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# JINNAH BUSINESS REVIEW

# JBR

Advertising Effectiveness of Televised Messages using Appeals: A Case-study in the Chinese Context

Impact of E Procurement and Logistics on Effectiveness of Supply Chain Management - A Study of Aviation Industry in Pakistan

"AS YOU LIKE IT" Impression Management or Organizational Citizenship Behavior

Measuring Validity of Determinants of Consumer Subscription Behavior in Telecom Sector of Pakistan

Measuring the Effect of Work-Family and Family-Work

Conflicts on Organizational Commitment among Nursing Staff in Pakistan

Corporate Governance and Firm Performance: A Study on Moderating Effects of Firm Size and Leverage on the Relationship between Corporate Governance and Firm Performance in Banking Sector of Pakistan

Impact of Political Instability and Terrorism on Stock Returns: Evidence from Pakistan

An Empirical Examination of Linkages among Karachi Stock Exchange and Emerging Equity Markets of Asia Pacific Region

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## **EDITOR'S NOTE PUBLISH OR PERISH**

Welcome to Jinnah Business Review Volume 1, No. 2. A journal, though in its formative years, aspires to be the preeminent management journals in coming years. The journal welcome contributions from various areas of Business Management. I am genuinely indebted to all members of the Editorial Board for their valuable contributions and special thanks to reviewers who helped us in finalization of these masterpieces.

A big question mark stuck in the minds of many, specially those in academics is “why we need to publish?”. I have come across with this question in each and every class where students raise their concern, “why these days every teacher requires us to do research?”. Definitely unless you don't have an answer to this question, the whole effort to make them go through such rigorous research activity would appear total wastage of time to them.

When you are competing in a competitive job market, nothing helps you more than publication. Publications indicate that you are serious in business and want to move ahead in career. The situation prevalent in Pakistan, specially in academics, indicate that PhDs are already entering the market and after some time only the PhD degree will not be a source of competitive advantage; the only thing which would differentiate you is publication. My colleagues who are already in academics must also take publications seriously as the time has come even in Pakistan where if you want to stay in academics you have to publish or you perish, there is no third option.

Jinnah Business Review provides an appropriate forum for researchers to publish. The submitted papers are subjected to a rigorous double blind peer review and the comments by our learned reviewers once incorporated improve the quality of your paper. If some one doesn't correct you, the mistakes remain, hence these comments are, in fact, a blessing to improve your research quality. Contributors from all around Pakistan and aboard are encouraged to submit their manuscript, we will help you to publish.

I would like to specially thank Dr. Muhammad Masoor Ahmed, Executive Vice President, Mohammad Ali Jinnah University and Dr. Arshad Hassan, Dean Management Sciences, Mohammad Ali Jinnah University for their support. Last but not the least my JBR team, a small team of talented young people, Mr. Amir Khan Khattak, Mr. Bilal Saeed, Ms. Maria Mashkooor and Ms. Rumesa Pervez Khan. They have worked really hard and credit for good things in this publication goes to them.

Prof. Dr. Sajid Bashir  
Editor in Chief  
Jinnah Business Review

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# ADVERTISING EFFECTIVENESS OF TELEVISED MESSAGES USING APPEALS: A CASE-STUDY IN THE CHINESE CONTEXT

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## ABSTRACT

Brand managers seeking for a loyal customer base need to build an emotional connection between the brand and consumers (Brady et al., 2004) particularly in a marketplace defined by heightened competition and commoditization. To the extent that advertising plays a key role in forging these bonds, there is a growing recognition that advertisers have an incomplete understanding of what it means when an emotional component is incorporated into their persuasive communication message. The present study tries to find out the preference of Chinese consumers for an emotional or rational appeal used in Television advertisements. The findings of the study emphatically proved that emotional appeals used in Television advertisements were preferred more and had a positive impact for respondent with different demographic and psychographics profiles. This was more profound among female respondents from lower age group and among respondents having achievement as their highest priority need. However, a mixed response was found for Television advertisements dominated with emotional appeals when a cross comparison was made across demographic and psychographics profile along with product life stage. In some case emotional appeal was preferred over rational appeal while rational appeal was preferred by respondents under some specific situation proving the fact that impact of appeal is situation specific. The present study hopes to provide direction to the advertising agencies in the matter of developing an appropriate ad message. This study in the Chinese context also aims to provide a cue for a proper mix of appeals in designing effective advertising messages.

## INTRODUCTION

Globalization created more scope for researchers to explore influence of advertising on consumers (Kanso & Nelson, 2007). Advertising is a paid non-personal form of communication, usually structured and persuasive about products, services or ideas by an identified sponsor through an assortment of media (Bovee & Arens, 1992). Ha, John, Janda, and Muthaly (2011) viewed advertising spending as imperative for firms to retain customers. Hence, the purpose of advertising is to assist the consumer to make informed purchase decision by creating awareness about the product. Television's share of the global ad market rose from 37% in 2005 to 39.9% in 2010. Television advertisements expenditure

is expected to rise to \$193.7 billion in 2012 to represent 40.4% of the market. However, a slight decline is forecasted to 40.3% in 2013 and 40.2% in 2014. Even so Zenith predicts Television advertisements spend to contribute 41.1% of new ad dollars between 2011 and 2014. Chinese Ad spend will grow by \$ 1,571 million by 2014 vs. 2011.

Unfortunately, most of the corporations do not conduct in-depth research on advertising effectiveness which creates barriers for corporations in developing effective advertising strategies (Tai, 2007). Consequently, it becomes critical for advertisers to ensure customers are attracted and persuaded by ad message. For instance, Obermiller, Spangenberg, and MacLachlan (2005) commented that consumers get irritated by over-

dramatized advertisements. Advertisement plays a vital role in providing products information apart from creating meanings to consumer values, goals and expectations (Freidmann & Zimmer, 1988; Kwan & Eze, 2012). Advertisements need to be interesting and enjoyable to attract consumer's attention. To have an understanding about how advertisement works, one needs to focus on the consumers than on the brand. Consumers watch or receive thousands of advertisements messages everyday through different media. Some may be very attractive, relevant or interesting to the consumer and may influence their purchasing behaviour. Although it is possible for an advertisement to be a combination of both informational and transformational execution, in practice either the transformational or the informational tends to dominate each other when the two are combined in a single ad. There is a slowdown in advertising, and worse still, the relevance of mass media advertising is coming under scrutiny like never before due to other non-conventional media. Though memorability has long been considered an appropriate index of ad effectiveness, consumer response to ad is an important parameter to measure effectiveness (Young, 2000). What advertisement does to people is only half question answered. The remainder is how people respond to advertisement. Advertisers and marketers need to be aware of the possible impact of their communication on brand image and consumer response. Through effective communication, marketers attempt to build product categories need, create brand awareness and facilitate purchase. The prerequisite of a successful ad message is interpretation of ad message in the way an advertiser wants. The message's impact depends not only upon what is said but also on how it is said. Every successful ad works because it makes an effective appeal to some need or desire of people who encounters it.

## LITERATURE REVIEW

Advertising professionals use a number of rational and emotional appeals (or both) combined with different advertising formats. Advertisers can choose between a primarily information-dominant or image-dominant ad. Research indicates that, over time, ads have become more emotional and less rational with 'objective' product arguments (De Pelsmacker & Geuens, 1997). When advertising professional chooses to use an information-oriented appeal, he or she can use various arguments or a combination of arguments based on price, availability, ingredients, performance, quality and so on to persuade consumer (Abernathy & Eranke, 1996). The extent to which these arguments are used though might be partly a deliberate choice of advertising strategy, but is also influenced by the product type (Pickett et al., 2001).

Research suggests that information-rich ads lead to more positive affective and cognitive responses to the ad and towards the brand (Aaker & Bruzzone, 1985; Pasadeos, 1990; Leather et al., 1994; Chandy et al., 2001). Most empirical research shows that ads with a lot of emotionality and warmth lead to positive responses both to the ad and to the brand (Aaker et al., 1986; Stayman et al., 1989; De Pelsmacker & Geuens, 1996; De Pelsmacker & Van den Bergh, 1998; De Pelsmacker et al., 1998). This is even more so among people with lot of emotional and cognitive empathy (De Pelsmacker & Geuens, 1999). Emotional executions like music is considered very powerful peripheral cue that is capable of drawing attention, evoking positive mood and setting an emotional tone. The fact that musical ads lead to more positive evoked feelings and attitudes towards the ad is supported by the empirical studies (Gorn, 1982; Leather et al., 1994; De Pelsmacker & Van den Bergh, 1998; Roehm, 2001).

Humor again is often used as an emotional execution strategy (McCullough, 1992). Studies have concluded that humor draws attention to the ad (Weinberger & Gulas, 1992) specifically (Spotts et al., 1997) for low-involvement transformational products. Weinberger and Gulas (1992) found that humor works best for existing as opposed to new products. The effectiveness of humor seems to also depend upon the type of humor used (Speck, 1991), prior product usage and knowledge (De Pelsmacker & Geuens, 1999) and individual differences such as the 'Need for Cognition' (Geuens & De Pelsmacker, 2002). This result confirms earlier conclusions on the importance of the amount of information on one hand (Stewart & Koslow, 1989; Leather et al., 1994), and the effectiveness of emotions on the other (Aaker et al., 1986; Stayman et al., 1989; Geuens & De Pelsmacker, 1998). Neither does creativity and emotionality lead to most positive affective responses, nor do information-rich commercials without any emotional or creative execution. Relevant information and creative presentation of message with effective combination of appeals evokes positive affective responses to the commercials. This result supports earlier conclusions (Decock & De Pelsmacker, 2001) that information overload in commercials generally leads to more negative reactions and less effectiveness. Overall, this confirms the positive effect of emotions and moderate levels of information of television commercials (Decock & De Pelsmacker, 2001). Creativity is very important for good advertising, but it is only effective if it is linked to relevant product information else it will result in ambiguity (Kover et al., 1995; De Pelsmacker et al., 1998). This confirms the importance of affective component in the formation of brand attitudes (Demetrios & Ambler, 1999; Decock & De Pelsmacker, 2001).

Some researchers have attempted to distinguish rational, factual, and informational advertising from imaginative, emotional and transformational advertising (Laskey, Day, & Crask, 1989; Puto & Wells, 1984). The goal of informational appeals is to focus directly on the features or benefits of the product. In contrast, transformational appeals emphasize the experiences that consumer will have on consumption of a good or service. The practitioners of creating ads on soft-sell that appealed to the images associated with the use of the product, hardly made any explicit mention of the quality of the product in their ad message (Homer, 2008). Several studies have employed Mueller's (1987) definitions of hard and soft sell appeals, or some variation of it (Bradley, Hitchon, & Thorson, 1994; Johansson, 1994; Lin, 2001; Mueller, 1992; Nevett, 1992; Wang et al., 1997). Alden, Steenkamp, and Batra (1999) explored positioning strategies, by labeling two contrasting approaches: the soft-sell/image approach and the hard-sell/ direct approach. It is of interest to note their research suggestion that the features of the soft-sell approach are more suitable than the hard-sell approach for a positioning strategy.

According to Leiss, Klein, and Jhally (1997), there are two basic advertising formats: product-information format which is consistent with a hard-sell approach, the product is the center of attention, and the focus of the ad is on explaining the product and its function while product-image format is consistent with the soft-sell approach where brand name and package play an important part. Here the product is given a symbolic meaning and relationship than mere utility (Leiss, Klein, & Jhally, 1997).

Mueller (1987) emphasized mood and atmosphere conveyed through a beautiful scene or an emotional story in soft-sell appeal where human emotions and sentiments are emphasized over clear-cut product-related appeals. Meanwhile, she defined a hard-sell appeal as follows: "Sales orientation is emphasized here, specifying brand name and product recommendations. Explicit mention may be made of competitive products, sometimes by name, and the product advantage depends on performance." Alden, Steenkamp, Jan-Benedict, and Batra (1999) operationalized two contrasting approaches the soft-sell/image approach (content that does not emphasize reasons to buy but, conveys general associations with the brand), and the hard-sell/ direct approach (sales-oriented, verbal, strong message arguments, comparative content).

In soft-sell appeal human emotions are emphasized to induce an affective feeling from the viewer via some indirect mechanism. While in a hard-sell appeal the objective is to induce rational thinking on the part of the receiver through direct emphasis on a sales

orientation, often specifying the brand name and product recommendations. Foote, Cone, and Belding (FCB) Planning Matrix for product classification, classifies products according to whether the purchase decision is high or low involvement and involves cognitive (thinking) or affective (feeling) information processing. There is a recognition that some ads attempt to convey information to consumers to help them develop a preference, while others appeal to emotions. Hard-sell appeals rely more on the 'thinking' aspect while soft-sell appeals rely more heavily on the 'feeling' aspect.

Leiss, Klein, and Jhally (1997) discussed product-information and product-image format. In the former, the product and its function is consistent with a hard-sell approach. In contrast, in the product image format, "brand name and package play an important part, but the product is given special qualities by means of a symbolic relationship that it has to some more abstract and less pragmatic domain of significance than mere utility" (Leiss, Klein, and Jhally 1997, p. 244).

Mood and atmosphere are conveyed through a beautiful scene or the development of an emotional story or verse. Verbal and visual metaphors not directly related to the product are employed. Human emotional sentiments are emphasized over clear-cut, product-related selling recommendations. Product-focused messages are not considered soft sell. Sales-oriented advertising messages making explicit or implicit mention of competitive products. Product advantage depends on performance that is superior on some particular criterion. The category also includes such statements as 'number one' and 'leader', known as hard sell message.

It is now widely accepted that emotion is an essential component for successful execution of advertising message. Yet, due to the complex and elusive nature of emotions, much remains to be discovered about the exact mechanisms by which emotion operates and the extent to which it has an influence on information processing, attitude formation, and purchase decision. It is not surprising, therefore, that there is currently a renewed focus on the issue of emotion among both advertising practitioners and academicians. Marketers of nation's top companies feel the need of emotion as a key research priority, particularly in regards to the creation of emotional connections with consumers and understanding the emotional element of branding. Top organizations like Advertising Research Foundation and American Association of Advertising Agencies are initiating to utilize findings on emotion, to use it as an effective tool for capturing emotional responses to advertising.

Poels and Dewitte (2006) have made extensive review

and analysis of the methods employed in the last 20 years to measure emotion. Moreover, there are insightful findings emerging from the field of neuroscience using brain imaging technology to pinpoint the functional mechanisms of emotion. Researchers have made strides to examine the impact of emotion and the interactive relationship of emotion and cognition (Buck et al., 2002; Meyers-Levy & Malaviya, 1999; MacInnis & Jaworski, 1989). There is a need to further develop both the theoretical explanations and the means of assessing how emotion in advertising works. Some advertising researchers are applying this knowledge to generate new understandings of consumers' emotional responses.

## METHODOLOGY

Based on the literature review the present study was aimed to make an attempt to understand the impact of Television advertisements using emotional and rational appeal on Chinese consumers. The scope of the study was limited to north eastern part of China. The method for sample selection was simple random sampling of TV viewers. The samples were drawn from three capital cities from three states of eastern China. In the present study the concept emotion was not treated as negative or positive. An attempt was made to understand the impact of Television advertisements using emotional and rational appeal for both FMCG and consumer durable product categories. Tooth Paste, Bathing Soap, Detergent, Chocolates and Soft Drink representing FMGC category and Television, Washing Machine, Refrigerator, Two Wheeler and Four Wheeler representing consumer durable were chosen for the present study. The rational for choosing the above mentioned product was due to

the two factors. The first consideration was to select the products from FMGC and consumer durables category whose advertisement consumer recalled the most in the pilot test. The second consideration was to select that product having both emotional and rational appeals aired in Television during the year 2012. The present study basically depended on the questionnaire survey method to collect the primary data. A total of 600 copies of the questionnaire were distributed out of which 528 was retrieved for final analysis. Questionnaire was designed to capture both demographic and psychographics profile of the respondents. For capturing psychographics questionnaire on Maslow's hierarchy of need and personality Type was administered. An appeal used in ads was treated as effective if it has successfully created the desired effect, leading the viewer to action in terms of inquiry or purchase. Action in this study referred to inquiry, trial or purchase. Part B of the questionnaire was designed to capture action prompting characteristics of the Television advertisements using predominate emotional or rational appeals.

## RESULTS

The first objective of the study was to understand the impact of emotional appeal used in Television advertisements across respondents with different demographic and psychographics profile. This objective was studied by capturing consumer response to ad message dominated by emotional appeal in terms of "inquiry" or "trial/purchase". Table 1 and 2 represents impact of emotional appeal across different demographic and psychographics profile for FMCG and Durable product category respectively.

**TABLE 1**  
**Influence of Emotional Appeal**

| FMCG Product Category | Tooth Paste |                    | Bathing Soap |                    | Detergent |                    | Chocolates |                    | Soft Drink |                    |
|-----------------------|-------------|--------------------|--------------|--------------------|-----------|--------------------|------------|--------------------|------------|--------------------|
|                       | Inquiry     | Trial/<br>Purchase | Inquiry      | Trial/<br>Purchase | Inquiry   | Trial/<br>Purchase | Inquiry    | Trial/<br>Purchase | Inquiry    | Trial/<br>Purchase |
| Below Graduation      | 40.37       | 59.63              | 38.53        | 61.47              | 40.37     | 59.63              | 60.55      | 39.45              | 43.12      | 56.88              |
| Graduation & Above    | 29.58       | 70.42              | 34.96        | 65.04              | 37.16     | 62.84              | 57.46      | 42.54              | 42.79      | 57.21              |
| Female                | 31.98       | 68.02              | 31.98        | 68.02              | 30.81     | 69.19              | 54.65      | 45.35              | 42.44      | 57.56              |
| Male                  | 31.79       | 68.21              | 37.57        | 62.43              | 41.33     | 58.67              | 59.83      | 40.17              | 43.06      | 56.94              |
| LIG*                  | 42.11       | 57.89              | 42.11        | 57.89              | 37.89     | 62.11              | 54.74      | 45.26              | 50.53      | 49.47              |
| HIG*                  | 27.86       | 72.14              | 29.85        | 70.15              | 34.83     | 65.17              | 56.72      | 43.28              | 42.29      | 57.71              |
| HMIG*                 | 30.00       | 70.00              | 38.13        | 61.87              | 40.00     | 60.00              | 58.75      | 41.25              | 40.00      | 60.00              |
| LMIG*                 | 33.87       | 66.13              | 38.71        | 61.29              | 41.94     | 58.06              | 66.13      | 33.87              | 40.32      | 59.68              |
| Physiological         | 27.78       | 72.22              | 25.93        | 74.07              | 40.74     | 59.26              | 51.85      | 48.15              | 33.33      | 66.67              |
| Esteem                | 34.26       | 65.74              | 33.33        | 66.67              | 37.04     | 62.96              | 50.93      | 49.07              | 37.96      | 62.04              |

|                    |  |       |       |       |       |       |       |       |       |       |
|--------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Belongingness      | 32.06  | 67.94 | 41.98 | 58.02 | 37.40 | 62.60 | 61.83 | 38.17 | 45.80 | 54.20 |
| Safety             | 27.78  | 72.22 | 38.89 | 61.11 | 38.89 | 61.11 | 50.00 | 50.00 | 38.89 | 61.11 |
| Self-actualization | 33.73  | 66.27 | 37.87 | 62.13 | 37.87 | 62.13 | 65.09 | 34.91 | 46.75 | 53.25 |
| Type A             | 34.05  | 65.95 | 32.43 | 67.57 | 34.05 | 65.95 | 58.38 | 41.62 | 38.38 | 61.62 |
| Type B             | 38.89  | 61.11 | 44.44 | 55.56 | 41.67 | 58.33 | 75.00 | 25.00 | 58.33 | 41.67 |
| *LIG               | Lower Income group (<RMB 1250/per month)                   |       |       |       |       |       |       |       |       |       |
| *LMIG              | Lower Middle Income group (RMB 1200/ to Rs 3800/per month) |       |       |       |       |       |       |       |       |       |
| *HIG               | Higher Income group (>RMB 5000/per month)                  |       |       |       |       |       |       |       |       |       |

**TABLE 2**  
**Influence of Emotional Appeal**

| FMCG Product Category | Television  |        | Washing Machine  |        | Refrigerator     |        | Two Wheeler      |        | Four Wheeler     |        |
|-----------------------|---|--------|------------------|--------|------------------|--------|------------------|--------|------------------|--------|
|                       | Inquiry/Purchase  | Trial/ | Inquiry/Purchase | Trial/ | Inquiry/Purchase | Trial/ | Inquiry/Purchase | Trial/ | Inquiry/Purchase | Trial/ |
| Below Graduation      | 75.23   | 24.77  | 56.88            | 43.12  | 66.06            | 33.94  | 65.14            | 34.86  | 37.61            | 62.39  |
| Graduation & Above    | 77.51   | 22.49  | 64.06            | 35.94  | 69.93            | 30.07  | 70.42            | 29.58  | 48.17            | 51.83  |
| Female                | 75.58   | 24.42  | 64.53            | 35.47  | 72.09            | 27.91  | 61.05            | 38.95  | 41.28            | 58.72  |
| Male                  | 77.75   | 22.25  | 61.56            | 38.44  | 67.63            | 32.37  | 73.41            | 26.59  | 48.27            | 51.73  |
| LIG*                  | 69.47   | 30.53  | 48.42            | 51.58  | 61.05            | 38.95  | 64.21            | 35.79  | 69.47            | 30.53  |
| HIG*                  | 80.10   | 19.90  | 62.69            | 37.31  | 72.14            | 27.86  | 70.15            | 29.85  | 80.10            | 19.90  |
| HMIG*                 | 75.63   | 24.37  | 65.00            | 35.00  | 68.13            | 31.87  | 70.63            | 29.37  | 75.63            | 24.37  |
| LMIG*                 | 82.26   | 17.74  | 77.42            | 22.58  | 74.19            | 25.81  | 70.97            | 29.03  | 82.26            | 17.74  |
| Physiological Esteem  | 81.48   | 18.52  | 57.41            | 42.59  | 70.37            | 29.63  | 77.78            | 22.22  | 48.15            | 51.85  |
| Belongingness         | 78.70   | 21.30  | 65.74            | 34.26  | 69.44            | 30.56  | 71.30            | 28.70  | 44.44            | 55.56  |
| Safety                | 79.39   | 20.61  | 67.18            | 32.82  | 70.99            | 29.01  | 68.70            | 31.30  | 48.09            | 51.91  |
| Self-actualization    | 83.33   | 16.67  | 66.67            | 33.33  | 83.33            | 16.67  | 72.22            | 27.78  | 50.00            | 50.00  |
| Type A                | 72.19   | 27.81  | 60.95            | 39.05  | 66.27            | 33.73  | 65.09            | 34.91  | 43.79            | 56.21  |
| Type B                | 80.54   | 19.46  | 62.70            | 37.30  | 69.73            | 30.27  | 78.38            | 21.62  | 55.68            | 44.32  |
| Type B                | 61.11   | 38.89  | 58.33            | 41.67  | 66.67            | 33.33  | 50.00            | 50.00  | 41.67            | 58.33  |
| *LIG                  | Lower Income group (<RMB 1250/per month)                    |        |                  |        |                  |        |                  |        |                  |        |
| *LMIG                 | Lower Middle Income group (RMB 1200/ to Rs 3800/per month)  |        |                  |        |                  |        |                  |        |                  |        |
| *HIG                  | Higher Income group (>RMB 5000/per month)                   |        |                  |        |                  |        |                  |        |                  |        |
| *HMIG                 | Higher Middle Income group (RMB 3800/ to RMB6500/per month) |        |                  |        |                  |        |                  |        |                  |        |

From above table it was evident that respondents has been exposed to Television ads predominated by emotional appeals inquired about the product. However for FMGC category greater percentage of respondent tried/purchases the products while for durable product category remarkable percentage of respondents inquired about the product on being exposed to Television ad dominated by emotional appeal.

The second objective of the study was to understand the impact of emotional appeal on respondents with various demographic and psychographics profile. Chi square test was used. The Z value (0.135) at P>0.05 indicated that there was no significant difference in

preference for emotional appeals among respondents from different educational background as respondents from different educational groups had equally strong preference for emotional appeals. The Z value (2.316) at P<0.05 indicated that there was significant difference in preference for emotional appeals among respondents belonging to different age groups.

Lower age group had stronger preference for emotional appeals compared to higher age group. The Z value (2.133) at P<0.05 indicated that there was significant difference in preference for emotional appeals among respondents belonging to different gender group. Female respondents had stronger preference for emotional appeals. The Z value (1.123) at P>0.05 indicated that there was no significant

difference in preference for emotional appeals among respondents from different income group. The Z value (1.998) at  $P < 0.05$  indicated significant difference in preference for emotional appeals across respondents with different need priority in life. Respondents having achievement as their priority of need had stronger preference for emotional appeals. The Z value (1.759) at  $P > 0.05$  indicated that there exists no significant difference in preference for emotional appeals across respondents with different personality trait. Respondents with Type A and B personality had equally strong preference for emotional appeals.

The third objective of the study was to know preference of respondents with different demographic and psychographic profile for Television advertisements using emotional or rational appeal for product of various categories and life stages. For the present study Maslow's hierarchy of need categories was used the biological needs were leveled as lower and the psychological needs were leveled as higher. For the current study product life stage was captured on two parameters price and number of year of existence of product in the market. Based on these parameter 4 category emerged as: new and expensive product, new

and less expensive product, established and expensive product and established and less expensive product. Factorial experiment design was used to find the significance of each factor (treatment) separately.

Factorial experiment design gives significant information of higher order interactions. Factorial experiment makes a better study of the different interaction effects than the main effects. The effects were taken as combination of appeal (rational and emotional), product life stages divided on product price (expensive and less expensive) and product stages (established and new products). In the present study the effects were taken as education, age, sex, income, need priority, personality types each being combined with appeal (rational and emotional), product price (expensive and less expensive) and product stages (established and new products). All of these were administered at two levels: lower level and higher level. So in total there are 16 treatments for sample segmented (by education, age, sex, income, need priority, personality types) and 15 orthogonal effects:- four main effects (A,B,C,D), six first level interaction effects (AB,AC,AD,BC,BD,CD) and one second order interaction effects (ABCD).

**TABLE 3**  
**Segmentation by Education**

| Segmentation by Education | Education | Appeal    | Price          | Product Stage       | F value |
|---------------------------|-----------|-----------|----------------|---------------------|---------|
| $A_1B_0C_1D_1$            | Higher    | Rational  | Expensive      | New Product         | 13.97*  |
| $A_1B_1C_0D_1$            | Higher    | Emotional | Less Expensive | New Product         | 121.38* |
| $A_1B_1C_1D_0$            | Higher    | Emotional | Expensive      | Established Product | 20.37*  |
| $A_1B_1C_0D_0$            | Higher    | Emotional | Less Expensive | Established Product | 48.17*  |
| $A_0B_1C_1D_0$            | Lower     | Emotional | Expensive      | Established Product | 36.81*  |

\* $P < 0.01$ , df (1,30)

As evident from table 3, higher educational group preferred Television ads using dominantly rational appeal for new and expensive product. However, for new and less expensive product or for established and expensive

product they preferred Television advertisements using dominantly emotional appeal. Lower education group preferred Television advertisements using dominantly emotional appeal for expensive and established product.

**TABLE 4**  
**Segmentation by Age**

| Segmentation by Age | Age    | Appeal    | Price          | Product Stage       | F value |
|---------------------|--------|-----------|----------------|---------------------|---------|
| $A_1B_0C_1D_1$      | Higher | Rational  | Expensive      | New Product         | 50.94*  |
| $A_1B_1C_0D_1$      | Higher | Emotional | Less Expensive | New Product         | 18.56*  |
| $A_1B_1C_1D_0$      | Higher | Emotional | Expensive      | Established Product | 15.38*  |
| $A_1B_1C_0D_0$      | Lower  | Emotional | Less Expensive | New Product         | 132.47* |
| $A_0B_1C_1D_0$      | Lower  | Emotional | Expensive      | Established Product | 290.34* |

\* $P < 0.01$ , df (1,30)

As evident from table 4, respondents belonging to higher age group preferred Television advertisements using dominantly rational appeal for new and expensive product. However, for new and less expensive product or for established and expensive product they preferred

Television ad using dominantly emotional appeal. Respondents belonging to lower age group preferred Television advertisements using dominantly emotional appeal for less expensive and new product and for expensive and established product.

**TABLE 5**  
**Segmentation by Gender**

| Segmentation by Gender                                      | Age    | Appeal    | Price          | Product Stage | F value |
|---|--------|-----------|----------------|---------------|---------|
| A <sub>0</sub> B <sub>1</sub> C <sub>1</sub> D <sub>0</sub> | Female | Emotional | Expensive      | Established   | 61.02*  |
| A <sub>0</sub> B <sub>1</sub> C <sub>0</sub> D <sub>1</sub> | Female | Emotional | Less Expensive | New Product   | 27.84*  |
| A <sub>1</sub> B <sub>1</sub> C <sub>0</sub> D <sub>1</sub> | Male   | Emotional | Less Expensive | New Product   | 8.18*   |

\*P<0.01, df (1,30)

As evident from table 5, female respondents preferred Television advertisements using dominantly emotional appeal for expensive and established product. They also prefer Television advertisements using dominantly emotional appeal for new and less expensive product and for new and less expensive product.

**TABLE 6**  
**Segmentation by Income**

| Segmentation by Income                                      | Income | Appeal    | Price          | Product Stage | F value |
|---|--------|-----------|----------------|---------------|---------|
| A <sub>0</sub> B <sub>1</sub> C <sub>1</sub> D <sub>0</sub> | Lower  | Emotional | Expensive      | Established   | 104.09* |
| A <sub>0</sub> B <sub>1</sub> C <sub>0</sub> D <sub>1</sub> | Lower  | Emotional | Less Expensive | New Product   | 47.49*  |
| A <sub>1</sub> B <sub>0</sub> C <sub>0</sub> D <sub>1</sub> | Higher | Rational  | Less Expensive | New Product   | 97.90*  |

\*P<0.01, df (1,30)

As evident from table 6, respondents belonging to lower income group preferred Television advertisements using dominantly emotional appeal for expensive and established product. They also prefer Television advertisements using dominantly emotional appeal for new and less expensive product and for new and less expensive product.

**TABLE 7**  
**Segmentation by Need Priority**

| Segmentation by Need Priority                               | Need Priority | Appeal    | Price          | Product Stage | F value |
|---|---------------|-----------|----------------|---------------|---------|
| A <sub>0</sub> B <sub>1</sub> C <sub>1</sub> D <sub>0</sub> | Lower         | Emotional | expensive      | Established   | 36.81*  |
| A <sub>0</sub> B <sub>1</sub> C <sub>0</sub> D <sub>1</sub> | Lower         | Emotional | Less Expensive | New Product   | 239.70* |
| A <sub>1</sub> B <sub>1</sub> C <sub>0</sub> D <sub>0</sub> | Higher        | Emotional | Less Expensive | Established   | 48.17*  |
| A <sub>1</sub> B <sub>1</sub> C <sub>1</sub> D <sub>0</sub> | Higher        | Emotional | Expensive      | Established   | 20.37*  |
| A <sub>1</sub> B <sub>1</sub> C <sub>0</sub> D <sub>1</sub> | Higher        | Emotional | Less Expensive | New Product   | 121.38* |

\*P<0.01, df (1,30)

As evident from table 7, respondents with lower need preferred Television advertisements using dominantly emotional appeal for expensive and established product. They also prefer Television advertisements using dominantly emotional appeal for new and less expensive product. Respondents' with higher need preferred Television advertisements using dominantly emotional appeal for established and both expensive and less expensive product. Respondents with higher need also preferred Television advertisements using dominantly emotional appeal for new and less expensive product.

**TABLE 8**  
**Segmentation by Personality Type**

| Segmentation by Personality Type                            | Personality Type | Appeal    | Price          | Product Stage | F value |
|---|------------------|-----------|----------------|---------------|---------|
| A <sub>0</sub> B <sub>1</sub> C <sub>1</sub> D <sub>0</sub> | Type A           | Emotional | Expensive      | Established   | 58.13*  |
| A <sub>0</sub> B <sub>1</sub> C <sub>0</sub> D <sub>1</sub> | Type A           | Emotional | Less Expensive | New Product   | 26.52*  |
| A <sub>1</sub> B <sub>1</sub> C <sub>0</sub> D <sub>1</sub> | Type B           | Emotional | Less Expensive | New Product   | 54.68*  |

\*P<0.01, df (1,30)

## CONCLUSION AND MANAGERIAL IMPLICATIONS

This study was designed to provide an understanding of the impact of emotional versus rational appeals

used in ad message on respondents with various demographic and psychographics profile and across various product category and product life stage. The impact of emotional and rational appeals in advertising was studied from the perspective of preference for the

ad resulting in action. From this study it was evident that different advertisement appeals led to different response and that both emotional and rational appeal were not equally preferred across all product category and product life stage.

To effectively perform the communication activity that directs the flow of goods and services from producer to the ultimate consumer or user, consumer psychology has to be well understood. While one end of the continuum of consumer information processing perspective deals with hedonic experimental model that views consumers driven purely by emotion in pursuit of fun, fantasies and feelings the other end of consumer processing model is based on pure reason cold, logical and rational. In between these extremes rests the bulk of consumer behavior most of which is not based on pure reason nor pure passion.

The most obvious reason why people buy things is that they want them. Since the whole advertising is evolved around consumer, it therefore becomes necessary to understand how consumers think about advertisement and advertised product. Consumers have a tendency to be in attentive to most ads and exercise a high degree of selective perception. Therefore advertisement should act as a source of information, serve as a time saver and as a source of engagement that would help to develop a positive attitude towards the ad and the product or brand.

Advertising has to function first at communication level before it can influence sale, in terms of getting attention, arousing interest, transmitting information, building an image, being understood, inspiring confidence, engendering favorable attitude, registering selling points, portraying benefits, making lasting impressions.

The present study of impact of Television advertisements using emotional versus rational appeals emphatically proved that the emotional appeals used in Television advertisements had positive impact on the consumers in terms of action across various product category. Television advertisements predominated with emotional appeal were highly preferred and effective for the respondents across different product life stages. Possibly from the finding it also has become evident that ad message dominated by emotional appeal seems to be more appropriate for established product even if they are expensive, also for new and less expensive product category. Though for new expensive product category emotional appeal does have dominating impact as found from response across from various demographic and psychographics segment. This may be due to the fact that consumer search for functional utility in ad message for new and expensive product category.

Television advertisements still continue to be the corner stone of modern advertising along with other emerging medium. Advertising, in turn, is the greatest fillip behind all the marketing efforts. The investment in advertising nationally is of a very large magnitude. Out of this investment the apportionment for Television advertisements is of gigantic proportion. Such mammoth investments must be justified, and such justification can only come from the findings of a study such as the present one. The present study hopes to provide direction to the advertising agencies in the matter of designing and developing effective ad message and effective resource allocation. The finding from the present study hopes to provide a cue to agency people as well as creative departments in the agencies for a proper mix of appeals in their advertisement message.

## **LIMITATIONS**

The sample size chosen for the study appears to be quite sizeable considering that the study is only an academic one. But considering the importance of the findings and their bearings on the subsequent practical applications, the size of the sample should have been much larger.

Another limitation of the study might have been the use of only five cities of north eastern part of China. The above limitation of the study paves the way for further extension of it by undertaking at a national scale for a particular category of product class. This will enable a stronger and a more balanced perspective on the views of the participants on the research issues.

## **FUTURE EXTENSION OF THE STUDY**

The present study was conducted at product level, future researchers study can craft soft-sell or hard-sell versions of advertisements at brands level to study the impact of emotional versus rational appeals used in ad for specific brands. Future research can be carried for a broader variety of products for example for service industry to study the impact of emotional versus rational appeals used in Television advertisements. Advertisers must understand cultural differences in emotion in order to create ads that evoke desired emotional responses and thus proper associations with brands. The present study can be carried in cross-cultural context to capture consumer responses to the usage of such appeals in a culture-specific context. Advertisers and researchers need to become more aware of the relationship between culture, emotion, and advertising in an effort to create more effective communications and connections with consumers.

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# IMPACT OF E PROCUREMENT AND LOGISTICS ON EFFECTIVENESS OF SUPPLY CHAIN MANAGEMENT: A STUDY OF AVIATION INDUSTRY IN PAKISTAN

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## ABSTRACT

**The principal objective of this study is to identify and evaluate the potential solutions to the problems in the traditional supply chain management in the Aviation Industry of Pakistan. The role of technology with Supply Chain Management is also discussed in this study. The data was collected from various Airline companies in Pakistan. The results indicate that e procurement and logistics are vital for supply chain effectiveness in aviation industry of Pakistan. Specific recommendations and implications are also discussed.**

## INTRODUCTION

Supply chain management (SCM) moves from designing, implementing, and evaluating the flow of raw materials, products, and information among multiple companies in the industry. The major actors in this flow are suppliers, manufacturers, wholesalers, and retailers who are all involved in business processes like procuring, producing, and delivering products. Supply chain management is an exploding field, both in research and in practice. The management of supply chain activities can differ greatly from management activities in traditional manufacturing supply chains (Gunasekaran, Macbeth, & Lamming, 2000). It has been observed that supply chain has become an essential part of businesses after organization have started making knowledge based strategies.

Supply chain needs new and innovative ideas for their processes and the new organizational structure to ensure that they have been released with complete potential. In order to maximize returns from the supply chain process, re-engineering and designs will have to take place (Pretorius, 2001). Implementing a code of conduct across a supply chain is a complex process that companies are still grappling with, yet some have made more progress than other. Buyer-supplier relationships are becoming important with the increasing cost of materials purchased (procurement) as a proportion of the total sales volume (Anupindi & Akella, 1993). By this it means that businesses are feeling the pressure to improve procurement effectiveness, and a focus on

strategic sourcing and hosting offerings is becoming a popular first step. E-procurement point solutions are fading, yet companies still want to protect procurement investments. In this we are also focusing on the enhancement of the procurement process and going towards E-procurement. Logistic is actually elaborated as the means of transportation of certain products. Regardless of the logistic evaluation tool that is used by an organization to assess the quality of its logistic service, it is important that one such tool is indeed used, to allow improvements to be internalized, as it already happens with processes in other areas of the company (Graeml & Peinado, 2009). Talking of technology, the ERP has obtained good results and productivity of organizations. Its success could be measured as "The interest in ERP system is growing" (Rell & Basel, 2010, p.831) The benefits of ERP modules include increased sharing of data, information flow and data security (Moller, 2005). The collection of module in ERP is based on the need and preference of the organization. (Alanbay, 2005).

Previously no significant research is conducted in Pakistan regarding SCM in aviation industry. So this study is an attempt to generate awareness about this important under-researched area. Majority of studies have been conducted in developed countries but not in Pakistan, where the context is very much different because of business priorities and needs.

## LITERATURE REVIEW

### Supply chain management

A supply chain encompasses all activities associated with the flow and transformation of goods from the raw material stage (extraction), through to end users, as well as the associated information flows both up and down the supply chain. A supply chain can therefore be viewed as the formation of a value chain network consisting of individual functional entities committed to the controlled sharing of business data and processes, to explore the level of supply chain integration construct and its dimensions and to determine the feasibility of measuring a case's level of supply chain integration (McLaren, 2006). An important lesson in supply chain management research is that firms should consider global supply chain performance, and not just the performance of their portion of the chain. Firms strive to adapt their supply chains to the e-business environment. They need to decide how much and in what sequence they will be investing in various supply chain efforts to leverage the benefits of the new technology.

Simple supply chains indicate that it may be costly for some members to manage their inventory in a completely synchronized fashion with the whole chain. According to the findings of this study, joint problem solving, open communication and timely information are an integral part of the relationship. Risk and benefit sharing and the integration of systems were seldom part of the relationship (Weiss, Fourie & Nel, 2002). Determining detailed skills for future professionals in the area of supply chain management reduces the potential training costs for companies and reduces the gap between academia and business (Gonzalez, Quesada, Gourdin & Hartley, 2008). In the next two years, there will be a further increase in electronic methods of purchase and in the selling of products and services through the internet; it is not, however, to be expected in the near future that the supply chain will be subject to comprehensive integration permitting simultaneous planning steps to take place. Determining detailed skills for future professionals in the area of supply chain management reduces the potential training costs for companies and reduces the gap between academia and business (Gonzalez, Quesada, Gourdin, & Hartley, 2008). The Internet provides a tool that allows supply chain activities to be carried out in a synchronized, instantaneous manner, facilitating maximum supply chain performance. Internet is a supply chain management tool that can be used to improve customer satisfaction, reduce costs, smooth production flows and shorten cycle times.

Supply chain management emphasizes the potential advantages of establishing linkages that can orchestrate suppliers and customers in the entire supply chain. (Baihaqi, Beaumont, & Sohal, 2008). The interactions of these variables and their relationship with supply chain performance culminate in the form of the contingency based

framework that can be used to analyze e-supply chains. To exhibit the applicability of the framework especially as an aid in decision making, an e-supply chain simulation framework is proposed. (Mukhtar, Jailani, Abdullah, Yahya & Abdullah, 2009). The concept of ERP seems to be growing and expanding. It will be useful to investigate topics such as how the companies using the ERP system perceive this trend (Moon, 2007). Multinational organizations benefit from supply chain support. Supply chain linkages induce a need for many small organizations to acquire ERP support, often constrained to match systems of the core supply chain firm (Olson Sheu & Chae, 2005). The richness of structural properties in supply chain architecture provides unique ways of representation of structure, information, and process flow in the enterprise. (Chandra & Kumar, 2006). The core idea is that the successful implementation of SC integration projects is not as much a technological problem and that a thorough study of the current and desired states of business processes in all companies involved is required (Trkman & Groznik, 2006). While improved supply chain management principles combined with new information (e-business) technologies may not have been given much macroeconomic attention in the past, its effective implementation can help firms reduce costs, increase revenues, boost efficiencies, and expand market opportunities. Today it is expanding in breadth and depth alike. More companies are opening Internet channels and more buyers are ordering over the Internet. Also, applications are getting more sophisticated. For example, industry exchanges do not only handle transactions, but also generate data. Companies that consider adopting an integrated information system should replace the question "which is the most effective implementation strategy?" with the more appropriate one "which strategy best fits the business requirements of our organization?" (Masini, 2003). The researcher wants to elaborate the benefits of this system because ERP can then be expanded to other sectors of the business. It was also discovered that an online web-based quotation system would attract lots of customers since no company in Pakistan is offering such a service, which can be offered at a very low implementation cost (Baray, Hameed, & Badii, 2008). Here the researcher wants to say that the most important issue in a successful ERP project is an understanding the working of the company's business and all of their context requirements. (Ojala, Vilpola, & Kouri, n.d.)

## **E- Procurement**

Having the ability to supply the procurement demands for modern weapons thus involves very substantial resources on the part of the vendor. There are no incentive conflicts among the supply chain's firms, and firms choose rational procurement policies. The firms could

let the supplier control the supply chain's reorder point policies, subject to the constraints that all players are no worse off and any potential savings are shared (Cachon, 2001). The firm should adjust its cash reserves and its inventory levels at various stages depending on recent realization of demand (Hu, 2006). Information sharing allows the supplier to identify which retailers have the highest need for replenishments. One of the basic problems which are being faced by the organizations is the improper flow of information between two or more parties. If the information given or received is wrong then there would be a lot of errors in the process. This means that the organization should introduce the ERP systems to reduce the error possibility. For information sharing to be useful, the information shared should not be inferential by the receiving party using any of the available data (Raghunathan, 2001). An information-rich supply chain system under incomplete knowledge of the system parameters is important (Aviv, 2003). This research recognizes information flow as the biggest cause for bottlenecks in supply chains and proposes a model that will provide the necessary visibility and flexibility to the system.

Technology, being the important part in this include the ERP software like SAP. The concept of supply chain management (SCM) helps the companies in the environment to achieve effective enterprise integration (Gunasekaran, Macbeth, & Lemming, 2000). ERP is a key tool for obtaining information of day to day business processes for making the decisions; therefore, ERP becomes a key factor for operations productivity (Guo, Wang, & Luo, 2006). The SCM actively interlinks the ERP system like warehouse, logistics, procurement, distribution channels, marketing and sales that directly involve value adding in supply network (Selk, Kloeckner, & Albani, 2006). The 'plug and play' is the concept of technology use for specific solutions for specific problems which could be easily added to an existing ERP environment. ERP provides base for knowledge management, which helps in decision making while problem solving. (Guo, Wang & Luo, 2006). According to Zile (2004); "ERP system support many knowledge management functions and persuade knowledge management proposal in an organization". The accomplishment of ERP is key tool for the productivity of available resources. (Rell & Basel, 2010). The ERP System allows enhancing the coordination in term of data base management and functionality of all functional areas "sales, service, marketing, procurement, production, logistics and waste disposal, which are directly involved in the value creation process. (Selk, Kloeckner, & Albani, 2006). The basic use of this software in the department of many organizations, particularly multinational companies, is

to improve the efficiency of their organization. ERP Modules are made for different departments, Human resource, Supply Chain management, Customer Relation management, Stock and Procurement. In this way this software increases the overall efficiency of the organization." (Belbag, Cimen, Tarim, & Tas, 2009).

*Hypothesis 1. E-Procurement has a positive effect on the Supply Chain Management.*

## **Logistics**

The implementation of logistics as managerial concept and practices in manufacturing companies is the most important indicator for the development of logistics in the economy as whole. (Guo & Tang, 2008). For example, IBM has used AMT to address a wide range of business issues, including inventory management, supply-chain configuration, product structure, and replenishment policies. Asset Management Tool has become the foundation for a number of supply-chain-reengineering initiatives. Through which we can further communicate with the Logistics Cost. We examine the drivers of current customer profitability in a supply chain for a large distributor with a heterogeneous client base (Niraj, Gupta, & Narasimhan, 2001). This actually means that on one hand, a small percentage of customers contribute to a large percentage of total profits, and on the other hand, a substantial percentage of customers are unprofitable. Speed to market is slightly more important than cost when choosing a sourcing region; however, due to new and innovative logistics systems, proximity is starting to become less of a benefit offered by US and South/Central American suppliers (Cesca, 2005). Companies need to analyze both the first cost and total cost of a good before choosing a supplier for sourcing (Cesca, 2005). The novel features of our model include dual modes of supply for dealer replenishments and net customer demand that is responsive to speed of service (Rao, Wolf, and Tayur, 2000). Transportation costs are a function of market type, location within the supply chain and proximity to market (Cesca, 2005). The costs of the regulated carriers are high because the price level is high, and not the reverse (i.e., cost is price-determined, not price-determining). All activities involved in the construction process within the implementation logistics should be built around cross-functional teams, and everyone should be involved right from the start when implementing the advanced technologies. This means that there is no single department which deals with the suppliers but everyone in the organization should know who the suppliers are, what is the channel and what kind of technology is being used during the process. Overall, transportation and inventory holding costs are important

factors in a retail company's strategy; however only minimization of inventory holding costs enhances its performance (Cesca, 2005). Companies in the petroleum industry have become increasingly reliant on the services of third-party logistics companies to manage their supply chains.

*Hypothesis 2. Logistics has a positive effect on the Supply Chain Management.*

## RESEARCH METHODOLOGY

### Sample and Instrumentation

Total of 200 questionnaires were distributed in the three main airlines operating in Pakistan. Out of 250 questionnaires 217 questionnaires were received which were completely filled by the customers; hence the response rate was 86.8%.

The data was collected in Non-contrived environment. It means that natural working environment was not disturbed, which shows that the researcher is having minimal interference. The respondents were requested to fill up a questionnaire that asked questions about how much important to them is the concept of Supply Chain Management with the determinants (E-Procurement and Logistics) and their effect on the overall organization. Managers and Senior Employees were requested to help in data collection and to ensure that proper answer were given to the questionnaires and also to illuminate any concerns or problems faced by the respondent in understanding the questionnaire. Almost all the conscientious people were supportive in this regard. It was also assured that all the information filled in by the respondents would be kept confidential.

The alpha for the Supply Chain Management is 0.906 which means 90.6%. E-Procurement has the alpha of 0.889 which make this part 88.9% reliable. Third is the logistics which has the alpha of 0.783 means that it is 78.3% reliable.

## RESULTS

**TABLE 1**  
**Correlation Analysis**

| Variable       | 1      | 2    | 3 |
|----------------|--------|------|---|
| 1. SCM         | 1      |      |   |
| 2. Procurement | .433** | 1    |   |
| 3. Logistics   | .425** | .284 | 1 |

The Correlation Analysis shows that Supply Chain Management was strongly related with E-Procurement ( $R = 0.433$ ,  $S = 0.00$ ). As it showed that there is a

strong link between the product E-Procurement and the Supply Chain Management which is (43%) gives us the indication that the E-Procurement has the (43%) share in the development of the Supply Chain Management. Furthermore we also came to see that there was a significant strong and positive relation of the Supply Chain Management with the Logistics that is ( $r = 0.425$ ,  $p = 0.00$ ) which makes it (42%). This finding of the logistics shows that it is almost as important as the E-Procurement but the correlation values is less than E-Procurement because at Procurement level the strategically decision making is being done.

**TABLE 2**  
**Regression Analysis**

|               | Beta | t     | sig  |
|---------------|------|-------|------|
| E procurement | .36  | 5.650 | .000 |
| Logistics     | .392 | 5.445 |      |

*R Square= 0.287, Adjusted R Square= 0.28, F=42.99, n =217*

## DISCUSSION AND CONCLUSION

As we know that the objective of this article is to identify and evaluate the potential solutions to the problems in the traditional supply chains in the Aviation Industry of Pakistan. For this we selected the main Airlines Companies of Pakistan, which includes: (1) Pakistan International Airline (2) Air Blue (3) Shaheen Airlines.

All of these organizations are running successfully in Pakistan and because of the less choice for customers, the competition is always high. To attract the customers, these companies are always trying something new. But before the customer we have to see whether there is coordination among themselves or not, which means it is important to know what are their processes of doing business internally and how do they integrate within the organization. We did a brief investigation on the Supply Chain Network of these organizations for which the variables selected were E-Procurement and Logistics of the Organization. These organizations used the traditional way of procurement, first generating requirement, then asking different vendors for bidding. This was one of the lengthy process for which they have to wait for the response of the vendor. This was all done by their old information management system which is less efficient. The result shows that the E-Procurement can play a vital role in the enhancement of the complete Supply Chain Network. The results show the significance of (0.443) which is highly positive because by putting ERP or technology in Procurement process it will give you Centralized information, which means that all the

information can help you in process will be available at one point. ERP contain collection of modules such as, production, inventory, Procurement, Sales, Marketing, and Accounting (Chima, 2007). Every single time the information is readily available information. The time of the one complete process is also improved which, in other words is known as Improved Lead Time. They could just integrate between the departments. Financial reporting will also increase though the data between all the departments will be known. Time will be saved due to analytical reporting. Inventory cost reduced company can invest that money onto some other project then this. Master data can be easily maintained, which is centralized for the facilitation of company. The benefits of ERP modules are such as, Increase Sharing data and information flow, Data Security (Moller, 2005). The Selection of module in ERP is based on the need and preference of the organization (Alanbay, 2005). Cost effectiveness will increase, this means extra costs will be reduced, for example, things which are not required for some specific time, it's better not to order for them till the need arises. Quality will increase and will result in the satisfaction of the end user. Better and efficient management will develop. Extended information will be available e.g. marketing employees can get the data of finance for future planning.

System transparency means error free transactions will be done. Single entry data means that the data will have to be entered only once, then it can be retrieved at any time. The ERP provides exact picture of stock and demand which is core activity of SCM. ERP Software could do stock tracking and demand estimation" (Belbag, Cimen, Tarim, & Tas, 2009).

The second Variable is as important as the first one because it also shows the significance of (0.434). Logistical behaviors are the fundamental functions that have to be performing in any logistics system. It is vital to distinguish that they are the components of a true system, in that they are all unified. Very often a change in one will create a wave effect of change throughout the whole organization. The reason for which the logistic is as important as E-Procurement is because with the technology, the Logistics would raise your output and efficiency. This means that through an outsourced supply chain, you can focus on your center business activities and reduce or eliminate your money investment in non-core area such as tools and conveniences. In addition get pleasure from belief and dependability with an established track record and a remarkable customer selection.

Due to its importance the ERP system is considered a competitive edge between the competitors. The ERP has been proved a key tool for the productivity of available resources. The ERP provides the best solution

of problems being faced in SCM. This automotive system controls and reduces the cost and enhances the production. The ERP System helps in product planning, parts purchasing, maintaining inventories, interacting with suppliers, providing customer service, and tracking orders. This software is being used by many organizations to improve the efficiency in different departments like Human resource, Supply Chain management, Customer Relationship management, Stock and Procurement. The ERP system provides helps in internal organization connectivity and everyday business process. The benefit of ERP is to increase sharing in data and information flow, which helps in decision making in the organization.

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# “AS YOU LIKE IT” IMPRESSION MANAGEMENT OR ORGANIZATIONAL CITIZENSHIP BEHAVIOR

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## ABSTRACT

**This study attempts to investigate the relationship between impression management and organizational citizenship behavior using the theoretical underpinning provided by “Theory of Others Orientation” and “Social information processing Model”. Many researchers argue that employees exhibiting organizational citizenship behavior are good at using impression management techniques; they are “good actors” rather than “good soldiers”. Such behaviors can vary across cultures; hence the moderating role of culture was taken into account. Data were collected from 168 teachers working in the educational institutions using a questionnaire. Results suggest that impression management significantly determines the organizational citizenship behavior while this relationship is further strengthened in a collectivist culture.**

## INTRODUCTION

Impression management is defined as an effort of the individual to enhance his/ her image in the minds of others. (Rosenfeld, Giacalone, & Riordan, 1995). There are three types of impression management (1) “job focused” impression management, (2) “self focused” impression management and (3) “supervisor focused” impression management. (Bolino, Varela, Bande & Turnely, 2006). While impression management has been studied as a technique to build a positive image in the mind of others, some researchers argue that employees use these techniques to show extra role behaviors including Organizational Citizenship Behavior (OCB) (Tedeschi & Melburg, 1984). The construct Organizational Citizenship Behavior (OCB) was introduced by Bateman and Organ (1983) who defined it as behavior of the individual which is not restricted, is not explicitly rewarded by the organization and also not directly recognized by the workplace, it collectively has a positive impact on the performance of an organization. Thus researchers attempt to relate this positive behavior with impression management seems quite interesting, still limited literature analyzed this relationship.

Impression management techniques can vary in different cultures; still this important aspect has not been properly explained in extant literature. In a collectivist society the main orientation of the individual is towards interests of the group (Hofstede, 1984) and people

show a higher level of interdependency upon the group (Triandis, 1995). Thus techniques used by individuals in a collectivist society to impress others can vary than those used in an individualistic society.

Theory of other orientation presented by Meglino & Korsgaard (2004), provide a substantial underpinning to argue that people having high others orientation take majority of actions to please others (Bazerman, 1993; Cropanzano, Stein, & Goldman, 2007; Lester, Meglino, & Korsgaard, 2007). Similarly the Social exchange theory has its basic argument which includes that standards or regulations of reciprocity have got a central role in leading and inspiring the barter of advantages between the concerned groups or individuals. This principal has a basic rule which says that the receiving party should return the benefit to the party/individual or group to the other party (giving part) (Lester, Meglino, & Korsgaard, (2007). The main theme of social exchange highlights the advantages of self serving and not for the sake of any implicit motive exchange of benefits between two individual groups and parties. This theory argues that the rules of the exchange relationship have a central role in strengthening and accruing the exchange relationship. Generally, the receiving party/ group or individual should also exchange the benefit in return (Lester, Meglino, & Korsgaard, 2007). Hence one can argue that impression management techniques used by individuals or extra role behaviors exhibited by them have got potentially same motive i.e. reciprocity in form of favors by the

organizations and its members. Thus Robinson and Morrison (1995) rightly argue that their key motivator to exhibit OCB is impression management which can even result in appraisal related errors in it (Becton, Portis, & Schraeder, 2007) extra role behavior can be intermingled with impression management (Wayne & Green, 1993; Schnake, 1991)

While a plethora of research focuses the developed countries for the study of OCB and impression management, few studies like Gautam et.al. (2005) in Nepal show that there is a constructive alliance between the constructs of OCB and cultural dimensions i.e. collectivism and power distance. Similarly impression management holds importance in all types of organizations, but its relevance with academia is more profound. Impression management cannot be disintegrated from the basic role of a teacher in class to his/her responsibility as an employee in the organization. Thus the present study has two fold significance, the first being analysis of extra role behaviors and impression management in a collectivist culture and secondly it further elaborates OCB in the educational sector as analyzed by Garg and Rastogi (2006) by testing its specific link with impression management.

### **Impression management and Organizational Citizenship Behavior**

Organ (1988) defined OCB as a behavior which is beyond the formal job of an individual; it includes helping peers and providing them assistance in their work related tasks. All of these positive works are done voluntarily. Extra role behavior is found to have a proven association with organizational commitment, moreover satisfied employees are found to exhibit a higher level of organizational citizenship behavior (Foote & Tang, 2008) while it has a negative relationship with organizational cynicism (Dyne, Graham, & Dienesch, 1994). A significant influence of psychological contract on extra role behavior was found by Robinson and Morrison (1995).

There is strong and significant evidence explaining the relationship between organizational citizenship behavior and impression management. Eastman (1994) suggests that individuals may engage in OCB because of impression management purposes. The research on impression management shows that there are techniques which individuals use to develop and improve their image in the organization (Jones & Pittman, 1982). Impression management is significantly associated with performance appraisal techniques and it has a possibility of errors in appraisals (Becton, Portis, & Schraeder, 2007). Findings of Podsakoff et al. (2000) show that OCB has a stronger impact on the judgmental decisions

of management while it can affect supervisory ratings of the performance (Bolino, Varela, Bande, & Turnely, 2006; Rioux & Penner, 2001).

Employees engage in OCB to get desired results from their performance. There is an association of impression management with the performance appraisal/rating and performance of the job of an individual, the person may use impression management techniques to create a good image in front of his/ her supervisor. Moreover, there is a positive linkage between the supervisory rating of performance and extra role behavior, this behavior plays mediating role between supervisory rating and impression management.

Employees manage their impression on the supervisors and peers by engaging themselves in the positive behaviors which include organizational citizenship behavior. (Ferris et al., 1994). There is an indirect association of psychological contract and organizational citizenship behavior, when there is a positive psychological contract then the employees go for organizational commitment which leads to organizational citizenship behavior.

### **Role of Culture**

Hofstede (1984) defined culture as “the collective programming of the mind which distinguishes the members of one human group from another”. An individual who belongs to collectivist society prefers to work in a group instead of working individually, there is a significant importance of relationships and family in this kind of society, decisions are made with the opinion and consultation of members, groups are catered for and the members of collectivist society believe in cooperation and trust. Cultural differences are a strong predictor of cultural values of the countries and nations, people in different cultures have different values in the perspective of culture (Hofstede, 1984). A study conducted by Gautam, Dick, Wagner, & Davis (2005) in Nepal shows that there is a positive association between the constructs of extra role behavior and cultural dimensions i.e. collectivism and power distance. It is found that there is a negative association amongst organizational commitment and OCB in collectivist societies i.e. Nepal.

*Hypothesis 1. Impression management is positively associated with organizational citizenship behavior.*

*Hypothesis 2. There is a moderating role of collectivism in the relationship of impression management and organizational citizenship behavior.*

**METHODOLOGY**

Self administrated questionnaires were used as instrument for data collection. A five point Likert Scale was used to measure the variables. A total of 250 questionnaires were distributed and out of which 168 were received back making the response rate as 60.8%. The questionnaire to measure collectivism was adopted from, Jung & Kellaris, (2001) the questionnaire to measure the impression

management was adapted from Wayne and Ferris (1990) while organizational citizenship behavior scale was adopted from Williams and Anderson (1991).

The sample includes the educational sector of Pakistan and specifically public and private sector universities of Pakistan. The convenient Sampling technique was used and questionnaires were distributed among teachers of the universities in the vicinity of Rawalpindi and Islamabad.

**RESULTS**

**TABLE 1**

**Correlation Analysis**

| Variable        | Mean | SD    | 1       | 2       | 3 |
|-----------------|------|-------|---------|---------|---|
| 1. IM           | 3.55 | 0.537 | 1       |         |   |
| 2. OCB          | 3.65 | 0.598 | 0.17**  | 1       |   |
| 3. Collectivism | 3.53 | 0.897 | 0.491** | 0.627** | 1 |

\*\*p<.001, \*P<.05, IM = Impression Management, OCB = Organizational Citizenship Behavior

Correlation analysis shows a significant relationship between impression management and organizational citizenship behavior. According to the hypothesis, impression management is positively and significantly

related to extra role behavior (0.170\*\*, \*\*p<.001). Results also show a positive and significant correlation between collectivism and organizational citizenship behavior (0.491\*\*, \*\*p<.001)

**TABLE 2**

**Regression Analysis**

| Predictor             | Dependent Variable:<br>$\beta$ | Organizational Citizenship Behavior<br>$R^2$ |
|-----------------------|--------------------------------|--|
| Impression Management | 0.25**                         | 0.454  |

n = 168, \*\*p<.001, \*P<.05

**TABLE 3**

**Moderated Regression Analysis**

| Predictor                             | $\beta$ | $R^2$ | $\Delta R^2$ |
|---------------------------------------|---------|-------|--------------|
| Moderator Analysis                    |         |       |              |
| Step 1                                |         |       |              |
| Control Variables                     |         | 0.04  |              |
| Step 2                                |         |       |              |
| Impressions Management                | 0.25**  | 0.454 | 0.18**       |
| Step 3                                |         |       |              |
| Impressions Management x Collectivism | 0.162*  | 0.48  | 0.03*        |

n = 168, \*\*p<.005, \*P<.01, Control variables= Age, Gender

The regression and moderated regression analysis were used to examine the interactive effects of collectivism and impression management on extra role behavior. The results show that the interaction term for collectivism ( $\beta = 0.162^{**}$ , p = .001) have a significant impact on OCB. In the study collectivism is significantly

moderating the relationship between impression management and organizational citizenship behavior.

**DISCUSSION**

Generally we found a good support for our

hypothesis. Though there are two distinct constructs, exhibition of extra role behaviors is taken by some as an impression management technique. The moderation of collectivism in this particular linkage is also the unique result of the study.

The teachers while performing jobs are required to exhibit extra role behaviors. Being the mentors and role models for students certain behaviors are supposed to be part of their personality like dedication, honesty and patience. Some associate image of teachers with these positive attributes and they are bound to exhibit such behaviors which are consistent with these expectations. For example a teacher has to be in class in time to show adherence to rules but these findings indicate that this action can be the result of teachers effort to have an impression of being punctual and honest.

Interestingly for the majority of jobs organizational citizenship behaviors and impression management techniques are used to impress the management or boss but for teachers another stakeholder i.e. the students are also important. This can be true to such an extent that a teacher may not be adhering to the organizational policies to please the administration but at no cost he/she can afford to have a negative image before students. Thus the teacher's job to exhibit extra role behaviors and use of impression management techniques is more critical.

Collectivism is integral part of culture in Pakistan (e.g. see Hofstede, 1984) and it has potential of affecting the majority of employment related relationships. Likewise collectivism significantly moderates the relationship between impression management and organizational citizenship behavior. It is an interesting finding that in collectivist culture most of our actions are dictated by the demands of others, and we are having diverse role expectations and we consider them important as well. Just in day to day life starting from petty to big decisions we try to please others rather than going for our own choice and we commonly use the famous wordings of Shakespeare "As you like it". This tendency is also reflected in organizations and thus our study provides an interesting explanation for using impression management techniques in organizations. In an attempt to please others the employees in organizations use variety of impression management techniques which are considered as extra role behaviors including the organizational citizenship behavior. Thus an important contribution of this study is to explain the degree to which impression management techniques are associated with extra role behaviors. We found that the relationship will be weaker in individualist cultures and collectivism enhances the strength of relationship between impression management techniques and extra role behaviors.

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# MEASURING VALIDITY OF DETERMINANTS OF CONSUMER SUBSCRIPTION BEHAVIOR IN TELECOM SECTOR OF PAKISTAN

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## ABSTRACT

Organizations are changing the way they do business due to the competitiveness and dynamism of the business environment. Measuring customer satisfaction is a major concern of any industry to excel. Hence key challenge for the telecom sector is how to retain and increase customer's subscription rate. Service quality is an important factor which has a significant extent to customer's attitude and customer's subscription behavior. This study was conducted to examine the relationship between service quality and subscription behavior mediating by customer's attitude. The relationship between service quality dimensions (tangibility, reliability, assurance, empathy, and responsiveness) along with two additional dimensions convenience and network aspects using modified SERVPERF was investigated by personally administering a questionnaire to the sample of 400 customers drawn using convenience sampling. The data collected was analyzed using different statistical tools. The findings suggest that service quality, customer's attitude and customer's subscription behavior are positively related to each other. It also supports that customer's attitude toward services mediate the relationship between services quality and customer's subscription behavior.

## INTRODUCTION

Study of consumer behavior is very important for marketer because it makes possible to know and forecast the consumer's buying behavior in market place. Consumer behavior is not only related with what is bought by the consumer but also why the consumer bought, from where he bought, consumer purchasing and consumption pattern of goods and services (Brent, 1975).

According to Anilkumar and Joseph (2012), attitude is defined in term of the group of feelings or emotions and intentions together. It is not necessary that attitude against any service or product is always positive or negative. It encompasses several feelings and desires for concerned products or services. Basically it is long term evaluation which builds up the strong foundation for structuring the motivation, emotions, consumer awareness to its society and his perceptions comprehensively. Customer's mood, feelings and emotions may be impacted by attitude towards any product or service. Its loyalty and belongingness proves the strong belief of customer for any product or service which is the result of direct experience only.

It is necessary for the telecommunication companies to

examine the intensity of customer's sensitivity and intention towards Service Quality to ensure service excellence. With the help of such information, telecommunication companies can emphasize on objectives and procedures of service quality to survive in market competition.

In past a lot of research has been conducted by several authors in this field (like Ahmad & Qazi, 2011; Khan, 2010; Ahmad et al., 2010) but the main emphasis of these researchers was only on the five dimensions of service quality which were described by the Parasuraman, Zeithmal and Berry (1988) in their SERVQUAL model.

The purpose of this study is to measure Pakistan Telecommunication sector clients' subscription behavior. Telecommunication market of Pakistan is perceived as the largest target market section in developing economies. All over the world there has been a lot of research conducted to determine the service quality intensity in relation with several other factors and variables but it is important to disclose that no research contribution is found is past literature.

## REVIEW OF LITERATURE

In the early stages of service quality research, it was

common to measure customer's satisfaction to assess the service quality. At this point in time, it is more common to determine service quality as predecessor of customer's satisfaction (Cronin, Michael, Brady, Tomas and Hult, 2000). Early studies had very simple idea that the customer satisfaction result in positive financial benefits. However, now it is known that mere satisfaction does not guarantee continued service support. Therefore, recent research has shifted the focus of learning drivers of customer satisfaction to investigating the drivers of customer perceived attitude and behavior.

Quality as perceived by customers has drawn substantial attention in literature (Olshavsky, 1985; Jacobson and Aaker, 1987; Holbrook and Corfman, 1985). As soon as the customer has consumed the services customer perception is traditionally measured. Crosby, DeVito and Pearson (2003) mentioned that to understand quality, it is not mandatory that something is perceived in consumer mind upon first feeling. Phusavat and Kanchana (2008) explained the quality as a most important priority to achieve competitive advantage. In their research work, quality was given the higher weight 36.4 percent while service provided is given 20.4 percent, customer focus was given 12.9 percent and knowledge is given 12.5 percent weight. The rest of 9.8 percent weight was given to costs and 8.0 percent to flexibility. According to Anderson and Olsen (2008), an important driver to create customer equity is customer service and should be given much important to attract and keep the right customers at profit.

Olatokun and Nwonne (2012) pointed out that service quality lies in the minds of consumers. According to Johnson and Sirikit (2002), service quality reflects customer's expectations about a product or service. According to Wal, Vander and Bond (2002), quality is the degree of a product or service to meet or exceed consumer expectations. Amstron and Kotler (2009) declared that attitude is a person's favorable/unfavorable feelings, assessment and action trend towards an idea or object.

Solomon, Bamossy and Askegaard (2002) supported the above mentioned views and stated that attitude is long lasting ordinary assessment of people towards a specific problem. Schiffman and Kanuk (2004) described attitude within the framework of customer's behavior as a stable tendency to behave accordingly in a real situation, regarding a certain object or a group of objects. According to Peter (1994) an attitude is a specific organization of emotions, motivation, cognitional processes, perceptual and responding to surrounding environment of an individual. Anilkumar and Joseph (2012) found that the attitude of consumers is a continuous process to evaluate the use of objects, human behavior or issue. Attitude guides a person's

feelings and also influence on behavior. Consumer behavior does not change very quickly. It shows the belongingness to the customer over the years due to several factors. Customer's attitude is a sketch to determine the new information / objects. Ultimately, the customer's attitude, which is stock up in memory of customer after his experience in the purchase decision play a crucial role. From these findings, they concluded that the impact of customer behavior is nothing else but attitude.

Customer's subscription behavior can be defined as a regular or within specified time series of routines purchasing of products/services. According to a Harvard business school professor Theodore Levitt, consumer behavior study is the company's most important educational priority, because a company's basic purpose is to produce and retain consumer. Different marketing strategies are used to create the customers. The marketing strategies' quality is based on knowing, entertaining and influencing customers (Brent, 1975).

Furthermore, Lovelock and Wirtz (2007) developed a model for service consumption which consists of three stages. First, the pre-purchase stage is a constituent of three components. First, the perception of need and the search for information that accordingly clarifies the need. Second, exploring the solution, the suppliers, and alternative service products which are identified by the consumer and third, the evaluation of the alternatives and the suppliers for a decision on purchasing the service or product. The second stage is the encounter stage, the moments of interface between a customer and a supplier. This stage involves a request from a supplier that has been chosen by the customer to supply the service or the product, or initiate self-service for which the payment may be straightforward or billed later. The third stage is an evaluation of the performance for the service or product encountered and its effect on future intentions. This is the stage in which satisfaction or dissatisfaction will occur and the loyalty decision will be made by the customer. In the process of purchasing or subscribing to a mobile telephony service, the customer assesses the mobile service based on experience of use and the rating is done in accordance to the mobile service attributes. As discussed by Khan (2010) the list of indicators for the cellular services quality are service retain- ability, network access, integrity and service access as identified by global system for mobile communication (GSM) association (Sutherland, 2007). Network aspect can be defined as customer perception about network service providers, such as conversation, voice quality, and network coverage and dropped calls. The final dimensional quality of service is convenient, we are referring to is how much the convenience of our customers find and access the ISP, and how to balance the

charging or paying bills. The following hypotheses are developed based on the above mentioned literature.

**Hypotheses**

*Hypothesis 1. Services Quality (SQ) has significant impact on Customer’s Subscription Behavior (CSB) in telecom services.*

*Hypothesis 2. Services Quality (SQ) has significant impact on Customer’s Attitude (CA) towards services in telecom services.*

*Hypothesis 3. Customer’s Attitude (CA) towards services has significant impact on Customer’s Subscription Behavior (CSB) in telecom services.*

*Hypothesis 4. Services Quality (SQ) has significant impact on Customer Subscription Behavior (CSB) mediated by Customer’s Attitude (CA) towards telecom services.*

**METHODOLOGY**

The study is causal as it tests developed hypotheses based on earlier literature between service quality, customer attitude and customer subscription behavior. The scope of study is limited to the federal capital of Pakistan. The respondents are customers of telecom companies operating in Pakistan. The data was collected by personally administering questionnaire to a sample of 480 respondents drawn from a population of approximately 3 million using convenience sampling technique. 384 out of 520 were received. The response rate was 73%.

**Research Instrumentation**

Service quality elements tangibility and empathy items are adopted from Chadha and Kapoor (2009),

reliability, assurance and responsiveness items are adopted from Loke, Taiwo, Salim and Downe (2011), network aspects and convenience are adopted from Negi, (2009), Consumer attitude items are adopted from Kuo and Yen (2009) and Consumer subscription behavior items are adopted from Cronin, Michael, Brady, Tomas and Hult (2000).

**RESULTS**

The data was analyzed using different statistical tools in order to examine the assumed relationships between the service quality, attitude and subscription behavior. The following table 1 shows the mean, standard deviation and the correlation between the three variables of the study.

**TABLE 1  
Descriptive Statistics and Correlation**

|     | Mean   | S. D  | SQ    | CAA   | CSB |
|-----|--------|-------|-------|-------|-----|
| SQ  | 3.5029 | .6101 | 1     |       |     |
| CAA | 3.6753 | .8057 | .7034 | 1     |     |
| CSB | 3.6078 | .9659 | .6492 | .7346 | 1   |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Descriptive analysis of the study indicates CAA has high mean which is 3.675 and standard deviation is .8057. CSB have maximum standard deviation as 9.65 and mean is 3.607 whereas SQ have mean of 3.50 and standard deviation .6101 .Correlation indicates about to one to one relationship between variables. Result of correlation analysis indicates SQ have significant relationship with CAA (r=.7034) and CSB(r=.6492) whereas CAA and CSB relationship is also significant at(r=.7346).

Confirmatory factor analysis was also done to test measurement model. The main purpose of CFA is to test the data fitness to a hypothetical model to measure its construct. The model based on theory and previous researches.

| Sr. # | Variable            | Source  |
|-------|---------------------|---|
| 1     | Service Quality     | Chadha and Kapoor (2009), Effect of Switching Cost, Service Quality and Customer Satisfaction on Customer Loyalty of Cellular Service Providers in Indian Market, S. K. The Icfai University. Journal of Marketing Management, Vol. VIII, No. 1 |
|       | i. Tangibility      |   |
|       | ii. Empathy         |   |
|       | iii. Reliability    | Loke, Taiwo, Salim and Downe (2011), Service Quality and Customer Satisfaction in a Telecommunication Service Provider, International Conference on Financial Management and Economics. IPEDR vol.11  |
|       | iv. Assurance       |   |
|       | v. Responsiveness   |   |
|       | vi. Network Aspects | Negi, (2009), User's perceived Service Quality of mobile communications: experience from Ethiopia, International Journal  |

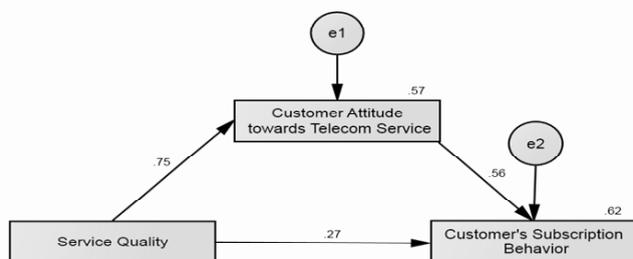
|   |                                  |  |
|---|----------------------------------|--|
|   | vii. Convenience                 | of Quality and Reliability Management, Vol. 26   |
| 2 | Consumer's Attitude              | Kuo and Yen (2009), "Towards an understanding of the behavioral intention to use 3G mobile value-added services", <i>Computers in Human Behavior</i> 25  |
| 3 | Consumer's Subscription Behavior | Cronin, Michael, Brady, Tomas and Hult (2000), "Assessing the Effects of Quality, Value, and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments Behavioral Intentions, <i>Journal of Retailing</i> Vol. 76, No. 2 |

| Items   | Variable            | Estimate > 0.3 | P-Value |
|---|---------------------|----------------|---------|
| Services provider's physical facilities are visually appealing. (e.g., ambience of outlet).               | SQ-Tangibility      | 0.77           | 0.000   |
| Services provider's employees appear neat and clean.  | SQ-Tangibility      | 0.71           | 0.000   |
| Materials associated with service (such as pamphlets, etc.), are visually appealing.                      | SQ-Tangibility      | 0.71           | 0.000   |
| When the service provider promises to do something by a certain time, services are delivered as promised. | SQ-Reliability      | 0.58           | 0.000   |
| Whenever I face any problem, the service provider staff is sympathetic and supportive.                    | SQ-Reliability      | 0.68           | 0.000   |
| The service provider staff is reliable.   | SQ-Reliability      | 0.75           | 0.000   |
| The service provider staff keeps the transaction records accurately.                                      | SQ-Reliability      | 0.57           | 0.000   |
| The service provider staff tells the customer exactly when services will be performed.                    | SQ-Responsiveness   | 0.59           | 0.000   |
| I receive prompt service from the service provider staff.   | SQ-Responsiveness   | 0.59           | 0.000   |
| Service provider staff is always willing to help the customers.   | SQ-Responsiveness   | 0.72           | 0.000   |
| Service provider staff does not appear to be too busy in responding customer requests.                    | SQ-Responsiveness   | 0.37           | 0.000   |
| I can trust the service provider staff.   | SQ- Assurance       | 0.68           | 0.000   |
| I feel safe when performing transaction with the service provider staff.                                  | SQ- Assurance       | 0.32           | 0.000   |
| The service provider's staff is polite.   | SQ- Assurance       | 0.91           | 0.000   |
| Service provider's staff has enough knowledge to answer customer's questions.                             | SQ- Assurance       | 0.58           | 0.000   |
| Services provider has employees who give you individual attention.  | SQ- Empathy         | 0.97           | 0.000   |
| Employees of services provider understand your specific needs.  | SQ- Empathy         | 0.59           | 0.000   |
| Services provider employees have your best interests at heart.  | SQ- Empathy         | 0.46           | 0.000   |
| Service provider's network has excellent voice quality.   | SQ- Network Aspects | 0.77           | 0.000   |
| Service provider has wider network coverage.  | SQ- Network Aspects | 0.85           | 0.000   |
| Service provider's network support no call drops.   | SQ- Network Aspects | 0.74           | 0.000   |

|  |                                |      |       |
|--|--------------------------------|------|-------|
| Service provider has sufficient offices in different geographic areas (e.g. franchises, customer care centers etc) to solve customer’s problems. | SQ- Convenience                | 0.85 | 0.000 |
| Service provider has toll-free numbers, websites etc. for clarification of problems, knowing account status etc                                  | SQ- Convenience                | 0.43 | 0.000 |
| It is easy to get scratch cards/easy load from or pay bill to the service provider.  | SQ- Convenience                | 0.40 | 0.000 |
| I think using this company services is good idea.  | Customer’s Attitude            | 0.78 | 0.000 |
| I think using this company service facilitates me to keep in touch with my friends and family is a good idea.                                    | Customer’s Attitude            | 0.82 | 0.000 |
| I like the way in which this service operator provide its services.  | Customer’s Attitude            | 0.70 | 0.000 |
| I will use this services provider services in future.  | Customer Subscription Behavior | 0.78 | 0.000 |
| I would recommend this services operator to others.  | Customer Subscription Behavior | 0.93 | 0.000 |
| If I had to select services provider over again, I will make the same choice.  | Customer Subscription Behavior | 0.75 | 0.000 |

The table mentioned above depicts strong factor loadings that are  $\geq 0.3$  for all items of service quality, customer’s attitude and subscription behavior of customers and the p-values of all items are .000 and less than 0.05 which is showing that the results are highly significant. This confirms that no item is excluded from the instrument so all items of service quality, customer’s attitude and subscription behavior are valid and included in the instrument.

**FIGURE 1**  
**Estimated Structure Model**



The figure 1 shows the structure model shows the relationship among service quality and customer’s subscription behavior mediated by customer attitude towards telecom services. The structural equation model not only measures the direct impact of the service quality on customer subscription behavior but also it checks the mediating effects of the customer attitude towards telecom services on customer’s subscription behavior.

**TABLE 2**  
**Index of fit of the Model**

| Goodness of Fit measures          | Obtained Values | Suggested min/max Values (Hair et al., 1995) |
|-----------------------------------|-----------------|--|
| Chi Square                        | 6.019           |  |
| Df                                | 2               |  |
| p-value                           | 0.049           | $\leq 0.05$                                  |
| GFI                               | 0.99            | $\geq 0.9$                                   |
| AGFI                              | 0.97            | $\geq 0.8$                                   |
| CFI                               | 0.99            | $\geq 0.9$                                   |
| RMSEA                             | 0.07            | $\leq 0.05$                                  |
| Normed chi-square (chi-square/Df) | 3.01            | $\leq 3.0$                                   |

The results of the measures shown in table 2 clearly prove the desired fitness of the model (Chi-square/Df = 3 & p-value  $\leq 0.05$ ). The recommended values as discussed by Hair, Anderson, Tatham and Black (1995); McAulay, Zeitz and Blau (2006); Roh, Ahn and Han (2005) have been achieved. To test the model the study used Chi-square and GFI which are called absolute fit measures; CFI is an incremental fit measure; and Normed Chi-square and AGFI are parsimonious fit measures (Keramati et al., 2010) all these value indicate the best fit of our model on recommended level.

**TABLE 3**  
**Hypotheses testing based on regression weights**

| Variables | Estimates | S.E. | P   | Results  | Hypothesis Support       |
|-----------|-----------|------|-----|----------|--------------------------|
| CSB<--SQ  | 0.267     | .074 | *** | Accepted | Hypothesis1 is supported |
| CA <--SQ  | 0.752     | 1.0  |     | Accepted | Hypothesis2 is supported |
| CSB<--CA  | 0.565     | .056 | *** | Accepted | Hypothesis3 is supported |

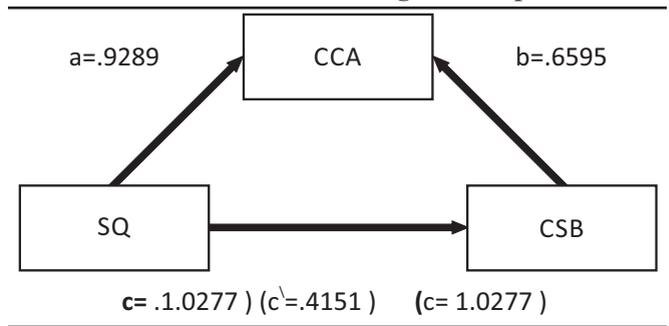
The study analyzes the relationship between service quality and customer subscription behavior. The beta value between these variables is 0.27 which shows that if there is one degree change in service quality, it would result in about 27% change in customer subscription behavior. The analysis highlights that the relationship between service quality and customer subscription behavior is highly significant ( $p < 0.05$ ). Therefore, we can accept Hypothesis 1 i.e., Services quality has significant impact on customer’s subscription behavior in telecom services.

The direct relation of service quality with customer subscription behavior was significant; the next step is to check the effect of service quality on customer attitude. The regression weights between service quality and customer attitude are 0.75. This shows that one degree change in service quality would bring about 75% positive changes in customer attitude. This analysis reveals that the relationship between service quality and customer attitude is statistically significant as  $p = 0.000$  ( $p < 0.05$ ). Hence, Hypothesis 2 i.e. services quality has significant impact on customer attitude towards telecom services is accepted.

Similarly, the regression weight between customer attitude and customer subscription behavior is 0.56. This shows that one degree change in customer attitude would bring about 75% positive changes in customer subscription behavior. The relation between customer attitude and customer subscription behavior is also significant as  $p = 0.000$  ( $p < 0.05$ ). The study concludes that customer attitude has a positive impact on customer subscription behavior. Hence, Hypothesis 3 i.e. attitude towards services has significant impact on customer’s subscription behavior in telecom services is endorsed.

Lastly, this study discovers the mediating effect of customer attitude on customer subscription behavior. Here, the study analyzes mediation between service quality and subscription behavior using simple mediation process (Preacher and Hayes 2004).

**FIGURE 2**  
**Model with estimate regression paths**



According to Preacher and Hayes (2004) simple regression analysis is conducted, path c of service quality and customer subscription behavior relationship is significant as  $\beta = 1.0277$ , standard error=.0615 and t is according to prescribed rule higher than 2 and this step t is 16.703. Service quality and customer attitude relationship beta is .9289, standard error is .0480 and  $t = 19.365$  and p is at significant level. CAA and CSB relationship is also significant at .0000 level were as beta=.6595, standard error=.0563 , $t = 11.71$ . Path c\ beta is .4151, standard error=.0743,  $t = 5.584$  all the results are according to prescribed rule. Result of analysis also indicates as c\ is significant so according to sobel (1982) this study have partial mediation. Direct effect is .4151 and indirect effect is .6126 hence total effects is 1.0277, normality is 10.01 of the study.

**TABLE 4**  
**Regression Analysis**

| Structural Path | $\beta$ | S.E   | t      | p     | Sig/ Insig. |
|-----------------|---------|-------|--------|-------|-------------|
| SQ-->CSB        | 1.0277  | .0615 | 16.703 | .0000 | Sig.        |
| SQ-->CAA        | .9289   | .0480 | 19.365 | .0000 | Sig.        |
| CAA-->CSB       | .6595   | .0563 | 11.715 | .0000 | Sig.        |
| SQ-->CAA-->CSB  | .4151   | .0743 | 5.5847 | .0000 | Sig.        |

**TABLE 4.1**  
**Indirect, Direct and Total Effect**

| Structural Path | Direct Effect | In-direct Effect | Total Effect | Z Value | Sig.  |
|-----------------|---------------|------------------|--------------|---------|-------|
| SQ-->CSB        | .4151         |                  | 1.0277       | 10.01   | .0000 |
| SQ-->CAA-->CSB  |               | .6126            |              |         |       |

Number of bootstrap samples = 1000, Level of confidence = 95%.

Beta value between service quality and customer attitude is 0.75 and beta value between customer attitude and customer subscription behavior is calculated as 0.56. These regression weights are higher than regression

weights of all other relationships of our structural model. The relationships are evident from the analysis that 75% change in customer attitude would be due to one degree change in service quality and 56% positive increase in customer subscription behavior would be due to one degree change in customer attitude. The p-values for both relations are 0.000 ( $p < 0.5$ ) which shows relationships between service quality and customer attitude and between customer attitude and customer subscription behavior are statistically highly significant. Hence, we accept H4 which states that services quality has significant impact on customer subscription behavior mediated by attitude towards telecom services.

### CONCLUSION AND FUTURE DIRECTION

Telecommunication companies needed to investigate degree of customers' sensitivity and perceptions toward service quality for improve the overall subscription satisfaction. Telecommunication service provider companies would then able to strategically focus service quality objectives and procedures to fit the competitive market with sufficient information at hand.

The findings of this study provide insight into relationship between service quality, customer attitude and customer subscription behavior in the context of Pakistan telecom industry. As results predict, strong disparities were found regarding service quality, customer attitude and customer subscription behavior with respect to demographics variables e.g. gender, age groups, profession and income level.

On SERVPERF basis this study can be successfully applied what has been extracted from the literature of service quality of telecom/cellular sector with evidence, providing a base to understand the dynamic relationships among service quality, customer's attitude and customer's subscription Behavior. Other researchers should further scrutinize these dimensions and relationship with respect to telecom sector of Pakistan with additional samples before generalizations can be made. Furthermore, additional research is needed to find out whether some other factors/dimension in telecom sector of Pakistan should be included or not.

For future researches, it is suggested that the variables that affect service quality of Internet user on cell phone should be discussed. The new customer attitude towards the new technologies like 3rd Generation (3G) technology should be explored. This study is conducted on the basis of selected samples only with some selected group of mobile users; in the follow-up studies scope can be extend to other customer groups. Due to time constraint, convenient sampling method was adopted. So, in future studies can collect random sampling technique to collect the data on wider scale to reconfirm

the projected model.

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# MEASURING THE EFFECT OF WORK-FAMILY AND FAMILY-WORK CONFLICTS ON ORGANIZATIONAL COMMITMENT AMONG NURSING STAFF IN PAKISTAN

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## ABSTRACT

**The purpose of conducting this study is to analyze the impact of Work-Family conflict versus Family-Work conflict on employee's organizational commitment. The moderating role of collectivism on the relationship between work-family conflict versus family-work conflict and organizational commitment was studied as such behaviors can vary across cultures. Data was collected from 250 female nurses of different hospitals of Rawalpindi/ Islamabad using a questionnaire. The results reveal that work-family conflict has a more negative impact on organizational commitment as compared to family-work conflict, in a collectivist culture like in Pakistan, where females are unable to manage their family along with their work as their work starts interfering with their family lives. HR researchers need to focus on the strategies and policies that they can implement to reduce work-family versus family-work conflict in order to increase organizational commitment of nurses with their hospitals.**

## INTRODUCTION

Having an unbalance or conflict between one's personal and professional life is a very crucial issue. In order to maintain a balance between these two domains, a lot of research is going on all around the world. According to Crompton and Lyonette (2006), how to achieve a balance in work and life is of increasing interest these days, both nationally and internationally. The conflict between Work and Family Life (WFC) or the conflict between Family and Work Life (FWC) has become a hot political as well as social issue in many countries of the world mainly since the latter part of the twentieth century (Hein, 2005). Many studies have been conducted on this topic by different researchers all around the world, this shows the importance and worth of this topic and hence the reason of our interest as well. As examined by Bashir and Ramay (2008), Work-family conflict is such an issue that can affect people's lives in every aspect. Analyzing past literature, people's work-related consequences (e.g. reduced organizational commitment, low job satisfaction and high turnover intentions etc), family consequences (e.g. low marital and family satisfaction etc) and even their own physical and mental health problems (e.g. stress, depression and poor physical health etc) get affected due to work and

family conflicts (Eby, Casper, Lockwood, Bordeaux & Brinley, 2005; Allen, Herst, Bruck, & Sutton, 2000; Zhang, Griffeth, & Fried, 2012).

Work-family conflict and family-work conflict are the types of inter-role conflicts. When fulfillment of one domain interferes with the other domain, it creates a disturbance and this unhinge is considered to be one of the major stressors (Cohen, 2009). Work and family conflicts negatively affects one's work life, home life, and one's own mental health (Lourel, Ford, Gamassou, Guéguen, & Hartmann, 2009). As per Cohen and Liani (2009), there is a need to reconcile work and family life. Spillover theory can be used in support of our study. According to the spillover theory, it is the process through which work and home domains influence each other. Spill over is an intra-individual mechanism describing the transmission of affect between work and family domains (Judge & Ilies, 2004; Song, Foo, & Uy, 2008). Spillover has a great influence on individuals by transmitting either stressors, affect, or buffering resources between work and family domains (Heller & Watson, 2005; Powell & Greenhaus, 2006). Moreover, according to Mennino, Rubin, and Brayfield (2005), family demands increase spillover more for women than for men. Hence, the rationale behind our study's main focus on females facing work-family and family-work conflicts is that

the females face more interference in these 2 domains and have more pressures of managing both domains side by side as compare to men. Spillover can be positive as well as negative. According to Small and Riley (1990), negative spillover occurs when demands from the two domains of job and home compete for an individual's time, energy, and attention.

Work-family conflicts and family-work conflicts generally occur from the pressures and role expectations of work and family (Higgins, Duxbury, & Irving, 1992; Frone, Russell, & Cooper, 1992). In past literature, it was found out that the negative outcomes of work-family conflicts and family-work conflicts resulted in job dissatisfaction and low or no organizational commitment (Lambert, Kass, Piotrowski, & Vodanovich, 2006). This situation intensifies in the case of women who are working as well as managing their families side by side. Many studies report higher levels of work-family and family-work conflicts among women (Gutek, Searle, & Klepa, 1991). According to Cousins and Tang (2004), as a lot of women are now entering the labor market, services sector and are more determined about their career, education, and financial independence, a question of how to reconcile the work and family life arises. As per Harris (2004), it is the societal norms that women have greater involvement with the family, meaning women experience greater conflict in trying to balance their work and family responsibilities.

The total percentage of the female population working in Pakistan is 21.17% according to 2009 data, out of this 0.35% of the females including nurses are in the health and social work industry. As this study aims to focus on the female nurses only, work-family and family-work conflicts thus become an issue encountered by many females of Pakistan where predominantly collectivism culture prevails, which then negatively affects (especially) their work-related outcomes. Work-family conflict is challenging for nurses and the nursing profession (Grzywacz, Frone, Brewer, & Kovner, 2006). The relationship of work-family conflict and family-work conflict with organizational commitment have been studied a number of times but the context of our study is a bit different. We have studied this relationship in the context of national culture. The national culture represents a country's primary and visible values held by a large number of its population. As this culture is acquired in early childhood, it changes very slowly (Hofstede, 1994). It is measured through various cultural dimensions and values such as individualism-collectivism, masculinity-femininity, uncertainty avoidance and power distance as introduced by Hofstede. Individualist cultures tend to view the work and family domains as two separate entities, while collectivist cultures perceive these two domains as integrated (Yang, 2005). Moreover, Yang,

Chen, Choi & Zou (2000) found out that work demand had a greater impact on Work Interference with Family (WIF) in China than in USA, while family demand had a stronger effect on WIF in the USA than in China, partly due to differences in individualism-collectivism cultural dimensions. These differences are likely to influence how frequently WFC and FWC is experienced, when gender faces more problems in managing the work and family domains, its antecedents and its outcomes such as higher or lower job satisfaction, organizational commitment, turn over intentions etc. (Aycan, 2008).

The potential contribution of this paper is to uncover the impact of work-family and family-work conflicts on the organizational commitment of nurses in a high collectivist culture of Pakistan. Pakistan being an underdeveloped country predominantly follows collectivist culture. According to the past literature, collectivism prevails mainly in underdeveloped countries whereas the main population of developed countries is of the individualistic view (Hofstede, 1994). The reason for focusing on the nursing profession in our study is that it is a tough job with long working hours; it needs the attention of future researchers. The respondents were the nurses of different hospitals of Rawalpindi and Islamabad with different family backgrounds in the collectivist cultural setting.

This study contributes to the work-family/cross-cultural field in four ways. Firstly, it contributes to cross-cultural psychology by providing a South-Asian perspective from one country. Individual level analysis may offer some insight into the cultural differences. Secondly, this study will specifically contribute in knowing the work-family vs. family-work conflicts faced by the nurses of Pakistan where predominantly collectivist culture prevails. Thirdly, we examined both directions of conflict in this study because although research on Work-Family Conflict is abundant, there have been few studies that have assessed WFC as bidirectional –WIF and family interference with work (FIW) (Bruck & Allen, 2003; Lapiere et al., 2008). Specifically, only a few studies from Eastern cultures combining both directions of conflict could be located (Luk & Shaffer, 2005; Ngo & Lau, 1998). Fourthly, this study is conducted on female nurses only, working in private/public hospitals of Islamabad/Rawalpindi, Pakistan.

## LITERATURE REVIEW

The nursing profession is a tough as well as a full time job. Nurses usually face a lot of problems because of work-family as well as family-work conflicts due to the collectivist culture prevailing in Pakistan. Literature relevant to Work-family and Family-work conflicts

reveals their effects on organizational commitment. Grzywacz et al. (2006) recommended future research to help examine nurses' balancing their demands of work and family in order to avoid work-family and family-work conflicts. The aim of this study is to link the WFC and FWC with organizational obligation/commitment having collectivism as a moderator.

### **Work-family Conflict**

Work-family conflicts are a form of inter role conflicts; when work domain interferes with family domain such that participation in one role, i.e. home becomes more difficult by participating in another role, i.e. workplace (Greenhaus & Beutell, 1985). WFC has been originated from the studies of role conflict and it is defined on the basis of the role theory. The main concern of Role conflict theory as proposed by Greenhaus and Beutell is those role conflicts that create role participation problems which then leads to different negative outcomes. The interferences between work and family have always resulted in work-family conflict (Ngo & Lau, 1998). They found that the extent to which this causes conflict is determined by the closeness of fit between the two spheres.

### **Family-work Conflict**

Work-family conflict is often viewed as a bidirectional construct: Work-family conflict may occur when work interferes with family (i.e. work-family conflict); it may also occur when family interferes with work (i.e. family-work conflict) (Netemeyer, Boles & McMurrian, 1996; Zhang et al., 2012). Role conflicts arise when either of the two domains becomes a hurdle in participating in the other one.

### **Work-family Conflict and Organizational Commitment**

Research into work-family conflict emphasizes the complex nature of the inter-relationship between work and family and its positive and negative outcomes (Harris, 2004; Allen et al, 2000; Greenhaus & Beutell, 1985; Gutek et al., 1991). The study of WFC in relation to organizational commitment is important to study. WFC can result in increased absenteeism, burnout, withdrawal and decreased satisfaction and commitment (Allen et al, 2000; Batt & Valcour, 2003; Hammer, Bauer & Grandey, 2003). Previous research has also demonstrated a negative relationship between WFC and organizational commitment (e.g. Allen et al., 2000; de Janasz & Behson, 2007). Individuals who have a low expectation for and comfort with conflict and its resulting uncertainty are likely to experience reduced commitment

to their organization (de Janasz & Behson, 2007). It is mainly assumed that work-family conflict occurs due to an inability of people to control their work and working schedules (Beigi, Ershadi, & Shirmohammadi, 2012).

Whereas according to Stoeva, Chiu and Greenhaus, (2002), the main cause of WFC is when individuals are performing multiple roles like parent, spouse and worker, then each of these roles place demand for a person's time, energy and commitment. Majority of successful women professionals have to fit domestic responsibilities around their work. Harris (2004) found out that gender role theory argues that societal norms of women's greater involvement with the family, even within apparently liberalized industrial democracies mean that women will experience greater conflict in trying to balance work and family responsibilities. Married persons experience more work-family conflict than unmarried persons (Greenhaus & Beutell, 1985). They also found out that it might be expected that parents would experience more work-family conflict than non parents.

According to the gender role theory, women are more likely to see the family role as part of their social identity than men do. Moreover, while women's roles in the workplace have increased, the expectations placed on them in the family role have not diminished. In addition, a meta-analysis review found that the WFC and the FWC should be distinguished because they have unique antecedents. Thus, the majority of research on this topic examines both directions of conflict. Research findings so far have supported the distinctiveness of the two concepts (Mesmer-Magnus & Viswesvaran, 2005). This shows a clear support to our first hypothesis:

*Hypothesis 1. Work-Family Conflict is significantly related to organizational commitment.*

### **Family-work Conflict and Organizational Commitment**

Mayer, Caruso, & Salovey (2000) found that committed employees are more likely to remain with the organization and strive towards the organization's operation, goals, and objectives than others. Therefore, if employees experience high levels of family-work conflict, their roles and household tasks in family life interfere with the work and develop a negative affect towards the organization (Ajiboye, 2008). In families where both husband and wife are working (either full-time or part-time), individuals face dual demands from work and family activities, resulting in increased levels of Family-work conflict (Fu & Shaffer, 2001). For a country like Pakistan where there are very traditional cultural values, and predominantly collectivism prevails, despite the fact that women are now more educated, and more

career oriented, they still carry the primary responsibility for family work (Fu & Shaffer, 2001; Berardo, Shehan, & Leslie, 1987; Grant, Simpson, Rong, & Peters-Golden Grant, 1990). With the help of above literature, we can anticipate that women face interference more from the family domain where as men face interference more from the work domain. Netemeyer et al. (1996) who also developed a scale for measuring work-family and family-work conflicts found out that both, work-family conflict and family-work conflict affect the work related consequences like organizational commitment, job satisfaction, and turnover intentions. Whereas, a counter argument to this is that family-work conflict is associated with work related consequences in addition to non-work behaviors and attitudes (Higgins, Duxbury, & Irving, 1992).

According to many past researchers, jobs that cause considerable levels of conflict (it can either be work-family conflict or family-work conflict), has negative effects on organizational commitment, turnover intentions and job satisfaction (Johnston, Parasuraman, Futrell, & Black, 1990; Boles, Johnston, & Hair Jr, 1997; Hoffman, 1993). Meta-analyses have revealed that high work-family conflict and family-work conflict were related to a wide range of work-related consequences (e.g. low job satisfaction, reduced organizational commitment, high turnover intentions), family consequences (e.g. low marital and family satisfaction), and physical and psychological health problems (e.g. depression and poor physical health) (Allen et al., 2000; Eby et al., 2005; Mesmer-Magnus & Viswesvaran, 2005; Zhang et al., 2012).

Married women have to shoulder a great deal of domestic burden even when they are gainfully employed in the labor market, since their husbands have limited participation in child care and household chores. Worse still, in Pakistan there is little or no support from employers and the government concerning child care. Work-family and family-work conflicts thus become an issue encountered by many females of Pakistan, especially nurses as this issue mainly arises for the working women of middle-class group as per the past literature, decreasing the level of job related consequence like commitment towards their organization. Hence giving clear evidence and support to our following hypothesis:

*Hypothesis 2. Family-Work Conflict is significantly related to organizational commitment.*

### **Moderating Role of Collectivism**

Wharton and Blair-Loy (2006) determined that there is a need for more research that examines the work-family and family-work conflict in cultural settings.

Moreover little attention has been paid to cross-national and cultural similarities and differences (Cohen & Liani, 2009). In today's fast moving world, where males and females both are career oriented, it has become more complex for both men and women in many cultures to simultaneously manage the workplace and home demands.

Many past researches have been conducted on work-family conflicts and job-related outcomes within many countries of the west but western countries tend to have a culture that is high on individualism (Hofstede, 2001), so we cannot apply the findings of those studies in a totally opposite culture i.e. collectivism. Joplin, Shaffer, Francesco, and Lau (2003) found out that culture greatly influences the nature of work-family conflicts. There are very few studies conducted on work-family conflicts in the developing countries and from the eastern side of the world which have the collectivist culture orientation (Lo, 2003). In these nations there is no or a very weak concept of gender equality and equal partnership between men and women.

Here the moderating role of collectivism toward organizational commitment further justify and support our following hypothesis:

*Hypothesis 3a. Collectivism moderates the relationship between Work-Family Conflict & organizational commitment.*

According to the past literature on work-family conflict, it was found out that the level of family participation is positively related to family-work conflict. The findings of a study on Hong Kong workers show that the local workers experienced significantly more family-work conflict as compare to the workers from western cultures (Luk, 2001). This shows that greater family involvement predicted greater family-work conflict among the people of collectivist culture. There is a general assumption that both the employees and the organization are likely to experience a number of negative outcomes when the views and characteristics of the employees conflict with those of the organization (Peterson, 2003; Kristof, 1996; Chatman, 1989).

Organizational commitment, when individuals face family-work conflict and work-family conflict, have become important because during the last few years there has been an increase in the workload which has lead employees to have less time for their families and vice versa (Akintayo, 2010). Although it was found out by Abraham (1997) that organizational commitment may be stronger among collectivists who view their organizations as in-group but when it comes to dealing with work-family and family-work conflicts, the results may be different. Fewer women work outside their homes

in Pakistan as compared to Western countries but during last decade or so this trend has changed; women work to support their family's fight against inflation and poverty (Hussain, 2008). Many of these women are married. Hostility, economic pressures in married couples result in high degree of Family-Work Conflict and Work-Family Conflict as compared to single individuals (Akintayo, 2010). Thus providing strong evidence for the following hypothesis:

*Hypothesis 3b. Collectivism moderates the relationship between Family-Work Conflict & organizational commitment.*

## METHODOLOGY

### Instrumentation

Data was collected from full-time employees of different hospitals. Female nurses were preferred more. Data was collected through paper-and-pencil survey. The questionnaire assesses demographic and relational dimensions of work-family and family-work conflicts, role of collectivist culture and organizational commitment. All the items in the questionnaire were responded to using a 5-points likert-scale where 1 (strongly disagree) to 5 (strongly agree), unless otherwise stated.

### Work-Family Conflicts

Work-family conflict (WFC) occurs when work related demands interfere with home responsibilities. Work life conflict is measured by considering its two dimensions WFC & FWC. Questionnaire used in this study is a five items scale, developed by Niemeyer et al. (1996) for measuring the work life conflict. The sample items include, "The demands of my work interfere with my home and family life", "Things I want to do at home do not get done because of demands my job puts on me", "Due to work-related duties, I have to make changes to my plans for family activities".

### Family-Work Conflicts

Family-work conflict (FWC) arises when family responsibilities impede work activities. We used a 5 items scale in this study developed by Niemeyer et al. (1996) for measuring the work life conflict. The sample items include, "The demands of my family interferes with work related activities", "Things I want to do at work don't get done because of the demands of my family", "Family-related strain interferes with my ability to perform job-related duties".

### Organizational Commitment

Organizational commitment is the individual's psychological attachment with the organization. When there are family conflicts with work and work conflicts with family then this organizational commitment tend to break apart as individuals cannot manage or create a balance between their work and family life. This leads to an individual's detachment from work which then leads to many other different outcomes that are not a part of our research. Organizational Commitment is measured through questionnaire developed by Cook and Wall (1980) on a 7 point likert scale. It is a nine-item scale and some of the sample items are; "I am quite proud to be able to tell people who it is that I work for", "I feel myself to be part of the organization", "The offer of a bit more money with another employer would not seriously make me think of changing my job", "I'm not willing to put myself out just to help the organization".

### Collectivism

Collectivism and individualism are deeply pervading cultures. People simply take their culture's stance for granted. Individualist cultures, such as those of the United States and Western Europe, emphasize personal achievement at the expense of group goals, resulting in a strong sense of competition. Collectivist cultures, such as those of China, Korea, and Pakistan, emphasize family and work group goals above individual needs or desires. Both collectivist and individualistic cultures have their failings. People in individualist cultures are susceptible to loneliness, and people in collectivist cultures can have a strong fear of rejection. Collectivist culture of Pakistan plays a great role in strengthening the negative impact of these conflicts on organizational commitment. We used a five item scale questionnaire to measure collectivism developed by Dorfman and Howell (1988). Some of the sample items are: "Group welfare is more important than individual rewards", "Being accepted by the members of your work group is very important", and "Managers should encourage group loyalty even if individual's goals suffer".

### Sample

Our rationale for using a sample with majority female nurses is that usually the female workers/employees face more difficulties such as work-family and family-work conflicts as compare to males in a collectivist culture like Pakistan where females have all the responsibility of taking care of their homes and families whether they are working or not. And for a profession like nurse where there is a lot

of work burdens, a job that has high responsibility and is treated with respect, females usually tend to face difficulty in balancing their work and their family life side by side.

We have used purposive sampling technique in this research because we have collected data from nurses of different hospitals of Rawalpindi/Islamabad, Pakistan. The sample size was 300 whereas 250 respondents provided the feedback. The demographics considered in our research are gender, age, marital status, education and years of experience. Following table shows the demographics characteristics:

**TABLE 1**  
**Demographic characteristics of sample**

| Variables  | %     | (N)   |
|------------|-------|-------|
| <b>Sex</b> |       |       |
| Male       | 9.6%  | (24)  |
| Female     | 90.4% | (226) |
| <b>Age</b> |       |       |
| 20-25yrs   | 15.2% | (38)  |
| 25.1-30yrs | 33.6% | (84)  |
| 30.1-35yrs | 27.2% | (68)  |
| 35.1-40yrs | 14.0% | (35)  |
| 40.1-45yrs | 8.2%  | (21)  |
| 45.1-50yrs | 1.2%  | (3)   |
| 50.1-above | .4%   | (1)   |

**Marital Status**

|          |       |       |
|----------|-------|-------|
| Single   | 33.6% | (84)  |
| Married  | 63.2% | (158) |
| Divorced | 3.2%  | (8)   |

**Education**

|        |      |     |
|--------|------|-----|
| Metric | 1.6% | (4) |
|--------|------|-----|

**Intermediate**

|            |       |       |
|------------|-------|-------|
| Graduation | 6.4%  | (16)  |
| Masters    | 4.8%  | (12)  |
| Others     | 84.8% | (212) |

**Experience**

|           |       |       |
|-----------|-------|-------|
| 1-3years  | 33.2% | (83)  |
| 3-7years  | 45.2% | (113) |
| 7-10years | 15.6% | (39)  |
| 10-above  | 6.0%  | (15)  |

There are 9.6% respondents males and females represent 90.4% of the total respondents as our main focus was on the female nurses. In the selected sample mostly nurses are young as the table shows that there are 33.6% and 27.2% nurses who are in between the age of 25.1 to 30 years, and 30.1 to 35 years respectively. 63.2% of the nurses are married, which means they are managing their work and family life side by side. Majority of the nurses have other education like different diplomas in nursing which are 84.8% according to the above table. According to the above table majority of the nurses have a working experience of 3 to 7 years i.e. 45.2% nurses.

**RESULTS**

**TABLE 2**  
**Means, Standard deviations and Correlations**

| Variables | Mean   | Std. Dev | 1       | 2      | 3      | 4 |
|-----------|--------|----------|---------|--------|--------|---|
| 1. OC     | 4.6773 | .71162   | 1       |        |        |   |
| 2. WFC    | 3.4544 | .95097   | -.235** | 1      |        |   |
| 3. FWC    | 3.3184 | 1.02815  | -.267** | .712** | 1      |   |
| 4. COL    | 3.5312 | .86265   | .157*   | .221** | .173** | 1 |

\*p<0.05

\*\*p<0.01

Table 2 presents descriptive statistics and correlations among the independent, moderating and dependent variables. Mean and standard deviation of organizational commitment is 4.6773 and 0.71162 respectively. Then, the mean and standard deviation of work-family conflict is 3.4544 and 0.95097 respectively. And then family-work conflict mean and standard deviation is 3.3184 and 1.02815 respectively

The results show that work-family conflict is significantly and negatively correlated with organizational commitment having value -.235 significant at p < 0.01. Thus confirming when work-family conflict arises among individuals, their organizational commitment becomes low. Similarly family-work conflict is significantly and negatively correlated with organizational commitment at -.267 significant at p < 0.01.

This shows that individuals who face family-work conflicts in their lives, their organizational commitment tends to decrease. A positive and significant correlation has been observed between collectivism and organizational commitment having value .157 significant at  $p < 0.05$ , indicating that collectivism positively effects organizational commitment of the employees.

**TABLE 3**  
**Regression analysis for outcomes**

| Predictors        | Organizational commitment |                |              |
|-------------------|---------------------------|----------------|--------------|
|                   | $\beta$                   | R <sup>2</sup> | $\Delta R^2$ |
| Step 1            |                           |                |              |
| Control Variables |                           | .012           |              |
| Step 2            |                           |                |              |
| WFC               | -.076                     |                |              |
| FWC               | -.252**                   | .094           | .082**       |

**Regression analysis for outcomes:**

We performed regression analysis to test work-family conflict and family-work conflict as predictors of the outcome variable: organizational commitment. Work-family conflict is not significantly related to organizational commitment with Beta value -.076 ( $p = .384$ ) showing that work-family doesn't affect the commitment of employees towards their organization. Whereas, family-work conflict is significantly and negatively related to organizational commitment at Beta value -.252(\*\*) ( $p = 0.007$ ). This shows that whenever there is family-work conflict, this is going to decrease the organizational commitment among the employees.

**TABLE 4**  
**Results of Moderated Regression Analysis for Organizational Commitment**

| Predictors         | Organizational commitment |                |              |
|--------------------|---------------------------|----------------|--------------|
|                    | $\beta$                   | R <sup>2</sup> | $\Delta R^2$ |
| Moderator Analysis |                           |                |              |
| Collectivism       |                           |                |              |
| Step 1             |                           |                |              |
| Control variables  |                           | .012           |              |
| Step 2             |                           |                |              |
| WFC                | -.126                     |                |              |
| FWC                | -.234**                   |                |              |
| COL                | .220**                    | .134           | .122**       |
| Step 3             |                           |                |              |
| WFC x COL          | -1.435**                  | .240           | .106**       |
| FWC x COL          | -.831                     |                |              |

Moderated regression analysis for organizational commitment: Moderated regression analysis was used to examine the role of collectivism culture on the work-family conflict, family-work conflict and organizational commitment relationship. First, control variables were entered into the model. In the second step we entered our two independent variables, work-family conflict and family-work conflict along with collectivism to predict organizational commitment. Then in the third step, the two interaction terms were entered, one between work-family conflict and collectivism, and the second between family-work conflict and collectivism.

We observed that family-work conflict (Beta = -.234,  $p < 0.05$ ) and collectivism (Beta = .220,  $p < .003$ ) are significantly related as the predictors of organizational commitment whereas work-family conflict (Beta = -.126,  $p > 0.1$ ) is not significantly predicting the organizational commitment as an outcome.

Whereas when the two interaction terms were created, it was observed that work-family conflict and collectivism (Beta = -1.435(\*\*),  $p < 0.05$ ) has a significant interaction with the outcome variable thus giving strong support to our hypothesis 3a. The second interaction term between family-work conflict and collectivism shows that Beta value is -.831 ( $p = .206$ ) thus partially supporting our hypothesis 3b.

**Summary of Results**

To summarize our results, Hypothesis 1 got rejected showing that there is no significant relationship between work-family conflict and organizational commitment. Hypothesis 2 got accepted showing family-work conflict predicts the organizational commitment as an outcome. Hypothesis 3a got supported showing that in collectivist cultures, work-family conflict decreases the organizational commitment among the employees. At the end, hypothesis 3b got rejected or we can say partially significant showing that in collectivist cultures, family-work conflict cannot affect the organizational commitment of employees.

**DISCUSSION**

We observed that two of our hypotheses got accepted and two of our hypotheses got rejected. The direct link between work-family conflict and organizational commitment got rejected whereas the direct link between family-work conflict and organizational commitment got accepted. But when we studied these two relations specifically in our cultural context, taking collectivism as moderation between these two relationships as the new contribution to this study, the results came out to be totally opposite.

The work-family conflict predicts organizational commitment as an outcome in a collectivist culture like Pakistan and family-work conflict does not seem to predict or effect organizational commitment in this type of cultural setting. This indicates that in collectivist cultures, people are more concerned about socializing, networking, making relationships and having close bonds. They are generally living together with their extended families, grandparents etc. Hence in such cultures, family-work conflict rarely occurs and even if it does, it does not lowers the organizational commitment of the employees as at home, the work is mutually and easily managed by any of the family members and even at work, the colleagues and peers tend to help out each other in difficult times by managing one another's work. Whereas in individualistic cultures, there is no concept of doing someone else's part of the work either at home or at work.

It has been observed that Work demands having flexibility of when to do it and where to do it reduces the work-family conflicts and contribute to positive work outcomes (Bond, Thompson, Galinsky, & Protta, 2003). In collectivist cultures where home demands are easily managed by other members of the family, in such cultures family-work conflicts occur at a very minimal level and hence again, contributing to work outcomes as it enables both men and women to fully concentrate on their work as well as family with a balance.

The main aim of this research was to measure the effects of work-family versus family-work conflicts. The moderating role of collectivism shows that female employees and in our study, nurses mainly face work-family conflict and as a result their organizational commitment decreases. The results shown above fully support hypothesis 2 and hypothesis 3a where as rejects hypothesis 1 and partially supports hypothesis 3b hence proving that the effects of work-family and family-work conflicts have a negative impact on organizational commitment especially in a country where collectivism prevails predominantly.

### Practical Implications

Some of the practical implications of this study are as follows;

Organizations can hire psychiatrists and psychologists in order to help them with their problems and mental health issues. The organizations can work together with their employees in understanding and helping with their issues to increase organizational commitment and conclusively increase organization's overall performance. And specifically for working females of Pakistan including nurses, there should be more focus on flexible hours, provide incentives for day

care centres in order to help them balance their work and family lives side by side.

### CONCLUSION

According to our results, in Pakistan work is the main cause of conflict not the family. The results show that Work-Family Conflict is affecting Organizational Commitment of nurses in Pakistan. Due to collectivist culture prevailing predominantly in Pakistan, it moderates this relation because of more attention being paid to the work demands. Mainly work demands are affecting the family responsibilities. Families are being ignored because of high commitment towards the organizations. Females in a collectivist culture face major problems in balancing their work and family responsibilities side by side as they have to give attention to their work at the stake of their families.

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# **CORPORATE GOVERNANCE AND FIRM PERFORMANCE: A STUDY ON MODERATING EFFECTS OF FIRM SIZE AND LEVERAGE ON THE RELATIONSHIP BETWEEN CORPORATE GOVERNANCE AND FIRM PERFORMANCE IN BANKING SECTOR OF PAKISTAN**

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## **ABSTRACT**

**The main purpose of this study is to examine the impact of the corporate governance mechanism on firm performance. The variable employed in this study to measure firm performance, is return on assets. The empirical results indicate that firm performance is in positive and significant relation to corporate governance. On the other hand, the relationship between firm performance and corporate governance is moderated by size of the firm where as the leverage does not play its role in moderating the relationship between the variables of interest of this study.**

## **INTRODUCTION**

Over time some cases that came before the academic world stunned the world that despite efficient, well qualified and lavishly compensated top management, some of these firms are unable to perform efficiently. In 2001, Enron Xerox, WorldCom had been caught of getting involved in accounting scandals, which leads to the credibility of corporate financial reports under suspicion, furthermore, shaking investors' confidence. The recent economic crises in Asia and the various high profile corporate scandals like Adelphia, Enron and WorldCom have triggered significant attention towards the importance of corporate governance mechanism. Though, this debate is a relatively new one but the associated issues have been around for decades since Berle and Means (1932) and times. Sarbanes-Oxley Act was enacted in 2002 to enhance the corporate governance mechanism which is viewed as the initial stage of financial revolution, in the expectation that governance mechanism may be reinforced, public confidence retrieved, accuracy and reliability of financial information assured. The emergence of corporate governance practices is revealed to have a significant impact in improving the economic dynamism, to build the market confidence and to ensure a consistent pattern of investment flows in the long run; thus, ultimately influencing the overall performance of an organization. Moreover, the revelation of a variety of corporate governance mechanisms ensures that the management is intended to act in the best interests of

shareholders. These mechanisms can be internal (board of directors, stock ownership by the managers, and executive compensation) or external to an organization like the existence of market for the corporate control, institutional ownership, and the level of debt financing. The implication extent of these mechanisms is dependent upon the historical development and various legal and institutional features of a particular country where a firm is headquartered in so in order to ensure the success of an organization, the corporate governance practices must be compatible with the national and global standards. Since corporate governance mechanism is a relatively new phenomenon so it is difficult to measure the effectiveness of the corporate governance systems. This study is an attempt to explore major measures of corporate governance employed in Pakistan. Corporate governance is of paramount importance to a company and is almost as important as its primary business plan. If executed effectively it can prevent corporate scandals, fraud and the civil and the criminal liability of the company. It also enhances a company's image in the public eye as a self-policing company that is responsible and worthy of shareholders and debt holder capital. And by adopting proper corporate governance practices we remove agency problems which are faced by insiders and outsiders of the company. The identification of corporate governance indicators/measures in Pakistani corporate sector and their impacts on performance that could lead to putting forward concrete policy guidelines are some of the objectives of this study. To meet the objectives

this study holds an empirical analysis of corporate governance mechanism on firm performance among the banking organizations working in Pakistan. The purpose of this research is to examine the impact of corporate governance mechanism upon firm performance and the role played by size of the firm and the leverage has also been studied as moderators.

The subsequent section of this study briefly reviews the various corporate governance variables and highlights multiple other variables which can have a significant impact on the firms' performance. This is followed by the research methodology and the empirical results of the study. The final section discusses the conclusion with the limitations, implications and avenues for future research.

## LITERATURE REVIEW

This section provides a detailed review of literature that advances the importance of selected corporate governance and numerous other variables in understanding their impact on the performance of an organization. Corporate governance is defined as the mechanism that assures the efficient allocation of equity among the inside and outside investors and aims to protect the shareholders' interests through returns on their investments (Shleifer & Vishny, 1997). A similar concept was introduced by John and Senbet (1998) who regard corporate governance practices as a way of exercising control over corporate insiders and management such that the interest of corporate stakeholders are protected. Stakeholders comprise of not only the shareholders of an organization but also the debt holders and even those who have an indirect stake in the organization like employees, suppliers, customers and other concerned parties. Legally, corporate governance is approached as a key mechanism of outside investors' protection (whether shareholders or creditors) against the insider's expropriation through the legal system (Shleifer & Vishny, 1986). Jensen and Meckling (1976) relate the expropriation with the agency problems where the insiders focus on using the company's profits for their own interest rather than distributing them to the outside investors. Complementary to these findings, Hart (1995) disclosed two contributing factors towards the corporate governance issues in an organization. One of those factors was the agency problem or conflict of interest that commonly arises among the members (corporate owners, management of the organization, workers or consumers) of the organization while the second factor was related to the associated transaction costs such that the agency problems could not be managed through a contract. Thus, the corporate governance structure dictates the allocation of the board, managers and the stakeholder's rights and

responsibilities in the corporation, and implies the rules and regulations involved in making important decisions on the corporate affairs. This ultimately sets a base or a structure for developing the organizational objectives and the means involved in attaining those objectives and monitoring the organizational performance. An extensive literature on the determinants of financial performance tends to be qualitative in nature mainly because the result of quantitative comparison is difficult to analyze. One strand of the literature acknowledged ROA and ROE as the two measures for the determinants of bank profitability. Besides that, a comprehensive large number of studies have documented corporate governance, the size of the firm, expenditure on R&D, capital expenditure and the leverage ratio as the various determinants of a firm's performance. The relationship between corporate governance and economic performance has been an issue of special concern for both the academia and the policy makers during the recent years. The central issue of the finance-based corporate governance studies is to understand how economic value such as the capitalists' legal protection, the competitive environment of an organization, the organizational ownership and board structure and the financial policy is being directed by the corporate governance mechanisms. The World Bank, in 1999, states that corporate governance comprises two mechanisms, internal and external corporate governance. Internal corporate governance, giving priority to shareholders' interest, is operated by the board of directors to monitor top management. On the other hand, external corporate governance monitors and controls managers' behaviors by means of external regulations and force, in which many parties are involved, such as suppliers, debtors (stakeholders), accountants, lawyers, providers of credit ratings and investment bank (professional institutions). Veliyath (1999) pinpoints that the board serves as a bridge between owners and managers; its duty is to protect shareholders' interests. Specifically speaking, taking responsibility for managing and supervising, the board should monitor managers' behavior for shareholders' interest, make important decisions, employ management team and superintend firms to obey the law. Jensen (1993) holds the belief that the organizational effectiveness is highly influenced by the size of the board, i.e. small boards are regarded as a more effective tool in monitoring CEO's actions as compared to the large boards that emphasize on "politeness and courtesy"; thus making it easier for CEO to control. This is because the directors in a large board have diverse opinions, hence consensus is difficult to reach, This lowers the efficiency and the situation deteriorates if directors increase in numbers (Lipton & Lorsch, 1992). Yermack (1996); Eisenberg, Sundgren, and Wells (1998); Singh and Davidson (2003)

unveil that board size is negatively related to corporate performance. Nevertheless, Bacon (1973) holds an opposite opinion that larger board implies members with diverse background and viewpoints, which is helpful for the quality of decisions; additionally, a wide range of their interest may neutralize decisions. Zahra and Pearce (1989); Kiel and Nicholson (2003) reveal that board size is positively related to corporate performance.

A board includes internal and external directors. Fama and Jensen (1983) detect that internal directors, by virtue of their positions possess much more information, are likely to collude with managers and make decisions against shareholders. By comparison, external directors in neutral position, acting as supervisor, are good for eliminating the principal-agency problem. Beasley (1996) investigated the relation between board composition and financial scandals, revealed the ratio of independent directors in the firms with no scandals to be higher than in those firms which have been caught manipulating financial reports. Bhagat and Black (2002) take the ratio of independent directors minus the ratio of inside directors as a proxy, and the result discloses that board independence, significantly and negatively correlates with short-term performance, but board independence makes no difference in improving corporate performance. According to Agency Theory, when a chairman assumes the role of CEO, namely acting as a decision maker and supervisor at the same time, the function of the board to minimize agency cost could weaken tremendously; in the end, corporate performance goes down (Jensen & Meckling, 1976; Fama & Jensen, 1983; Patton & Baker, 1987). Empirical studies by Daliy and Dalton (1993); Dahya, Lonie and Power (1996) unveil that CEO's duality could bring about negative affects on corporate performance. However, according to stewardship theory, executive's responsibilities may neutralize self-interest behaviors derived from CEO duality, and they may become more devoted to advancing corporate performance. Boyd (1995) agrees that CEO's duality brings in positive effects on corporate performance. Berle and Means (1932) set forth that ownership dispersion implies management to be distinguished from ownership. Shleifer and Vishny (1986); Morck, Shleifer and Vishny (1988) detect the phenomenon of ownership concentration. La Porta et al. (1999) and Claessens et al. (2000) usher in the conception of ultimate controller; define firm ownership as voting rights, unearthing that many controlling shareholders of listed firms predominate firms by means of pyramid structure and cross holding, which could result in central agency problems. Kao, Chiou and Chen (2004) reveal that firms in financial distress are closely related to high ratio of the shares pledged by directors, causing concern about the agency problem resulting from the

pledge of corporate shares. Chiou, Hsiung and Kao (2002) delineated that directors and supervisors could fund by the collateralized shares and further purchase more firm stocks to manipulate stock price or enhance their power. Directors' and supervisors' financial stress, because of the collateralized shares, is closely related to share price. Share price slumping, the value of then collateralized shares depreciates and even drops below the standard of the required margin; correspondingly, collateralizing shareholders will be requested to collateralize more shares, while debtors fail to afford more shares as collaterals, financial institutions as creditors will close the position of collateralized shares. As a result, collateralizing shareholders, making use of their position, may make a prey of small shareholders or embezzle company funds. The relationship between size and leverage of a firm is discussed in two different contexts. One point of view supports a positive relationship between firm size and leverage. Titman and Wessels (1988) state that large firms do not consider the bankruptcy costs in deciding the level of leverage as these are just a small percentage of the total value of the firm. Therefore large firms may prefer to use a higher level of gearing. Friend and Lang (1988); Marsh (1982) also support the positive relationship between the size of firm and leverage levels. Another group of researchers provides evidence about the existence of a negative relationship between the size of firm and leverage. Rajan and Zingales (1995) find that as large firms are generally well-established and have good performance track record, enabling them to issue equity at fair prices. In turn, this reduces their reliance on debt and therefore there exists a negative relationship between size and leverage of the firm.

## THEORETICAL FRAMEWORK

The Boards of directors may have a difficulty communicating with each other in a large size board, which causes great detriment to firm performance. Yermack (1996); Eisenberg et al. (1998); Singh and Davidson (2003) prove that board size has a negative relation with firm performance. As for the relation between board independence and firm performance, if outside directors are independent and have professional ability, they could be more objective to make decisions and monitor managers. Empirical research by Weisbach (1988), Huson et al. (2001) corroborate that the higher ratio of independent directors accounts for boards, the better firm performance could be. As the chairman serves as the executive, playing roles of decision-maker and supervisor simultaneously, the board could lose its independence and monitoring power, consequently performing a weak function as

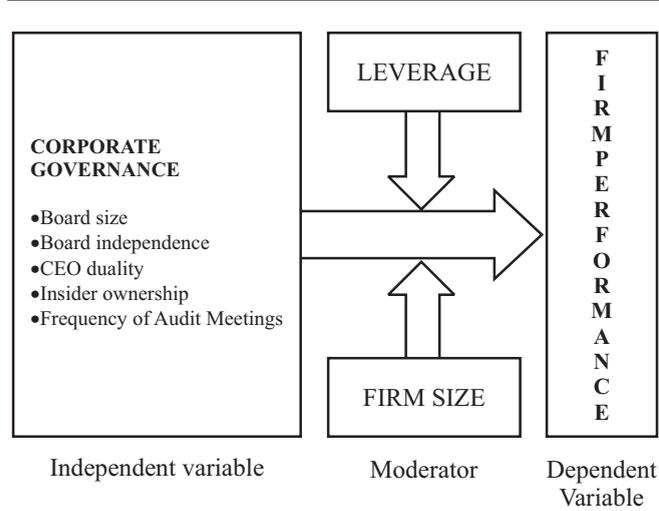
a bulwark against agency problems. Daliy & Dalton; (1993), Dahya et al. (1996) attest to that CEO duality seems to deteriorate firm performance. In light of the statement above mentioned, this paper proposes the hypotheses as follows. About firm performance, according to convergence of interest hypothesis, higher insider ownership could reconcile managers' and outside shareholders' interests, which would lessen agency problems. Empirical results by Kesner (1987), Oswald and Jahera (1991); Eng and Mak (2003) bear evidence of that insider ownership has a positive relation with firm performance. A large number of researchers also consider that the audit committee meetings are a way to have a check on the directors that whether they are abiding by the procedures set forth by the commissions and that had been laid in the charter of the firm. On the basis of the above discussion it can be written as

$$\text{Firm performance} = f(\text{BS, BI, D, IOP, ACM})$$

- Where BS = Board size  
 BI = Board independence  
 D = CEO duality  
 IOP = Insider ownership  
 ACM = Frequency of Audit Meetings

The schematic diagram the research could be presented as follows:

**FIGURE 1**  
**Conceptual Model of the research**



Some studies are also of the view that the Firm Size and Leverage alters the strength of the relationship between firm performance and corporate governance. Another way to look over the relationship is to develop an index of corporate governance by using the five facets described in the above equation as:

$$\text{Firm performance} = f(\text{CGI})$$

**METHODOLOGY**

The econometric model of the research could be written as:

$$\text{ROA} = \beta_0 + \beta_1 \text{BS} + \beta_2 \text{BI} + \beta_3 \text{D} + \beta_4 \text{IOP} + \beta_5 \text{ACM} + \mu t \quad (1)$$

Where “μ” is assumed to be a white noise process. The equation (1) measures whether corporate governance practices determine firm performance.

An index of corporate governance has been developed. This index is developed by using the weights set forth by FTSE for each facet/dimension of corporate governance. Using the firm size and leverage as moderators the econometric models could be written as:

$$\text{ROA} = \beta_0 + \beta_1 \text{CGI} + \beta_2 \text{FS} + \beta_3 \text{CGI} \times \text{FS} + \mu t \quad (2a)$$

$$\text{ROA} = \beta_0 + \beta_1 \text{CGI} + \beta_2 \text{FS} + \beta_3 \text{CGI} \times \text{FS} + \beta_4 (\text{FS})^2 + \beta_5 (\text{CGI} \times \text{FS})^2 + \mu t \quad (2b)$$

$$\text{ROA} = \beta_0 + \beta_1 \text{CGI} + \beta_2 \text{LEV} + \beta_3 \text{CGI} \times \text{LEV} + \mu t \quad (3a)$$

$$\text{ROA} = \beta_0 + \beta_1 \text{CGI} + \beta_2 \text{LEV} + \beta_3 \text{CGI} \times \text{LEV} + \beta_4 (\text{LEV})^2 + \beta_5 (\text{CGI} \times \text{LEV})^2 + \mu t \quad (3b)$$

The stated corporate governance practices will be converted into its index (CGI) to be used as a determinant of ROA along with moderators (firm size: FS and leverage LEV), to capture the effect of moderators in two of their forms (2a, 2b, 3a and 3b). Equation (2a and 3a) will capture the effect of moderator in its interactional form if coefficient β<sub>3</sub> happens to be statistically significant; the effect will be measured as:

$$\Delta \text{ROA} / \delta \text{CGI} = \beta_1 + \beta_3 \text{FS} + \mu t \quad (4a)$$

$$\Delta \text{ROA} / \delta \text{CGI} = \beta_1 + \beta_3 \text{LEV} + \mu t \quad (5a)$$

The models have been evaluated at three levels (mean of FS or LEV, one-standard deviation–minus, and one-standard deviation–plus). The equations (4b and 5b) capture the effect of moderator in its interactional form as well as in the form of β<sub>5</sub> if the latter coefficient β<sub>5</sub> happens to be statistically significant; the effect will be measured as:

$$\Delta \text{ROA} / \delta \text{CGI} = \beta_1 + \beta_3 \text{FS} + 2\beta_5 \text{FS} \quad (4b)$$

$$\Delta \text{ROA} / \delta \text{CGI} = \beta_1 + \beta_3 \text{LEV} + 2\beta_5 \text{LEV} \quad (5b)$$

The models have been evaluated at three levels (mean of PD or LEV and 1 SD±). Equations 4b and 5b can measure the effect of moderator in one of the four forms, namely:

- (i) If β<sub>3</sub> and β<sub>5</sub> are positive, the effect will be increasing

- with an increasing rate.
- (ii) If  $\beta_3$  is positive and  $\beta_5$  negative, the effect will be increasing with a decreasing rate.
- (iii) If  $\beta_3$  is negative  $\beta_5$  positive, the effect will be decreasing with decreasing rate.
- (iv) If  $\beta_3$  and  $\beta_5$  are negative, the effect will be decreasing with increasing rate.

The data from 2006 to 2011 of fourteen banks that are working in Pakistan has been used.

### RESULTS AND DISCUSSION

First it has been found that whether the corporate governance practices affect the firm performance or not. The results are as follows:

$$ROA = 7.708 - 0.123BS + 1.102BI - 0.2809D + 3.2053IOP + 0.0003ACM$$

(0.422) (0.005) (0.002) (0.040)  
(0.067) (0.889)

$R^2 = 0.5886$   
 $F = 14.32$  (p-value = 0.000)

It has been found that the model is overall a good fit as  $R^2 = 0.6998$  which suggests that 69.98% variation in the dependent variable has been explained by variations in explanatory variables. The board size is statistically significant and bears a negative size, the board independence is also significant with positive sign, the dummy used to capture the CEO duality is significant as well as bear a negative sign, the insider ownership is significant and bears a positive whereas the frequency of audit committee meeting are found to be statistically insignificant in case of banking firms of Pakistan.

An index of CGI has been developed to study the impact of corporate governance on performance of the firm. It is thought that variable CGI determines ROA; the model is specified as follows.

$$ROA = \beta_0 + \beta_1 CGI + \mu t$$

Using data and running regression the following results are found:

$$ROA = 0.5251 + 0.2241CGI$$

(0.124) (0.068)

$R^2 = 0.3478$   
 $F \text{ stat} = 7.08$  (p-value=0.000)

The results are fine as it has been found that there exists a relationship between firm's performance and the corporate governance. As one of the objectives of this

study is looking at the existence of firm size (FS) and leverage (LEV) as moderators, the relationship between ROA and CGI in the presence of the moderators could be checked by having a look at the results of equations 2a, 2b, 3a and 3b respectively as follows:

$$ROA = 0.501 + 0.113CGI + 0.202FS + 0.051CGI \times FS$$

(0.143) (0.084) (0.002) (0.049)

$R^2 = 0.3794$   
 $F \text{ stat} = 9.04$  (p-value=0.000)

$$ROA = 0.410 + 0.101CGI + 0.197FS + 0.024CGI \times FS + 0.1942(FS)^2 + 0.047(CGI \times FS)^2$$

(0.105) (0.076) (0.003) (0.063)  
(0.059) (0.071)

$R^2 = 0.3895$   
 $F \text{ stat} = 11.22$  (p-value=0.000)

$$ROA = 0.546 + 0.103CGI - 0.196LEV + 0.062CGI \times LEV$$

(0.123) (0.073) (0.067) (0.318)

$R^2 = 0.2524$   
 $F \text{ stat} = 6.02$  (p-value=0.000)

$$ROA = 0.399 + 0.09CGI + 0.197LEV + 0.024CGI \times LEV + 0.202(LEV)^2 + 0.051(CGI \times LEV)^2$$

(0.125) (0.086) (0.072) (0.242)  
(0.127) (0.214)

$R^2 = 0.2003$   
 $F \text{ stat} = 5.06$  (p-value=0.000)

The results presented in (i) have improved in terms of  $R^2$  and F-statistics; the new variable FS is significant and its interaction term with CGI i.e. CGI x FS is also significant as per the requirement of the effect of the moderating variable. The results can hence be reproduced as follows:

$$ROA = 0.5013 + 0.1126CGI + 0.2021FS + 0.051CGI \times FS$$

Taking the derivative of ROA with respect to CGI (to check the effect of CGI on ROA, in the presence of moderator FS):

$$\delta ROA / \delta CGI = 0.1126 + 0.051FS$$

Putting values of FS, the effect of CGI and FS on ROA could be understood. Estimating 'Descriptive Statistics':

**TABLE 1**  
**Descriptive Statistics**

|     | N  | Min   | Max   | Mean   | Std. Deviation |
|-----|----|-------|-------|--------|----------------|
| ROA | 84 | .00   | 0.06  | 0.0297 | 0.0464         |
| CGI | 84 | 5.12  | 10.83 | 3.8995 | 3.1683         |
| FS  | 84 | 17.65 | 20.47 | 9.2513 | 0.3897         |

One-standard deviation plus-minus range of FS-variable has been used to check the level effect of this variable on CGI – ROA relationship. The respective range (of FS, using one SD±) is estimated, as follows.

For FS variable, range is: = (-0.3897 → 0.000 → 0.3897)

### Evaluating the effect of CGI

$$\delta ROA/\delta CGI = 0.1126 + 0.051FS(-0.3897) = 0.0927$$

$$\delta ROA/\delta CGI = 0.1126 + 0.051FS(0.0000) = 0.1126$$

$$\delta ROA/\delta CGI = 0.1126 + 0.051FS(0.3897) = 0.1324$$

The effect of CGI on ROA enhances when FS increases.

The results presented above capture the effect of moderator if the relationship is nonlinear. The effect is measured as follows:

$$ROA = 0.410 + 0.101CGI + 0.197FS + 0.024CGI \times FS + 0.1942(FS)^2 + 0.047(CGI \times FS)^2$$

Taking derivative of ROA with respect to CGI (to check the effect of CGI on ROA, in the presence of moderator FS):

$$\delta ROA/\delta CGI = 0.101 + 0.024FS + 20.047FS$$

Since the values of  $\beta^3$  and  $\beta^5$  are positive it can be concluded that the effect of the moderator is increasing at an increasing rate.

The results presented above have not improved in terms of  $R^2$  and F-statistics; the new variable LEV is significant and its interaction term with CGI i.e. CGI x LEV is not significant as per the requirement of the effect of the moderating variable. Hence one can conclude that the leverage does not act as the moderator.

The results presented above also show that the interaction variables are not significant meaning that the leverage does not moderate the relationship between ROA and CGI both in linear as well as nonlinear forms.

By understanding the presented results it can be concluded that the corporate governance practices do possess a relationship with the performance of the firm and the firm size moderates this relationship. However no substantial evidence was found regarding the role of leverage as a moderator in the relationship between performance of the firm and the corporate governance index.

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# IMPACT OF POLITICAL INSTABILITY AND TERRORISM ON STOCK RETURNS: EVIDENCE FROM PAKISTAN

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## ABSTRACT

**This study examines the impact of terrorist activities and regime in Pakistan on the return and volatility dynamics of the financial markets in Pakistan between year 2000 and 2010. The study constructs two dummy variables that quantify political instability and terror and examine the effect on stock market volatility. An ARCH and GARCH model to discover evidence that terrorism and regime has a significant impact on both the return and volatility dynamics of stock markets. To capture the asymmetries in terms of negative and positive shocks, this study also uses threshold GARCH (TGARCH) and an exponential GARCH (EGARCH) model. From both of the TGARCH and EGARCH results, it can be reveal that for the return of KSE-100, there are asymmetries in the news that shows bad news has a larger effect on the volatility of return than good news. Finally study of the reaction of the stock market to terrorist events may also provide indication to investors and speculators to adjust their positions when such events transpire.**

## INTRODUCTION

Stock market acts as a barometer for a country's economy. In today's information-oriented world, news travels very fast and contagion can spread quickly and capital markets become more flexible and are absorb shocks brought on different news such as terrorism, political instability etc. Stock market of Pakistan is going through quite rough patch from many years. The change of political government and later on the terrorists' attacks have badly affected the stock market and make the Pakistan Stock Market unreliable place for investment. As by seeing the overall scenario of Pakistan's stock market during that time period it was not difficult for prices to follow certain patterns that support the rejection of Random Walk Hypothesis.

This study examines the impact of change in government and terrorism in Pakistan on the country financial market volatility. Pakistan is one of those episodic-democratic countries who are facing continuous upheavals and socio-political disruptions since their inception. Military interventions could be witnessed in the political history of Pakistan. More over intervallic wars with India, strikes, antigovernment demonstrations and most importantly the ongoing war on terror have popped Pakistan to prominence on the socio-political platform. Such sociopolitical flux, terrorist attacks and

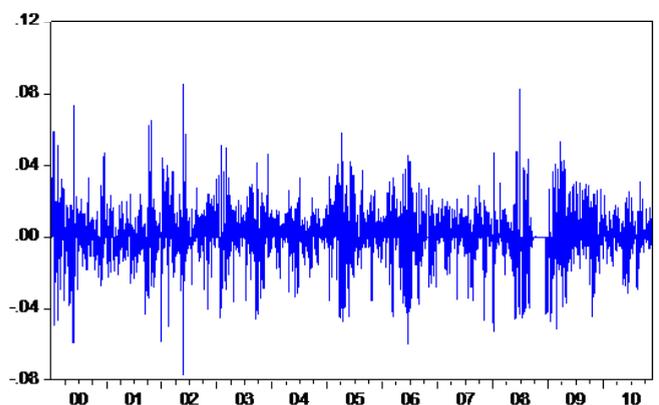
other disruptions can have serious implications for stock price movement because stock prices reflect investors' expectations about the future and these stock price movements on aggregate can generate a surged wave of activity.

There has been an extensive work on study of stock market returns and volatility with respect to the fundamental variables and the macroeconomic variables but a diminutive work has been done so far to study the impact of socio-political factors on the stock market volatility in Pakistan. The existing literature on impact of socio-political factors on stock returns volatility is quite inadequate especially if we talk in context of Pakistani market. Masood, & Sergi (2008) analyzed Pakistan's political risks and events that have affected the Pakistani stock market since its independence but their study chiefly covers the political events. Terrorism and strikes which have recently become the matters of intense interest and the source of unrest in the economy are the missing part there.

The Karachi stock market is rapidly converting into a volatile market. If we see figure below it showed that there are high volatility during year 2000 to 2010. This cannot be viewed as a positive sign for this emerging market like Stock market of Pakistan. Though heavy fluctuations in stock prices are not an unusual phenomena and it has been observed at almost all big

and small exchanges of the world. But focusing on the reasons for such fluctuations is instructive and likely to have important policy implications. The efficient market hypothesis argues that changes in stock prices are mainly dependent on the dissemination of information regarding the expected returns from the stock and risk associated with that stock.

**FIGURE 1**  
**Stock Market Returns**  
**R\_KSE**



So the purpose of study is to examine empirically the impact of socio-political instability on Pakistani stock market.

## LITERATURE REVIEW

A number of theoretical and empirical articles argue that these factors hinder economic growth of a country. Cutler, Poterba and Summers (1989) claimed that the stock prices move in response to the information other than about the fundamental values. They estimate the fraction of stock returns that can be accredited to various kinds of economic and non-economic events including assassinations of important political or national figures, war, invasions, raids and major policy change but their findings suggests a very small effect of non-economic news on the share price.

Most of the studies have found a significant impact of political news or events on the stock market behavior. Chan and Wei (1996) studied the impact of political news on the stock market volatility in Hong Kong and using GARCH-M model they found the strong evidence of the impact of political news on stock market volatility inferring that unfavorable political news is correlated to negative returns for the Hang Seng Index and vice versa. Mei and Guo (1999) examined the impact of political insecurity on the financial crises in emerging markets and they observe that market volatility increased during political election and transition periods and political uncertainty could be a major contributory factor to

financial crisis.

Similarly Kim and Mei (2001) inferred through empirical analysis using GARCH(1,1) filter that the political risk affect the stock market volatility but this impact of political events or news is asymmetric, with bad news having a greater influence on volatility relative to good news. However Voth (2001) have argued that the impact of political factors in studies on German market has been over stated. He argued that the majority of events escalating political uncertainty had a minute or no effect on the value of German assets and the volatility of their returns. Instead, it was inflation that is mainly responsible for most of the variability in stock returns. He suggests that there is no direct linkage between the political factors and the stock market, however through channel it impacts. But Voth (2002) in a panel study of a set of 10 countries using panel regression confess that during great depression political risks changed dramatically over the period, and are adequate to account for a large part of the boost in stock price volatility.

Beaulieu, Cosset, and Essaddam (2002) examined the impact of political risk in Canada on the volatility of stock returns, covering important political events in the country. Their study suggested that political news performs a significant role in the volatility of stock returns. Moreover the volatility of stock returns also depends on the degree of how much a firm is exposed to political risk i.e. the structure of its assets and the level to which there is foreign involvement. Kutan and Perez (2002) also found a significant impact of social and political factors on stock return volatility in their study conducted on Colombian stock market.

Bautista (2003) applied Regime-switching-ARCH regression on Philippine stock returns to estimate its conditional variance and the estimated volatility was then related to major political and economic events. Their study revealed that the Philippine stock market is sensitive to radical changes in the political situation. Moreover the series of military takeover attempts during late 1980s in Philippines lead to hefty fluctuations in stock market index.

Masood and Sergi (2008) analyzed political risks and events that have affected the Pakistan's stock markets since its foundation. They have found that Pakistan's political risk carries a significant risk premium of between 7.5% and 12%. They made forecasts using Bayesian hierarchical modeling and Markov Chain Monte Carlo (MCMC) techniques and found that there is relatively high probability of occurrence of events with an average arrival rate of approximately 1.5 events per year.

Many others also wrote that political instability warped the future path of investment decisions (Calvo & Drazen 1997), lessened public investment leading to a shift of government budgets from capital spending

to government consumption (Darby, Li & Muscatelli (1998), and makes governments less inclined to make improvements to the legal system (Svensson (1993)

Wars and unrest at the borders creates instability and panic among the investors that could affect the stock market movement at large. The effect of war has been analyzed in many studies including Cutler, Poterba, and Summers (1989), Aggarwal, Incaln and Leal (1999), and in Pakistan, Masood and Sergi (2008).

Aggarwal, Incaln, & Leal (1999) examined the sort of events that cause large swings in volatility of emerging stock markets. For this purpose they examine various social, political and economic events both at global and domestic level to find out their explanatory power in context of the returns volatility in the emerging markets including the impact of gulf war. Though at small scale but the impact of gulf war was felt in those emerging markets. Similarly Masood and Sergi (2008) found that among other factors that they studied, wars with India, 1948, 1965, 1971 and 1999 kargil war negatively influenced the Pakistani stock market.

Evia et al. (2008) examined the effect of socio-political conflict in Bolivia on economic performance. Factors studied widespread during the conflicts as strikes, demonstrations, road blockades, and conventional rent-seeking. Their results showed that economic growth due to external factors is positively related to conflict while growth due to productive investment is negatively related to conflict.

Terrorism is another as put that has been studied in relation to economic activity. Many studied in this distance; produced conflicting results as Becker and Murphy (2001) argue that economic performance are not much affected, because terrorist attacks usually devastate only a small portion of the overall stock of capital in a country. By contrast, Abadie and Gardeazabal (2005) repeated that terrorism shape overall economic risk in a country and lead to the economic shakiness in the country. They also conclude their study that higher level of terrorism risks results into the lower levels of foreign direct investment (FDI). Almost all studies on terrorism and its influence on stock prices limited to only on a single or few events, such as the 11 September 2001 attacks, as considered by Hon et al. (2004) and Chen, and Siems (2003) study.

Chen and Siems (2003), used event study methodology to capture the aftermath of terrorism on global capital markets. They studied on the reaction of U.S. capital markets in response to terrorist attacks. Their results showed that capital markets of US are more resilient & flexible than in the past and recover quicker from terrorist attacks than other global capital markets. Their study suggests this increased market resilience to be partially explained by a stable financial sector in

US that provides adequate liquidity to support market stability and reduce the spread panic.

## METHODOLOGY AND DATA DESCRIPTION

Stock index data is taken from Karachi Stock Exchange which is a well-known and reliable source of stock market information in Pakistan. The daily closing value of KSE-100 index is used for calculating the daily returns.

The closing prices of KSE-100 index for Karachi Stock Exchange are taken for the period January 1 2000 to December 31, 2010. Study used Terrorism in Pakistan as dummy variable of terrorist incidents during this period; Regime, a dummy variable for government changes from fully democratic government to Marshal Law or democratic under such condition. Study has applied ARCH/GARCH technique to capture the results.

### ARCH/GARCH Study Models

This section presents the methodology of the paper. Daily data for Karachi stock markets were obtained from Karachi stock exchange and data for terrorism, and regime were obtained from South East Asia Terrorism Portal, and Different News Paper of Pakistan. Study apply ARCH/GARCH tools to see the long term relationship of these variable taking stock return as dependent variable and terror, regime and kargal war as independent variables.

The first ARCH model was presented by Engle (1982). The model suggests that the variance of the residuals at time  $t$  depends on the squared error terms from the past periods. Engle simply suggested that it is better to simultaneously model the mean and the variance of a series when we suspect that the conditional variance is not constant.

Consider the simple model:

$$Y_t = \alpha + \beta X_t + \mu_t$$

Where  $X_t$  is an  $n \times k$  vector of explanatory variables and  $\beta$  is a  $k \times 1$  vector of coefficients.

Normally, it is assume that  $\mu_t$  is ideally, independently distributed with a zero mean and a constant variance  $\sigma^2$ , or in mathematical notation:

$$\mu_t \sim \text{iid } N(0, \sigma^2)$$

Robert F. Engle (1982) idea starts from the fact that he allows the variance of the residuals ( $\sigma^2$ ) to depend on past history or to have heteroskedasticity because the variance will change over time. One way if allowing for

this is to have the variances depend on one lagged period of the squared error terms as follows:

$$\sigma_t^2 = h_t = \gamma_0 + \gamma_1 \mu_{(t-1)}^2$$

Which is basic ARCH (1) process.

Engle ARCH (1) model simultaneously models the mean and variance of the series with the following specification:

$$Y_t = \alpha + \beta X_t + \mu_t \tag{A}$$

$$\sigma_t^2 = h_t = \gamma_0 + \gamma_1 \mu_{(t-1)}^2 \tag{B}$$

$\mu_t \sim \text{iid } N(0, \sigma^2)$

In ARCH (q) model, the variance equation has the following form:

$$\sigma_t^2 = \gamma_0 + \gamma_1 \mu_{t-1}^2 + \gamma_2 \mu_{t-2}^2 + \dots + \gamma_q \mu_{t-q}^2$$

In summation form, the above equation can be written as:

$$\sigma_t^2 = \gamma_0 + \sum_{j=1}^q \gamma_j \mu_{t-j}^2$$

Also  $\gamma_i \geq 0 \forall i = 0, 1, 2, 3, \dots, q$

Where:

$X_t$  = Set of Explanatory Variables

$\sigma_t^2$  = Conditional variance at time t

iid  $N(0, \sigma^2)$  = Ideally, independently distributed with a zero mean and constant variance  $\sigma^2$

$Y_t$  = Set of Dependant Variables

$\mu_t$  = Disturbance term

Where equation (A) is called the mean equation and equation (B) is called the variance equation. The ARCH (1) model says that when a big shock happen in period t-1, it is more likely that the value of  $\mu_t$  will be bigger as well. That is, when  $\mu_{t-1}^2$  is small, the variance of the next innovation  $\mu_t$  is also small. The estimated coefficient of  $\gamma_1$  has to be positive for positive variance.

**The GARCH model**

ARCH provided a framework for the analysis and development of time series models of volatility. However the ARCH model is only the starting point of the empirical study and relies on a wide range of specification tests. One of the drawbacks of ARCH specification, according to Engle (1995), was that it looked like a moving average specification than an auto regression. The GARCH (1, 1) model can be generalized to a GARCH (p, q) model that is, a model with additional lag terms.

From this, a new idea was born which was to include

the lagged conditional variance term as autoregressive terms. This idea was worked out by Tim Bollerslev, who in 1986 published a paper entitled ‘Generalised Autoregressive Conditional Heteroskedasticity’ in Journal of Econometrics, starting a new family of GARCH models.

A high ARCH order is needed to capture the dynamic behaviour of conditional variance. The Generalized ARCH (GARCH) model of Bollerslev (1986) fulfils this requirement as it is based on an infinite ARCH specification which reduces the number of estimated parameters from infinity to two. The general GARCH (p, q) model has the following form:

$$Y_t = \alpha + \beta X_t + \mu_t$$

$\mu_t \sim \text{iid } N(0, \sigma^2)$

In that case, the GARCH (p, q) model (where p is the order of the GARCH terms  $\sigma_t^2$  and q is the order of the ARCH terms  $\mu^2$  is given by:

$$\sigma_t^2 = \alpha_0 + \alpha_1 \mu_{t-1}^2 + \dots + \alpha_q \mu_{t-q}^2 + \beta_1 \sigma_{t-1}^2 + \dots + \beta_p \sigma_{t-p}^2$$

In summation form, the above equation can be written as:

$$\sigma_t^2 = \alpha_0 + \sum_{i=1}^q \alpha_i \mu_{t-i}^2 + \sum_{i=1}^p \beta_i \sigma_{t-i}^2$$

Where:

$\sigma_t^2$  = Conditional variance at time t

iid  $N(0, \sigma^2)$  = Ideally, independently distributed with a zero mean and constant variance  $\sigma^2$

$\mu_t$  = Disturbance term

The above can be describe as, the value of the variance scaling parameter  $\sigma^2$  now depends both on the past values of the shocks (the q MA terms), which are captured by the lagged squared residual terms, and on past values of itself (the p AR terms), which are captured by lagged  $\sigma^2$  terms.

It is clear from the last equation that for p=0, the model reduces to ARCH (q). The simplest form of GARCH (p, q) is the GARCH (1, 1) model, which has the following form:

$$Y_t = \alpha + \beta X_t + \mu_t \tag{C}$$

$$\sigma_t^2 = h_t = \gamma_0 + \gamma_1 \mu_{(t-1)}^2 + \gamma_2 \mu_{t-1}^2 \tag{D}$$

$\mu_t \sim \text{iid } N(0, \sigma^2)$

Where equation (C) is called the mean equation and equation (D) is called the variance equation. This model specification usually performs very well and is easy to estimate because it has only three unknown parameters.

**RESEARCH ANALYSIS**

The data regarding financial market consists of daily closing price, expressed in local currency (rupees), of the KSE-100 index from January 1, 2000 to December 31, 2010. The daily return series has been generated by using the following equation:

$$R_t = \ln \left( \frac{KSE_t}{KSE_{t-1}} \right)$$

Where  $R_t$  is the return for day 't' and  $KSE_t$  and  $KSE_{t-1}$  represents the closing value of the KSE-100 index for day 't' and 't-1' respectively and 'ln' stands for Natural Log.

**Descriptive Statistics**

Table 1 show the average daily returns in percentage terms in the KSE 100 index are 0.05%. The maximum daily return in the Karachi stock market is 8.5% whereas the maximum loss in one day is 7.7%. Study use two independent dummy variable to capturing the impact of regime and terrorism in Pakistan on the volatility of Pakistani stock returns.

**TABLE 1**  
**Descriptive Statistics**

|        | <b>RETURN</b> | <b>REGIME</b> | <b>TERROR</b> |
|--------|---------------|---------------|---------------|
| Mean   | 0.0005        | 0.7467        | 0.3937        |
| Median | 0.0000        | 1.0000        | 0.0000        |
| Max    | 0.0851        | 1.0000        | 1.0000        |
| Min    | -0.0774       | 0.0000        | 0.0000        |

**Testing of ARCH Effect**

Table 2 show AR (1) model or one can say for simplicity as the mean equation for KSE-100 index using simple OLS. The results of table 2 do not interest by themselves because these just show the presence of auto regression in the data, not the ARCH effects. The significant AR (1) coefficient in table 2 indicates the presence of significant correlation in returns of the markets, suggesting that future returns could be predicted based on the past returns.

**TABLE 2**  
**A simple AR (1) model for the KSE-100**

Dependent Variable: R\_KSE  
Method: Least Squares

| <b>Variable</b> | <b>Coefficient</b> | <b>Std. Error</b> | <b>t-Statistic</b> | <b>Prob.</b> |
|-----------------|--------------------|-------------------|--------------------|--------------|
| C               | 0.000498           | 0.000204          | 2.446672           | 0.0145       |
| R_KSE(-1)       | 0.034959           | 0.015853          | 2.205171           | 0.0275       |

**TABLE 3**

**Testing for ARCH (1) effects in the KSE-100**

Heteroskedasticity Test: ARCH

|               |          |                     |       |
|---------------|----------|---------------------|-------|
| F-statistic   | 189.2076 | Prob. F(1,3973)     | 0.000 |
| Obs*R-squared | 180.6974 | Prob. Chi-Square(1) | 0.000 |

The result of table 3 show the presence of ARCH effects in the data or more specifically to check the conditional heteroskedasticity. The Obs\*R-squared is 180.6974 and has the probability limit of 0.000. This clearly suggests that we reject the null hypothesis of homoskedasticity or can say that the ARCH (1) effects are present.

**The ARCH (1) model**

**TABLE 4**  
**ARCH (1) model**

Dependent Variable: RESID<sup>2</sup>  
Method: Least Squares

| <b>Variable</b>         | <b>Coefficient</b> | <b>Std. Error</b> | <b>t-Statistic</b> | <b>Prob.</b> |
|-------------------------|--------------------|-------------------|--------------------|--------------|
| C                       | 0.000129           | 7.31E-06          | 17.66385           | 0.000        |
| RESID <sup>2</sup> (-1) | 0.213094           | 0.015492          | 13.75528           | 0.000        |

Table 4 shows the results of the ARCH (1) model with explanatory variable (Terrorism and Regime in Pakistan) in the variance equation. From table 4, the result shows that terror has significantly impact on volatility of stock market. In ARCH (1), mean equation show that current return can be predicted by past prices.

**TABLE 5**  
**An ARCH (1) with explanatory variable in the Variance equation**

Method: ML - ARCH (Marquardt) - Normal distribution

| <b>Variable</b> | <b>Coefficient</b> | <b>Std. Error</b> | <b>t-Statistic</b> | <b>Prob.</b> |
|-----------------|--------------------|-------------------|--------------------|--------------|
| C               | 0.000701           | 0.000188          | 3.72453            | 0.0002       |
| R_KSE(-1)       | 0.042357           | 0.019028          | 2.226              | 0.0260       |

Variance Equation

| <b>Variable</b>        | <b>Coefficient</b> | <b>Std. Error</b> | <b>t-Statistic</b> | <b>Prob.</b> |
|------------------------|--------------------|-------------------|--------------------|--------------|
| C                      | 0.000128           | 1.54E-06          | 83.01755           | 0.0000       |
| RESID(-1) <sup>2</sup> | 0.214855           | 0.017348          | 12.38496           | 0.0000       |

**The GARCH (1,1) model**

Table 6 present the results for a GARCH (1, 1) model. The results of GARCH are presented in Table 1.3. The insignificant value of R\_KSE(-1) show that in GARCH (1,1) the current returns cannot be predicted by past prices. From the variance equation, it is seen that current volatility can significantly predicted by past price behaviors and GARCH(-1) term show that phenomena of

predicting past volatility is persistent over the period of time. It is also seen that explanatory variables terrorism and political instability both have significant impact of the price volatility.

**TABLE 6**

**A GARCH (1, 1) model with explanatory variable in the Variance equation**

Dependent Variable: R\_KSE

Method: ML - ARCH (Marquardt) - Normal distribution

$$\text{GARCH} = C(3) + C(4)*\text{RESID}(-1)^2 + C(5)*\text{GARCH}(-1) + C(6)*\text{REGIME} + C(7)*\text{TERROR}$$

| Variable  | Coefficient | Std. Error | t-Statistic | Prob.  |
|-----------|-------------|------------|-------------|--------|
| C         | 0.000852    | 0.00017    | 4.995829    | 0.0000 |
| R_KSE(-1) | 0.020403    | 0.016793   | 1.214957    | 0.2244 |

**Variance Equation**

| Variable               | Coefficient | Std. Error | t-Statistic | Prob.   |
|------------------------|-------------|------------|-------------|---------|
| C                      | 4.30E-06    | 3.64E-07   | 11.79342    | 0.00000 |
| RESID(-1) <sup>2</sup> | 0.093076    | 0.005121   | 18.17363    | 0.00000 |
| GARCH(-1)              | 0.876677    | 0.005362   | 163.4854    | 0.00000 |
| REGIME                 | 1.51E-06    | 2.38E-07   | 6.351193    | 0.00000 |
| TERROR                 | -1.25E-06   | 4.23E-07   | -2.957655   | 0.00310 |

**A TGARCH model**

TGARCH (Threshold GARCH) model is used to capture asymmetric behavior in the stock market in terms of negative and positive shocks. For this purpose, it simply adds multiplicative dummy variable into the variance equation to check whether there is statistically significant difference in the behavior of bad and good news.

Table 7 represents TGARCH (1,1) model for the KSE-100. The results of the TGARCH (1,1) showed that the coefficient of RESID(-1)<sup>2</sup>\*(RESID (-1) <0) term is highly statistically significant (significance level is 5%) and positive which indicate that bad news are creating more volatility in stock market than good news.

The significant value of R\_KSE(-1) show that in TGARCH (1,1) the current returns can be predicted by past stock prices. From the variance equation, it is seen that current volatility can significantly predicted by past price behaviors and GARCH(-1) term show that phenomena of predicting past volatility is persistent over the period of time. It is also seen that explanatory variables terrorism and political instability both have significant impact of the price volatility.

**TABLE 7**

**A TGARCH (1,1) model for the Returns of KSE-100 with an explanatory variable in the variance equation**

Dependent Variable: R\_KSE

Method: ML - ARCH (Marquardt) - Normal distribution

$$\text{GARCH} = C(3) + C(4)*\text{RESID}(-1)^2 + C(5)*\text{RESID}(-1)^2 * (\text{RESID}(-1) < 0) + C(6)*\text{GARCH}(-1) + C(7)*\text{TERROR} + C(8)*\text{REGIME}$$

| Variable  | Coefficient | Std. Error | t-Statistic | Prob.  |
|-----------|-------------|------------|-------------|--------|
| C         | 0.000681    | 0.000171   | 3.984386    | 0.0001 |
| R_KSE(-1) | 0.032116    | 0.017003   | 1.888851    | 0.0500 |

**Variance Equation**

| Variable                              | Coefficient | Std. Error | t-Statistic | Prob.   |
|---------------------------------------|-------------|------------|-------------|---------|
| C                                     | 4.96E-06    | 4.00E-07   | 12.40635    | 0.00000 |
| RESID(-1) <sup>2</sup>                | 0.05152     | 0.005218   | 9.873138    | 0.00000 |
| RESID(-1) <sup>2</sup> *(RESID(-1)<0) | 0.078549    | 0.007756   | 10.12775    | 0.00000 |
| GARCH(-1)                             | 0.872875    | 0.005623   | 155.2226    | 0.00000 |
| TERROR                                | -1.76E-06   | 4.41E-07   | -3.996234   | 0.00010 |
| REGIME                                | 1.79E-06    | 2.45E-07   | 7.326947    | 0.00000 |

**An EGARCH model**

The ARCH/GARCH model may not capture the volatility clustering observed in financial returns data when shocks to the volatility are not symmetric. Table 8 is showing the results of exponential general autoregressive conditional heteroskedastic (EGARCH) specification which was firstly proposed by Nelson (1991).

The results of the EGARCH (1, 1) shows that the coefficient of RESID (-1)/@SQRT (GARCH (-1)) term is highly statistically significant (significance level is 5%) and negative. Therefore for the KSE-100 index bad news has larger effects on the volatility of the return of KSE-100. From both of the TGARCH and EGARCH results, it can be reveal that for the return of KSE-100 there are asymmetries in the news especially bad news has a larger effects on the volatility of series than good news.

**TABLE 8**

**An EGARCH (1,1) model for the KSE-100 100 with an explanatory variable in the variance equation**

Dependent Variable: R

Method: ML - ARCH (Marquardt) - Normal distribution

$$\text{LOG}(\text{GARCH}) = C(3) + C(4)*\text{ABS}(\text{RESID}(-1)/\text{SQRT}(\text{GARCH}(-1))) + C(5)*\text{RESID}(-1)/\text{SQRT}(\text{GARCH}(-1)) + C(6)*\text{LOG}(\text{GARCH}(-1)) + C(7)*\text{REGIME} + C(8)*\text{TERROR}$$

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C        | 0.001024    | 0.000131   | 7.795457    | 0.0000 |
| R(-1)    | 0.033195    | 0.015826   | 2.097497    | 0.0359 |

## Variance Equation

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C(3)     | -0.565423   | 0.026895   | -21.02359   | 0.0000 |
| C(4)     | 0.197343    | 0.008141   | 24.24054    | 0.0000 |
| C(5)     | -0.075927   | 0.005518   | -13.7608    | 0.0000 |
| C(6)     | 0.950779    | 0.002801   | 339.4778    | 0.0000 |
| C(7)     | 0.006068    | 0.003516   | 1.725906    | 0.0844 |
| C(8)     | -0.022481   | 0.004402   | -5.107116   | 0.0000 |

## CONCLUSIONS AND RECOMMENDATIONS

This study analyzed the impact of terrorist related activities and political instability on the return and volatility dynamics of Karachi Stock Exchange (KSE) in Pakistan using daily time series data from January 1, 2000 to December 31, 2010.

In order to find whether terrorist activities and political instability have a statistically significant effect ARCH family models were used. Since, in ARCH / GARCH model a positive shock will have exactly the same effect in the volatility of the series as a big negative shock of the same magnitude. However, for equities it has been observed that negative shocks (or bad news) in the market have a larger impact on the volatility than a positive shocks (or bad news) of the same magnitude. To capture the asymmetries in terms of negative and positive shocks, threshold GARCH (TGARCH) model was used. To confirm the results of TGARCH model, this study has analyzed the results of exponential GARCH (EGARCH) model which was firstly developed by Nelson (1991). Results of ARCH/GARCH family showed that current market return can be predicted significantly with the help of past stock prices. It also showed that current stock market volatility can be significantly predicted with the past price volatility and GARCH(1,1) model showed that predicted volatility is persistent in nature. It can also draw asymmetric price behavior pattern in the stock market through TGARCH and EGARCH reconfirms the results.

The antiphon of the equity market of Pakistan to terrorist activities and political instability provide clues to investors and speculators in Pakistan to adjust their positions when such events occur and help regulatory authorities take actions to ensure that adequate liquidity is provided to adjust market into normal conditions.

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# AN EMPIRICAL EXAMINATION OF LINKAGES AMONG KARACHI STOCK EXCHANGE AND EMERGING EQUITY MARKETS OF ASIA PACIFIC REGION

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## ABSTRACT

This study analyses weekly stock indices for ten equity markets of Asia Pacific region for the period January 1, 2001 to June 30, 2013 to explore the long run relationship among Karachi stock exchange and Asia Pacific equity markets. These markets include Hong Kong, Singapore, Indonesia, Korea, Malaysia, Pakistan, Taiwan, India and China. Multivariate Cointegration and VAR procedures are performed to observe the long term dynamic relationships among these markets. Results show that Karachi stock exchange is best performing market for the period under study as it offers the highest return at relatively low risk level. Multivariate Cointegration analysis provides an evidence of a single cointegrating equation among the markets studied. The results of the bivariate Cointegration tests indicate that the Pakistani stock market is not individually integrated with any of the emerging Asia Pacific markets except Hong Kong and Taiwan. Granger causality tests reveal a casual flow from Korea, Hong Kong, Taiwan and Indian indices to Karachi stock exchange index. This unidirectional causality is indicator of lead-lag relationship amongst them. Variance decomposition analysis shows that Karachi Stock Exchange (KSE) is exogenous as most of its vibrations are explained by its own unique shocks. Above results explain that international investors can derive the benefits of portfolio diversification and any volatility in emerging Asia Pacific markets does not expose the international investors in Karachi stock exchange to any immediate threat of spill over effect.

## INTRODUCTION

Financial world is reshaping itself. Globalization has changed the entire landscape of financial world. Equity markets for developing and developed markets are now becoming more closely interlinked. These markets have unique feature and country characteristics. Volume of empirical literature on the topic is an indicator of the fact that researcher has shown strong interest in the linkages among international stock markets and this interest has increased considerably after the liberalization of financial regulations in developed as well as developing countries. Technological developments in communications, trading systems, financial; innovation and service proliferation have created more opportunities for international portfolio investments. The interest is result of globalization which is accelerating the process of integration of international economies and financial markets.

In recent years, the new emerging equity markets have attracted the attention of international fund

managers as an opportunity for portfolio diversification. This new dimension has intensified the interest of academics in exploring international market linkages. Thus, an analysis of the long-run co-movement of national stock prices and their short-term temporal relationships has taken a focus with reference to international portfolio diversification. So objective of the study is to understand the dynamic inter-linkages between Karachi stock exchange and the equity markets of Asia Pacific region. These countries include Hong Kong, Singapore, Indonesia, Korea, Malaysia, Pakistan, Taiwan, India and China. If these markets are independent then investors in these countries can invest to diversify their portfolio and the authorities in these countries need not worry about any contagious effects.

Paper is divided into four sections. Section 2 gives an overview of recent literature on the topic. Section 3 presents the data and methodology employed in the paper. Section 4 reports empirical results of various tests conducted. Section 5 concludes the paper and provides

policy implications of the result.

## LITERATURE REVIEW

Literature on inter linkages of equity markets across the globe is divided into two broader groups. Some studies used the ARCH/GARCH models to examine the contagious effects regionally or globally. Here emphasis is on to analyze the spillover/contagious effects of a shock from one country to another. Other group tested the interdependence of equity markets by using cointegration analysis based on vector auto regressive frame work. We are employing second approach to test the interdependence among equity markets of Asia pacific region so literature review contains only those studies that have used this approach to test the cointegration among national stock exchanges.

Glezakos, Merika, and Kaligosfiris (2007) examined the short and long-run relationships between major world financial markets and the Greek stock exchange for the period 2000-2006 using monthly data. Financial markets studied include USA, Japan, England, France and Italy, Belgium, Holland and Greece. The research methodology include testing for stationarity, Cointegration and Granger Causality in VAR model. The results showed the dominance of the USA equity market and the strong influence of DAX and FTSE on all other markets of the sample.

Wong, Penm, Terrell, and Lim (2004) investigate the relationship between the major developed markets of United States, United Kingdom and Japan with the emerging markets of Malaysia, Thailand, Korea, Taiwan, Singapore and Hong Kong. They found that Singapore and Taiwan were cointegrating with Japan while Hong Kong was cointegrating with the United States and the United Kingdom. No long run equilibrium relationship between Malaysia, Thailand and Korea and the developed markets of the United States, the United Kingdom and Japan was found. They also discovered that interdependence between most of the developed and emerging markets was on rise since famous Stock Market Crash of 1987 and that interdependence had significantly increased after financial crisis of East Asian countries in 1997. Therefore possibility of international portfolio diversification to minimize risk had significantly decreased after the Stock Market Crash of 1987.

Ibrahim (2005) studied the international linkage of the Jakarta equity market and evaluated the impact of the Asian crisis over the long run and short-run dynamic interactions among the equity markets of Indonesia and equity markets of two highly developed markets of the US and Japan. He also explored the long term relationship among Philippines, Thailand, Singapore and Malaysia which are major ASEAN markets. He used monthly

data for the period; January 1988 to December 2003 and applied cointegration analysis and vector autoregressive technique. Long-run equilibrium relationship between Indonesia and developed markets of USA and Japan and south East Asian markets was examined by using cointegration tests suggested by Johansen and Juselius. Results revealed that Jakarta equity market did not share a long run relation with other South East Asian markets and equity markets of US and Japan. The equity market of Indonesia was found segmented from south East Asian Equity Markets. It was also found that US market exerts pressure on ASEAN markets. Vector error correction model and impulse response functions were used to examine the short-run causal nexus. Results provided evidence about the absence of short run interactions between the Jakarta stock exchange and other regional markets. Therefore Indonesian equity market offered an opportunity of global portfolio diversification. The study also cofirmed the stability of results in three different sample periods i.e , pre-crisis sample period, post crisis sample period and entire sample period.

Fazal and Saidi (2000) investigated the integration of Pakistani equity market with equity markets of USA, UK, France, Germany, Japan, Singapore and Hong Kong by using weekly General Price Index for KSE for the period Jan 1988 to December 1993. They used the Cointegration analysis, correlation analysis and error correction model. Correlation analysis showed low level of correlation between Pakistani market and other markets. Cointegration analysis suggested no long term relationship among the equity markets. Result provided evidence about existence of long term relationship among Karachi stock market and equity markets of US, UK and Japan. In order to capture the short term dynamics vector error correction model was used but results were not in line with long term behavior. Furthermore, no causal relationship was identified among equity markets of Pakistan ,UK and Japan markets. However , US market is wielding some effect on Pakistani market.

Roca (1999) investigated the price linkages between the equity markets of Australia and that of the U.S., U.K., Japan, Hong Kong, Singapore, Taiwan and Korea using weekly stock market data. He used Johansen Cointegration technique to determine the long run relationship between the price levels of the above countries and employed Granger causality test to determine the short run relationships. His results indicated no Cointegration between Australia and other markets. However, the Granger causality test revealed that Australia was significantly linked with the U.S. and the U.K.

Ghosh, Saidi, and Johanson(1999) examined the disaster of Asian Pacific stock markets by employing the vector autoregressive framework. Natural logarithm of

daily closing prices of stock market indices of Malaysia, India, Thailand, Philippine, Hong Kong, Korea, Taiwan, Singapore, Indonesia, US and Japan were tested to see the long term relationship by using Cointegration techniques. Results suggested that US market has unique relationship with Indian, Korean and Malaysian markets. Hong Kong market was significantly influenced by US market. However markets of Singapore, Indonesia and Philippine were related to Japan. Markets of Taiwan and Thailand was not found cointegrated.

## METHODOLOGY

### Data Description

The study uses weekly indices of equity markets of Asian markets; namely Pakistan, Malaysia, Indonesia, India, China, Taiwan, Korea, Hong Kong, Australia and Thailand. Specifically, the stock indices under study are the All Ordinary Composite Stock Index (Australia), KS11 Stock Index (Korea), the Hang Seng Stock Composite Index (Hong Kong), the KSE 100 Share Index (Pakistan), the Kula Lumpur Composite Stock Index (Malaysia), the Jakarta Composite Stock Index (Indonesia), the Shanghai Stock Exchange Index (China), the Taiwan stock Index (Taiwan), and the Bombay Stock Exchange Index (India) and Strait Times index (Singapore). All stock index prices are taken from yahoo finance. The data cover the period from Jan 1, 2001 through June 30, 2013.

The continuously compounded rate of return is calculated by using the following formula

$$R_t = \ln(P_t / P_{t-1})$$

### Methodology

Cointegration analysis with Vector auto regression framework is used to test the co movement of equity prices in different stock exchanges across the states. This study tests the dynamic interaction among the Karachi stock exchange and equity markets of emerging equity markets of Asia pacific region by using (i) Descriptive statistics, (ii) Correlation matrix, (iii) Cointegration tests, (iv) Granger causality test and (iv) variance decomposition analysis. The Cointegration technique and a vector auto regression model are used to study the long-run and short-run interactions.

Descriptive statistics provides information about mean return, skewness, kurtosis and risk of equity markets. Correlation analysis reports degree of association among variables. Cointegration analysis requires that time series should be integrated of same order so index series is examined to test the stationarity

of data. The augmented Dickey-Fuller (ADF) test is used on the market index levels and their first differences to test for unit roots in the data. Dickey-Fuller tests assume that the errors terms independently and identically distributed. This condition may not be true in some case so Phillip-Perron test is also used as it permits the error terms to be weakly dependent and heterogeneously distributed.

If the market index series are integrated of the same order, then it is necessary to investigate that linear combination is stationary. Two or more non stationary time series are cointegrated if a linear combination of these is stationary. Cointegration tests are conducted by means of the method developed by Johansen (1988), and Johansen and Juselius (1990). The Johansen method applies the maximum likelihood procedure to determine the presence of cointegrating vectors in nonstationary time series. The Johansen maximum likelihood approach is based on the concept of vector autoregressive framework. Johansen and Juselius propose two likelihood ratio tests for the determination of the number of cointegrated vectors. One is the maximal eigenvalue test which evaluates the null hypothesis that there are at most  $r$  cointegrating vectors against the alternative of  $r + 1$  cointegrating vectors. The maximum eigen value statistic is given by,

$$\lambda_{\max} = -T \ln(1 - \lambda_{r+1})$$

where  $\lambda_{r+1}, \dots, \lambda_n$  are the  $n-r$  smallest squared canonical correlations and  $T =$  the number of observations.

The second test is based on the trace statistic which tests the null hypothesis of  $r$  cointegrating vectors against the alternative of  $r$  or more cointegrating vectors. This statistic is given by

$$\lambda_{\text{trace}} = -T \sum \ln(1 - \lambda_i)$$

In order to apply the Johansen procedure, a lag length must be selected for the VAR. Akaike Information Criterion (AIC) is used to select the number of lags required in the cointegration test. If the market index series provide evidence cointegrating relationship then equity market will have a tendency to move together in the long run. Granger (1986); Engle and Granger (1987) explain that if two variables are cointegrated then Granger-causality must exist in at least one direction. As index series may share ordinary stochastic trends so dependent variables in the vector error correction model must be Granger-caused by lagged values of the error correction terms. Therefore, joint F-test can be applied to coefficients of each explanatory variable to explore the temporal Granger-causality among variables.

## EMPIRICAL RESULTS

Table 1 presents the descriptive statistics for weekly stock returns for the 10 emerging equity markets from Asia Pacific region i.e Pakistan, Malaysia, Indonesia, India, China, Taiwan, Korea, Hong Kong, Australia and Singapore

**TABLE 1**  
**Descriptive Statistics**

|      | Mean    | Std. Dev. | Kurtosis | Skewness | Min     | Max    |
|------|---------|-----------|----------|----------|---------|--------|
| KSE  | 0.0040  | 0.0338    | 5.1885   | -1.2634  | -0.2010 | 0.1092 |
| AOrd | 0.0006  | 0.0220    | 7.8104   | -1.2663  | -0.1771 | 0.0810 |
| JKSE | 0.0038  | 0.0332    | 5.8882   | -1.0459  | -0.2404 | 0.1159 |
| KS   | 0.0018  | 0.0345    | 4.7005   | -0.6701  | -0.2293 | 0.1703 |
| TW   | 0.0006  | 0.0319    | 3.0874   | -0.1567  | -0.1308 | 0.1832 |
| HSE  | 0.0005  | 0.0318    | 2.6443   | -0.2370  | -0.1782 | 0.1172 |
| KLSE | 0.0015  | 0.0196    | 4.4016   | -0.8309  | -0.1145 | 0.0665 |
| STI  | 0.0007  | 0.0276    | 6.1986   | -0.5409  | -0.1647 | 0.1532 |
| BSE  | 0.0024  | 0.0335    | 2.6333   | -0.4896  | -0.1738 | 0.1317 |
| SSE  | -0.0001 | 0.0342    | 2.0432   | 0.0891   | -0.1490 | 0.1394 |

A careful examination of above statistics reveals that Karachi stock exchange offers the highest return of 0.4% per week whereas Indonesian stock market and Indian stock markets stand second and third offering 0.38 % and 0.24% weekly average return respectively. Korean stock markets show highest risk with a standard deviation of 0.0345. Chinese stock market stands second with reference to risk. Highest return is earned by Korean market in one week and highest loss is reported by Indonesian market in one week. With reference to Pakistani equity market, it can be said that Karachi stock exchange offers the highest return for a given level of risk. Results are in line with general assertion about Karachi stock market. Moreover, Returns are generally negatively skewed.

Table 2 shows the result of correlation analysis among equity markets of Pakistan, Malaysia, Indonesia, India, China, Taiwan, Korea, Hong Kong, Australia Thailand.

**TABLE 2**  
**Correlation Analysis**

|      | KSE    | AOrd   | JKSE   | KS     | TW     | HSE    | KLSE   | STI    | BSE   |
|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| AOrd | 0.1646 | 1      |        |        |        |        |        |        |       |
| JKSE | 0.1162 | 0.4570 | 1      |        |        |        |        |        |       |
| KS   | 0.1785 | 0.5836 | 0.4359 | 1      |        |        |        |        |       |
| TW   | 0.1580 | 0.4429 | 0.3931 | 0.6304 | 1      |        |        |        |       |
| HSE  | 0.1486 | 0.6877 | 0.4587 | 0.6512 | 0.5462 | 1      |        |        |       |
| KLSE | 0.1410 | 0.4519 | 0.4789 | 0.4753 | 0.3979 | 0.5334 | 1      |        |       |
| STI  | 0.1784 | 0.6910 | 0.4844 | 0.6673 | 0.5695 | 0.7761 | 0.5634 | 1      |       |
| BSE  | 0.1533 | 0.5407 | 0.4122 | 0.5315 | 0.4266 | 0.6037 | 0.4312 | 0.6277 | 1     |
| SSE  | 0.0733 | 0.2292 | 0.2162 | 0.2190 | 0.1596 | 0.3234 | 0.2734 | 0.2274 | 0.167 |

Above Table 2 shows that Karachi stock exchange is not correlated with the equity markets of the Asian countries. Australian equity market appears to be strongly correlated with equity markets of Korea, Hong Kong and Thailand. Indian stock market is also correlated with equity markets of Australia, Korea, Hong Kong and Thailand. On the other hand, Chinese stock market is weakly correlated with far eastern equity markets. However some correlation is present among equity markets of far eastern countries it may be due to free flow of fund within region and economic integration of ASEAN.

Table 3 presents the results of unit root analyses. The pre-condition of series being integrated of same order is verified with the Augmented Dickey-Fuller (1981) and Phillips-Perron (1988) tests. The tests are applied to levels and first differences where the model includes a constant and a trend. The appropriate lag lengths are chosen according to AIC- Akaike Information Criterion.

**TABLE 3**  
**Unit Root Analysis**

|                    | ADF Level | ADF 1st Diff | PP Level  | PP 1st Diff |
|--------------------|-----------|--------------|-----------|-------------|
| KSE                | -1.443807 | -21.6852     | -1.305528 | -21.82218   |
| AORD               | -1.487386 | -25.89356    | -1.522379 | -25.89659   |
| JKSE               | -0.686235 | -12.31563    | -0.641139 | -26.64114   |
| KS11               | -1.506157 | -27.43493    | -1.487252 | -27.43334   |
| TW                 | -1.884692 | -26.11874    | -2.137838 | -26.23327   |
| HIS                | -1.216137 | -25.68421    | -1.335846 | -25.75246   |
| KLSE               | -0.488739 | -23.23151    | -0.705731 | -23.55487   |
| STI                | -1.041754 | -24.26845    | -1.263718 | -24.47725   |
| BSE                | -0.854038 | -15.16911    | -0.81573  | -25.03991   |
| SSE                | -1.136944 | -23.73611    | -1.396518 | -24.11148   |
| 1% Critical Value  | -3.440181 | -3.440181    | -3.440181 | -3.440181   |
| 5% Critical Value  | -2.865769 | -2.865769    | -2.865769 | -2.865769   |
| 10% Critical Value | -2.56908  | -2.56908     | -2.56908  | -2.56908    |

The null hypothesis of a unit root is not rejected for the data series as calculated values are more than tabulated values and it is rejected for the first differenced data as calculated values are less than critical values at 5% level of significance. As indices series are difference stationary so all series are integrated of order one.

As all series are integrated of order one, so bivariate and multivariate Cointegration analysis of Johansen is performed. Analyses are made under the model with a constant and linear trend in the cointegration vector and the optimal lags are chosen to minimize AIC. Table 4 presents the results of the Johansen multivariate Cointegration analysis.

**TABLE 4**  
**Multivariate Cointegration Analysis**  
**Trace Statistics**

| No. of CE(s) | Eigen value | Statistic | Critical Value | Prob.** |
|--------------|-------------|-----------|----------------|---------|
| None *       | 0.10        | 260.44    | 239.24         | 0.00    |
| At most 1    | 0.09        | 195.16    | 197.37         | 0.06    |
| At most 2    | 0.07        | 136.52    | 159.53         | 0.44    |
| At most 3    | 0.04        | 92.15     | 125.62         | 0.82    |
| At most 4    | 0.04        | 64.21     | 95.75          | 0.88    |
| At most 5    | 0.02        | 39.61     | 69.82          | 0.95    |
| At most 6    | 0.02        | 24.44     | 47.86          | 0.93    |
| At most 7    | 0.01        | 12.53     | 29.80          | 0.91    |
| At most 8    | 0.01        | 5.49      | 15.49          | 0.75    |
| At most 9    | 0.00        | 1.38      | 3.84           | 0.24    |

Trace test indicates 1 cointegrating equation at the 0.05 level. Max Eigen value test also confirms the same results. Results are also robust to selection of test type. A bivariate analysis for identification of pair wise long term relation ship among sock market indices has also been performed and results are stated in Table 5 below.

**TABLE 5**  
**Bivariate Analysis Cointegration Analysis**

| Hypothesized No. of CE(s) | Eigen value | Trace Statistic | Critical Value0.05 | Prob. |
|---------------------------|-------------|-----------------|--------------------|-------|
| <b>KSE &amp; AORD</b>     |             |                 |                    |       |
| None                      | 0.006       | 6.277           | 15.495             | 0.663 |
| At most 1                 | 0.003       | 2.202           | 3.842              | 0.138 |
| <b>KSE&amp; JKSE</b>      |             |                 |                    |       |
| None                      | 0.009       | 6.837           | 15.495             | 0.597 |
| At most 1                 | 0.001       | 0.854           | 3.841              | 0.356 |
| <b>KSE&amp; KS11</b>      |             |                 |                    |       |
| None                      | 0.008       | 7.520           | 15.495             | 0.518 |
| At most 1                 | 0.003       | 2.121           | 3.841              | 0.145 |
| <b>KSE&amp; TW</b>        |             |                 |                    |       |
| None*                     | 0.021       | 15.947          | 15.495             | 0.043 |
| At most 1                 | 0.003       | 2.080           | 3.841              | 0.149 |
| <b>KSE&amp; HSI</b>       |             |                 |                    |       |
| None*                     | 0.021       | 16.427          | 15.495             | 0.036 |
| At most 1                 | 0.004       | 2.554           | 3.841              | 0.110 |
| <b>KSE &amp; KLSE</b>     |             |                 |                    |       |
| None                      | 0.012       | 8.003           | 15.495             | 0.465 |
| At most 1                 | 0.001       | 0.506           | 3.841              | 0.477 |
| <b>KSE &amp; STI</b>      |             |                 |                    |       |
| None                      | 0.017       | 13.201          | 15.495             | 0.108 |
| At most 1                 | 0.003       | 1.995           | 3.841              | 0.158 |
| <b>KSE &amp; BSE</b>      |             |                 |                    |       |
| None                      | 0.014       | 11.123          | 15.495             | 0.204 |

|                      |       |       |        |       |
|----------------------|-------|-------|--------|-------|
| At most 1            | 0.003 | 1.772 | 3.841  | 0.183 |
| <b>KSE &amp; SSE</b> |       |       |        |       |
| None                 | 0.005 | 5.630 | 15.495 | 0.739 |
| At most 1            | 0.004 | 2.338 | 3.841  | 0.126 |

Result of bivariate Cointegration analysis of Karachi stock exchange with Asia Pacific Markets indicate that trace statistics is less than the 5% critical value except Taiwan and Hong Kong stock exchanges. This indicates that KSE index is not pair wise cointegrated with AORD, JKSE, KS11, KLSE, STI, SSE and BSE of Indian stock exchange index. Above results suggest that KSE do not have a long-run equilibrium with Asia Pacific equity markets and thus offers an opportunity for portfolio diversification. The results of the bivariate cointegration tests indicate very clearly that the Pakistani stock market is not individually integrated with any of the far eastern markets, as the existence of a cointegrating relation between the Pakistani and any other index is strongly rejected from our tests. However, when the group of markets is considered together, we find that for “up to 4 weeks” lag intervals, there is evidence of a single cointegrating equation between all the markets studied. According to granger representation theorem, if markets are cointegrated, then granger causality must exist at least in one direction. However, Alexander (2001) points out that cointegration are not a pre-condition for lead-lag relationship and other common factors between time series can result in causality. Granger causality tests are employed to the first differences of indices to verify if there has been a causality running from one market to another in the short-run. The optimal lag length is set according to Akaike information criterion. Table 6 provides the results of pair wise analysis. Significant probability values are indicator of rejection of the null hypothesis.

**TABLE 6**  
**Granger Causality Test**

| Null Hypothesis:                  | Obs | F-Stat | Prob. |
|-----------------------------------|-----|--------|-------|
| RAORD does not Granger Cause RKSE | 649 | 2.364  | 0.095 |
| RKSE does not Granger Cause RAORD |     | 0.805  | 0.448 |
| RJKSE does not Granger Cause RKSE | 649 | 0.192  | 0.825 |
| RKSE does not Granger Cause RJKSE |     | 2.032  | 0.132 |
| RKS does not Granger Cause RKSE   | 649 | 2.705  | 0.068 |
| RKSE does not Granger Cause RKS   |     | 2.217  | 0.110 |
| RTW does not Granger Cause RKSE   | 649 | 6.592  | 0.002 |
| RKSE does not Granger Cause RTW   |     | 6.048  | 0.003 |
| RHSE does not Granger Cause RKSE  | 649 | 2.888  | 0.056 |

|                                   |     |       |       |
|-----------------------------------|-----|-------|-------|
| RKSE does not Granger Cause RHSE  |     | 0.547 | 0.579 |
| RKLSE does not Granger Cause RKSE | 649 | 0.710 | 0.492 |
| RKSE does not Granger Cause RKLSE |     | 1.545 | 0.214 |
| RSTI does not Granger Cause RKSE  | 649 | 3.520 | 0.030 |
| RKSE does not Granger Cause RSTI  |     | 0.885 | 0.413 |
| RBSE does not Granger Cause RKSE  | 649 | 3.315 | 0.037 |
| RKSE does not Granger Cause RBSE  |     | 1.265 | 0.283 |
| RSSE does not Granger Cause RKSE  | 649 | 0.744 | 0.476 |
| RKSE does not Granger Cause RSSE  |     | 0.999 | 0.369 |

It is found that HSE, TW, STI and BSE indices “Granger causes” KSE index. This granger causality is unidirectional at the 5% significance level. It means that KSE index follows above markets in the short run and there exists a lead-lag relationship between them. However no granger causality is found with Chinese equity market.

Finally, we conduct variance decomposition analysis to see as to what extent shocks to certain markets are explained by other markets. It provides some further evidence on the patterns of linkages amongst stock markets and enhances our insights about reaction of markets to system wide shocks. It also helps to the pattern of responses propagation over time. Table 7 gives the decomposition of forecast error variance for the variables whereas results for other markets are given in Appendix A.

**TABLE 7**  
**Variance decomposition of KSE**

|    | KSE   | KLSE | KS   | AORD | BSE  | SSE  | HSE  | TW   | STI  | JKSE |
|----|-------|------|------|------|------|------|------|------|------|------|
| 1  | 100.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2  | 95.77 | 0.07 | 1.20 | 0.35 | 0.80 | 0.02 | 0.02 | 1.50 | 0.19 | 0.08 |
| 3  | 93.56 | 0.28 | 1.90 | 0.51 | 0.78 | 0.19 | 1.03 | 1.46 | 0.20 | 0.09 |
| 4  | 93.41 | 0.33 | 1.94 | 0.52 | 0.80 | 0.19 | 1.05 | 1.46 | 0.20 | 0.09 |
| 5  | 93.31 | 0.34 | 1.98 | 0.54 | 0.80 | 0.19 | 1.06 | 1.46 | 0.21 | 0.09 |
| 6  | 93.30 | 0.35 | 1.98 | 0.54 | 0.80 | 0.19 | 1.06 | 1.46 | 0.22 | 0.09 |
| 7  | 93.30 | 0.35 | 1.98 | 0.54 | 0.80 | 0.19 | 1.06 | 1.46 | 0.22 | 0.09 |
| 8  | 93.30 | 0.35 | 1.98 | 0.54 | 0.80 | 0.19 | 1.06 | 1.46 | 0.22 | 0.09 |
| 9  | 93.30 | 0.35 | 1.98 | 0.54 | 0.80 | 0.19 | 1.06 | 1.46 | 0.22 | 0.09 |
| 10 | 93.30 | 0.35 | 1.98 | 0.54 | 0.80 | 0.19 | 1.06 | 1.46 | 0.22 | 0.09 |

The Karachi stock market appear to be the exogenous as most of its shock is explained by its own unique variation. It can be seen that variation in Karachi equity market are greatly self explanative whereas Indian and Chinese markets are exerting some impact on Karachi stock exchange during 2001-2013. Results for remaining countries exhibit that far eastern markets exert significant impact on each other. Indian market

is also found influenced by Hong Kong and Australian markets.

## CONCLUSION

This study focuses on investigating the integration of Karachi stock exchange with equity markets of Asia Pacific region to explore the opportunities for portfolio diversification. Descriptive statistics shows that Karachi stock exchange offers the highest return at relatively low risk level whereas Indonesian stock market is the most risky market. Correlation analysis reveals that Karachi stock exchange is not correlated with the equity markets of the Asian countries. However, Australian equity market appears to be strongly correlated with equity markets of Korea, Hong Kong and Singapore. Similarly, Indian stock market is also correlated with equity markets of Australia, Korea, Hong Kong and Singapore. As correlation analysis is a weak technique so Johansen (1991) cointegration test is employed to weekly stock price indexes of Pakistan, Malaysia, Indonesia, India, and China. Taiwan, Korea, Hong Kong, Australia Thailand on bivariate and multivariate settings. Multivariate Cointegration analysis indicates the presence of long term relationship by indicating the existence of at least one Cointegration equation. As pre requisite to integration analysis, index series are also tested for unit root and these are found to be integrated of order one I(1). Bivariate cointegration tests indicate that Pakistani stock market is not individually integrated with any other Asia Pacific markets except China. Granger causality tests reveal a casual flow from AORD, KS11 and BSE indices to Karachi stock exchange index suggesting a unidirectional lead-lag relationship amongst them. Lower causal relationships that exist between the Karachi stock exchange and emerging equity markets suggest that opportunities for international portfolio diversification among these equity markets still exist. So investors can harvest the benefits of portfolio diversification. Further variance decomposition analysis reveal that Karachi stock market seems to be the exogenous as most of its shock is explained by its own variations. Therefore we can conclude that as Karachi stock market is cointegrated with emerging Asian markets so any financial crisis in Asia Pacific region does not portray any immediate threat of spill over effect to investments in Pakistan.

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