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The Relationship of Personality Factors with Occupational Role Stress and Organizational Commitment Among University Teachers

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This study aimed at exploring the Big-Five Personality Factors – Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness – and their relationship with occupational role stress and organizational commitment among university teachers. Its sample consisted of 500 teachers (250 each from public and private sector universities; of which 282 were men and 218 were women), whose ages ranged from 25 to 75 years, job experience from 1 to 40 years, educational qualifications from Master's to PhD, and income levels from Rs.10,000 to Rs.150,000 per month. The study findings suggest that the teachers of public sector universities experience higher stress and show lower commitment than the teachers of private sector universities. Neuroticism and Conscientiousness are positively correlated with stress and negatively correlated with commitment; while Extraversion, Agreeableness and Openness are negatively correlated with stress and positively correlated with commitment. The study concludes that the Big-Five Personality Factors are linked with occupational role stress and organizational commitment among both public and private sector university teachers.

Keywords: university teachers, education system, Big-Five Personality Factors, occupational role stress, organizational commitment

As the highest abode of learning and enlightenment, universities always take front seat in the education system. The most important segment of a university system is the faculty. University teachers play a vital role in the development and improvement of knowledge, in addition to education and training of students. They have to respond to both the demands of knowledge and the needs of society, besides understanding and coping with the new trends in the education system. Moreover, increasing body of knowledge in each discipline poses an important challenge for university teachers regarding how to encapsulate this enhanced knowledge meaningfully.

Teachers teach not only through their lectures, but also through their actions. Whatever they teach is carried on in the context of an interpersonal setting. The teacher's personality plays a mediating role in the teaching-learning process. The establishment of a genuinely good working relationship between the teacher and the student, thus, requires an interaction not only at the intellectual level but also at the level of personality.

Studies on teacher effectiveness point out that certain personality factors are responsible for developing effective teaching competencies among teachers. Verma (1998) concludes that extraverted people tend to be the most successful teachers and that emotional stability is essential for successful teaching. Effective teaching competencies are directly proportional to the teacher's physical and psychological adjustment in the society, institution and family (Prasad, 2000). A lack

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of balance in the teacher's personality also results in a condition of uncertainty and instability, which restrains learning achievement of the pupil.

A consensus has been evolved around the existence of a hierarchical structure of five broad personality factors (also known as 'Big-Five Personality Factors') that form a continuum along which an individual may be situated. The Big-Five Personality Factors include Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness. These personality factors tend to influence the way a teacher handles a stressful situation.

Teachers differ from each other in their emotional, affective and behavioural functioning in different situations. Teachers' stress is reflected in their students' emotional reaction and adjustment in society. Moreover, stress has significant effects on psychological, mental and physical health of a teacher. Facets of performance – such as creativity, classroom management and implementation of educational techniques – may suffer when a teacher experiences high stress level (Verma, 1998).

The pressures related to human life are increasing with each day. The society is abruptly changing lifestyles, modes, ways, relationship and other psychological variables with increasing effects on teaching at the university level. Consequently, teaching has become a profession with complex work environment that results in occupational role stress (Verma, 1998).

Research has established that high level of occupational role stress results in substantial costs to organizations and the community through health care expenses, loss of productivity and high turnovers (Cooper & Cartwright, 1994). Organizational commitment is another critical variable in understanding employees' work behaviour. Recent findings indicate that low level of organizational commitment among teachers may result in poor student achievement test scores, and high turnover and absenteeism (Cohen & Hudecek, 1993).

Statement of the Problem

In the past, no serious attempt was made in Pakistan to explore teachers' individual differences with respect to their personality factors, and the level and dimensions of occupational role stress and organizational commitment. Thus, little evidence is available to suggest that teachers of public and private sector universities in Pakistan face different problems from each other. Therefore, it is imperative to understand teachers' personality factors in psychological terms.

Objectives

The objectives of the study were to:

1. Analyze the Big-Five Personality Factors – Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness – and explore their relationship with occupational role stress and organizational commitment among public and private sector university teachers.
2. Explore the relationship of variables such as type of university, gender, marital status, educational qualification and income level with the Big-Five Personality Factors, and the level of occupational role stress and organizational commitment among university teachers.
3. Find out the differences in the Big-Five Personality Factors, and the level and dimensions of occupational role stress and organizational commitment among university teachers.

Hypotheses

In order to achieve these objectives, the following hypotheses were formulated:

1. The Big-Five Personality Factors are linked with occupational role stress and organizational commitment.
2. There are differences in the Big-Five Personality Factors, and the level and dimensions of occupational role stress and organizational commitment among public and private sector university teachers.
3. Higher Neuroticism results in higher occupational role stress among university teachers.
4. There is an inverse relationship between occupational role stress and organizational commitment among university teachers.
5. Male university teachers experience higher occupational role stress and show lower organizational commitment than female university teachers.
6. Married university teachers experience higher occupational role stress and show lower organizational commitment than their unmarried counterparts.
7. University teachers holding PhD degrees experience higher occupational role stress and show lower organizational commitment than those university teachers who have lower educational qualifications.
8. University teachers in low income group experience higher occupational role stress and show lower organizational commitment than their counterparts in middle and high income groups.

Methodology

Participants

The sample of the study consisted of 500 teachers (250 each from public and private sector universities, of which 282 were men and 218 were women), whose ages ranged from 25 to 75 years, job experience from 1 to 40 years, educational qualifications from Master's to PhD, and income levels from Rs.10,000 to Rs.150,000 per month. Other specifications of the sample were marital status and type of employment.

Instruments

A stratified random sample of 500 teachers was collected from 20 public and private sector universities of Rawalpindi and Islamabad for the study. Contacts were made with these teachers at their respective workplace. Data were collected using the following instruments:

1. The Mini-Marker Set (MMS) developed by Goldberg (1992) was used to measure personality factors among public and private sector university teachers. The MMS has five subscales, namely Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness. These subscales comprise eight items each with a five-point rating scale where 1 is 'very inaccurate', 2 is 'slightly inaccurate', 3 is 'cannot say anything', 4 is 'slightly accurate' and 5 is 'very accurate'.

2. The University Teachers Stress Inventory (UTSI) developed by Khurshid (2008) was used to measure occupational role stress among university teachers. The UTSI has six subscales, namely Workload Stress Scale, Student-Related Stress Scale, Colleagues-Related Stress Scale, Administration-Related Stress Scale, Personal Factor Results in Stress Scale and Manifestations of Stress Scale. These subscales comprise 54 items with a five-point rating scale where 1 is 'strongly disagree', 2 is 'disagree', 3 is 'undecided', 4 is 'agree' and 5 is 'strongly agree'.

3. The Organizational Commitment Questionnaire (OCQ) developed by Mowday, Steers and Porter (1979) was used to measure organizational commitment among university teachers. The OCQ has three subscales, namely Normative Commitment Scale, Affective Commitment Scale and Continuance Commitment Scale. These subscales comprise five statements each with a five-point rating scale where 1 is 'never', 2 is 'sometimes', 3 is 'often', 4 is 'mostly' and 5 is 'always'.

Data analysis was conducted using Pearson product-moment correlation (PPMC), mean (*M*) and standard deviation (SD).

Results and Discussion

To explore the relationship of the Big-Five Personality Factors – Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness – with occupational role stress and organizational commitment among public and private sector university teachers, the correlations of the Mini-Marker Set (MMS) subscales were calculated with the University Teachers Stress Inventory (UTSI) and Organizational Commitment Questionnaire (OCQ).

The results showed that three of the Big-Five Personality Factors – Conscientiousness, Neuroticism and Openness – had a significant positive correlation with the UTSI, while the remaining two – Extraversion and Agreeableness – with the OCQ (Table 1). Moreover, Conscientiousness had a significant negative correlation with the OCQ.

Table 1
Relationship of Big-Five Personality Factors with Occupational Role Stress and Organizational Commitment

Subscale	UTSI	OCQ
Extraversion	.15	.74*
Agreeableness	.063	.71*
Conscientiousness	.52*	-.57*
Neuroticism	.32*	-.14
Openness	.52*	.048**

* $p < .01$; ** $p < .05$

Next, the level of occupational role stress and organizational commitment among private and public sector university teachers was measured. The results showed that of a total of 500 teachers, 235 (47%) experienced high and only 87 (17.4%) low occupational role stress, while 213 (42.6%) showed high and only 87 (17.4%) low organizational commitment (Table 2). As many as 178 teachers (35.6%) experienced moderate occupational role stress, while 200 (40.0%) showed moderate organizational commitment.

Table 2
Level of Occupational Role Stress and Organizational Commitment Among University Teachers (N=500)

Level	*N*	%
Occupational Role Stress		
Mild	87	17.4
Moderate	178	35.6
High	235	47.0
Organizational Commitment		
Low	87	17.4
Moderate	200	40.0
High	213	42.6

To explore the differences in stress among public and private sector university teachers, the mean (*M*) and standard deviation (SD) of their scores on the six dimensions of occupational role stress were calculated. The results showed that the teachers of private sector universities experienced a significantly higher workload stress than the teachers of public sector universities, while the latter experienced a significantly higher administration-related stress than the former (Table 3). Overall, the teachers of public sector universities experienced a significantly higher stress than the teachers of private sector universities.

Table 3
Dimensions of Occupational Role Stress Among Public and Private Sector University Teachers

	Public Sector (N=250)		Private Sector (N=250)	
Dimension	*M*	SD	*M*	SD
Workload Stress Scale	27.3	5.9	34.3	4.6
Student-Related Stress Scale	26.1	5.8	20.6	6.4
Colleagues-Related Stress Scale	26.5	5.2	20.2	6.9
Administration-Related Stress Scale	36.1	7.6	22.1	6.8
Personal Factor Results in Stress Scale	21.2	6.3	23.1	7.3
Manifestations of Stress Scale	26.1	7.1	20.2	7.0
Total	163.37	35.35	140.15	42.8

To explore the differences in organizational commitment among public and private sector university teachers, the mean and standard deviation of their scores on the three dimensions of organizational commitment were calculated. The results showed that the teachers of private sector universities showed higher normative commitment than the teachers of public sector universities, while the latter showed higher affective commitment and continuance commitment than the former (Table 4). Overall, teachers of private sector universities showed higher commitment than the teachers of public sector universities.

To explore the relationship between Neuroticism and occupational role stress among public and private sector university teachers, the mean and standard deviation of their scores on Neuroticism and the UTSI were calculated. The results showed that there was a relationship between Neuroticism and occupational role stress, since higher score on Neuroticism resulted in higher score on the UTSI among both public and private sector university teachers (Table 5). Also, the teachers of public sector universities experienced higher Neuroticism and occupational stress.

Table 4
Dimensions of Organizational Commitment Among Public and Private Sector University Teachers

	Public Sector (N=250)		Private Sector (N=250)	
Dimension	*M*	SD	*M*	SD
Normative commitment	20.29	4.09	17.90	4.26
Affective commitment	18.06	3.86	21.99	4.41
Continuance commitment	16.11	4.17	20.14	4.11
Total	54.46	12.15	60.03	12.78

Table 5
Relationship Between Neuroticism and Occupational Role Stress Among Public and Private Sector University Teachers

	Public Sector (N=250)		Private Sector (N=250)	
Scale	*M*	SD	*M*	SD
Neuroticism	30.7	4.1	23.92	4.6
UTSI	163.37	35.35	140.15	42.8

To explore the relationship between occupational role stress and organizational commitment among university teachers, the correlation between their scores on the UTSI and OCQ was calculated. The results showed that there was an inverse relationship between occupational role stress and organizational commitment among university teachers, meaning that higher score on role stress resulted in lower commitment (Table 6).

Table 6
Correlation Between Occupational Role Stress and Organizational Commitment Among Public and Private Sector University Teachers (N=500)

Scale	Correlation
UTSI OCQ	-.54

Next, the sample's mean and standard deviation were calculated on the MMS, UTSI and OCQ for the variable 'Type of University'. The teachers of public sector universities scored higher on Openness, Neuroticism and Conscientiousness, while the teachers of private sector universities on Agreeableness (Table 7). Their scores on Extraversion were almost similar. The results showed that the teachers of public sector universities experienced a significantly higher stress than the teachers of private sector universities, while the latter showed higher commitment than the former.

Next, the sample's mean (*M*) and standard deviation (SD) were calculated on the MMS, UTSI and OCQ for the variable 'Gender'. The results showed that the male university teachers scored higher on Conscientiousness and Neuroticism, while their female counterparts on Agreeableness (Table 8). Their scores on the remaining two personality factors of Openness and Extraversion were almost similar. The results also showed that the male university teachers experienced a significantly higher stress than the female university teachers, while the latter showed higher commitment than the former.

Next, the sample's mean and standard deviation were calculated on the MMS, UTSI and OCQ for the variable 'Marital Status'. The results showed that the married university teachers

scored higher on Neuroticism and Openness, while their unmarried counterparts on Extraversion (Table 9). Their scores on the remaining two personality factors of Conscientiousness and Agreeableness were almost similar. The results also showed that the married university teachers experienced a significantly higher stress than the unmarried university teachers, while the latter showed higher commitment than the former.

Table 7
Comparison of University Teachers' Scores on MMS, UTSI and OCQ by Type of University

	Public Sector (N=250)		Private Sector (N=250)	
Subscale	*M*	SD	*M*	SD
MMS				
Extraversion	26.73	4.17	27.16	4.79
Agreeableness	30.08	5.34	31.64	6.19
Conscientiousness	30.26	4.87	28.20	4.45
Neuroticism	28.20	4.45	25.42	5.09
Openness	33.48	5.43	29.83	5.46
UTSI	163.37	35.35	140.15	42.8
OCQ	54.46	12.15	60.03	12.78

Table 8
Comparison of University Teachers' Scores on MMS, UTSI and OCQ by Gender

	Men (N=282)		Women (N=218)	
Subscale	*M*	SD	*M*	SD
MMS				
Extraversion	25.55	3.37	24.83	4.97
Agreeableness	25.27	3.08	29.98	2.35
Conscientiousness	29.55	3.11	23.94	2.93
Neuroticism	25.11	4.11	22.58	1.71
Openness	25.62	4.71	26.20	3.65
UTSI	154.95	37.61	145.85	40.89
OCQ	54.98	13.53	59.02	10.78

Table 9
Comparison of University Teachers' Scores on MMS, UTSI and OCQ by Marital Status (N=500)

	Married		Unmarried	
Subscale	*M*	SD	*M*	SD
MMS				
Extraversion	24.8	3.2	26.08	4.04
Agreeableness	25.4	4.5	25.86	3.33
Conscientiousness	24.6	2.9	24.33	1.76
Neuroticism	24.9	1.7	20.28	3.45
Openness	27.7	4.8	23.95	1.88
UTSI	151.6	34.61	131.2	22.9
OCQ	53.4	12.42	58.98	10.9

Next, the sample's mean and standard deviation were calculated on the MMS, UTSI and OCQ for the variable 'Qualification'. The results showed that the university teachers holding PhD degrees experienced higher stress than their counterparts holding Master's / MPhil degrees, but they also showed the least commitment (Table 10).

Table 10
Comparison of University Teachers' Scores on MMS, UTSI and OCQ by Qualification (N=500)

	Master's		MPhil		PhD	
Subscale	*M*	SD	*M*	SD	*M*	SD
MMS						
Extraversion	26.39	3.0	23.86	4.62	28.88	2.4
Agreeableness	25.80	2.33	27.50	2.91	28.90	3.17
Conscientiousness	24.99	1.78	24.42	3.50	22.64	2.7
Neuroticism	23.44	1.88	23.79	1.83	22.55	2.59
Openness	27.15	2.98	23.10	3.54	23.15	2.98
UTSI	148.97	36.59	146.57	29.54	153.87	36.41
OCQ	54.16	11.86	52.29	14.16	45.48	11.3

Next, the sample's mean and standard deviation were calculated on the MMS, UTSI and OCQ for the variable 'Income Level'. The results showed that the university teachers whose monthly income is under Rs.25,000 experienced a significantly higher stress and showed a significantly lower commitment than their counterparts who earn more (Table 11). The results also showed that the university teachers whose monthly income is under Rs.25,000 scored the highest on Conscientiousness, while those who earn over Rs.50,000 per month scored the highest on Agreeableness.

Table 11
Comparison of University Teachers' Scores on MMS, UTSI and OCQ by Income Level (N=500)

	Under Rs.25,000 per month		Rs.25,001-50,000 per month		Over Rs.50,000 per month	
Subscale	*M*	SD	*M*	SD	*M*	SD
MMS						
Extraversion	22.85	3.23	25.53	3.49	22.45	2.10
Agreeableness	24.85	3.79	22.05	3.99	28.48	1.00
Conscientiousness	29.39	3.01	29.00	1.97	23.03	2.50
Neuroticism	23.37	1.86	26.40	2.96	18.54	1.39
Openness	25.70	3.75	26.37	1.71	24.33	2.63
UTSI	149.06	33.99	132.42	32.3	117.2	42.3
OCQ	51.84	11.34	56.47	11.31	57.67	16.76

Conclusion

This study aimed at making a contribution to the existing literature on the relationship of the Big-Five Personality Factors with occupational role stress and organizational commitment among public and private sector university teachers. Its results suggest that Conscientiousness, Neuroticism and Openness have a significant positive correlation, while Extraversion and

Agreeableness have an insignificant positive correlation with the UTSI. Similarly, Extraversion and Agreeableness have a significant positive correlation, while Openness has an insignificant positive correlation with the OCQ. Moreover, Conscientiousness has a significant negative correlation and Neuroticism has an insignificant negative correlation with the OCQ.

This establishes that certain personality factors are responsible for developing certain behaviour among university teachers. For example, the university teachers who score higher on Conscientiousness, Neuroticism and Openness are likely to experience higher stress and, consequently, show lower commitment.

Another objective of the study was to explore the differences in the Big-Five Personality Factors, and the level and dimensions of occupational role stress and organizational commitment among teachers of public and private sector universities. The results suggest that the teachers of private sector universities experience a significantly higher workload stress than the teachers of public sector universities, while the latter experience a significantly higher administration-related stress than the former. However, overall, the teachers of public sector universities experience a significantly higher stress than the teachers of private sector universities. Similarly, the teachers of private sector universities show higher commitment than the teachers of public sector universities.

The study provides empirical evidence of the theoretical relationship between occupational role stress and organizational commitment. Its findings strengthen the hypothesis that there is an inverse relationship between occupational role stress and organizational commitment, meaning thereby that high level of stress among university teachers may reduce their level of commitment.

The study also provides insights into demographic variables that may influence the level of occupational role stress and organizational commitment. Variables such as gender, marital status, educational qualification and income level have a statistically significant relationship with occupational role stress and organizational commitment. The results of the study are in line with all the stated hypotheses.

Recommendations

1. Personality is a very important variable because of the strong relationship between the Big-Five Personality Factors, occupational role stress and organizational commitment.
2. For higher organizational commitment, the level of occupational role stress should be reduced.
3. University administrations should devise strategies to reduce or eliminate the causes of stress among teachers identified in this study.
4. Overall, the teachers of public sector universities experience higher occupational role stress than the teachers of private sector universities, thus the administrations of the former should arrange stress management training to eliminate or reduce it.
5. Disparity in the pay structure of university teachers should be eliminated to reduce the level of stress and enhance the level of commitment among them.
6. The university teachers holding PhD degrees experience higher occupational role stress and show lower organizational commitment than their counterparts with Master's / MPhil degrees, thus they should be provided with incentives to reduce the level of stress and enhance the level of commitment among them.

7. Overall, the teachers of public sector universities show lower organizational commitment than the teachers of private sector universities, thus the administrations of the former should take necessary steps to enhance it.

Applied Significance

Human beings are complex and diverse. Each individual experiences events and environmental conditions in somewhat personal way. If we want to understand an individual's reaction, we must examine the ways s/he perceived the situation. Often, a problem, which seems insignificant to one person, is highly stressful for another person. For better organizational management, it is important that the management develops an understanding of human resources in areas such as personality factors, personal emotions and the psychological needs that drive individual behaviour.

Normally, it is difficult to change an individual's personality; however, an understanding of personalities can help in avoiding situations in which one experiences too much stress. It is expected that by virtue of the present study, the managements of Pakistani public and private sector universities would have an empirical criteria for manipulating various organizational characteristics with personal characteristic of the faculty to cater to the growing demands for establishing a healthy work environment. This will help a university's management in predicting behavioural outcomes of the faculty, because each of the Big-Five Personality Factors correlates with a number of associated behaviours. They can develop appropriate policies and programmes to facilitate the workforce consisting of diverse personalities for improving the quality of work life.

In the field of education, teachers have to work hard and face a lot of pressures to show optimal performance. Stress may significantly impair the teacher-pupil relationship and may reduce both the quality of teaching and their level of commitment to work. To minimize stress in the lives of teachers, a university's management should be fully aware of the level and dimensions of their stress. This study provides valuable information in this connection.

The desirable outcomes of organizational commitment are low turnover, limited tardiness and low absenteeism. When a university's management knows the commitment level of the teachers, further steps can be taken to enhance their level of commitment. In this way, an understanding can be developed among the management and teaching staff of a university that could enhance teachers' performance.

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The Manifestation of Aggression Among Patients with Conversion Disorder and Obsessive Compulsive Disorder

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This study aimed at exploring the differences in the manifestation of aggression among 92 patients with conversion disorder and 73 patients with obsessive compulsive disorder who were admitted to Nishtar Hospital, Multan. The Aggression Questionnaire designed by Buss and Perry (1992) was used to measure the four facets of aggression: physical aggression, verbal aggression, anger and hostility. The findings suggest that aggressive symptoms are more common in patients with conversion disorder than in patients with obsessive compulsive disorder. Among patients with conversion disorder, aggressive symptoms are more common in women patients and patients with large family size. However, no significant differences could be observed in the manifestation of aggression among patients with conversion disorder based on their marital status, family system, place of residence (urban / rural), income level and birth order.

Keywords: conversion disorder, obsessive compulsive disorder, hysteria, aggression, dysfunction

Conversion disorder is a psychiatric condition characterized by the conversion of mental conflicts into somatic forms having no apparent cause. These physical symptoms are an outcome of emotional conflicts and they appear involuntarily at the time of extreme psychological stress, while a medical examination does not find any clearly defined physical cause for the dysfunction.

Conversion disorder is commonly known as 'hysteria', which is derived from Greek word 'hysterus', meaning wandering of uterus in the body. Galen rejected the idea of wandering uterus and explained that the abnormality was due to undue retention of uterine secretions. Almost two hundred years later, Charchot explained that hysteria originated from organic weakness of the nervous system (Janet, 1907). Freud first used the term 'conversion' to refer to the substitution of a somatic symptom for a repressed idea (Kring, Davison, Neale & Johnson, 2005). According to his doctrine, anxiety is converted into physical symptoms gaining social acceptance and protecting a person from painful memories and conflicts.

The immediate cause of conversion disorder is a stressful event or situation that leads the patient to develop bodily symptoms as symbolic expression of a longstanding psychological conflict or problem resulting in aggression (Halligan, Bass & Marshal, 2001). Physical, emotional or sexual abuse, repressed anger, and early sexual fantasy are the key pathogenic factors in all cases of conversion disorder (Shoenberg, 2001). According to Celani (1976), conversion disorder symptoms are the result of cultural, social and interpersonal influences, and the way the patient has learned to communicate helplessness, thereby facilitating an environment in which attention and support are gained and aggressive impulses avoided. The patient's symptoms may be reinforced by the reactions of caretaker and families (Maldonado & Spiegel, 2001; Singh & Lee, 1997).

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Conversion disorder is thought to occur primarily in societies with strict social systems that prevent individuals from directly expressing feeling and memories towards others (Tseng, 2001). The symptoms of conversion disorder are generally not under patients' conscious control, and are often mysterious and frightening to them. The symptoms usually have an acute onset, but sometimes they worsen gradually.

According to Shoenberg (2001), depression, anxiety, cognitive impairment, communication problems, internal and external threats, suppressed thoughts, repressed aggression, and hostility trigger conversion symptoms. Celani (1976) explains that hidden wishes appear in the language of conversion symptoms, which communicate the patient's frustration, anger, hatred, sorrow, guilt, sexual conflicts, aggressive impulses, etc. Conversion symptoms dramatically illustrate the complex relationship among mind, brain and body, and they often appear after the occurrence of stressors (Maldonado & Spiegel, 2001).

Obsessive compulsive disorder, on the other hand, refers to recurrent and persistent thoughts, impulses or images that cause marked anxiety or distress. According to Baer et al. (1990), clinically, the most common obsessions are repetitive thoughts of violence (e.g., killing one's child), contamination (e.g., becoming infected by shaking hands) and doubt (e.g., repeatedly wondering whether one has performed some act, such as having hurt someone in a traffic accident).

Most researchers believe that obsessive compulsive disorder develops as a reaction of emotional stress or conflict in the presence of a series of environmental, biological and personal vulnerable factors or as a part of the current life situation (Kaplan, Sadock & Grebb, 1994).

Both conversion disorder and obsessive compulsive disorder are rooted in irrational anxieties, but a key difference is how patients view themselves (dysfunctional versus righteously functional). The level of profanity and extreme aggressiveness, though, indicates that other anxiety disorders may also be involved. It is possible to have co-morbidity of anxiety disorders, since abnormal activity in different parts of the brain are involved.

Keeping in view the literature discussed above, this study was conducted to investigate the differences in the manifestation of aggression among patients with conversion disorder and obsessive compulsive disorder. The study also aimed at examining the aggression level of patients displaying high aggression in relation to their demographic variables.

Methodology

Participants

Two samples of patients with conversion disorder and obsessive compulsive disorder were taken from Nishtar Hospital, Multan. The patients, whose ages ranged between 31 and 54 years, were diagnosed on the basis of DSM-IV diagnostic criteria. Details of their socio-demographic characteristics – such as educational qualification, marital status, occupation, family income, place of residence (urban / rural), birth order, number of siblings, number of children and so on – were also collected.

Instrument

The Aggression Questionnaire (Buss & Perry, 1992), translated into Urdu by Khalid and Hussain (2000), contains 29 items to measure the four facets of aggression: items 1-9 deal with 'physical aggression', items 10-14 with 'verbal aggression', items 15-21 with 'anger' and items 22-29 with 'hostility'. The participants marked each item on a 5-point rating scale according to their

intensity as 1 (least), 2 (mild), 3 (average), 4 (moderate) and 5 (greatest), except items 7 and 21 which were scored reverse. The internal reliability coefficient of the Aggression Questionnaire is 0.94 for all the 29 items, while the reliability of its subscale ranges from 0.74 to 0.87.

Procedure

The Aggression Questionnaire was individually administered to both samples of patients after getting their formal consent and assuring them of strict confidentiality. Questions were read to illiterate patients so that they could answer them properly. Slight changes were also made in the language of the questionnaire to facilitate the understanding of a few items for the participants. The Statistical Package for Social Sciences (SPSS) was used to analyze data.

Results

The study attempted to explore the role of demographic variables in the manifestation of aggression among 92 patients with conversion disorder and 73 patients with obsessive compulsive disorder. The results showed that there was no significant difference in the aggression level of the two samples: aggressive symptoms were more common in patients with conversion disorder than in those with obsessive compulsive disorder (Table 1).

Table 1
Aggression Level of Patients with Conversion Disorder and Obsessive Compulsive Disorder

Illness	*N*	*M*	SD	*t*	*P*
Conversion disorder	92	113.42	20.51	3.33	0.013*
Obsessive compulsive disorder	73	95.52	18.21		

df = 163; * $p < .05$

To study the effects of independent variables such as male / female, married / unmarried, nuclear / joint family system and urban / rural area on the aggression level of patients with conversion disorder, independent sample t-test was applied. The test results showed that aggressive symptoms were more common in female patients than in male patients; while marital status, family system and place of residence did not play any significant role in relation to the aggression level of the sample (Table 2).

Table 2
Aggression Level of Patients by Gender, Marital Status, Family System and Place of Residence

Variable	Group	*N*	*M*	SD	*t*	*P*
Gender	Female	78	94.03	28.742	2.33	0.022*
	Male	14	75.21	20.962		
Marital Status	Married	60	93.37	28.059	-1.018	0.071
	Unmarried	32	87.03	29.090		
Family System	Nuclear	36	92.33	26.497	.315	0.331
	Joint	56	90.41	29.808		
Place of Residence	Rural	43	95.49	30.486	1.374	0.153
	Urban	49	87.37	26.211		

df = 90; * $p < .05$

To examine the role of age, income level, family size and birth order on aggression the level of patients with conversion disorder, one-way analysis of variance (ANOVA) was computed. To decipher the effects of age, income level, family size and birth order, the sample was first divided into three groups accordingly. The three age groups were '21-30 years', '31-40 years' and '41-50 years'; the three income groups were 'low', 'middle' and 'high'; the three family size groups were 'small', 'medium' and 'large'; and the three birth order groups were 'first', 'middle' and 'last'.

Table 3
Frequency, Mean and SD of Patients with Conversion Disorder in Each Group of Age, Income Level, Family Size and Birth Order on Aggression Questionnaire (N=92)

Variable	Group	*N*	*M*	SD
Age	21-30 years	22	87.95	22.10
	31- 40 years	41	91.04	25.12
	41-50 years	29	83.82	23.04
Income Level	Low (under Rs.10,000)	18	93.14	20.12
	Middle (Rs.10,000-50,000)	52	88.17	17.34
	High (over Rs.50,000)	22	81.73	19.66
Family Size	Small (under 4)	14	82.36	29.08
	Medium (4-6)	44	84.36	28.37
	Large (over 6)	34	103.59	24.33
Birth Order	First	25	86.24	29.10
	Middle	57	91.91	28.54
	Last	10	99.20	26.41

The results showed that conversion disorder patients in different age and family size groups had different aggression levels, while income level and birth order did not play any significant role in this connection (Table 4).

Table 4
One-Way Analysis of Variance (ANOVA) for Scores of Patients of Conversion Disorder with Different Age, Income Level, Family Size and Birth Order on Aggression Questionnaire (N=92)

Scale	Variance	*SS*	*df*	*MS*	*F*	*P*
Age	Between groups	8432.92	2	5382.231	2.412	0.031*
	Within groups	5444.63	89	711.163		
	Total	83462.55	91			
Income Level	Between groups	2133.862	2	4115.186	0.825	0.163
	Within groups	75432.730	89	713.671		
	Total	76345.514	91			
Family Size	Between groups	8368.92	2	4184.461	5.716	0.005*
	Within groups	65153.63	89	732.063		
	Total	73522.55	91			
Birth Order	Between groups	1283.833	2	641.916	0.791	0.082
	Within groups	72238.721	89	811.671		
	Total	73522.554	91			

* $p < .05$

Discussion of Results

This study was carried out to decipher the differences in the aggression level of two samples of patients, one with conversion disorder and the other with obsessive compulsive disorder. The researchers hypothesized that aggressive symptoms are more common in patients with conversion disorder than in patients with obsessive compulsive disorder. The results support this hypothesis and show a significantly higher aggression level among patients with conversion disorder than among patients with obsessive compulsive disorder (Table 1). This finding is consistent with the work of Kaplan, Sadock and Grebb (1994), which shows that conversion disorder caused by intense anxiety results in more aggression than obsessive compulsive disorder.

The researchers hypothesized that the manifestation of aggression is higher among female patients with conversion disorder than among their male counterparts. The results support this hypothesis and show a significantly higher aggression level among female patients than among males (Table 2). This finding is consistent with the work of Salari and Baldwin (2002).

The researchers hypothesized that aggressive symptoms are more common in married patients with conversion disorder than in their unmarried counterparts. The results support this hypothesis and show that married patients have a slightly higher aggression level than unmarried patients, though the difference is insignificant (Table 2). This finding cannot be compared with earlier studies on the subject since the manifestation of aggression among patients with conversion disorder with reference to their marital status has not been the focus of those studies.

The researchers hypothesized that the manifestation of aggression is higher among conversion disorder patients living in the joint family system than among their counterparts living in nuclear families. The results do not support this hypothesis and show that patients living in nuclear families have a slightly higher aggression level than patients living in the joint family system, though the difference is insignificant (Table 2).

The researchers hypothesized that aggressive symptoms are more common in conversion disorder patients living in rural areas than in their urban counterparts. The results support this hypothesis and show that patients living in rural areas have a slightly higher aggression level than patients living in urban areas, though the difference is insignificant (Table 2). This finding is consistent with the work of Maqsood, Ali, Ahmad, Rehman and Niaz (2006), which shows that there is no significant difference between the presenting symptom of conversion disorder between rural and urban populations.

The researchers hypothesized that the manifestation of aggression is higher among conversion disorder patients with low incomes (under Rs.10,000 per month) than among their counterparts with middle (Rs.10,000-50,000 per month) and high (over Rs.50,000 per month) incomes. The results support this hypothesis and show that patients with low incomes have a slightly higher aggression level than patients with middle and high incomes, though the difference is insignificant (Table 3).

The researchers hypothesized that aggressive symptoms are more common in conversion disorder patients with large family size (over 6) than in their counterparts with medium (4-6) and small family size (under 4).

The results support this hypothesis and show a significantly higher aggression level among patients with large family size than among patients with medium and small family size (Table 3). This finding is consistent with the work of Khan, Ahmad and Arshad (2006), which shows a strong correlation between large family and psychological problems.

The researchers hypothesized that the manifestation of aggression is higher among middle- and later-born patients with conversion disorder than among their first-born counterparts. The results support this hypothesis and show that middle- and later-born patients have a slightly higher aggression level than first-born patients, though the difference is insignificant (Table 3). This finding is consistent with the work of Khan, Ahmad and Arshad (2006), which shows that middle-born conversion disorder patients suffer more from psychological problems.

Conclusion

The study concludes that the manifestation of aggression is higher among patients with conversion disorder than among patients with obsessive compulsive disorder. Moreover, the identification of aggression is very important for proper treatment of conversion disorder. Adequate understanding of the family physiology and structure of the patient with conversion disorder is also needed. The results suggest that aggression also makes a person prone and vulnerable to conversion disorder. Thus, psychological services need to be developed and updated for efficient management of aggression among patients with conversion disorder.

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An Analysis of Socioeconomic Factors Causing Deforestation in Hazara Division, Khyber Pakhtunkhwa

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This study aimed at identifying the major causes of rapid deforestation in Abbottabad and Mansehra districts of Hazara Division in the Khyber Pakhtunkhwa province [formerly known as the NWFP]. The findings suggest that different socioeconomic activities of the general public are responsible for rapid deforestation in the study area. They also confirm the hypothesis that construction activities are more destructive for forests than cultivation in the forest-rich Abbottabad and Mansehra districts. The main causes of deforestation in the study area have been identified as changing employment patterns, conversion of forest lands, common property resources, introduction of permit system for tree-cutting, lack of alternate energy resources and non-cooperative behaviour of Forest Department officials. The study suggests that, to save forests in Abbottabad and Mansehra districts, the government should prepare a comprehensive land use policy, improve coordination between local communities and Forest Department officials, and provide energy substitutes at subsidized rates to forest communities.

Keywords: forests, deforestation, timber, Forest Department, Forest Development Corporation

Forests are crucial for the well-being of humanity. As a renewable resource, they play an important role in the economy, ecology and social system of a country. Forests provide foundations for life on earth through ecological functions, by regulating the climate and water resources, and by serving as habitats for plants and animals (FAO, 2001). They also furnish a wide range of essential goods such as wood, food, fodder and medicines, in addition to opportunities for recreation, spiritual renewal and other services.

Forests are under pressure from growing human and livestock populations, which often result in conversion or degradation of forests into unsustainable forms of land use. When forests are lost or severely degraded, their capacity to function as regulators of the environment is also lost, increasing floods and erosion hazards, reducing soil fertility, and contributing to the loss of plant and animal life (FAO, 2001). As a result, the sustainable provision of goods and services from forests is jeopardized.

A country should ideally have one-fourth of its land area under forest cover. However, Pakistan is placed among countries with low forest cover. Of the four forest-cover percentage groups (over 70%, 40-69%, 10-39%, 0-9%), the country lies in the last category: 0-9%. The area covered by forests, scrubs or trees planted on farmland in Pakistan is 4.226 million hectares, which is equivalent to 4.8% of the country's land area (GoP, 2005).

According to FAO (2005), Pakistan has less than 0.03 hectares of forest per capita as compared with the world average of 1 hectare. The major causes of low forest cover in the country include: arid climate; overexploitation of forest resources for meeting energy needs; changes in land

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use for agriculture and urbanization; extraction of river waters without caring for the needs of forest ecosystems downstream; inefficient use of wood; and frequent forest fires (GoP, 2010).

Of Pakistan's 4.226 million hectares of forests, coniferous hill forests are spread over 1.92 million hectares; scrub or foothill forests over 1.19 million hectares; irrigated plantations, farmland trees and riverain forests over 0.1 million hectares, 0.47 million hectares and 0.17 million hectares, respectively; mangrove forests in the Indus Delta over 0.2 million hectares; and miscellaneous plantations over 0.16 million hectares (Shahbaz, 2009).

The natural forests of Pakistan are mostly located in the hilly areas of Khyber Pakhtunkhwa [formerly known as the North West Frontier Province (NWFP)], Gilgit-Baltistan [formerly known as the Northern Areas] and Azad Jammu and Kashmir (AJK). The forest area of the country's five provinces is: Khyber Pakhtunkhwa (1.684 million hectares), Gilgit-Baltistan (0.666 million hectares), Punjab (0.608 million hectares), Balochistan (0.59 million hectares) and Sindh (0.4 million hectares); while the remaining 0.275 million hectares of forests are located in AJK (Siddiqui, 1997).

With expanding population, more and more forest area is being cultivated for growing food and non-food crops in Pakistan. Moreover, the country's rural population has free rights to collect timber and firewood from, and graze livestock on, public and private lands. Thus, past trends and the current state of forests in Pakistan indicate large-scale deforestation and degradation of natural forests, particularly in Khyber Pakhtunkhwa and Gilgit-Baltistan.

Pakistan's forests are vanishing at one of highest rates in the world, and forest depletion is a serious environmental concern for the country. According to Hasan (2001), the country experiences deforestation at an annual rate of 1.1%, which means about 55,000 hectares of forests are vanishing every year. FAO (2005), however, estimated that between 1990 and 2000, Pakistan's deforestation rate was 1.5% annually. The country's forests are being lost because of questionable land use practices, and the ever-increasing demand for timber and firewood (Shahbaz, 2009).

The Government of Pakistan has prepared a number of policies and programmes for the forestry sector, yet the area under forest cover has not increased significantly. According to the Millennium Development Goals (MDGs) of the Forestry Sector, Pakistan is committed to increase forest cover to 6% by 2015 (GoP, 2010). This implies that an additional 1.051 million hectares have to be brought under forest cover in the next five years. However, the provincial forest departments have limited financial, technical and human resources under regular budgets to achieve this target.

The limited availability of reliable data on forest resources in Pakistan is a major hindrance in planning appropriate actions to achieve different targets. Land reforms – however, half-hearted they may be – were introduced in the country for agricultural land, but not for forests. After 1947, the government took over large chunks of land, and uncultivable land was transferred to the provincial forest departments through the Federal Land Commission. According to the 1973 Constitution of Pakistan, forestry is a provincial subject.

Housing around 40% of Pakistan's forests, Khyber Pakhtunkhwa has 17% of its land area under forest cover (Steimann, 2003). The province is Pakistan's richest in terms of forests since its per capita forest area (0.09 hectares) is three times higher than the national average. The province has mostly coniferous forests, but scrub forests are also found in the foothills and plains of Mardan, Peshawar and Kohat districts. Due to climatic conditions, most of Khyber Pakhtunkhwa's forests are located in Hazara and Malakand divisions (55% and 33%, respectively). The province's share in the national production of forests, out-turn of firewood, out-turn of timber and the revenue earned by forest departments is 47.4%, 28.6%, 31% and 47.3%, respectively (Wani & Khan, 2004).

The mountain forests of Khyber Pakhtunkhwa are great repositories of biodiversity (Suleri, 2002). According to Khan and Mahmood (2003), these forests play a very important role in the economy of the local communities, for whom they are the main source of timber, firewood, forage and many non-timber products. Besides providing a wide range of direct benefits to people, these forests protect the country's watersheds, which yield hydropower and water for the large agricultural economy in the rest of the country.

However, Khyber Pakhtunkhwa's mountain forests are expected to be completely liquidated by 2025 (Government of NWFP, 2002). According to Ahmed and Mahmood (1998), studies based on remote sensing showed that, if the current rate of deforestation in Khyber Pakhtunkhwa continued, the forest area in most parts of the province would completely disappear within 30 years. The annual rates of decline in the forest area for different parts of Hazara Division are between 1.4% and 8.8%; and, if these rates continued, the forest area in this region would completely disappear within 50 years at most (Dijk & Hussein, 1994).

Although significant progress has been made in tree planting, particularly on farmland, it does not compensate for the loss of natural forests (Geiser & Steimann, 2004). Provincial Forest Department officials often blame the local people for their exploitative use of forest resources (Shahbaz, Ali & Suleri, 2006). However, according to Shahbaz (2009), ineffective, top-down and non-participatory forest management by the Forest Department is the main cause of rapid deforestation in the province.

The removal of forest tracts to grow crops, increasing urbanization, forest felling for road construction, the dependence of the rural population on wood for fuel, the exploding population, poverty, lack of awareness, overgrazing of land by cattle and the timber mafia are some of the other causes of forest depletion in the mountainous regions of Khyber Pakhtunkhwa (Mehmood, 2003; Shahbaz, 2009; Steimann, 2003).

Objectives

The objectives of the study were to:

- Identify those socioeconomic activities in the sample districts of Abbottabad and Mansehra that are affecting the growth of forests and resulting in deforestation.
- Evaluate the response of the local communities to forest department officials' efforts aimed at efficient forest management.
- Suggest policy measures in the light of stakeholders' suggestions for arresting rapid deforestation in the two sample districts.

Hypothesis

Construction activities are more destructive for forests than cultivation in Abbottabad and Mansehra districts of Hazara Division in the Khyber Paktunkhwa province.

Methodology

The study incorporates both primary and secondary data. Primary data about different socioeconomic activities of the general public living in forest areas was collected from Hazara Division, which was selected because it is rich in reserved forests meant for the subsistence of the

local communities. The study was conducted in Abbottabad and Mansehra districts, which account for 11.5% and 45.7%, respectively, of Hazara Division's forests. Abbottabad District has only reserved forests; while Mansehra District has reserved forests, private forests and 'guzara' (the private forests located close to settlements to meet the needs of the local communities).

The respondents, locals who depend on forest resources, were selected from different areas of Abbottabad and Mansehra districts using simple random sampling technique. They were selected based on their experience and past knowledge of forestry-related activities in the two sample districts. Questionnaires written in Urdu, including names of certain things in the local language for easy comprehension, were distributed among the respondents and later their answers were translated into English.

Abbottabad District has one 'tehsil' (sub-district): Abbottabad; and Mansehra District has four tehsils: Balakot, Frontier Region Kala Dhaka, Mansehra and Oghi. In Abbottabad District, questionnaires were distributed in all the five Forest Ranges of the Gallis Forest Division: Bagnotar, Birangali, Doongagali, Proper Abbottabad and Thandiani. In Mansehra District, questionnaires were distributed in all the four Forest Ranges of the Siran Forest Division: Battal, Jabbori, Proper Mansehra and Shinkiari. Each village in Mansehra District has 50 to 300 houses and in District Abbottabad 100 to 400 houses scattered over hilly areas. The sample size of 200 was proportionally distributed among villages of the two selected districts.

The results of primary data were first discussed with officials of the Forest Department, Government of Khyber Pakhtunkhwa; Pakistan Forest Institute, Peshawar; Forest Management Centre, Khyber Pakhtunkhwa; and Forest Development Corporation, Khyber Pakhtunkhwa. After incorporating their views and comments, the results were analyzed in the light of secondary data about different socioeconomic variables. These data were taken from different statistical documents of the Government of Pakistan, particularly *Pakistan Economic Survey* (various issues) and *Fifty Years of Pakistan in Statistics* (four volumes).

Results and Discussion

The study findings suggest that education is an important factor in helping the local communities better understand their environment and the trend of getting education is high in both the sample districts. Almost one-fourth (24%) of the respondents had done matriculation, 15% had higher education and the remaining had also attained at least some education. These results support the official claim that the participation rate at primary, middle and high levels in Khyber Pakhtunkhwa is 64%, 28% and 22%, respectively (Government of NWFP, 2005).

The related figures for Abbottabad District are 91%, 38% and 27%, respectively; and for Mansehra District, 76%, 23%, and 16.37%, respectively. The study findings suggest that, at the primary level, the participation rate of the two sample districts is above the provincial average. Moreover, Abbottabad District's participation rate at the primary level (91%) is the highest among all 24 districts of Khyber Pakhtunkhwa (Government of NWFP, 2005).

More than one-half (51%) of the respondents were aged between 30 years and 60 years. In addition, 15% of them were aged over 60. This implies that data were collected from experienced people, strengthening the results of the study. The study findings suggest that the average family size in the two sample districts is 6 to 8. This finding is consistent with official statistics, according to which the average household size in the country is 6.8 (GoP, 1998) and in Khyber Pakhtunkhwa it is 8 (Government of NWFP, 2005).

The results showed that the majority (55%) of the respondents worked in the services sector. Of the remaining, 15% depended on agriculture and 8% on labour (non-farm) as their primary source of income; while 18% had small businesses. These findings are inconsistent with the work of Shahbaz and Ali (2004), according to which 29% of the respondents depended on labour (non-farm), 7% on farming and forestry, and 5% on livestock as their primary source of income; while 15% were salaried individuals and 14% had small businesses. However, the earlier study was conducted in Swat and Mansehra districts, while this one in Abbottabad and Mansehra districts, which may be the reason for the difference in results.

The official statistics for Khyber Pakhtunkhwa show a mixed trend in this regard. In all, 42% of the people of the province depend on agriculture as their primary source of income, while this figure is 19% and 47% for Abbottabad and Mansehra districts, respectively (Government of NWFP, 2005). This shows that the participation rate in the agriculture sector in Mansehra District is higher than the provincial average of 42%. The official data also supports the study finding that the services sector is one of the fastest growing employment categories in Abbottabad District—23% compared with Khyber Pakhtunkhwa's average of 17%.

The results showed that besides their primary source of income, 44% of the respondents depended on labour (non-farm), agriculture and the services sector as their alternate source of income; while forests were an alternate source of income for only 9% of the respondents. These findings are consistent with the work of Shahbaz and Ali (2004). Another study conducted by Ali, Shahbaz and Suleri (2006) in Mansehra and Swat districts also shows almost similar trends. The findings of these studies contradict the popular assumption that the rural population of Khyber Pakhtunkhwa depend on forests as its primary source of income.

If a population lives near or within forest areas, it is difficult for the government to keep a close check on its activities, and this may result in rapid deforestation. The results showed that the majority (57%) of the respondents in the two sample districts lived within or very close to forests (0-2 km). This finding is consistent with the work of Wannitikul (2005), which shows that the distance from Bangkok is positively correlated with the forest area, meaning that the farther a province is from the capital Bangkok, the more forest remain.

Field observations suggest that the joint family system is still strong in the sample districts of Abbottabad and Mansehra, which keeps the assets and landed property together. Almost one-half (44%) of the respondents blamed the local population for tree-cutting, while 28.5% blamed Forest Department officials (Table 1). Surprisingly, only 14.5% of the respondents blamed the timber mafia for tree-cutting.

Table 1
Perception of Respondents Regarding who is Responsible for Tree-Cutting (%)

District	No Response	Locals	Forest Department	Timber Mafia
Abbottabad	18	45	20	17
Mansehra	3	43	37	12
Total	10.5	44	28.5	14.5

The majority (54%) of the respondents viewed that the Forest Department itself represented the timber mafia, thus the study concludes that Forest Department officials are the most responsible for rapid deforestation in the two sample districts (Table 2). Many respondents also accused police officials and politicians of being part of the timber mafia, reflecting people's lack of trust in them.

Table 2
Perception of Respondents Regarding who Supports Timber Mafia (%)

District	No Response	Locals	Politicians	Forest Department
Abbottabad	25	26	25	67
Mansehra	36	28	29	41
Total	30.5	27	27	54

The study also attempted to explore the major uses of wood among the respondents. The majority (59%) of them used wood for cooking, followed by heating and construction (Table 3). Heating is the second major use of wood, but third item in terms of quantity of wood consumed. These findings are consistent with the work of Shahbaz and Ali (2004), which showed that in Mansehra District, 90% and 56% of the respondents used wood for cooking (firewood) and construction (timber), respectively. These findings are also consistent with those of the Government of NWFP (2002), according to which the actual pressure on forests is because of firewood rather than timber. Ali, Shahbaz and Suleri (2006) also found that 90% and 73% of the respondents in Mansehra District used forests for firewood and timber, respectively.

Table 3
Uses of Wood (%)

District	No Response	Cooking	Heating	Construction	Furniture
Abbottabad	28	45	4	20	0
Mansehra	5	73	1	15	3
Total	16.5	59	2.5	17.5	1.5

The results showed that almost two-thirds (62%) of the respondents believed that forests were being cut to construct houses and paths, while 40% of them believed that forests were being converted into agricultural land. Based on these findings, the study hypothesis is accepted. According to official statistics (GoP, 1998), the number of housing units in Khyber Pakhtunkhwa increased from 1,074,000 in 1973 to 2,211,000 in 1998.

The overwhelming majority (98%) of the respondents demanded natural gas for cooking and heating to save forests. They were not very keen on electricity, because of its high rates, load-shedding and theft. A large number (89%) of the respondents did not have any gas facility. On the whole, the study findings indicate shortage of wood substitutes in the two sample districts.

The results showed that the overwhelming majority (87.5%) of the respondents used wood for cooking and heating, while 18.5%, 11.5% and 9% of them used gas, coal and electricity, respectively (Table 4). These findings are consistent with official statistics, according to which 86.54% of the households in Khyber Pakhtunkhwa used wood for cooking, while 8.79% used gas for cooking (Government of NWFP, 2005).

Table 4
Sources of Cooking and Heating (%)

District	No Response	Wood	Electricity	Coal	Gas	Oil
Abbottabad	0	84	8	2	23	2
Mansehra	4	91	15	16	14	0
Total	2	87.5	11.5	9	18.5	1

Almost one-half (47%) of the respondents in Abbottabad District did not have the government permission for free grazing of their livestock (Table 5). However, the majority (56%) of the respondents in Mansehra District had the government permission for free grazing of their livestock, as compared with only 24% of the respondents in the Abbottabad District.

Table 5
Permission for Grazing of Livestock (%)

District	No Response	Response	Free	With Fee
Abbottabad	17	Yes	24	2
		No	47	7
Mansehra	13	Yes	56	0
		No	11	5
Total	15	Yes	40	1
		No	29	6

The majority of the respondents did not know if the nearest forest was ‘reserved’ or ‘protected’. This implies that they also did not know if they had the permission to graze their livestock in that forest, rendering them unable to properly exercise their legal rights. Field observations endorsed that Forest Department officials did not communicate this information to the local communities.

The results showed that the majority (54%) of the respondents in Abbottabad District had no forest lands, while 39% of them owned forest lands. The study findings suggest that the ownership of forest lands among the respondents is limited and most of them do not take interest in the joint management of forests. More than three-fourths (78%) of the respondents owned agricultural land, while only 10% were tenants. Field observations, however, showed that most of them were small landowners.

The results showed that the majority of the respondents (68%) in Abbottabad District were interested in planting fruit trees, 30% in firewood trees and only 10% in timber. On the other hand, exactly one-half (50%) of the respondents in Mansehra District were interested in planting firewood trees, 30% in fruit trees and only 1% in timber. The non-availability of piped gas in most parts of Mansehra District and expensive cylinder gas emphasize the need for firewood. The respondents preferred fruit and firewood trees over timber because, according to them, they take less time to mature and give more return.

The majority (70%) of the respondents showed interested in tree plantation, but they demanded government support in the form of sapling and technical expertise. More than one-half (53%) of the respondents did not take interest in tree plantation because of the non-cooperative behaviour of Forest Department officials. They also cited other reasons such as water shortage (52%) and common property (33%).

The results showed that almost two-thirds (62%) of the respondents had no access to Forest Department officials (Table 6). This finding is consistent with the work of Shahbaz and Ali (2004), which showed that institutional access was difficult in Mansehra District. Dasgupta (1986) also mentioned that there was a large communication gap between the people of hilly areas and the government. More than one-half (54%) of the respondents either did not use permit for tree-cutting or they did not have any knowledge of the use of permit for tree-cutting (Table 7). The number of such respondents was higher in Mansehra District (67%) than in Abbottabad District (41%).

Table 6
Access to Forest Department Officials (%)

District	No Response	Yes	No
Abbottabad	7	21	72
Mansehra	2	46	52
Total	4.5	33.5	62

Table 7
Use of Permit for Tree-Cutting (%)

District	No Response	Yes	No or No Knowledge
Abbottabad	11	48	41
Mansehra	1	32	67
Total	6	40	54

The results showed that 23% of the respondents did not pay the fine imposed by the Forest Department on illegal tree-cutting. If this fine is not paid, the illegally cut trees are confiscated by Forest Department officials. The fine ranges between Rs.20,000 and Rs.40,000, but concerned officials normally give receipt for far less than the actual amount. The respondents complained that if they raised any objection, then the amount of fine was doubled.

However, according to Steimann (2003), the rates of fine on illegal tree-cutting for different timings (day and night) and types of timber are fixed; while the criticism against the field staff of the Forest Department gives the impression that they arbitrarily shape the rules on fining offenders. The same study found that people were satisfied with the performance of the Joint Forest Management Committee (JFMC) in Mansehra District, since it was more helpful than the Forest Department in the issuance of tree-cutting permits. However, some people accused the JFMC of favouring influential people and not forwarding poor people's applications for tree-cutting permits in the same manner.

According to Javed and Fawad (1998), no right can be acquired over reserve forests except by succession; and no right can be alienated by mortgage, grant, lease and sale or otherwise without the sanction of the government. However, the same study indicates that the sale and purchase of rights is one of the major causes of deforestation in Khyber Pakhtunkhwa. This finding is consistent with the results of the present study. According to Dasgupta (1986), the permit system results in felling of the best trees, leaving behind only defective trees; and a huge gap exists between felling of trees and re-plantation.

The results of the present study showed that the overwhelming majority (92%) of the respondents believed that there had been no increase in the forest area during the past decade; while 75% and 63% of the respondents believed that there had been no increase in cultivated and grazing areas, respectively, during this period. The study findings also suggest that, because of fast growing population, the area which used to be cultivated in the past is now being used for construction.

Only 39% of the respondents owned any type of livestock, and almost two-thirds (73%) of them opined that there had been no increase in the livestock population during the past decade (from 1996 to 2006). During this period, cattle (bullocks, cows) increased in the country by 44%, buffaloes by 34%, sheep by 12%, goats by 30%, horses by 3%, camels by 13%, mules by 18% and asses by 19% (GoP, 2006).

However, this increase was the lowest in Khyber Pakhtunkhwa. The province accounts for 20% cattle in the country, 7% buffaloes, 13% sheep, 18% goats, 22% horses, 43% mules and 13% asses (GoP, 2006). The contribution of Abbottabad and Mansehra districts in the livestock population of the country is 4.3% and 5.3%, respectively. This implies that grazing is not as big a threat to forests in Khyber Pakhtunkhwa as it is believed to be.

The results showed that more than three-fourths (76%) of the respondents in Mansehra District and 42% of the respondents in Abbottabad District thought that the benefits of any agency's work, whether governmental or non-governmental, had not reached the local communities. More than three-fourths (76%) of the respondents reported that they had no knowledge of the forest policy of the country or the province.

Field observations showed that the village development committees were loosing their credibility because of the non-participation of the local people, and most of the respondents preferred the traditional 'jirga' over them. This finding is consistent with the work of Shahbaz and Ali (2004), which shows that the local people have the highest degree of trust in jirga.

The study highlights that there are no arrangements at either the national or the local level to control forest fires; and the local people extinguish them on self-help basis. About 50,000 hectares of forests in Pakistan are affected annually by forest fires (Wani & Khan, 2004). According to the respondents, Forest Department officials and the timber mafia are responsible for these fires. Nadkarni, Pasha and Prabhakar (1989), however, blame the local people for degrading forests by putting them on fire to promote grass cover, and keep away wild animals and mosquitoes.

According to Forest Department officials, the main cause of forest fires is not the timber mafia, but the local people who use these forests for grazing of their livestock. When the surface of the land is filled with dry leaves and twigs, it restricts growth of grass, so the local people set fire to burn the litter. The study suggests that Forest Department officials should check whether the trees have been cut before the fire or they have been burnt with fire.

According to the results, the local people get the permit to cut one or two trees for personal use, but they actually cut many more and sell them in the market, thus causing rapid deforestation. In this connection, the study findings suggest that the tree-cutting permit should not be given to rich people since they use it for commercial purposes; it should be given on the basis of 'cut one and plant five trees'; and it should only be given for construction wood, not for firewood.

In plantation season, an area is demarcated with whitewash to show that it has been planted or seed has been thrown on it, but in practice no tree is planted. Since there are no boundary lines, the local people first encroach on this area and then make it their property. Thus, the study suggests that the Forest Department should install boundary pillars around such areas and paint them. Most important, 'patwaris' (revenue officers) should not be allowed to change these boundaries.

The study suggests that the government should give barren, non-populous and uncultivated land to the local people on lease for tree plantation; control all such activities that facilitate wood processing for different purposes; distribute plants free-of-cost at the doorstep of people during tree plantation campaign and make arrangements for proper follow-up to ensure its success; and give easy loans to the local people to install gas plants run by animal waste.

The field staff of the Forest Department marks mature trees and hands them over to the Forest Development Corporation (FDC), which supervises the cutting and auction of all the marked trees. The FDC works with harvesting contractors, responsible for cutting the marked trees; carriage contractors, responsible for carrying timber to the sale depots at Havelian and Dargai; and stacking contractors, responsible for dividing big logs into small logs based on the quality of timber.

The FDC holds three to four open auctions of timber each month. The private forests owners also sit in these auctions since they have a share in the sale. According to Forest Department officials, the presence of the owners makes corruption impossible in the whole process, as was alleged by the respondents of this study.

Forest Department officials also justify on-the-spot charging of fine on illegal tree-cutting: "The charge needs evidence and property of the case, which are big trees. Since these are difficult to carry to the magistrate, to avoid lengthy procedures, forest guards have been authorized to charge on-the-spot fine based on the quality of timber. However, only Divisional Forest Officers are authorized to compound illegally cut trees and forest guards can only give temporary receipts."

Conclusion

The study concludes that the joint family system is still strong in the sample districts of Abbottabad and Mansehra, which keeps the assets and landed property together. The services group is one of the fastest growing employment categories in Abbottabad District since people are leaving agriculture as their primary source of income. The results also show that besides their primary source of income, a large number of people in the sample districts depend on labour (non-farm), agriculture and the services sector as their alternate source of income.

The study concludes that the majority of people in the sample districts use wood for cooking, followed by heating and construction. Heating is the second major use of wood, but third item in terms of quantity of wood consumed. A very few people use wood for commercial purposes. Moreover, the overwhelming majority of people use wood for cooking and heating, followed by gas, coal and electricity. The study findings indicate shortage of wood substitutes and suggest that they be provided at subsidized rates in Abbottabad and Mansehra districts.

The study concludes that forests are being cut to construct houses and paths, besides being converted into agricultural land. Based on this, the study hypothesis is accepted. The study findings further suggest that the ownership of forest lands is limited in the two sample districts and most people do not take interest in the joint management of forests.

The study concludes that most people in the sample districts are small landowners (not tenants), who are interested in planting fruit and firewood trees rather than timber since, according to them, the former take less time to mature and give more return. Strangely, the majority of people have no knowledge of the forest policy of the country or the province. The study also highlights that there are no arrangements at either the national or the local level to control forest fires.

The study suggests that drastic reforms should be introduced in the Forest Department, Government of Khyber Pakhtunkhwa. Most important, it should have better coordination with the local people besides being more accessible to them. In addition, the government should prepare a comprehensive land use policy for the forest-rich areas such as the sample districts for this study, so that uncontrolled and unplanned construction causing rapid deforestation may be stopped.

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Social Exclusion and Contraceptive Use Among Rural and Urban Women in Pakistan

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This study aimed at explaining contraceptive use in the overall socio-cultural context of the Pakistani society, besides examining the conceptual framework of social exclusion as a determinant of contraceptive use among rural and urban women. The study is a departure from mainstream social exclusion studies using conventional indicators such as poverty and marginalization, since it aims at measuring exclusion by level of women's participation in social, cultural, political and economic activities, as well as in personal and family decision-making. The study was conducted in an urban town of Lahore District and in five villages of Kasur District in Punjab. Data were collected from 655 ever married women through household and individual questionnaires. The results indicate that women's social exclusion is prevalent in both rural and urban areas of Pakistan, though its extent is relatively higher in the former. The findings suggest that the patriarchal structure and gender discrimination are the two main reasons for women's exclusion from the mainstream of life. The study concludes that high level of social exclusion results in low level of contraceptive use among rural and urban women in Pakistan.

Keywords: contraceptive use, social exclusion, patriarchal structure, gender discrimination, Pakistani women

Pakistan presents an interesting context for examining the range of potential barriers to the use of reproductive health services, with strict cultural norms that may inhibit service utilization (Stephenson & Hennink, 2004). Despite having knowledge of modern contraceptive methods (94% of married women know about at least one modern contraceptive method), only 29.6 % of married women of reproductive age use any contraceptive method (NIPS & Macro International Inc., 2008).

Pakistan's political, social and cultural context poses many challenges to the family planning programme; for example, individual and cultural constraints on women restrict them from fully availing these services. Therefore, the unmet need for family planning in the country remains at a relatively high level by international standards (Westoff & Bankole, 2000). Contraceptive use is a sensitive issue in Pakistan since women are mostly not allowed to make decisions in this regard.

Family is considered to be the basic building block of society and it is generally believed that its integrity can be maintained by unequal power relation between men and women. The relatively less favourable position of women in the economic and decision-making spheres, in conjunction with their restricted mobility to access services, inhibits them from making choices about family size and the practice of family planning (Hakim & Aziz, 1998; Khan, 1999).

The status of women in Pakistan, measured through both conventional and non-conventional indicators, remains low (UNDP, 2004). Generally, rural women's conventional indicators of status, such as education and employment, are lower than that of their urban counterparts and they are denied even their basic rights (Mahmood & Ringheim, 1996).

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This study was conducted to explain contraceptive use in the overall cultural context of the Pakistani society. It hypothesized that women's social exclusion is widely prevalent, particularly in rural areas of the country, because of the patriarchal structure. The focus of the study was on determining the extent to which the patriarchal structure is responsible for women's social exclusion in Pakistan and to which contraceptive use is being affected by this social exclusion. 'Social exclusion', broadly defined, refers to the societal and institutional processes that exclude certain groups from full participation in social, cultural and political life of societies (Narayan, 1999).

Literature Review

Numerous studies have revealed that large segments of the population, concentrated in rural areas, face considerable difficulty in obtaining low-cost, high-quality family planning services (Rosen & Conley, 1996; Rukanuddin & Hardee-Cleaveland, 1992). The empirical studies carried out in diverse settings in the 1990s reveal that a set of related health concerns constitutes a powerful obstacle to using contraceptive methods (Bongaarts & Bruce, 1995; Yinger, 1998). According to Hashmi, Alam and Sheraz (1993), the fear of side-effects is one of the two most important explanations for the non-use of contraceptive methods.

Most studies on the subject conclude that education is one of the most consistent predictors of fertility across societies, and a well-established predictor of fertility at both the individual level and the contextual level (Cochrane, 1979; Sabatello, Adler, Sterksal & Peretz, 1996). However, Karim (1997) finds that women with post-secondary education have lower levels of contraceptive use than women with only primary education.

Most researchers have focused on Pakistani women's lack of physical and personal autonomy (Cain, 1993; Hakim & Aziz, 1998), poor education (Sathar & Manson, 1993), age at marriage (Abadian, 1996; Hakim, 1994; Mason, 1997; Soomro, 2000), son preference and child mortality (Arnold, 1996; Mahmood, 1992; Nag, 1991; Nayab, 1998), religious beliefs and values, and lack of employment opportunities and household authority as possible reason for low level of contraceptive use among them.

Several longitudinal analyses have shown women's stated intentions to be strongly associated with their later contraceptive behaviour (Adler, Kegeles, Irwin & Wibbelsman, 1990). According to Mahmood and Ringheim (1996), women's knowledge of sources of supply is the strongest predictor of contraceptive use. Another line of research focuses on spousal communication about contraception and related issues, and finds that it is a good predictor of contraceptive use and fertility preferences (Mahmood & Ringheim, 1997).

This integrated review of available studies indicates that reproductive behaviour, particularly the use of contraceptive methods, has been studied in relation to various factors; but these factors have been studied in isolation. Similarly, the concept of social exclusion and its effects on decision-making processes, particularly with regard to contraceptive use, have not been studied in Pakistan. This conceptual framework of social exclusion has been used in other cultural settings to examine the extent of deprivation and social inequality as a proxy measure of poverty.

In developing countries, however, researches rarely focus on women's social exclusion and its effects on various dimensions of reproductive behaviour, including contraceptive use. In the Pakistani society, women seem to be excluded from participation in social activities. Systematic examination of social contexts, institutions and social relationships provides insight into the processes whereby women are excluded from full participation in the mainstream of society.

For instance, women in Pakistan are disadvantageous in terms of access to education and gainful employment. Cultural expectations, particularly in rural settings, do not yet consider women as being independent of their male counterparts, and their identity is linked with the identity of male member of household. In rural areas, people give more importance to imparting education to boys than girls; though this trend is changing gradually (Hooper & Hamid, 2003).

Stephenson and Hennink (2004) conducted a study to analyze barriers to family planning service use among the urban poor in Pakistan. The study concludes that type of barrier a woman faces in accessing family planning services is not related to her individual characteristics; rather it is influenced by the characteristics of her household and other household members. It also suggests that the urban poor cannot be treated as a homogeneous group since there are important socio-demographic variations within them in relation to their family planning service use and the barriers faced in service utilization. However, women in urban slums identified socio-cultural factors as the greatest barrier to family planning service use.

According to Hardee and Leahy (2008), a large number of women in Pakistan continue to have an unmet need for family planning; that is, they want to either wait for their next child or not have any more children, but are not using any contraceptive method. One-fourth of married women of reproductive age in Pakistan are estimated to have an unmet need for family planning, with a greater share of the need among women who say they want no more children. The unmet need is highest among the poor, those living in rural areas and illiterate women.

The researcher could not find any specific study linking social exclusion with the use of contraceptive methods in Pakistan. However, the reviewed studies relating to women's status, fertility, contraceptive use and social exclusion helped in identifying several variables that are crucial to understanding women's social exclusion in Pakistan and how it affects the use of contraceptive methods among them. This study particularly focused on rural areas where the level of women's social exclusion is assumed to be higher than urban areas.

There is substantial information to suggest that a large number of women in Pakistan, particularly in rural areas, do not occupy major public spaces because of systematic socio-cultural exclusion. Through this study, an attempt has been made to examine the extent of social exclusion among urban and rural women in Pakistan, and its effects on their use of contraceptive methods.

Methodology

Data for this study were collected from five rural communities and one urban community. The multistage simple random sampling method was used to draw the sample. A household survey was also conducted in the study area to get the sample of respondents. In the first stage of sampling, Kasur District in Pakistan's population-wise largest province of Punjab was selected randomly. Kasur has three 'tehsils' (sub-districts), of which Kasur Tehsil was selected randomly. In the next stage, Kot Radha Kishan 'qanun go halqa' of Kasur Tehsil was selected. Next, Baghiar Mar 'patwar circle' (PC) of this qanun go halqa was selected using the simple random sampling method. All five villages of Bhagiar Mar PC were selected to draw a rural sample of ever married women (EMW).

For comparison, an independent sample of urban women was drawn. Lahore District, also in Punjab, was selected randomly for this purpose in the first stage of sampling. Lahore District has nine towns, of which Nishtar Town was selected randomly. In the next stage, Union Council No. 140 of Nishtar Town was selected. Next, Block No. 5 (Green Town) of this union council was selected using the simple random sampling method to draw an urban sample of EMW.

Sampling Procedure

The researcher approached the respondents in the last stage using the systematic sampling method. Assuming that there were 1.3 EMW per household, a sample of women was drawn from the list of enumerated households in the selected rural and urban areas.

To select the desired sample of 333 respondents from the rural areas, the researcher had to select a sample of 255 households, of the total of 1,535 households in all the five selected villages of Bhagiar Mar PC. Thus, the k^{th} value was worked out at 6 and every sixth of the 1,535 households was selected. The same procedure was adopted to select the desired sample of 325 respondents from the urban area. The researcher had to select a sample of 250 households, of the total of 1,637 households in Block No. 5 (Green Town). Thus, the k^{th} value was worked out at 6.5 and every sixth or seventh of the 1,637 households was selected.

The first household was selected by applying the simple random sampling method, while the subsequent values were obtained by adding k^{th} values in both rural and urban areas. A rural sample of 332 and an urban sample of 323 were finally obtained. All EMW in the selected households in both rural and urban areas were interviewed.

Categorization of Social Exclusion Index

To measure the independent variable of social exclusion, seven indicators were identified: 1) household income; 2) distance to health services; 3) age at marriage; 4) highest level of education; 5) frequency of consultation with family members; 6) participation in religious activities; and 7) casting of vote with own choice. Based on these indicators, social exclusion was categorized as 'highly excluded', 'moderately excluded' and 'least excluded'.

Categorization of exclusion variable for rural sample.

Quartiles have been applied to categorize the indicators as follows:

>Median = highly excluded.

≤Median = moderately excluded.

Categorization of exclusion variable for urban sample.

Respondents having 5+ Hs = highly excluded

Respondents having 3-4 Hs = moderately excluded

Respondents having ≤2 Hs = least excluded

Coding Procedures for Dependent Variable (Use of Contraceptive Methods)

Rural sample.

A minor change was made to the criterion because of less-than-expected cell frequency, and median was used to determine the high and low categories.

(≤ Median) = low

(> Median) = high

Urban sample.

Non-use of contraceptives = low

Contraceptive use after 3 or more live births = medium

Contraceptive use after ≤ 2 live births = high

Demographic and Socioeconomic Status of Women

The following is a descriptive analysis of the indicators used in this study to capture women's socioeconomic status. In the following, data on the respondents' age; marital status and age at marriage; school attendance and highest level of education; husbands' occupation, school attendance and highest level of education; and monthly household income are presented in percentages, as well as distributed by urban, rural and total samples.

The results showed that the overwhelming majority (85%) of the total respondents was in the reproductive age group (15-49 years) and only 15% of them were aged over 50 years (Table 1). There was no significant difference in the results of rural and urban samples.

Table 1
Age of Respondents

	Rural		Urban		Total	
Age of Respondents	*N*	%	*N*	%	*N*	%
15-19 years	6	2	5	2	11	2
20-24 years	43	13	24	7	67	10
25-29 years	55	17	63	20	118	18
30-34 years	61	18	48	15	109	17
35-39 years	57	17	60	19	117	18
40-44 years	31	9	35	11	66	10
45-49 years	27	8	43	13	70	11
Over 50 years	52	16	45	14	97	15
Total	332	100	323	100	655	100
Median value	35.04		36.72		35.96	

Pearson χ^2 insignificant at $p < .05$

The results showed that the overwhelming majority (96%) of the total respondents was married and only 4% of them were widowed, divorced or separated (Table 2). There was no significant difference in the results of rural and urban samples. This finding is consistent with official statistics given in the latest Demographic and Health Survey (NIPS & Macro International Inc., 2008). One possible explanation for the low percentage of widowed, separated or divorced women could be low reporting because of the stigma attached to separation and divorce in Pakistan.

Almost all the married respondents (99% in urban areas and 94% in rural areas) were married only once. The reasons for this could be that the institution of marriage is quite strong in Pakistan, and that women generally do not have opportunities to marry again once they are divorced or separated.

Women's age at marriage is an important indicator in measuring their level of exclusion. The results showed that more than one-half (52%) of the total respondents got married before reaching the age of 20 (Table 2). As expected, the results of rural and urban samples differed significantly on this count: 60% of the rural respondents got married before reaching the age of 20, as compared with 44% of the urban respondents.

This high percentage of women marrying so young may be because of cultural and 'Islamic' traditions. Whatever the reason, this could definitely cause hindrance for women in achieving higher educational and professional levels.

Table 2
Marital Status and Age at Marriage of Respondents

	Rural		Urban		Total	
Variable	*N*	%	*N*	%	*N*	%
Marital Status						
Married	316	95	310	96	626	96
Widowed/Divorced/Separated	16	5	13	4	29	4
Total	332	100	323	100	655	100
Age at Marriage						
Under 15 years	32	10	18	6	50	8
15-19 years	167	50	124	38	291	44
20-24 years	94	28	142	44	236	36
25-29 years	33	10	32	10	65	10
30-34 years	6	2	7	2	13	2
Total	332	100	323	100	655	100
Median value	17.68		20.68		19.76	

Pearson χ^2 significant at $p < .05$

Education is an important indicator of social status. The results showed that more than one-half (51%) of the total respondents had attended school (Table 3). As expected, the results of urban and rural samples differed significantly on this count: 78% of the urban respondents had attended school, as compared with only 23% of the rural respondents. This finding suggests that women in urban areas enjoy relatively better status than their rural counterparts.

The results showed that almost one-third (31%) of the total respondents who had attended school studied only until the primary level or even less (Table 3). As expected, the results of rural and urban samples differed significantly on this count: 59% of the rural respondents who had attended school studied only until the primary level or even less, as compared with only 22% of the urban respondents. This finding also indicates the low level of women's education in rural areas.

Table 3
School Attendance and Highest Level of Education of Respondents

	Rural		Urban		Total	
Variable	*N*	%	*N*	%	*N*	%
School Attendance						
Attended school	78	23	253	78	331	51
Never attended school	254	77	70	22	324	49
Total	332	100	323	100	655	100
Highest Level of Education						
Primary (5-year schooling) or less	46	59	55	22	101	31
Middle (8-year schooling)	16	21	47	19	63	19
Matriculation (10-year schooling)	10	13	84	33	94	28
Over Matriculation	6	8	67	26	73	22
Total	78	100	253	100	331	100

Pearson χ^2 significant at $p < .05$

While collecting data on women's socioeconomic profile, their husbands' occupation was also taken into consideration. The results showed that 44%, 27% and 22% of the urban respondents' husbands were private employees, businessmen and government employees, respectively (Table 4). On the other hand, 39% of the rural respondents' husbands worked in the agricultural sector; and 21%, 14% and 11% were private employees, businessmen and government employees, respectively.

Husbands' education is another important predictor that affects the level of women's social exclusion. Generally, education broadens the mental horizon of individuals and they tend to accept new ideas. Given this assumption, it seemed pertinent to measure the educational status of the respondents' husbands. The results showed that almost two-thirds (66%) of the total respondents' husbands had attended school (Table 4). As expected, the results of urban and rural samples differed, however not as significantly as was the case with the respondents themselves.

Husbands' school attendance is an important determinant of the level of women's social exclusion, but their level of education is equally important since it is assumed that if husbands have higher level of education, chances of women's inclusion in society's mainstream activities are greater. The results showed that 41% of the total respondents' husbands who had attended school studied until Matriculation (Table 4). Rather unexpectedly, the results of rural and urban samples were almost the same on this count: 41% and 42%, respectively.

Table 4
Occupation, School Attendance and Highest Level of Education of Respondents' Husbands

	Rural		Urban		Total	
Variable	*N*	%	*N*	%	*N*	%
Occupation						
Government employee	37	11	71	22	108	16
Private employee	70	21	141	44	211	32
Business	46	14	88	27	134	20
Agriculture	129	39	3	1	132	20
Others	50	15	20	6	70	11
Total	332	100	323	100	655	100
School Attendance						
Attended school	182	55	252	78	434	66
Never attended school	150	45	71	22	221	34
Total	332	100	323	100	655	100
Highest Level of Education						
Primary (5-year schooling) or less	45	25	33	13	78	18
Middle (8-year schooling)	43	24	34	13	77	18
Matriculation (10-year schooling)	74	41	106	42	180	41
Over Matriculation	20	11	79	31	99	23
Total	182	100	252	100	434	100

Pearson χ^2 significant at $p < .05$

The income level is another important indicator of social status, thus the respondents were asked about their monthly household income from all sources. One of the major assumptions taken into account was that rural women have lower status than their urban counterparts, and the income

level would help in determining how far this assumption is valid. The results showed that the monthly household income of almost one-half (47%) of the total respondents was between Rs.1,000 and Rs.5,000 (Table 5).

Table 5
Monthly Household Income of Respondents

	Rural		Urban		Total	
Monthly Household Income	*N*	%	*N*	%	*N*	%
Rs.1,000-5,000	211	64	99	31	310	47
Rs.5,000-10,000	95	29	121	37	216	33
Over Rs.10,000	26	8	103	32	129	20
Total	332	100	323	100	655	100
Median value	4933.64		7583.5		5405.95	

Pearson χ^2 significant at $p < .05$

As expected, the results of rural and urban samples differed significantly on this count: the monthly household income of almost two-thirds (64%) of the rural respondents was between Rs.1,000 and Rs.5,000, as compared with less than one-third (31%) of the urban respondents. Similarly, only 8% of the rural respondents reported that their monthly household income was over Rs.10,000, as compared with almost one-third (32%) of the urban respondents. This finding clearly suggests that poverty is concentrated in rural areas of Pakistan, while urban households enjoy a relatively better socioeconomic status.

Inferential Analysis

To draw inferences, chi-square test was used to test the association between social exclusion (independent variable) and use of contraceptive methods (dependent variable) among EMW. The association between these two variables was tested for rural, urban and total samples.

Hypothesis

The extent of social exclusion affects the use of contraceptive methods among ever married women (EMW).

In order to test the hypothesis, the use of contraceptive methods was categorized as ‘low’ (non-use of contraceptives), ‘medium’ (contraceptive use after 3 or more live births) and ‘high’ (contraceptive use after 2 or less live births) by the level of social exclusion: : ‘highly excluded’, ‘moderately excluded’ and ‘least excluded’. To measure the association between social exclusion and the use of contraceptive methods among EMW, the distribution of their percentages for rural, urban and total samples was analyzed.

The majority (71%) of the highly excluded respondents in both rural and urban areas reported low level of contraceptive use, as compared with 55% of the moderately excluded and 61% of the least excluded respondents (Table 6). These figures support the assumption that the highly excluded women have lower contraceptive use than their least excluded counterparts. The results showed that only 6% of the least excluded respondents reported high level of contraceptive use, as compared with 13% of the highly excluded respondents. This finding presents a contradictory trend to the assumed relationship between social exclusion and contraceptive use among EMW.

Table 6

Frequency and Percentage Distribution of Social Exclusion and Use of Contraceptive Methods Among Ever Married Women

Sample	Use of Contraceptive Methods	Level of Social Exclusion: Highly Excluded *N*	Highly Excluded %	Moderately Excluded *N*	Moderately Excluded %	Least Excluded *N*	Least Excluded %	Total *N*	Total %
Rural*	Low	211	78	-	-	51	82	262	79
	High	59	22	-	-	11	18	70	21
	Total	270	100	-	-	62	100	332	100
Urban**	Low	56	52	85	46	14	45	155	48
	Medium	39	36	79	43	6	19	124	38
	High	12	11	21	11	11	36	44	14
	Total	107	100	185	100	31	100	323	100
Total**	Low	268	71	134	55	20	61	422	65
	Medium	59	16	57	23	11	33	127	19
	High	51	13	53	22	2	6	106	16
	Total	378	100	244	100	33	100	655	100

* Pearson χ^2 insignificant at $p < .05$; ** Pearson χ^2 significant at $p < .05$

The results showed that 52% of the highly excluded urban respondents reported low level of contraceptive use, as compared with 45% of their least excluded counterparts. This finding supports the assumption that the highly excluded women in urban areas of Pakistan have lower contraceptive use than their least excluded counterparts. More than one-third (36%) of the least excluded urban respondents reported high level of contraceptive use, as compared with only 11% of their highly excluded counterparts. This finding clearly suggests that low level of social exclusion results in high level of contraceptive use among urban women.

Overall, the results presented mixed findings. The major assumption of the study was that high level of social exclusion results in low level of contraceptive use among both rural and urban women. However, this relationship was observed only in urban and total samples, not in the rural sample, where high level of social exclusion led to high level of contraceptive use. Thus, it may be concluded that the main hypothesis of the study has not been fully borne out by the empirical data.

There could be several explanations for this unexpected result. First, the overall sample size does not seem to be sufficient for carrying out such a complex analysis with so many variables used in the design of the social exclusion index. Admittedly, with such a limited sample size, unusual results are understandable and expected. Second, because of the highly uneven distribution of the respondents, some cells in the cross-table contained figures less than five. Hence, the results of chi-square should be read with caution.

Multivariate Analysis

The logistic regression was applied to the dependent variable—use of contraceptive methods. This dependent variable was taken as a dichotomous variable (ever used and never used) and the net effect of the seven indicators of social exclusion on the use of contraceptive methods was measured using the following formula:

$$p = 1 / 1 + \exp - z \; (z = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_k x_k)$$

Where p is probability of contraceptive use; x_1 is household income, x_2 is distance to health services; x_3 is age at marriage; x_4 is level of education; x_5 is frequency of consultation with family members; x_6 is participation in religious activities; and x_7 is casting of vote with own choice. The results showed that the respondents' age at first marriage was significantly associated with contraceptive use in all the three samples: rural, urban and total (Table 7).

Table 7
Logistic Regression of Social Exclusion (Independent Variable) and Contraceptive Use (Dependent Variable)

	Regression Coefficients		
Exclusion Factors	Rural	Urban	Total
Household income	-0.569	-0.012	-0.246
Distance to health services	0.078	0.384	0.373
Age at marriage	0.536*	0.632*	0.541*
Level of education	0.055	-0.055	-0.113
Frequency of consultation with family members	-0.26	0.241	-0.153
Participation in religious activities	-0.281	-0.111	-0.249
Casting of vote with choice	0.112*	0.088	0.153
Constant	1.536	-2.562	-0.213

Rural, urban and total (1 *df*); * $p < .05$

The study findings suggest that the later women get married, the higher their chances of using contraceptive methods, primarily because of their increased social power. The results also showed that, besides age at marriage, casting of vote with own choice was positively correlated with the use of contraceptive methods in rural and total samples.

Conclusion

If one looks at the data, the majority of results seems to be rather unexpected and does not fit in the theoretical framework of this study. For example, household income, distance to health services, level of education, frequency of consultation with family members and participation in religious activities did not prove to be significantly linked with the use of contraceptive methods in any of the three samples: rural, urban or total.

Although the results of chi-square test showed an association between social exclusion and the use of contraceptive methods among the respondents, the net-effect of the seven indicators of social exclusion was not found in rural and urban samples. Rather unexpectedly, the frequency of consultation with family members and participation in religious activities did not significantly affect the use of contraceptive methods among both rural and urban respondents.

It was assumed that the frequency of consultation with family members reduces the level of women's social exclusion, which, in turn, positively affects the use of contraceptive methods among them. However, within Pakistan's cultural context, women may not openly and freely discuss their sexual and reproductive health issues even if they are consulted in other family matters. Therefore, the frequency of consultation did not appear as a significant factor affecting contraceptive use.

The results of the logistic analysis suggest that only age at marriage is a significant factor affecting the use of contraceptive methods among both rural and urban women in Pakistan. The

underlying reason for this relationship may be that when women get married at later ages, they become mature enough to take some decisions on their own, even if these decisions are against the wishes of their family members.

The results indicated that the association between social exclusion and the use of contraceptive methods among the respondents existed in only urban and total samples. This finding implies that high level of social exclusion results in low level of contraceptive use among urban women in Pakistan. However, no significant association was found between the two variables of social exclusion and contraceptive use in the rural sample.

The absence of such an association in rural areas suggests that high level of women's social exclusion does not automatically result in low level of contraceptive use there. However, this unexpected result must be treated with caution because the cell size was not enough to find out any significant association between social exclusion and contraceptive use among the rural respondents.

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Measuring Competitiveness Among Asian Exporters in the Global Rice Market

Tahir Mukhtar[*] and Muhammad Ilyas

With the gradual reduction in trade barriers led by the process of globalization, countries all over the word now place more emphasis on promoting export competitiveness. Asian countries are the world's top rice exporters, but the 2007-08 world food price crisis has underscored that they are divided into 'rice-haves' and 'rice have-nots'. This study aimed at measuring competitiveness among five major Asian rice exporting countries of China, India, Pakistan, Thailand and Vietnam by computing both their comparative and competitive advantage in the global rice market, and ranking them according to the degree of advantage. For this purpose, the study used the Balassa index of revealed comparative advantage and the White index of revealed competitive advantage. The ranking of the five major Asian exporters for the period 1985-2005 showed that Pakistan had both the greatest comparative and competitive advantage in the global rice market, followed by Vietnam and Thailand. Thus, the study suggests that Pakistan should take advantage of the situation to increase its share in the global rice market.

Keywords: competitiveness, global rice market, 2007-08 world food price crisis, comparative advantage, competitive advantage

The era of globalization since the late 1940s has dramatically changed the world's trading patterns, as well as the measures employed by countries to survive in a world where trade is being liberalized. With the gradual reduction in trade barriers led by the process of globalization, countries now place more emphasis on promoting export competitiveness.

Competitiveness is one of the most hotly debates concepts in international trade. The concept has become more fashionable in recent times because of the liberalization of the markets and the emphasis on a more global economy. Competition used to be more localized within regions and nations but today, with an increasing international trade, it applies everywhere. Competitors are not fully identified as they used to be and now they might come from far away places, which was not the case previously.

Competitiveness is an indicator of the ability to supply goods and services at the location and in the form and at the time sought after by buyers, at prices that are as good as or better than those of potential suppliers, while earning at least the opportunity cost of returns on resources employed (Frohberg & Hartmann, 1997). Thus, a competitive firm, industry or country has the ability to satisfy the consumer with a product of the right price, right quality and right packaging.

Asian countries, the world's top rice suppliers, account for 76% of the 30 million tons of the staple food exported each year (Montero, 2008). Rice prices have shot up worldwide in the last few years, in part because many of these countries have cut back on exports fearing domestic shortages. The 2007-08 world food price crisis has underscored that, as a region, Asia is divided into 'rice haves' (where domestic production is enough to feed the population) and 'rice have-nots' (which consistently rely on imports).

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World food prices increased dramatically in 2007 and in the first two quarters of 2008, creating a global crisis and causing political and economical instability and social unrest in both poor and developed nations. Between 2006 and 2008, average world prices for rice rose by 217%, wheat by 136%, corn by 125% and soybeans by 107%. In late April 2008, rice prices hit 24 U.S. cents per pound, meaning that the grain's price more than doubled in just seven months.

The international trade in rice is small relative to its total production. Only 6-7% of the global rice production is traded each year, well below the trade shares for other grains and oilseeds. These market dynamics could be explained by several factors. Most important, rice is largely produced in Asian countries, where it is also the major food source for nutrition.

Because of food security concerns, rice production and trade are highly protected and sensitive. The global rice market is much more conservative than that of other agricultural commodities, which restricts its development. Also, it is highly volatile because a small change in the commodity's production or consumption results in a relatively big change in its total trade.

The five major Asian rice exporting countries are China, India, Pakistan, Thailand and Vietnam. A snapshot of these countries' rice production, consumption and trade – as well as how much they were affected by the 2007-08 world food price crisis – is given in the following:

China is the world's largest producer and consumer of rice, with annual supplies large enough to feed its entire population. The country exported 1.4 million tons of rice in 2007, but that was before the 2007-08 world food price crisis when consumer prices reached an 11-year high. To dampen price increases, China imposed strict restrictions on export of rice, which resulted in a drop of about 300,000 tons in the global market.

India exports about 4 million tons of rice annually, making it the world's third-largest exporter. But, after the 2007-08 world food price crisis, the country also imposed restrictions on export of rice, which put a considerable strain on world prices and supplies.

Pakistan exported 3.3 million tons of rice in 2007, making it the fifth-largest exporter just behind the United States. The country remained largely unaffected by the 2007-08 world food price crisis, but its exports fell by about 15% to 2.8 million tons that year because of a variety of domestic factors. Since rice is not a staple food in Pakistan like wheat, the government did not place the same kind of restrictions on its exports as other Asian countries. Therefore, with rice in short supply, many countries are pinning their hopes on Pakistan's exports.

Thailand is the world's largest exporter of rice, with 31% share in the global market. In 2007, the country exported 9.4 million tons of rice, of a total 20 million tons produced. Unlike many other Asian countries, Thailand did not impose any restrictions on export of rice after the 2007-08 world food price crisis and exported almost 9 million tons that year. Yet rice prices doubled in the country after the food price crisis. However, the government had stockpiled 2.1 million tons of rice and no shortages took place.

Vietnam is the world's second largest exporter of rice, with about 20% share in the global market. After the 2007-08 world food price crisis, the country's government said it would limit rice exports to 3.5 million tons, down from 4.5 million tons in 2007. The announcement contributed to doubling of global prices of rice. Consumer prices in Vietnam, meanwhile, increased by 20 percent, a 12-year record, because of the food price crisis.

The objectives of this study were to measure competitiveness among the five major Asian rice exporting countries by computing both their comparative and competitive advantage in the global rice market, and ranking them according to their degree of advantage. The study results will, thus, be useful for trade policy managers in designing efficient strategies.

Literature Review

No single measure of international competitiveness has general acceptance in the literature, but an important aspect is the level of prices across countries. The Ricardian (classical) and the Heckscher-Ohlin (neoclassical) theories of comparative advantage explain international trade within a two-country, two-commodity paradigm, thus analysis becomes very difficult and even impossible when trade involves more than two countries and/or commodities Chen (1995). To overcome this limitation, Balassa (1965; 1977) formulated an index of revealed comparative advantage (RCA).

Jebuni, Love and Forsyth (1988) used the Balassa RCA index to analyze the comparative advantage in exports for 12 less developed countries. Yeats (1997) identified possible distortions in trade patterns on account of discriminatory barriers that are so characteristic of the regional trade agreements, using the Balassa index in conjunction with changes in the regional orientation of exports to identify any apparent inefficiency in trade patterns of Mercosur countries.

Richardson and Zhang (1999) applied the Balassa RCA index to U.S. trade to analyze the patterns of variation across time, sectors and regions. They conclude that the patterns differ across different parts of the world over time, as well as for different levels of aggregation of the export data. Yue (2001) used the Balassa index to demonstrate that China has changed its export patterns to coincide with its comparative advantage, and that there are distinct differences in export patterns of the country's coastal and interior regions.

Ferto and Hubbard (2003) investigated competitiveness of Hungarian agriculture in relation to that of the European Union from 1992 to 1998, employing four indices of revealed comparative advantage, including the Balassa RCA index. Consistency tests suggest that the indices are less satisfactory as cardinal measures, but are useful in identifying whether Hungary has a comparative advantage in a particular product group.

Using both a version of the Balassa index and the export similarity index, Batra and Zeba (2005) measured revealed comparative advantage for India and China at two- and six-digit levels of the Harmonized System of classification. Their analysis showed that the pattern of comparative advantage for the two countries varied at different levels of commodity disaggregation.

Vollrath (1987) is among the earliest researchers to distinguish between comparative and competitive advantage. He argues that comparative advantage is applied to efficient, well-functioning and undistorted market prices; while competitive advantage to distorted market prices. Vollrath (1987; 1991) and White (1987) believe that the true measure of performance in global markets is competitive advantage, not comparative advantage.

The Vollrath revealed competitiveness index takes into account both a country's exports and imports relative to the rest of world's exports and imports of a particular commodity under the neoclassical framework. White (1987) measured competitiveness of the U.S. agricultural trade using a method similar in nature to the Vollrath index; however, his method is actually an extension of the Balassa RCA index.

The Vollrath revealed competitiveness index has also been used in some other empirical studies to measure economic and export performance of a country, a group of countries or a region. But, the debate to find an appropriate method with proven properties to measure the comparative advantage of the commodity patterns across countries still carries on. This study applies both the Balassa index of revealed comparative advantage and the White index of revealed competitive advantage to analyze the performance of the five selected Asian rice exporting countries of China, India, Pakistan, Thailand and Vietnam for the period 1985-2005.

Method of Analysis

Economic approaches to assess competitiveness differ greatly, and depend on analysis related to level of firms, sectors and overall economy (Frohberg & Hartmann, 1997). Approaches analyzing the sector level consider competitiveness to be the ability of an industry or a country to maintain market share, and to compete with foreign counterparts in foreign and domestic markets under free trade conditions (Kim & Marion, 1997; Traill, 1998).

As a theoretical reference, competitiveness is linked with comparative advantage related to the Heckscher-Ohlin theory and competitive advantage related to the Porter diamond model (Lall, 2001). An analysis of competitiveness at the sector level is usually carried out by assessing trade indices, and comparing trends and countries in the international market. In our analysis, we have used both revealed comparative advantage and revealed competitive advantage indices.

Balassa's Index of Revealed Comparative Advantage

Balassa (1965) formulated the revealed comparative advantage (RCA) index that deals with two countries and commodities. The Balassa RCA index is calculated as:

$$R_{ij} = (X_{ij} / X_{wj}) / (X_i / X_w)$$

Where,

R_{ij} = revealed comparative advantage of country $_i$ for commodity $_j$
X_{ij} = export by country $_i$ of commodity $_j$
X_{wj} = total world exports of commodity $_j$
X_i = total world exports of country $_i$
X_w = total world exports

The value of R_{ij} may be equal, greater or less than 1. If it is greater than 1, this means that the country $_i$ has a comparative advantage in exporting commodity $_j$ since its market share in the commodity is larger than its share in total world exports and vice-versa.

White's Index of Revealed Competitive Advantage

This index is an extension of the Balassa RCA index, and it uses both export and import data. The competitive advantage is determined by taking into account export supply as well as import demand of a specific commodity for a specific country. Revealed competitive advantage is calculated as the difference between revealed comparative export share and revealed comparative import share for commodity. The White index of revealed competitive advantage is calculated as:

$$RCA_{ij} = RCS_{ij} - RCD_{ij}$$

$$RCA_{ij} = (X_{ij} / X_{wj}) / (X_i / X_w) - (M_{ij} / M_{wj}) / (M_i / M_w)$$

Where,

RCA_{ij} = revealed comparative advantage of country $_i$ for commodity $_j$
RCS_{ij} = ratio of a country's $_i$ share of commodity $_j$ to its share in total world exports
RCD_{ij} = ratio of a country's $_i$ share of commodity $_j$ to its share in total world imports
M_{ij} = import of commodity $_j$ by country $_i$
M_{wj} = total world imports of commodity $_j$
M_i = total world imports of country $_i$
M_w = total world imports

If RCA_{ij} is greater than 0 and R_{ij} is greater than 1, then the results of both the models are identical and show that the country $_i$ has an advantage in exporting commodity $_j$ and vice-versa. However, if the results are not the same, then one may conclude that both models are inconsistent. The study uses data for the period 1985-2005 from the *Food and Agriculture Organization (FAO) Trade Yearbook* for these years.

The indices of revealed comparative and competitive advantage are useful in examining international trade performance. If they yield the same results, the revealed comparative index may be applied. However, if they yield contradictory results, it is better to apply the revealed competitive advantage index since it also considers the import performance.

Results and Discussion

The overview of the data show that Thailand has the largest market share (29.57% in 2005) in the global rice market, followed by India with 17.96% (Table 1). The fact that these two countries export rice in large volume does not necessarily mean that they also have a comparative or competitive advantage over other rice exporting countries.

Table 1
Shares of Major Asian Exporters in Global Rice Market (%)

Year	China	India	Pakistan	Thailand	Vietnam	Others
1985	7.29	4.07	6.90	25.97	0.00	55.77
1986	6.80	3.02	10.99	24.79	0.02	54.38
1987	6.84	4.95	9.06	27.27	0.07	51.82
1988	5.03	5.64	9.00	33.79	0.55	45.99
1989	2.21	5.07	6.15	35.05	7.57	43.95
1990	2.37	5.95	5.84	26.23	7.36	52.26
1991	4.08	7.61	7.75	26.85	4.21	49.49
1992	4.36	6.95	7.73	26.72	7.83	46.42
1993	5.32	8.22	6.40	25.99	6.35	47.73
1994	8.85	6.28	4.01	25.88	6.21	48.77
1995	0.77	19.30	6.31	26.61	5.34	41.67
1996	1.80	11.68	6.76	26.30	9.86	43.60
1997	4.08	14.68	7.04	17.41	10.93	45.87
1998	9.79	15.76	5.94	21.94	10.66	35.91
1999	8.57	9.23	7.51	24.79	13.03	36.87
2000	8.95	10.15	8.26	25.36	10.33	36.96
2001	5.01	10.08	7.42	22.50	8.91	46.09
2002	5.78	17.87	6.79	24.05	10.69	34.82
2003	2.75	12.65	7.94	25.84	10.27	40.54
2004	2.28	18.22	7.88	29.79	11.96	29.87
2005	2.86	17.96	14.00	29.57	11.25	24.36

Rice is an agricultural product, thus revealed comparative advantage was computed using the agricultural trade measure (ACA). Moreover, rice is included in total merchandise exports, thus revealed comparative advantage was also computed using the total merchandise trade measure

(TCA). Similarly, revealed competitive advantage was also computed using the agricultural trade measure (ACE) and the total merchandise trade measure (TCE).

The results show that the selected countries' values of revealed comparative advantage (Tables 2 & 3) and revealed competitive advantage (Tables 4 & 5) are greater than 1 and 0, respectively, for most of the years from 1985-2005, which implies that they had both comparative and competitive advantage in the global rice market.

Table 2
Revealed Comparative Advantage Using Agricultural Trade Measure (ACA) for Major Asian Rice Exporters

Year	China	India	Pakistan	Thailand	Vietnam
1985	2.36	3.75	20.53	16.91	0.02
1986	1.97	2.90	23.94	15.74	0.15
1987	1.90	5.21	24.58	17.35	0.81
1988	1.42	7.45	20.86	19.25	5.21
1989	0.65	5.75	12.45	17.57	31.88
1990	0.78	6.08	19.20	15.80	36.83
1991	1.15	8.21	24.67	15.01	24.35
1992	1.30	8.44	22.36	14.33	34.57
1993	1.48	8.30	24.92	14.71	29.37
1994	2.36	7.52	22.71	14.10	22.71
1995	0.24	15.54	27.42	13.04	15.34
1996	0.58	9.29	22.54	12.85	26.10
1997	1.37	12.90	38.03	14.67	29.18
1998	3.54	13.22	22.56	13.55	19.50
1999	3.04	8.31	26.42	14.48	22.17
2000	2.82	8.45	31.83	14.37	18.53
2001	1.60	7.97	30.13	12.54	18.20
2002	1.77	14.32	30.35	13.03	22.36
2003	0.85	10.16	33.59	13.03	24.05
2004	0.85	15.47	37.48	14.99	22.30
2005	0.94	12.58	51.51	15.36	18.67
Mean	1.57	9.13	27.05	14.89	20.11
Variance	0.76	13.30	68.85	3.07	115.66

Table 3
Revealed Comparative Advantage Using Total Merchandise Trade Measure (TCA) for Major Asian Rice Exporters

Year	China	India	Pakistan	Thailand	Vietnam
1985	2.44	8.82	52.73	70.83	0.04
1986	1.98	6.91	74.99	59.51	0.42
1987	1.83	10.23	59.98	52.42	2.08
1988	1.33	11.55	56.88	60.67	15.27
1989	0.57	9.41	40.02	53.87	119.89
1990	0.64	11.37	40.14	39.74	0.04
1991	0.97	14.85	43.88	33.26	75.32

Year	China	India	Pakistan	Thailand	Vietnam
1992	0.98	12.78	42.20	30.88	113.81
1993	1.13	13.80	34.54	26.37	79.71
1994	1.77	10.14	24.88	24.46	65.50
1995	0.15	29.91	40.61	24.08	50.08
1996	0.36	18.92	43.37	25.18	72.46
1997	0.74	23.59	47.90	16.63	67.99
1998	1.82	25.45	38.67	21.84	62.30
1999	1.54	14.12	53.53	24.01	63.99
2000	1.44	14.29	58.35	23.82	45.52
2001	0.79	13.94	49.26	21.82	36.32
2002	0.82	21.47	44.06	23.14	41.20
2003	0.35	16.59	49.68	24.60	38.02
2004	0.34	22.60	52.43	27.62	52.78
2005	0.41	24.11	96.75	29.59	38.46
Mean	1.07	15.95	49.76	34.02	55.15
Variance	0.42	40.11	225.86	244.45	1242.22

Table 4
Revealed Competitive Advantage Using Agricultural Trade Measure (ACE) for Major Asian Rice Exporters

Year	China	India	Pakistan	Thailand	Vietnam
1985	1.89	3.17	20.53	16.91	-33.33
1986	1.32	2.51	23.94	15.74	-27.36
1987	1.02	5.06	24.57	17.35	-25.90
1988	0.83	1.77	20.84	19.25	-10.18
1989	-1.07	-2.58	12.44	17.57	30.15
1990	0.68	0.80	19.20	15.80	35.35
1991	0.85	7.79	24.66	15.01	23.72
1992	1.03	7.08	22.36	14.33	34.40
1993	1.20	7.21	24.92	14.71	29.36
1994	1.70	7.45	22.54	14.10	22.60
1995	-1.15	15.54	27.42	13.04	15.13
1996	-0.32	9.29	22.52	12.85	26.02
1997	0.84	12.90	38.03	14.67	29.15
1998	3.10	13.21	22.55	13.54	19.49
1999	2.75	8.22	26.40	14.46	22.10
2000	2.37	8.37	31.82	14.36	18.46
2001	1.18	7.97	30.05	12.54	18.17
2002	1.31	14.31	30.26	13.02	22.09
2003	0.40	10.16	33.53	12.98	24.02
2004	0.85	15.47	37.48	14.99	22.30
2005	0.94	12.58	51.51	15.36	18.67
Mean	0.96	8.01	27.01	14.87	14.97
Variance	1.18	24.88	68.12	3.08	420.41

Table 5
Revealed Competitive Advantage Using Total Merchandise Trade Measure (TCE) for Major Asian Rice Exporters

Year	China	India	Pakistan	Thailand	Vietnam
1985	2.13	8.30	52.73	70.83	-29.01
1986	1.52	6.61	74.98	59.51	-30.25
1987	1.06	10.09	59.96	52.42	-24.58
1988	0.83	6.58	56.84	60.67	2.64
1989	-1.06	4.62	40.00	53.87	118.58
1990	0.55	8.68	40.14	39.74	116.04
1991	0.74	14.67	43.88	33.26	74.78
1992	0.81	12.01	42.20	30.88	113.68
1993	0.99	13.28	34.53	26.37	79.66
1994	1.33	10.08	24.59	24.46	65.32
1995	-1.05	29.91	40.60	24.08	49.82
1996	-0.38	18.92	43.34	25.18	72.35
1997	0.34	23.59	47.89	16.63	67.95
1998	1.52	25.43	38.64	21.83	62.28
1999	1.36	14.03	53.48	24.00	63.90
2000	1.15	14.23	58.33	23.81	45.42
2001	0.51	13.94	48.93	21.82	36.28
2002	0.56	21.46	43.74	23.13	40.93
2003	0.08	16.58	49.42	24.57	37.99
2004	0.34	22.60	52.43	27.62	52.78
2005	0.41	24.11	96.75	29.59	38.46
Mean	0.60	15.22	49.66	34.00	50.23
Variance	0.69	50.05	223.89	244.63	1853.92

The computed values of mean and variance demonstrate that, among the five major Asian rice exporting countries, Pakistan had both the greatest comparative and competitive advantage in agricultural trade, while Vietnam had both the greatest comparative and competitive advantage in total merchandise trade, during the period 1985-2005. Thailand ranks third and India fourth, while China is at the bottom of the ranking with both the least comparative advantage and the least competitive advantage. Next, t-test was applied to check whether the results of the two models are statistically the same.

Test of Comparative and Competitive Advantage Models

The t-test was applied on the mean of the difference between the revealed comparative advantage using agricultural trade measure (ACA) and the revealed competitive advantage using agricultural trade measure (ACE), as well as between the revealed comparative advantage using total merchandise trade measure (TCA) and the revealed competitive advantage using total merchandise trade measure (TCE), to determine whether this difference is significantly higher or lower than 0.

So, our null hypothesis is that the difference between the revealed comparative advantage and the revealed competitive advantage is 0:

H_0^a: $ACA_i - ACE_i = 0$

H_0^b: $TCA_i - TCE_i = 0$

The alternative hypothesis is:

H_1^a: $ACA_i - ACE_i \neq 0$

H_1^b: $TCA_i - TCE_i \neq 0$

Where,

i = 1, 2, 3, 4, 5 (1 = China, 2 = India, 3 = Pakistan, 4 = Thailand, 5 = Vietnam)

The results of the statistical test show that the mean and standard error are not equal to 0 for all the selected countries, and t-ratios are statistically significant at 5% for China, India, Pakistan and Vietnam (Table 6). So, we accept the alternative hypothesis for these countries. However, we accept the null hypothesis for Thailand as its t-ratio is statistically insignificant at 5%.

Table 6
Statistics on Differences Between Comparative and Competitive Advantage for Major Asian Rice Exporters

	Agricultural Trade				Total Merchandise Trade			
Country	Mean	Std. error	t-ratio	Sig. (2-tail)	Mean	Std. error	t-ratio	Sig. (2-tail)
China	.609	.083	7.332*	.000	.464	.081	5.720*	.000
India	1.121	.505	2.221*	.038	.720	.328	2.192*	.040
Pakistan	.040	.017	2.397*	.026	.099	.036	2.715*	.013
Thailand	.021	.011	1.839	.081	.013	.007	1.822	.083
Vietnam	5.144	2.324	2.213*	.039	4.914	2.263	2.171*	.042

* Significance at 5% level

The results imply that the indices of revealed comparative and competitive advantage do not yield similar results for any of the sample countries except Thailand. As discussed earlier, if the two indices yield contradictory results, it is better to apply the revealed competitive advantage index since it also considers the import performance.

Test of Country-to-Country Comparisons

This test determines whether the t-ratio of the difference for one country significantly higher or lower than another country when the same index is applied. The t-test was applied on the mean of the difference between ACA_i and ACA_j, ACE_i and ACE_j, TCA_i and TCA_j, and TCE_i and TCE_j to determine whether this difference is significantly different from 0.

So, our null hypothesis is that the difference between any pair of the five major Asian rice exporting countries is 0:

H_0^a: $ACA_i - ACA_j = \Delta ACA = 0$

H_0^b: $ACE_i - ACE_j = \Delta ACE = 0$

H_0^c: $TCA_i - TCA_j = \Delta TCA = 0$

H_0^d: $TCE_i - TCE_j = \Delta TCE = 0$

The alternative hypothesis is that the difference between any pair of the five main Asian rice exporting countries is statistically different from 0:

H_1^a: $ACA_i - ACA_j = \Delta ACA \neq 0$

H_1^b: $ACE_i - ACE_j = \Delta ACE \neq 0$

H_1^c: $TCA_i - TCA_j = \Delta TCA \neq 0$

H_1^d: $TCE_i - TCE_j = \Delta TCE \neq 0$

Where,

$\boldsymbol{i}$ = 1, 2, 3, 4, 5

$\boldsymbol{j}$ = 2, 3, 4, 5

The t-ratios were calculated for all pairs of countries using the ACA, ACE, TCA and TCE measures. The results showed that India had both comparative and competitive advantage over China in rice exports during the period 1985-2005 (Table 7). The same was true for Pakistan, Thailand and Vietnam when paired with China. However, India did not have any comparative and competitive advantage over Pakistan and Thailand in rice exports.

Table 7
Statistics (t-ratios) on Differences Between Comparative and Competitive Advantage for Major Asian Rice Exporters

	Agricultural Product Trade				*Total Merchandise Trade*			
	ACA		ACE		TCA		TCE	
Countries	t-ratio	Sig. (2-tail)	t-ratio	Sig. (2-tail)	t-ratio	Sig. (2-tail)	t-ratio	Sig. (2-tail)
China-India	-8.852*	.000	-6.348*	.000	-10.158*	.000	-9.011*	.000
China-Pak	-13.834*	.000	-14.259*	.000	-14.857*	.000	-15.032*	.000
China-Thai	-31.005*	.000	-29.946*	.000	-9.852*	.000	-9.916*	.000
China-Viet	-7.674*	.000	-3.094*	.006	-6.973*	.000	-5.237*	.000
India-Pak	-12.016*	.000	-14.434*	.000	-9.609*	.000	-9.704*	.000
India-Thai	-5.485*	.000	-4.956*	.000	-4.073*	.001	-4.057*	.001
India-Viet	-4.921*	.000	-1.633	.118	-5.073*	.000	-3.748*	.001
Pak-Thai	6.185*	.000	6.180*	.000	3.908*	.001	3.902*	.001
Pak-Viet	2.342*	.030	2.635*	.016	-.547	.590	-.050	.960
Thai-Viet	-2.071	.052	-.020	.984	-2.225*	.038	-1.412	.173

* Significant at 5% level

The results showed that Vietnam had comparative advantage over India in rice exports. However, its competitive advantage over India was only in merchandise exports, implying that there was no significant difference in the export of agricultural products between the two countries.

The results further showed that Pakistan had both comparative and competitive advantage, in agricultural product trade as well as total merchandise trade, over Thailand in rice exports. Pakistan also had both comparative and competitive advantage over Vietnam in agricultural product trade, but there was no statistically significant difference between revealed comparative and competitive advantage of the two countries in total merchandise trade.

Finally, the results showed that Vietnam had comparative advantage over Thailand in total merchandise trade, but not in agricultural product trade. Moreover, there was no statistically significant difference between revealed competitive advantage of the two countries in either agricultural product trade or total merchandise trade.

Conclusion

The indices of revealed comparative and competitive advantage are useful in examining international trade performance. If they yield the same results, the revealed comparative index may be applied. However, if they yield contradictory results, it is better to apply the revealed competitive advantage index since it also considers the import performance.

The study concludes that India, Pakistan, Thailand and Vietnam had both comparative and competitive advantage over China in rice exports during the period 1985-2005. There were no significant differences in revealed competitive advantage between Thailand and Vietnam or India and Vietnam in the agricultural product trade category; or between Pakistan and Vietnam in the total merchandise trade category.

Moreover, Pakistan had both revealed comparative and competitive advantage over the other sample countries in the agricultural product trade category; and over China, India and Thailand in the total merchandise trade category. Although Thailand and India are the two largest Asian exporters of rice with over 47% of the market share in 2005, they did not have either the greatest comparative or competitive advantage in rice exports.

Among the five major Asian rice exporting countries, Pakistan had both the greatest comparative and competitive advantage in rice exports, followed by Vietnam and Thailand, during the period 1985-2005. Thus, the study suggests that Pakistan should take advantage of the situation to raise its share in the global rice market.

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The Impact of Terrorism on Foreign Direct Investment in Pakistan

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This study aimed at investigating the impact of terrorism on foreign direct investment (FDI) in Pakistan from January 2000 to June 2009. To investigate the impact of independent variable killings by terrorist attacks (TER) on dependent variable FDI, the Augmented Dickey-Fuller (ADF) test was applied to determine order of integration of the series. All series were integrated of order one [I(1)]. Next, the Johansen's cointegration test was applied. The results of the trace test indicate a long-run relationship between the two variables; that there exists a negative and significant unidirectional relationship between terrorism and FDI. The study findings suggests that fully eliminating terrorism is imperative to attract FDI; and a failure to do so will drastically reduce the productive capacity of Pakistan's economy and the chances of poverty eradication in the country.

'Terrorism' is defined as the pre-mediated use of violence, or threat to use violence, by individuals or sub-national groups to achieve a political, economic or social objective through the intimidation of a large audience beyond that of the immediate victims (Enders & Sandler, 2006b). Terrorists use different modes of attack (such as bombings, assassinations, kidnappings and skyjackings), the mix of which is chosen to optimally trade-off risks and returns (Sandler, Tschirhart & Cauley, 1983).

Terrorists try to make their attacks appear arbitrary, so as to maximize an audience's anxiety as risks seem everywhere and unpredictable. In truth, these attacks are not random but are planned to take maximum advantage of perceived target weaknesses. There are two main types of terrorist activities: domestic and transnational terrorism.

Domestic terrorism is home-based with consequences for only the host country, its institutions, citizens, property and policies. This type of terrorism involves perpetrators, victims and targets solely from the host country. Any terrorist demands associated with a domestic terrorist incident are directed at the people or institutions from the host country. Many suicide bombings by the Tamil Tigers are acts of domestic terrorism, so are the bombings carried out by the Abu Sayyaf group in the Philippines that do not injure or murder foreigners.

On the other hand, if terrorists cross a border to launch attacks, then the attacks are transnational. Terrorist incidents that begin in one country and end in another (such as an international skyjacking or the mailing of a letter bomb to another country) are considered as transnational terrorism. If a terrorist incident involves the citizens from two or more than two countries as victims, then it is also transnational terrorism.

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Terrorism in any country or region can potentially affect economic growth in the short-run through a number of channels (Abadie & Gardeazabal, 2003; 2008). Terrorist attacks can increase uncertainty which, in turn, results in reduced domestic and foreign investments (Enders, Sachsida & Sandler, 2006a). For developing countries, foreign direct investment is an important source of generating employment, utilizing human and natural resources, and introducing new techniques of production (Enders & Sandler, 1996).

Terrorist attacks result in allocation of resources to unproductive activities in the shape of enhanced expenditure on security measures, such as buying of extra weapons and recruitment of additional police and paramilitary forces, payments made to relatives of dead and injured victims of terrorist attacks by the government, etc. (Blomberg, Hess & Orphanides, 2004). These resources, otherwise, could have been spent on other productive investments.

The increased government expenditures on security measures can crowd out more growth-enhancing public and private investments (Gaibulloev & Sandler, 2008). Terrorist attacks also hinder growth in developing countries such as Pakistan by raising the cost of doing business in terms of higher wage rate, larger insurance premiums, destruction of infrastructure, greater insecurity and so on.

The Poverty Reduction Strategy Paper-II (PRSP-II) of the Ministry of Finance, Government of Pakistan, reveals that the country's participation in the United States-led 'war on terror' has resulted in substantial unemployment in the affected regions, which in turn has fuelled rural poverty. Everyday bombings, worsening law and order situation, and displacement of local populations have taken a toll on the socioeconomic foundation of the country.

Finally, terrorism can impact key industries, such as airline and tourism, and sectors, such as export and investment, which can in turn reduce gross domestic product (GDP) and economic growth of a country (Drakos, 2004; Enders, Sandler & Parise, 1992; Ito & Lee, 2005; Nitsch & Schumaker, 2004). In a globalized world economy, where investors are allowed to expand their investments, terrorism may induce large transfers of capital across countries.

According to State Bank of Pakistan (SBP) statistics, net foreign investment declined by 13%, or about $324 million, during the first seven months of fiscal year 2009. Similarly, massive outflow of $25.058 million of foreign portfolio investment from the country's equity market was witnessed during the week ended on January 10, 2009.

According to National Clearing Company of Pakistan Limited (NCCPL) data, foreign portfolio investment has been witnessing a declining trend since the beginning of 2008, and the cumulative figure of this mode of investment declined by $432.458 million from January 1, 2008, to January 9, 2009.

Considering this, the main objective of this study was to investigate the impact of terrorist incidents on foreign direct investment (FDI) in Pakistan from January 2000 to June 2009. The importance and utility of foreign direct investment for developing countries cannot be overemphasized, since it plays a critical role in their economic development and growth. But an important question raised by the relevant literature is that which determinants are considered by foreign investors while taking the decision to invest in some country.

Based on the literature, the main determinants of FDI can be summarized into four categories: infrastructure effects, factors cost, market access and agglomeration effect. Blomberg, Hess and Orphanides (2004) find a strong relationship between terrorism and the economic situation of a country. Their study concludes that terrorism is related to the economic business cycle, thus economic slump increases the likelihood of terrorism.

Methodology

The study covers data from the first quarter of 2000 to the second quarter of 2009. All the relevant data was obtained from the *International Financial Statistics* (IFS) and South Asia Terrorism Portal, 2009. Killings by terrorist attacks (TER) was used as independent variable and foreign direct investment (FDI) as dependent variable in the model. These variables were used in logarithmic form. The best way of getting information about the stationarity of a time-series is to use the Augmented Dickey-Fuller (ADF) test, which is the wider description of the standard Dickey-Fuller test. This test was employed to verify the occurrence of unit root in a time-series.

Given a simple AR (1) process:

$$z_t = \rho z_{t-1} + x_t \tau + \varepsilon_t \qquad (1)$$

Where,

z_t = time-series

x_t = exogenous regressors, which are optional in the model

ρ & τ = parameters to be estimated

ε_t = white noise

To employ the standard Dickey-Fuller test, the term z_{t-1} was subtracted from both sides of equation (1) and then ordinary least square (OLS) estimation method was employed on equation (2):

$$\Delta z_t = \alpha z_{t-1} + x_t \tau + \varepsilon_t \qquad (2)$$

Where,

Δ = first difference operator

α = $\rho - 1$

ε_t = error term such that $\varepsilon_t \sim i.i.n\ (0, \sigma_\varepsilon^2)$

The rejection of the hypothesis H_0: $\alpha = 0$ ($\rho = 1$) explains that y_t is a non-stationary series and its variance increases with time. This is also an indication that the differences are needed to achieve stationarity. One problem with the Dickey-Fuller test of unit root is that the assumption of white noise is violated if the series is correlated at higher order lags.

In such situations, the ADF test offers a possible solution to the problem. It employs lagged differences of the time-series z_t among the regressors to correct for higher order correlation. In other words, the ADF test augments the traditional Dickey-Fuller test assuming that the *z* series is a *AR*(*p*) process and, therefore, adding *p* lagged difference terms of the dependent variables to the right hand side of regression of equation (2):

$$\Delta z_t = \alpha z_{t-1} + x_t^{'} \tau + \sum_{i=1}^{p} \phi_i \Delta z_{t-i} + \upsilon_t \qquad (3)$$

Through time-series data analysis, mostly we try is to investigate the long-run dynamic relationship among all the given variables. Engle and Granger (1987) state that two non-stationary time-series can be said to be cointegrated if their linear combination is stationary. The stationary linear combination is called the 'cointegrating equation' and may be read as a long-run equilibrium relationship among the variables. The Engle and Granger cointegration test is for two time-series variables; while for multiple time-series, cointegration test is applied following the Johansen and Jeselius (1990) approach. This method involved estimating the following unrestricted vector autoregressive (VAR) model:

$$z_t = A_0 + \sum_{j=1}^{p} A_j z_{t-j} + \varepsilon_t \quad (4)$$

Where,

z_t = n x 1 vector of non-stationary I(1) variable
A_0 = n x 1 vector of constants
p = lag order
A_j = n x n matrix of estimable parameters
ε_t = n x 1 vector of independent and identically distributed error terms

The VAR may be written as

$$\Delta z_t = A_0 + \sum_{j=1}^{p-1} \Gamma_j z_{t-j} + \Pi z_{t-1} + \varepsilon_t \quad (5)$$

Where,

$$\Gamma_j = -\sum_{i=j+1}^{p} A_i$$

$$\Pi = \sum_{j=1}^{p} A_j - I$$

Δ = difference operator
I = n x n identity matrix

The number of cointegration vectors is determined by the rank of matrix Π, which states the number of independent cointegration. If the rank of Π equals r, and $r < n$, then there exist r cointegrating vectors in equation (5). The causal relationship between a time-series is checked through the Granger (1969) causality test. A variable x_t is said to be Granger-cause another variable z_t if the past and present values of x_t help in predicting z_t. The evaluation of the following regressions helped in estimating the causality relationship between the time-series:

$$z_t = \sum_{j=1}^{p} \delta_{1j} z_{t-j} + \sum_{j=1}^{p} \theta_{1j} x_{t-j} + \mu_{1t} \quad (6)$$

$$x_t = \sum_{j=1}^{p} \delta_{2j} z_{t-j} + \sum_{j=1}^{p} \theta_{2j} x_{t-j} + \mu_{2t} \quad (7)$$

The null hypothesis H_0: $\theta_{1j} = 0$, (j = 1, 2, p) shows that x_t does not Granger-cause z_t. Similarly, H_0: $\delta_{2j} = 0$ (j = 1, 2, p) shows that z_t does not Granger-cause x_t. The non-rejection of both the hypotheses shows that there is no causal relationship between the two variables and they are independent of each other. The rejection of one hypothesis indicates unidirectional causality and the rejection of both hypotheses indicates bidirectional causality between the variables.

Results and Discussion

The stationarity of the variables was checked by employing the ADF test. The relevant literature suggests that mostly economic variables are non-stationary at their level, but stationary at first differences. The results show that both the variables are non-stationary at their levels, because $p > 0.05$; and stationary at their first differences, because $p < 0.05$. This shows that the variables are integrated of order [I(1)].

Table 1
Unit-Root Test for Pakistan

	Levels		First Differences	
Variable	Test Statistics	p-value	Test Statistics	p-value
Foreign Direct Investment (LFDI)	-2.9604	0.8598	-2.9604	0.0000
Killings by terrorist attacks (LTER)	-2.9719	0.3625	-7.0016	0.0000

After applying the unit root test to the TER and FDI variables of the model, the next step was to locate the cointegrating equations that would tell whether there is a long-run relationship between them. The relevant literature shows that two methods are usually employed to find out the number of cointegrating equations: the trace test statistics and eigenvalue statistics. We used the trace test statistics to find out the number of cointegrating equations. The results shows that the value of trace test statistics is greater than that of critical value, and there are two cointegrating equation in the model (Table 2).

Table 2
Cointegrating Trace Statistics and Eigenvalues for Pakistan

Null	$r = 0$	$r < 1$
Alternative	$r \geq 1$	$r \geq 2$
Trace Statistics	35.4035	14.5476
Eigenvalue	0.5658	0.4412
Critical Value (.05)	15.4947	3.8415
Probability	0.0000	0.0001

The long-run relationship between the two variables is given in the following equation:

LFDI = 0.012 – 0.2306 LTER

The cointegrating equation shows that terrorist activities negatively affected foreign direct investment in Pakistan from January 2000 to June 2009. The study results are significant because standard error is 0.1124 and t-statistics is 02.0509. Moreover, the study findings are consistent with those of Abadie and Gardeazabal (2003, 2008); Enders, Sachsida and Sandler (2006a); and Enders and Sandler (1996).

Table 3
Traditional Granger Causality Test for Pakistan

Hypothesis	F-Statistic	Probability
H_0: DLTER does not Granger cause DLFDI	0.7446	0.4870
H_1: DLFDI does not Granger cause DLTER	2.8090	0.0830

The trace test statistics confirmed the causal relationship between dependent variable of foreign direct investment and independent variable of killings by terrorist attacks (Table 3). Next the traditional causality test was employed, which showed that there was a unidirectional causal relationship between FDI and TER in Pakistan during the study period, from January 2000 to June 2009. Thus, the study findings suggest that need of the hour is that the country overcomes terrorism within its borders to attract foreign direct investment, which is one of the major sources of investment for economic growth and development.

Conclusion

The main objective of the study was to investigate the impact of terrorist activities on foreign direct investment in Pakistan for the period January 2000 to June 2009. To achieve the desired objective, the augmented Dickey-Fuller (ADF) test was applied to determine order of integration of the time series.

The results showed that all time series were integrated of order one [I(1)]. Next, the Johansen's cointegration test was applied and the results of the trace test indicated long-run relationship between independent variable TER and dependent variable FDI. The empirical results showed that there existed a negative and significant relationship between TER and FDI in Pakistan during the study period.

We deem it necessary to explain the adverse impacts of falling FDI for Pakistan's economy. Reduction or total elimination of FDI because of terrorism will have dire consequences for the country. In particular, this will reduce Pakistan's total output level by a multiplier effect, implying reduction in the employment level which, in turn, will increase the dependency ratio.

Reduction or total elimination of FDI also adversely impacts the balance of payments situation owing to less inflow of money. Similarly, this results in rising prices, less exports and more imports, and reduction in the exchange rate, which further discourage FDI because multinational companies (MNCs) would need more Pakistani currency to buy and send back home the same amount of, for example, US dollars.

To produce less, fewer workers would be needed in the labour market, which would exert a downward pressure on both nominal and real wages. The composite effect of all these factors will be deteriorating living standard of Pakistanis. In the light of study findings, it is highly recommended that Pakistan combats both domestic and transnational terrorism, not only to attract foreign direct investment but also to increase domestic investment, to achieve its macroeconomics economic and social goals.

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Gender Differences in Ability to Balance Work and Family Among Public Sector Schoolteachers

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This study aimed at analyzing gender differences in ability to balance work and family among public sector male and female schoolteachers. Its objectives were to find out the likely causes of inability to balance work and family, and how work-family conflicts cause inability to balance work and family, among these teachers. The study sample comprised of 150 teachers (75 males and females each) selected from four government higher secondary schools of Rawalpindi in the province of Punjab. First, the stratified random sampling technique was applied. Next, a questionnaire based on 5-point Likert scale was developed to assess the attitudes of the respondents. The results were analyzed through the Statistical Package for the Social Sciences (SPSS). Next, descriptive statistics and the independent sample t-test were applied to obtain the desired outputs. The results showed that female schoolteachers experienced more work-family conflicts than their make counterparts, thus facing more imbalances between work and family. The study concludes that family demands are mainly responsible for creating difficulty in balancing work and family among female schoolteachers, and work demands are mainly responsible for creating difficulty in balancing work and family among male schoolteachers.

Keywords: gender differences, schoolteacher, work-family conflict

It is a stereotype that men are likely to be more psychologically involved in their work than women, and that they devote more time and effort in fulfilling their work role than women. Difference between men and women also remain with regard to family, still primarily considered as women's sphere, and paid work, still primarily considered as men's domain (Ferree, 1990; Pleck, 1977). According to Biebly and Biebly (1989), women give priority to family over work, while men have more licenses to create non-competing work and family identities.

The gendered nature of workplace and normative, gender-based beliefs and expectations suggest the likelihood of differences in work and family role characteristics and pressures experienced by men and women (Gerson 1993; Pleck, 1977). The gender role expectation theory and utilitarian models of investments suggest that men and women differ in the amount of time and energy they devote to the dual demands of work and family roles (Gutek, Searle & Klepa, 1991).

In the past, men were expected to give priority to their work and women were expected to devote themselves to their families (Ferree, 1990). One of the most significant changes in the past few years has been the dramatic increase in participation of women in the labour force (Gager 1998). The convergence of women and men labour force participation rate suggests that these gendered expectation may no longer apply; however, there remains an unequal household division of labour often supported by man's and woman's gendered belief about appropriate work and family roles (Hochschild, 1997).

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Greenhaus, Parasuraman, Granrose, Rabinowitz and Beutell (1989) reported gender differences in the number of hours worked, with women professionals working fewer hours per week than their male partners. Gender differences have also been found in work role characteristics such as autonomy, flexibility and work-family conflict. Men's greater time commitment to the work role leaves them with less time and energy to give to the family role. Consistent with gender-based normative expectations, women still bear primary responsibility for home maintenance and childcare irrespective of their employment status (Duxbury & Higgins, 1991).

Although employed married women spend less time on housework and childcare than non-employed married women, they still devote considerably more time to home and family, in fulfilling their family role responsibilities, than their male partners (Parasuraman & Greenhaus, 1993). According to Pleck (1985), when men and women find incompatibility between the roles they indulge in, work-family conflicts arise.

There is no comprehensive definition of 'work-family balance' because different people have different perceptions about the same work and balance with family. Work-family balance is very much a personal issue and nobody can define what is right for an individual but himself or herself. For some people, commitment to work means that they want to put extra time. For somebody else, other aspects of life are equally important. It requires a good understanding of what is important to you, of your strengths and weaknesses, and of the conditions in which you work best.

Conflict is an inevitable side-effect of living. It is neither inherently good nor bad. Rather, it is the choices we make to handle conflict that can either have a negative or a positive outcome. Conflict manifests itself in various ways in an organization and personal life. More often, it exhibits in the form of disagreements, defensiveness or uncooperative behaviour.

Fatigue and irritability brought home from work often make performing family tasks more difficult, thus creating problems for the entire family. Husbands generally spend longer hours on the job, but perform fewer home tasks. Having the opportunity to rest after work may help make fatigue and irritability less of a problem for husbands than wives.

Inter-role conflict arises from competing demands among multiple roles, while intra-role conflict arises from conflicting expectancies within a specific role. Similarly, inter-role conflict results in individual attitude and behaviour that is incompatible with role expectation; while intra-role conflict results in anxiety, frustration and hopelessness within a personality. These attitudes are manifested in rude behaviour, both at work place and home.

Work-family conflict occurs when meeting one's family role expectations is perceived to be incompatible with meeting the role demands of one's job, and vice-versa (Biddle, 1979; Katz & Kahn, 1978; Sarbin & Allen, 1968). Work-family conflict is a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect (Greenhaus & Beutell, 1985). In other words, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role.

Conceptually, the conflict between work and family is bi-directional. Most researchers make the distinction between what is termed work-family conflict and what is termed family-work conflict. Work-family conflict occurs when experiences at work interfere with family life, such as extensive, irregular or inflexible work hours; work overload and other forms of job stress; interpersonal conflict at work; extensive travel; career transitions; and unsupportive supervisor or organization. For example, an unexpected meeting late in the day may prevent a parent from picking up his or her child from school. Conflict between work and family is important for organizations and individuals because it is linked with negative consequences.

Conflict can result in feelings of dissatisfaction, unhappiness, hopelessness, depression and other emotions. It can result in behaviours such as physical or emotional withdrawal, resignation from job, dissolution of personal relations, aggression, etc. The problem of balancing work and family is the major concern for both employees and employers. As concerns organizations, problems may manifest themselves in the form of absenteeism, turnover and, ultimately, lower productivity. As concerns employees, problems may manifest themselves in the form of stress, fatigue, anxiety and depression.

The research literature has consistently reported that women's work and family-role demands are higher than men's (Pleck, 1985). The literature also indicates that men have more control over the distribution of their time, which, in turn, should make it easier for them to satisfy both work and family expectations. Traditionally, men perceive that they can fulfill their family-role expectations simply by being a good provider without having to meet many additional demands within the home. In short, though work and family demands may compete for a man's time, they are experienced as mutually supportive.

Women, on the other hand, are unable to take time away from the work role to satisfy family expectations. Women, therefore, do not have the same control over the distribution of their time as men have, because the time they spent in satisfying work or family expectations is mutually exclusive. This lack of control should result in a greater perception of interference from work to family and from family to work. One of the consequences of inability to balance work and family demands is the increasing level of work and family conflicts among employed parents.

Although teachers do not enjoy many benefits, teaching is still considered to be a prestigious profession in Pakistan. Women, in particular, adopt teaching as a profession since it is much less demanding than office jobs in terms of time commitment. Both male and female teachers prefer to work in public sector schools because of job security, post-retirement benefits and less work-related stress.

Problem Statement

To what extent work and family conflicts cause inability to balance work and family among public sector schoolteachers.

Objectives

The objectives of the study were to examine:

1. Gender differences in work and family balance.
2. Likely causes of inability to balance work and family among public sector schoolteachers.
3. How work-family conflicts create inability to balance work and family.

Hypothesis

H_0: Work-family conflicts do not cause inability to balance work and family among male and female schoolteachers.

H_1: Work-family conflicts cause inability to balance work and family among male and female schoolteachers.

Research Questions

1. How work-family conflict causes inability to balance work and family among male and female schoolteachers?
2. Does work-family conflict causes inability to balance work and family among male and female schoolteachers?

Research Methodology

This cross-sectional study was conducted to establish the relationship between dependent and independent variable, with a view to identifying the factors that cause inability to balance work and family among male and female schoolteachers. The study sample comprised of 150 teachers (75 males and females each) selected from four government higher secondary schools of Rawalpindi in Pakistan's population-wise largest province of Punjab.

A questionnaire based on 5-point Likert scale and containing 21 items was developed to check the validity of the null hypothesis. The reliability value of the questionnaire was 0.601, which signifies that it can be used in future researches on the topic. Other primary sources included a slightly adapted questionnaire. Secondary sources such as research articles were also used.

Data were entered in the Statistical Package for the Social Sciences (SPSS) and the results were analyzed by frequency distribution. Next, t-test was used to assess gender differences in ability to balance work and family among public sector male and female schoolteachers. Through t-test, the variable of work-family conflict and its subscales were measured.

The subscale of 'work-family role characteristics' included work involvement, family involvement, spouse participation and family support; the subscale of 'job demand' included job autonomy, supervisor support, job challenge, pay and workload; and the subscale of 'work scheduling' included time commitment to work, time commitment to family and role overload.

Results

This section deals with the statistical analysis employed for the study, which has been cited step by step. Of the 150 respondents, half were men and half were women (Table 1). Of the 75 female teachers, 52 (69%) were married and 23 (31%) were unmarried; while, of the 75 male teachers, 52 (83%) were married and 13 (17%) were unmarried.

For 'work-family conflict', the results were significant at 99% and the mean level of female schoolteachers was higher than their male counterparts, which means that they experience more work-family conflicts (Table 2). For 'ability to balance work and family', the results were significant at 99% and the mean level of male schoolteachers was higher than their female counterparts, which means that they are better able to balance work and family (Table 3).

Table 1
Frequency and Percentages of Married and Unmarried Male and Female Schoolteachers

		Married		Unmarried	
Teacher	*N*	*N*	%	*N*	%
Male	75	62	83	13	17
Female	75	52	69	23	31

Table 2
Work-Family Conflict Among Married and Unmarried Male and Female Schoolteachers

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	68.18	8.72	4.781	.000
Female	75	74.05	6.06		

$p \leq .01$

Table 3
Ability to Balance Work and Family Among Married and Unmarried Male and Female Schoolteachers

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	4.31	.986	-4.758	.000
Female	75	3.45	1.20		

$p \leq .01$

For ‘work-family role characteristics subscale (work involvement)’, the results were significant at 99% and the mean level of female schoolteachers was higher than their male counterparts, which means that women take office work more seriously than men (Table 4). Moreover, women experience higher level of stress because of their work-related activities than men. This work-related tension may ultimately result in strain-based conflicts, one of the main factors that create difficulty in balancing work and family, among women.

Table 4
Work-Family Role Characteristics Subscale (Work Involvement)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	5.11	**20.141**	5.320	.000
Female	75	6.84	1.838		

$p \leq .01$

For ‘work-family role characteristics subscale (family involvement)’, the results were significant at 99% and the mean level of female schoolteachers was higher than their male counterparts (Table 5). This means that women are more involved in family matters than men, so much so that they hardly get any time for themselves, thus experiencing greater difficulty in balancing work and family.

Table 5
Work-Family Role Characteristics Subscale (Family Involvement)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	6.61	1.951	7.55	.000
Female	75	8.60	1.174		

$p \leq .01$

For ‘work-family role characteristics subscale (spouse participation)’, the results were significant at 99% and the mean level of male schoolteachers was higher than their female counterparts (Table 6). This means that the spouses of men participate more in household activities, thus helping them easily balance both work and family, than spouses of women.

Table 6
Work-Family Role Characteristics Subscale (Spouse Participation)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	8.13	1.679	-3.527	.001
Female	75	7.05	2.053		

$p \leq .01$

For 'work-family role characteristics subscale (family support)', the results were significant at 99% and the mean level of male schoolteachers was higher than their female counterparts (Table 7). This means that gender differences exist with regard to family support; for example, men are compensated more for their absence from family responsibilities than women.

Table 7
Work-Family Role Characteristics Subscale (Family Support)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	8.77	1.503	-4.038	.000
Female	75	7.77	2.530		

$p \leq .01$

For 'work-family role characteristics subscale', the results were significant at 99% and the mean level of female schoolteachers was higher than their female counterparts, which means that work-family role characteristics affect women more than men (Table 8). The results also imply that women perform more responsibilities of both work and family than men, thus experiencing greater difficulty in balancing work and family.

Table 8
Work-Family Role Characteristics Subscale

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	28.63	4.129	2.741	.007
Female	75	30.27	3.129		

$p \leq .01$

For 'job demand subscale (job autonomy)', the results were significant at 95% and the mean level of female schoolteachers was higher than their male counterparts, which means that they have more job autonomy as regards management-related decisions (Table 9). However, women normally do not set high goals for themselves, mainly because they are more involved in family matters and job is just a source of extra income for them to facilitate their families. On the other hand, men set high goals for themselves; and if these goals are not achieved, they are de-motivated.

Table 9
Job Demand Subscale (Job Autonomy)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	2.76	1.41	2.161	.032
Female	75	3.23	1.22		

$p \leq .05$

For ‘job demand subscale (supervisor support)’, the results were significant at 90% and the mean level of female schoolteachers was higher than their male counterparts, which means that they get more supervisor support (Table 10). Women are given more relief by their supervisors than men because of our cultural norms. For example, if a working woman’s baby or another family member is ill, the supervisor may allow her to take short leave. In comparison, men are rarely extended such favours by their supervisors.

Table 10
Job Demand Subscale (Supervisor Support)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	3.20	1.27	1.687	.094
Female	75	3.53	1.14		

$p \leq .001$

For ‘job demand subscale (job challenge)’, the results were significant at 99% and the mean level of female schoolteachers was higher than their male counterparts, which means that they face more job challenges (Table 11). As far as the teaching profession is concerned, the most challenging part is to transfer maximum knowledge to the students and create an atmosphere which is conducive to learning. Higher secondary teachers also face another challenge in the form of weak students, on whom they have to pay extra attention to enable them to pass the matriculation examination.

Table 11
Job Demand Subscale (Job Challenge)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	7.21	2.15	4.415	.000
Female	75	8.47	1.18		

$p \leq .01$

For ‘job demand subscale (pay)’, the results were significant at 95% and the mean level of male schoolteachers was higher than their female counterparts, which means that they are motivated by reward (Table 12). The results imply that the pay structure plays a major role in enhancing the performance and boosting the morale of men, which is understandable considering that they are mostly breadwinners of the family.

Table 12
Job Demand Subscale (Pay)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	4.00	1.10	2.218	.028
Female	75	3.56	1.31		

$p \leq .05$

For ‘job demand subscale (workload)’, the results were significant at 90% and the mean level of male schoolteachers was slightly higher than their female counterparts, which means that men and women have to deal with almost equal workload at workplace (Table 13).

Table 13
Job Demand Subscale (Workload)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	3.42	1.26	1.825	.070
Female	75	3.04	1.32		

$p \leq .001$

For 'job demand subscale', the results were significant at 99% and the mean level of female schoolteachers was higher than their male counterparts, which means that job-related factors cause lesser difficulties for them in balancing work and family (Table 14).

Table 14
Job Demand Subscale

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	22.88	4.44	4.851	.000
Female	75	25.94	3.20		

$p \leq .01$

For 'work scheduling subscale (time commitment to work)', the results were significant at 99% and the mean level of female schoolteachers was slightly higher than their male counterparts (Table 15). This means that women spend more time on job than men, thus experiencing more difficulties in balancing work and family.

Table 15
Work Scheduling Subscale (Time Commitment to Work)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	6.85	1.59	7.16	.000
Female	75	6.94	1.99		

$p \leq .01$

For 'work scheduling subscale (time commitment to family)', the results were significant at 99% and the mean level of female schoolteachers was higher than their male counterparts (Table 16). This means that women give more time to family affairs, experiencing more difficulties in balancing work and family.

Table 16
Work Scheduling Subscale (Time Commitment to Family)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	6.80	1.75	3.221	.002
Female	75	7.86	1.58		

$p \leq .01$

For 'work scheduling subscale (role overload)', the results were significant at 99% and the mean level of male and female schoolteachers was almost the same, which means that they feel an almost equal intensity of role overload (Table 17).

Table 17
Work Scheduling Subscale (Role Overload)

Teacher	*N*	*M*	SD	t-value	*P*
Male	75	3.02	1.22	1.78	.002
Female	75	3.00	1.23		

$p \leq .01$

Discussion of Results

This study was conducted to investigate gender differences in ability to balance work and family among public sector male and female schoolteachers. Based on study results and analysis of data, the null hypothesis (H_0) that work-family conflicts do not cause inability to balance work and family among male and female schoolteachers is rejected; while the alternative hypothesis (H_1) that work-family conflicts cause inability to balance work and family among male and female schoolteachers is accepted. This finding is consistent with the work of Greenhaus and Beutell (1985), which shows that one of the consequences of inability to balance work and family demands is the increasing level of work and family conflicts.

The study also highlights that women experience more work-family conflicts than men. This finding is consistent with the work of Duxbury and Higgins (1991). According to their gender role expectation theory, which is based on traditional socio-cultural role expectation, men take primary responsibility for the breadwinner role, while women assume primary responsibility for the family. This means that men have traditionally perceived that they can fulfill their family role by just being 'good provider of earnings' without having to meet many traditional demands within home; hence men have more control over their time than women.

Consistent with the work of Pleck (1977) and Greenhaus and Beutell (1985), the study finds that women are more involved in family activities than men. Since women give more time to family activities than men, they also experience more work-family conflicts. In our culture, tasks are largely specialized by gender, which means that women have continued to perform certain tasks traditionally ascribed to them, such as cooking, cleaning, child care, etc.

On the other hand, men usually perform tasks such as shopping and doing repairs, which means that there is a difference between these traditional tasks in terms of flexibility of time. The kind of housework men usually perform allows them to avoid work-family conflicts, as compared with the kind of housework employed women typically perform in their daily lives. The lawn maintenance or repair work can wait a week, but cooking and cleaning dishes cannot!

In our culture, it is women's obligation to perform family responsibilities. The majority of unpaid family work – such as meal planning, cooking and maintaining contact with extended family – is unacknowledged and not counted as work, yet such responsibilities are likely to contribute to women's stress. For example; meals create constraints because there is little flexibility in their timing. Those responsible for meals, usually women, must regulate their activities to prepare meal in time. They have to prepare the meal, serve it personally to every person and finally do the dishes.

These sequences of tasks affect the freedom of women to allocate time for themselves. Since women's tasks at home are less flexible and more demanding, they spill over into the time allotted to paid work or leisure. As a result, family life starts interfering with work life. This study finding is consistent with the work of Pleck (1977), who showed that family responsibilities create more work-family conflicts for women than men.

Because of women's stronger association with family members, especially children and the elderly, they are interrupted more often than men and are more likely to solve common household problems. Moreover, men generally get more support from family members and spouses as compared with women. This inequity is almost always disadvantageous to women and reveals a greater housework burden.

Women have an inborn psychological feeling for affection and association with their families; so they also want, in return, the same affection and association, which normally they do not find. Thus, women are likely to face depression, as well as lack of concentration and focus, which may, in turn, result in work-family conflicts.

Women's tasks tend to be more boring and apparently unending as compared with men's. This troubling combination may contribute to feelings of role overload. The results of this study show that men and women feel almost the same intensity of role overload. In this connection, the general notion of multiple role theorists is that the commitment to different roles might result in role overload and strain, which means that both men and women are competing to balance their work and family roles.

The study finds that job-related factors (especially pay) have more impact on men than women, because we live in a society where men are expected to support their families financially. Teachers of government schools in Pakistan do not get enough salaries on which they could wholly depend. As a result, they have to flip like a coin towards their school and then home to home for giving tuitions. This makes them physically and mentally tired; hence they get less time to participate in family issues, resulting in work-family conflicts.

As concerns job-related factors, another study finding was that women find their organizational culture friendlier and more supportive than men's, and they also have more decision-making authority than them. This might cause dissatisfaction among male schoolteachers, which may ultimately spill over in the family domain thereby causing work-family conflict.

Conclusion

From the interpretation of the results and discussion, it is obvious that work-family conflict causes inability to balance work and family among both male and female schoolteachers. Conflicts generally arise among men because their job-related issues cause conflict with family. However, among women, the situation is opposite; family issues cause conflicts with their jobs as well as family. Hence, both men and women face imbalances between their work and family.

The study concludes that the total demands on working women are higher than those on working men; still both are fighting equally to balance work and family. Moreover, both men and women are facing interference in work as well as family domains. When women, who are more likely to be involved in family issues, face incompatibility between the two domains, they experience greater work-family conflicts and, as a result, find it difficult to balance work and family.

On the other hand, men, who are more likely to be involved in work issues, face pressure from family to fulfill its needs. This pressure causes strain and time-based conflicts, ultimately creating difficulties in balancing work and family responsibilities. Finally, the study highlights that we set ascribe traditional boundaries to male and female roles. Though our society has modernized, the family division of labour does not seem to have changed in accordance with it.

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The Impact of Women's Autonomy on Maternal Health Care Utilization in Rural Punjab

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In the present study, 'women's autonomy' refers to their decision-making power regarding personal issues; and 'maternal health care utilization' to prenatal care, care taken by mothers at the time of delivery of child, and postnatal care. The study aimed at exploring the relationship between women's autonomy and maternal health care utilization. It was conducted in rural areas of Gujrat District in Pakistan's population-wise largest province of Punjab, and its target population was 104 married women. First, the impact of women's education on health care utilization was examined. Next, the association between women's education, family system and autonomy was examined. Finally, the association between women's autonomy and maternal health care utilization was examined. The study findings show that women's education and nuclear family are positively linked with their autonomy. Similarly, women's education and autonomy are positively linked with health care utilization among them.

Keywords: women's autonomy, health care utilization, maternal mortality, family system, Rural Punjab

During the past three decades or so, South Asian women's limited access to health care services has emerged as an interesting research topic. Women in the developing world generally have limited access to these services because of the lack of adequate infrastructure, which in particular affects maternal health. Thus, the risk of maternal death is 1 in 61 in the developing world, compared with 1 in 2,800 in the developed world (WHO, UNICEF & UNFPA, 2004).

Complications during pregnancy and childbirth are the leading causes of death and disability among women of reproductive age in developing countries. An estimated 529,000 maternal deaths occur worldwide each year, of which 99% in developing countries (WHO, 2005). Millions of women in these countries lack access to adequate care during pregnancy. Inadequate access and under-utilization of modern health care services are major reasons for poor health in the developing countries (Amin, Chowdhury, Kamal & Chowdhury, 1989). This inequality in the health and well-being of women in the developing and the developed world is a growing concern (Simkhada, Teijlingen, Porter & Simkhada, 2008).

This study focused on understanding the levels of autonomy among women in rural areas of Pakistan, where maternal health care utilization is considered to be impossible without the consent of the family or husband, and women living in the joint family system have lesser access to health care services than those living in nuclear families. This study aimed at exploring the role of family system and women's autonomy in health care utilization; the relationship between women's education and health care utilization; and finally the association between women's autonomy and maternal health care utilization.

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Literature Review

In this study, 'women's autonomy' refers to their decision-making power regarding personal issues. Researchers over the years have identified many determinants of women's autonomy, such as religion, family system, quality of family relationships, education and income, husbands' education and income, etc.

According to Dyson and Moore (1983), 'autonomy' indicates the ability – technical, social and psychological – to obtain information and use it as the basis for making decisions about one's private concerns and those of one's intimates. Thus, equality of autonomy between the sexes implies equal decision-making ability with regard to personal affairs.

Fotso, Azeh and Essendi (2009) assert that commonly used dimensions of women's autonomy include freedom of movement, discretion over earned income, freedom from violence or intimidation by husbands, and decision-making related to economic matters and health care. The consensus among researchers seems to be that women's autonomy is influenced mainly by three factors: socioeconomic status, level of education and family system.

South Asian women are generally less autonomous than men, implying that they do not enjoy much decision-making power at personal, household and societal levels. The patriarchal structure is still dominant in the Pakistani society, and women mostly have less power and autonomy than men. For example, women have little control over household matters and they cannot even take decisions about their own health without consulting their husbands.

In this study, 'maternal health care utilization' refers to prenatal care, care taken by mothers at the time of delivery of child, and postnatal care. The health of families and communities are tied to the health of women. The illness or death of a woman has serious and far-reaching consequences for the health of her children, family and community.

The slogan 'healthy women, healthy world' embodies the fact that, as custodians of family health, women play a critical role in maintaining the health and well-being of their communities. However, in countries like India and Pakistan, women are socialized to believe that their own wishes and interests are subordinate to those of the family group. They are, therefore, more likely to sacrifice their own health in repeated child-bearing than are women reared in cultures that give greater weight to personal interests (Dyson & Moore, 1983).

The female disadvantage in less-developed countries with regard to health and well-being has been documented abundantly (Santow, 1995). However, according to Bloom, Wypij and Das Gupta (2001), much less research has focused on the relationship between women's status and the use of health services. The health status of both women and children, particularly female children, suffers in relation to that of males in areas where patriarchal kinship and economic systems limit women's autonomy (Caldwell, 1986).

Elo (1992) mentions that educating women alters the traditional balance of power within the family, leading to changes in decision-making and allocation of resources within the household (Caldwell, 1979); education modifies women's beliefs about disease causation and cure, thus influencing both domestic child-care practices and the use of modern health care services (Caldwell, Reddy & Caldwell, 1983); schooling enhances a woman's knowledge of modern health care facilities, improves her ability to communicate with modern health care providers and, by increasing the value she places on good health, leads to heightened demand for modern health care services (Schultz, 1984); and women's schooling reflects a higher standard of living, as well as access to financial and other resources (Ware, 1984).

As is the case with mate selection, earnings of women make them autonomous in their decision-making regarding health care utilization. Women who have jobs enjoy more autonomy, and those who have higher scores of autonomy take decisions by self regarding their health. Several international initiatives have been launched in the recent past to improve the health conditions in developing countries.

Since one of the principal objectives of these health care programmes is to improve child survival through increased utilization of preventive maternal and child health care services, the question of whether maternal education affects health care utilization is of considerable interest to health policymakers. An improved understanding of the role played by female education can assist in the design of health interventions and, at the same time, advance our knowledge of the association between women's education and child mortality.

Previous researches suggest that maternal education has a positive effect on the use of health care services in Africa, some Middle Eastern countries (Abbas and Walker, 1986; Tekce and Shorter, 1984), Asia (Akin, Griffin, Guilkey & Popkin, 1986; Streatfield, Singarimbun & Diamond, 1990; Wong, Popkin, Guilkey & Akin, 1987) and Latin America (Fernandez, 1984; Monteith, Warren, Stanziola, Urzua & Oberle, 1987). According to Khan, Soomro and Soomro (1994), education has a positive association with health care utilization in Pakistan.

Despite various national and international initiatives to improve maternal health, more than half a million women from developing countries die each year because of complications related to pregnancy and childbirth. Most women in these countries do not have access to the health care and sexual health education services that they need. In many developing countries, complications of pregnancy and childbirth (mainly at the level of preconception and prenatal care) are the leading causes of death among women of reproductive age. More than one woman dies every minute from such causes; 536,000 women die every year (WHO, 2008).

Due to the emerging field of inquiry and contesting, very little empirical evidence is available about the relationship between women's autonomy and maternal health care utilization (Desai & Johnson, 2005). According to Basu (1993), women with higher autonomy are more likely to use antenatal and delivery care for their last birth than women with lower autonomy. Women's reproductive health-seeking behaviour is positively associated with their freedom of movement and decision-making power (Bhatia & Cleland, 1995).

In the male-dominated Pakistani society, men play a vital role in determining the health needs of women. Since men are decision-makers and control all the resources, they decide when and where woman should seek health care. Women suffering from an illness report less frequently for health care seeking than men. The low status of women prevents them from recognizing and voicing their concerns about health needs.

In the majority of rural settings in Pakistan, women are not allowed to visit health care centres alone, even in emergency situations. Moreover, they are mostly not allowed to spend money by self on their health. These kinds of restrictions often have serious repercussions on women's health in particular and self-respect in general. Though women are often the primary caregivers in the family, they are denied the basic health information and holistic health services.

In Pakistan, having a subjugated position in the family, women need the permission of male family members to visit health care centres. They are socially dependent on men and lack of economic control reinforces their dependency. The community and the family as institutions have always undermined women's prestige and recognition in the household care. The prevailing system of values preserves the segregation of sexes and the confinement of women to their homes.

Objectives

The objectives of the study were to:

1. Determine the demographic profile of the respondents.
2. Study the impact of education on health care utilization among women.
3. Investigate the impact of family system on women's autonomy and health care utilization.
4. Study the association between women's autonomy and maternal health care utilization.

Methodology

This study was conducted in rural areas of Kharian, a 'tehsil' (sub-district) of Gujrat District in Pakistan's population-wise largest province of Punjab, with married women as the target population. A criterion was decided for the selection of respondents, according to which only those women were considered who had delivered a baby within the past eight months.

Further, those women were excluded from the sample who had not completed their postpartum period, for the fear of under representation of those women who had delivered babies at the residence of their natal kin and had returned to the residence of their affinal kin after their postpartum period.

The study employed the two-stage cluster sampling method. Each of the three tehsils of Gujrat District was considered as a cluster. At the first stage of sampling, Kharian Tehsil was randomly selected. Next, all union councils of Kharian Tehsil were considered as a cluster and, at the second stage of sampling, one of them was randomly selected. In all, 104 women in the selected union council met the inclusion criterion.

An interview schedule comprising open-ended, close-ended and attitudinal questions was developed to gather information from the respondents. This interview schedule is divided into three main sections: i) demographic information of the respondents, ii) determinants of women's autonomy, and iii) impact of women's autonomy on maternal health care utilization. Non-parametric tests, the Spearman rank correlation coefficient (rho correlation) and the Mann-Whitney U-test, were used to analyze the data according to the above stated objectives. These tests were needed because of the violation of assumption of normality of the data.

Results and Discussion

The study results showed that the overwhelming majority (89.4%) of the respondents were housewives, followed by government employees and private employees (Table 1). The results also showed that an almost equal percentage of the respondents lived in the joint family system and nuclear families (51% and 49%, respectively). To measure the economic status of the respondents, they were asked about their monthly household income. The results showed that the majority (72.1%) of the respondents had a monthly household income of under Rs.20,000.

The study finding that nine of every 10 respondents were housewives can be attributed to the rural setting. It speaks volumes of the limited economic opportunities available to women in rural areas, where kinship circles and religious obligations do not allow them to work outside their homes. Married women who are economically inactive or less active have limited access to health care services, because they need the permission of their in-laws or husbands to visit health centres.

Table 1
Demographic Profile of Respondents

Variable	*N*	%
Occupation		
Government employee	4	3.8
Private employee	3	2.9
Agriculture	1	1.0
Self-employed	2	1.9
Housewife	93	89.4
Others	1	1.0
Total	104	100.0
Family System		
Nuclear	51	49.0
Joint	53	51.0
Total	104	100.0
Monthly Household Income		
Under Rs.5,000	12	11.5
Rs.5,000-10,000	29	27.9
Rs.10,001-15,000	19	18.3
Rs.15,001-20,000	15	14.4
Rs.20,001-25,000	15	14.4
Over Rs.25,000	14	13.5
Total	104	100.0

Next, age, family size and education of the respondents were measured on quantitative scale, so that these variables have minimum, maximum, mean (*M*) and standard deviation (SD). The results showed that the average age of the respondents was 28.01 years, with standard deviation of 5.014 years; the average family size of the respondents was 6.74, with standard deviation of 2.186; and the average education of the respondents was 7.29 years, with standard deviation of 4.26 years (Table 2). Because of their low educational levels, women depend heavily on their in-laws and husbands for all types of household matters, including their health care utilization.

Table 2
Age, Family Size and Education of Respondents (N=104)

Variable	Minimum	Maximum	*M*	SD
Age	19	40	28.01	5.014
Family size	3	11	6.74	2.186
Education	0	16	7.29	4.260

Education is widely believed to be the key determinant of women's health care utilization. The Spearman rank correlation coefficient (rho correlation) was used to measure the relationship between the variables of education and health care utilization. Spearman's rho correlation was applied because the data did not follow the normal distribution or was non-parametric in nature. The results, which were significant at .05 level, indicated a positive correlation between education and health care utilization (Table 3).

Table 3
Education and Health Care Utilization of Respondents Using Spearman's rho Correlation (N=104)

		Health Care Utilization	Education
Health Care Utilization	Correlation coefficient	1.000	.336**
	Sig. (2-tailed)	-	.000
Education	Correlation coefficient	.336**	1.000
	Sig. (2-tailed)	.000	-

** Correlation significant at .01 level (2-tailed)

Khan, Soomro and Soomro (1994) assert that women's education or literacy levels plays an important role and creates general awareness about the matters which affect family's health acquisition. According to Lule et al. (2005), a strong association exists between women's education or literacy levels and the use of reproductive and maternal health services. A descriptive study carried out in Turkey reports that educational attainment and lower parity levels are significantly associated with the choice of a modern home delivery as opposed to a traditional home delivery (Celik & Hotchkiss, 2000).

Poor rural women are more likely to have lower levels of education and are less likely to make use of available health care services. Evidence from Indian Punjab shows that education contributes to women's self-confidence and improved maternal skills, increases their exposure to information, and alters the way others respond to them (Das Gupta, 1990). Considering the findings of this research and previous studies on the subject, it can be said that education is the key determinant of rural women's health care utilization, and that higher levels of education lead to better health care utilization among rural women.

Family system is another important determinant of women's autonomy in Pakistan. Previous studies on the subject make it clear that nuclear families provide more independence to women, as a result of which they have higher levels of autonomy. This study also concludes in the line of the existing literature that nuclear families allow significantly higher levels of women's autonomy as compared with the joint family system (Table 4-A).

Table 4-A
Family System and Autonomy of Respondents (N=104)

	Family System	*N*	Mean Rank	Sum of Ranks
Total Score of Autonomy	Nuclear	51	68.48	3492.50
	Joint	53	37.12	1967.50

Next, the Mann-Whitney U-test was applied to see whether there was a significant difference between the average autonomy scores of respondents living in the joint family system and nuclear families. The results, which were significant at .05 level, clearly showed that women living in nuclear families have much more autonomy than those living in the joint family system (Table 4-B).

In this context, Lather, Jain and Vikas (2009) state that whether a woman lives in the joint family system (which includes the mother-in-law or where she is herself the mother-in-law) or a nuclear family will have a tremendous impact on her autonomy—in the joint family system, she is likely to have less autonomy than in a nuclear family. Andrist (2007) states that women living in the joint family system are on average less mobile than those living in nuclear families.

Table 4-B
Family System and Autonomy of Respondents (N=104)

Test	Total Score of Autonomy
Mann-Whitney U-Test	536.500
Wilcoxon (W)	1967.500
Z	-5.306
Asymp. Sig. (2-tailed)	.000

As discussed earlier in this paper, family system is a very significant indicator of women's health care utilization. This study applied the Mann-Whitney U-test to measure the impact of family system on women's health care utilization. The results showed that women living in nuclear families have far greater access to health care services than those living in the joint family system (Tables 5-A & 5-B).

Table 5-A
Family System and Health Care Utilization of Respondents (N=104)

	Family System	*N*	Mean Rank	Sum of Ranks
Total Score of Health Care Utilization	Nuclear	51	60.43	3082.00
	Joint	53	44.87	2378.00

Allendorf (2010) asserts that women with high-quality family relationships are more likely to use health care services. In nuclear families, women who have very few difficulties with their husbands are more likely to obtain antenatal care and deliver in a health facility. In the joint family system, women who have better relations with their in-laws are also significantly more likely to obtain antenatal care.

Table 5-B
Family System and Health Care Utilization of Respondents (N=104)

Test	Total Score of Health Care Utilization
Mann-Whitney U-Test	947.000
Wilcoxon (W)	2378.000
Z	-2.671
Asymp. Sig. (2-tailed)	.008

Bloom, Wypij and Das Gupta (2001) conclude that the nature of women's relationships with both affinal and natal kin is an essential consideration in an investigation of their autonomy. Considering the findings of most studies on the subject, it can be said that close ties to natal kin enhance women's autonomy. On the other hand, living in the same household with mothers-in-law diminishes women's autonomy in two ways. First, because women are subject to the authority of mothers-in-law, their interpersonal control within the household is limited directly. Second, because mothers-in-law mediate women's contact with natal kin, these women will have less opportunity to get the support of their parents and siblings.

Higher levels of autonomy have a positive impact on women's lives in many ways. It has been observed in previous studies on the subject that if women have higher levels of autonomy, they are more likely to use their rights in every field of life. This study also concludes that the higher

women's autonomy, the greater maternal health care utilization among them and vice-versa. The results, which were very significant at .05 level, showed positive association between women's autonomy and maternal health care utilization (Table 6).

Table 6
Autonomy and Maternal Health Care Utilization of Respondents Using Spearman's rho Correlation (N=104)

		Health Care Utilization	Education
Health Care Utilization	Correlation coefficient	1.000	.479**
	Sig. (2-tailed)	.	.000
Total Score of Autonomy	Correlation coefficient	.479**	1.000
	Sig. (2-tailed)	.000	.

** Correlation significant at .01 level (2-tailed)

Bloom, Wypij and Das Gupta (2001) examined the determinants of women's autonomy in three areas: control over finances, decision-making power and freedom of movement. After control for age, education, household structure and other factors, they reported that women with closer ties to natal kin are more likely to have greater autonomy in each of the three areas. Further analyses demonstrated that women with greater freedom of movement obtain higher levels of antenatal care and are more likely to use safe delivery care.

The influence of women's autonomy on the use of maternal health care services appears to be as important as other known determinants such as education. In Pakistan's context, Shaikh and Hatcher (2004) note that the utilization of a health care system may depend on socio-demographic factors, social structures, level of education, cultural beliefs and practices, gender discrimination, status of women, economic and political systems, environmental conditions, and the disease pattern and health care system itself.

Conclusion

The health situation of women in the developing world is pitiable in comparison with that of their counterparts in the developed world. Because of the inadequate infrastructure for women's health care utilization, the infant and maternal mortality rates are very high in developing countries. This study concludes that in the rural settings of Pakistan, women's access to health care services is blocked by the patriarchal structure, the joint family system, their lower levels of education and economic un-productivity, and the kinship structures in which they have to seek permission for everything either from their husbands or the affinal family.

The study findings further indicate that married women's autonomy is highly influenced by the level of their education and family system; women living in nuclear families are more autonomous than those living in the joint family system; women who have higher levels of education have more autonomy than their counterparts who have lower levels of education; and nuclear families and higher levels of education among women are positively associated with health care utilization among them.

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Is Commercialization a Sin?

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Property rights play a very important role in the process of development. Recent literature on development has brought into public eye the role of institutions, which can no longer be ignored, especially in developing countries. Several institutions, such as the contract law, financial markets and judicial systems, lubricate the efficient market functioning in the developed world. However, in the developing world, we see piles of rules and regulations formulated by generalist bureaucrats; indicating that town planning and zoning literature has not yet reached the very roots of the land use regulations that should provide not only clean environment, security and residential facilities to the citizens, but also socioeconomic opportunities in an efficient manner. This study focused on one such regulation – the Punjab Local Government (Commercialization) Rules, 2004 – to identify the problems being faced by the business community because of it.

Keywords: property rights, commercialization, land use, urban planning, zoning

> There is nothing which so generally strikes the imagination, and engages the affections of mankind, as the right of property; or that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe. And yet there are a very few, that will give themselves the trouble to consider the origin and foundations of this right (Blackstone, 1765-1769, p. 2).

Property rights play a very important role in the process of development. Recent literature on development (for example, Acemoglu, 2003; De Soto, 1986;) has brought into public eye the role of institutions which can no longer be ignored, especially in developing countries. Many scholars believe that these institutions are an answer to the question how countries which shared a common culture, religion and frontier evolved so profoundly different from each other.

Economists like Acemoglu (2003) went as far as holding geography and institutions responsible for differences in income levels of developing and developed countries. Several institutions lubricate the efficient market functioning in the developed world, such as the contract law, financial markets and judicial systems. Perhaps the most important, albeit the most neglected, of these institutions is property rights. A property has a bundle of rights from the legal point of view, but from where did the concept of property rights originate from?

Numerous laws – Greek, Roman, English, Spanish and French – contributed to the evolution of these rights. Each paved way for the fundamental understanding of two facts regarding property rights. First, owners are free to exercise rights over their property. Second, interference by others in the rights of owners is illegal and unlawful. The philosophical evolution from Locke's natural rights to John Stuart Mill utilitarianism asserted the same.

The freedom to exercise property rights, when secured, provides an incentive to the owners of land to invest in the improvement of their property and take part in economic activity. Similarly,

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non-interference in the rights of owners – such as buying and selling of property, as well as putting it to the desired use with the confidence that the authorities will not uphold the transaction – ensures dynamic growth through efficient markets. However, as communities evolved and human beings started living in close proximity to each other, the rights of one person started interfering with the rights of the other.

The pressures of high population growth, coupled with rapid urbanization, called for internalizing the externalities created in the case of land use. Initially, it was believed that in the case of externalities, the bargaining eventually reached by the negotiations referred to as 'social contract' was socially more efficient in the absence of any law. However, the failure of bargaining and the cost of negotiations or communications referred to as 'transaction cost' underscored the importance of civil society in countries where government exists.

This trend highlighted the implicit importance of the law that can encourage private bargaining by lowering transaction costs. The law was thus deemed to ease or facilitate the process of social contract for ensuring efficient property rights. Instead, to cater to externalities, legislations were used to impose several restrictions on what owners may do with their property. Since these restrictions were regulatory and non-compensatory in nature, they provided an incentive for the state to over-regulate private property.

Zoning

A very common regulation in the case of land use is zoning. 'Zoning' is a North American term for a system of land use. The word is derived from the practice of designating permitted uses of land based on mapped zones, which separate one part of a community from another. Commonly, the land is divided into three zones: commercial, residential and industrial.

Zoning was adopted for the first time in 1916 to prevent the construction of the Equitable Building in New York City. The long building was casting shadows over the neighbourhood, thus affecting their quality of life. These laws, after being challenged and sustained by the U.S. Supreme Court in 1926, were quickly adopted by all the states as Standard State Zoning Enabling Act.

Early zoning ordinances mainly dealt with the regulation of land use, and height and setback of buildings. However, these ordinances later evolved radically to address local planning issues such as housing, traffic, parking, noise and so on. Zoning laws, thus, became an icon of the modern urban planning in most parts of the world; the objective being to avoid nuisances by prohibiting through exclusion land use activities that are potentially offensive to others.

Many urban planners and scholars, however, projected 'mixed-use neighbourhood' as an alternative to zoning. They believed that the separation of land uses in residential, commercial and industrial zones implies the separation of homes from employment and rise of car culture along with other ills. They, instead, advocated the development of denser, mixed-use neighbourhoods that promote walking and cycling to jobs and shopping. They assumed that a dense, mixed-used of urban land preserves the uniqueness inherited in a neighbourhood. One good example of such an alternative model is the New York City's Greenwich Village with a vibrant urban community.

The above discussion applies mainly to developed countries, particularly the United States, which has well-defined property rights and elaborate zoning regulations. The situation is drastically different in developing countries such as Pakistan, which has weak property rights and rather arbitrary zoning regulations. The aggressive government land use regulations have gone beyond efficiency and have entered the realm of takings.

Land use regulations are more likely to be adopted in countries facing rapid land development, high public expenditure and high property taxes. The rapid conversion of farmland and open space to development, along with high public expenditure and property taxes, motivate local governments to impose more stringent land use regulations. According to Cho, Wu and Boggess (2003), these regulations, in turn, reduce land development, long-run public expenditure and property taxes at the expense of higher housing prices and short-run increase in public expenditure and property taxes.

Pakistan is a classic case of what has been suggested above since we see piles of rules and regulations formulated by generalist bureaucrats indicating that town planning and zoning literature has not yet reached the very roots of the land use regulations that should provide not only clean environment, security and residential facilities to the citizens, but also socioeconomic opportunities in an efficient manner.

The current laws and regulations governing land use and property rights in Pakistan are complex because no serious attempt has been made to shape them in a way that they can meet growing urban requirements. This study focused on one such regulation – the Punjab Local Government (Commercialization) Rules, 2004, which is in force throughout the province – to identify the problems being faced by the business community because of it.

Punjab Local Government (Commercialization) Rules, 2004

To commercialize property in Pakistan, one has to go through a cumbersome and costly process. Under the Punjab Local Government (Commercialization) Rules, 2004, after the application for commercialization of a property is approved, a fee levied at the rate of 20% of the commercial value of the land has to be paid to the local government.

The value of the land is determined on the basis of valuation table of the Revenue Department, which gives value of the property for both residential and commercial purposes, and the payment has to be made within one year. Moreover, a scrutiny fee levied at the rate of Rs.5 per square feet of covered area has to be paid the respective Tehsil Municipal Administration for the approval of the building plan.

The salient location-related requirements under the Punjab Local Government (Commercialization) Rules, 2004 are as follows:

- Commercialization shall only be allowed on those roads and streets that have been declared for commercialization by the Commercialization Committee after inviting public objections through proper advertisement in at least two national dailies.
- In residential zone / area, no window or other opening shall be allowed on the rear side of commercial property.
- Height of the building shall be in accordance with the building regulations.
- Roads / Streets for commercialization shall be decided by the Commercialization Committee after considering: i) existing growth pattern, ii) anticipated future development potential, iii) predominant commercial land use, iv) traffic volume, v) road width, v) aesthetic character, and vi) any other factor considered relevant.
- Roads /Streets for commercialization shall be reviewed periodically the Commercialization Committee.

Under the Commercialization Rules, 2004, for main roads, bypass roads and canals, the minimum setback shall be 20 feet. For property where the change is from non-commercial to commercial, the minimum setback shall be 10 feet. However, the Commercialization Committee may decide that the minimum setback shall be over 10 feet keeping in view factors such as traffic volume, covered area, nature / type of building, location, etc.

The documents required for submission of an application for commercialization of property under the Commercialization Rules, 2004 include: i) copy of computerized national identity card (CNIC), ii) the site plan, iii) no objection certificate (NOC) from the residents or any government agency to be affected by commercialization, iv) title documents, and v) any other document or information required by the Commercialization Committee. In addition, an application processing fee is levied at the rate of Rs.2,000 per 'marla' (272.25 square feet).

The Commercialization Rules, 2004 also provide for temporary commercialization, mainly with a view to regularizing illegal commercialization. Temporary commercialization is allowed at the rate of 3% of the commercial market value of the property for guesthouses, restaurants, youth hostels, museums, health centres, hospitals, clinics, schools, colleges, universities, clubs, bus stands, banks, etc., subject to the provision of NOC and prescribed parking facilities, and guarantee of no structural changes in the building. In this case, the fee is levied on the basis of land coverage; if the coverage is less than 25% of the plot area, the fee shall be levied on 25% of the plot area.

Similarly, the Commercialization Rules, 2004 provide for unauthorized commercial building at the rate of 30% of the commercial market value of the property, if the building is on the road already declared for commercialization. The other conditions are that there shall be no public encroachment or violation of the building bylaws or setback requirements.

The same rules apply to cantonments, where the commercialization charges are levied at the rate of 50% of the assessed market value of the property. There are two types of land in cantonments: old grant and leased land. In the case of leased land, the market value is determined by the Cantonment Board annually for each cantonment in Pakistan; while in the case of old grant, by the Deputy Commissioner. The rates of leased land are usually higher than that of old grant property. Subsequently, ground rent is charged at the rate of Rs.4 per square feet annually for commercial areas and Rs.4 per square feet annually for residential areas.

The rules for the commercialization of land in cantonments are the same throughout the country; however, assessed market rates differ from one cantonment to another. Other conditions for commercialization of property in cantonments include submission of the prescribed application form with a fee of Rs.500, NOC from General Headquarters (GHQ) of the Pakistan Army, and building map. In cantonments, commercialization is allowed only in previously identified areas, not in purely residential areas.

Concessions in the commercialization charges are offered to educational institutions, health facilities and information technology institutes, but not to restaurants, gyms and beauty parlours which account for 35-40% of the labour force, thus not facilitating the infrastructure that could better serve the urban consumers. While we can appreciate the existence of a commercialization policy, the regulations outlined are not as simple as they may appear on paper.

A review of the abovementioned policy reveals that two types of costs are attached to the process of commercialization. The first is a visible cost in the form of the commercialization charges (20% of the value of the property, a rate that stands alone in this part of the world). Let's look at it with a simple example. If one has to commercialize one marla of land on Bank Road, Rawalpindi, one will have to pay over Rs.1 million as commercialization charges (the commercial

value of one marla of land on Bank Road is placed at Rs.3 million; it falls in the cantonment area, where the commercialization charges are levied at the rate of 50% of the assessed market value of the property).

The ratio of the average rate of commercial land to residential land was positive in selected urban centres of Punjab – Rawalpindi (City), Rawalpindi (Cantonment), Sialkot (City) and Sialkot (Cantonment) – indicating higher assessed value of the declared commercialized property, as well as higher commercialization charges (Table 1).

Table 1
Commercialization Rates Per Marla in Punjab Province (in Rs.)

City	Range (Commercial)	Range (Residential)	Average Rate (Commercial)	Average Rate (Residential)	Ratio
Rawalpindi (City)	89,000-598,000	31,000-219,000	142,000	79,507	1.79
Rawalpindi (Cant.)	150,000-3,000,000	50,000-400,000	684,127	176,667	3.88
Sialkot (City)	6,980-1,800,000	7,260-181,500	576,244	94,664	6.19
Sialkot (Cant.)	105,000-910,000	104,000-325,000	488,750	220,594	2.39

The second type of cost attached to the process of commercialization is hidden. The transfer of property is still an arduous and a time-consuming task in Pakistan, keeping in view the number of departments involved in the transaction. The involvement of several departments sows the seeds for corruption in the form of speed money, bribery, etc. Moreover, in the absence of proper land record, multiple ownership dampens the entire process of urban development.

Coupled with the hidden costs are extra height charges, which according to the building bylaws are levied at the rate of Rs.60 per square feet of covered area above 38-feet height. The ceiling on the height of the building further aggravates the already existing problem of shortage of land for commercialization. The commercialization fee is charged directly to capture the increase in the market value of the land resulting from its conversion from residential to commercial use.

The exchequer, as per development authorities, is entitled to get some share of the increase in the value of property in the name of development of the subject area. However, this practice violates the basic principle of private property rights—the freedom of the owners to exercise rights over their property. The high fee also acts as a disincentive for the owners of property to commercialize it; hence shortage of the commercial property. The failure to keep pace with the demand of commercial property creates excess demand, which, in turn, results in increase in the price of property.

According to Kan, Kwong and Leung (2004), it is reasonable to conjecture that the prices of commercial and residential properties are simultaneously determined, since an expanding construction industry inevitably absorbs resources from the rest of the economy and, thereby, increases the marginal cost of other sectors. To clear the market, property prices have to be adjusted making housing unaffordable for a wide section of the society. The reverse has been observed in other parts of the world where palaces, estates, hunting grounds and leisure parks of the rich have given ground to the need of the cities (Haque & Nayyab, 2007).

The charging of high commercialization fee has another bearing on the consumers as well. When someone commercializes his property to set up a business in Pakistan, the cost of doing business obviously increases; and he, being a rational producer, follows full-forward shifting of this high-input cost to the consumers in terms of high prices of goods and services. This is no other than

an indirect tax on the consumer, and the stance of the economic theory on indirect taxes is very clear—they are distortionary in nature. Thus, one distortion – regulation – leads to another—high prices of goods and services.

When it comes to electricity, gas and water tariff, and other taxes, the commercial property in Pakistan is again subject to higher rates than residential property. This is meant to generate a stream of potential future income for the government, at times spread over a century. However, this can be materialized only if commercialization is allowed.

The presence of such potential income source leaves no justification for the practice of annexing astronomical commercialization charges upfront at the rate of 20% of the value of land. Thus, in effect, anyone who wants to change his property from residential use to commercial use will have to pay multiple taxes in the form of commercialization fee, higher property tax (after the conversion) and higher utility bills.

According to West (2001), taxation beyond some minimum point potentially erodes the value of the property that is taxed. Though some people would argue that taxation is a way of redistributing wealth, in the case of land regulations via commercialization, this line of argument loses its ground. The high cost of commercialization, both direct as well as indirect, also provides an equal economic incentive to cheat with the connivance of the 'commercialization mafia', as indicated in the following perception survey.

Land Commercialization Policy: A Perception Survey

A perception survey was conducted to gauge the views of builders and developers on the land commercialization policy of the government. All the builders and developers of Karachi, Lahore and Islamabad listed in the yellow pages of the telephone directory were contacted. The total study sample size was 90, of which 40 respondents belonged to Karachi, 35 to Lahore and 15 to Islamabad. The following questions asked were asked from the respondents:

1. What is the number of commercial projects undertaken by your company so far?
2. Have you ever gone through the process of commercialization of land?
3. How do you view the entire process of commercialization in terms of fee charged, speed money, time delays and other problematic areas?
4. What are your suggestions regarding the land commercialization policy?
5. What are the problems faced during the construction of high-rise commercial buildings?

Findings and Observations

The vast majority of the respondents viewed that the government's land commercialization policy was right, since most of its regulations were needed anyway for urban management. Almost all of them had carried out commercial projects, but only on already commercialized land, so they had not gone through the process of commercialization themselves. Still the respondents were interviewed because they were well aware of the whole process of commercialization.

The overwhelming majority (87%) of the respondents said that it was the government's right to charge commercialization fee as a source of revenue, while the remaining 13% contended that if the roads had already been declared as commercial by the government, then there was no need to charge any commercialization fee.

Some of the respondents complained that the authorities had raised the land evaluation charges, which automatically raises the commercialization fee, thus putting a much greater burden on the end users. A few of the respondents also viewed that the condition of NOC does not make sense on those roads that have been already declared for commercialization.

The respondents informed that 'speed money' ranged from 30% to 65% of the total cost of the project, depending on its size. The bigger the project, the higher the percentage of speed money. Moreover, the percentage of speed money is usually higher for the projects being executed in the main city, as compared with those in the city suburbs. At times, the percentage of speed money exceeds the total cost of the project. Interestingly, a large number of the respondents (43%) refused to answer this question.

More than three-fourths (78%) of the respondents said that they have to bribe or pay speed money to overcome any undue time delays, since they have to get the projects completed in time to maintain their reputation. However, time delays in specific cases were as long as six years. According to one builder in Lahore, the government has declared as commercial almost 90% of the city, still there were 200 plots only in Wapda Town due to be approved for commercialization by the authorities for the past five years. The revenue collection through the commercialization charges is, thus, hardly 10% of what the authorities could earn otherwise.

When their suggestions were invited regarding the land commercialization policy, more than one-half (54%) of the respondents favoured one-window operation and demanded reduction in the number of agencies involved in the commercialization process; however, about 31% of them said that only the movement of files for approval from one department to another be reduced.

Some of the respondents also suggested that the staff dealing with the approval of applications for commercialization of property should be transferred regularly; the more they stay on the same seat, the more speed money they demand from builders and developers. One option could be to provide the concerned staff with some incentive, so that they would expedite the process of commercialization rather than hampering it.

Some (12%) of the respondents viewed that an application for commercialization of property should not be rejected altogether; rather, it should be approved with a fine. A few (5%) of them also claimed that the commercialization mafia provides its services at the doorstep of builders and developers. Almost two-fifths (39%) of the respondents suggested that the continuous revision of the building bylaws be stopped, and these should be publicized adequately by the government.

Currently, the building bylaws vary from area to area; for example, the ground (G) plus floor restriction in Karachi Cantonment is 7-12, in Clifton it is 12, and in Gulistan-e Johar it is 4 on one side of the road and 12 on the other side. Some (11%) of the respondents also criticized the setback requirement terming it a waste of their property.

When the respondents were asked about the problems faced during the construction of high-rise commercial buildings, they unanimously said that their foremost problem is that the construction material cannot be placed on the green belt or footpath as per the building bylaws. Some of them also complained that even the placing of the signboard next to the construction site results in fine by one agency and no objection by the other.

Almost two-thirds (63%) of the respondents complained that the electricity, sui gas and sewerage pipelines to support high-rise structures are not provided at the right time, resulting in undue time delays in projects. The study also observed that since Lahore was undergoing very rapid commercialization, builders and developers in the city were facing more problems than their counterparts in Karachi and Islamabad.

Over the last few years, the overall shopping trend / culture in the big cities of Pakistan in general and in Lahore in particular has changed drastically—now even the lower middle class is seen visiting shopping malls for day-to-day purchases. This trend encouraged even non-professions and inexperienced people to start purchasing land for constructing shopping malls.

As a result, the prices of land in Lahore reached Rs.20 million to Rs.100 million per 'kanal' (20 marlas or one-eight of an acre) in some areas. Despite this, many substandard plazas / shopping malls have emerged on the scene, though most of the developers / investors have not been able to sell more than ground plus first floor, thus incurring huge financial losses. This has shattered the overall confidence of the purchasers / investors.

The price of commercial property has increased, while that of residential property has decreased, substantially in Lahore over the last few years. The selling of shops / commercial property, therefore, has become very difficult since the purchasers expect the same decline in the price of commercial property. They like to purchase either at a very low price or dose not purchase at all because of the fear of loss in resale.

Some of the possible difficulties that one may face after purchase of land include: i) delay in approval of drawings / building plan, ii) heavy commercialization charges, iii) government policy of not allowing placement of building / construction material and machinery beside the project site and their transportation on a daily basis, iv) non-availability of required heavy machinery and experts in modern construction trends, and v) increase in labour wages.

Commercialization of Zainab Towers, Model Town Link Road, Lahore

Zainab Towers is situated on Model Town Link Road, which is a controlled area since 1978. The land was bought from a registered government employee's cooperative housing society in 1986. In 1992, the land was commercialized and the map of Zainab Towers was approved through the society. In 2001, after construction of the first two floors, the Lahore Development Authority (LDA) interfered for the first time, objecting that the said building – along with 13 other plazas on the same road – should first be approved for commercialization by LDA.

The owners of Zainab Towers submitted applications for commercialization in 2002 and 2003, and also agreed to the new rate, Rs.2,400,000 per marla compared with Rs.600,000 million per marla in 1992, set by the Deputy Commissioner. But it was not commercialized with the objection that the whole line of plazas on Link Road did not fulfil the 10-feet setback requirement. Even the sequent meetings with the Director General of LDA failed to resolve the conflict and the case went to the Lahore High Court.

In 2004, LDA officials attempted to demolish Zainab Towers and 13 other plazas on Link Road. Zainab Towers, with one floor for parking and G plus three building, does not violate any of the building bylaws. The same is true for the 13 other plazas on the Link Road. If the setback requirement has to be met, one solution could be to reduce the 30-feet greenbelt to 20-feet, and make the owners of plazas pay for the extra piece of land.

Conclusion

If the government has to collect the commercialization charges at all, one possibility could be to charge commercialization fee on the difference between commercial property value and residential property value, rather than on the whole commercial value of the land required to be commercialized. For example, if a property has residential value of Rs.1 million and its commercial

value is Rs.1.5 million, the commercialization charges should be levied on the difference of Rs.500,000. This might rationalize the otherwise high commercialization charges to some extent.

According to England's town planning laws, when someone wanted to change the use of land from one purpose to another, a 'development charge' was levied. To calculate the amount of this charge, the assumed selling value of a property if it was confined to its present use was deducted from the assumed value of the property after its development potential had been realized. The difference between the two values was taxed at 100%.

Easy rules governing commercialization and effective property rights institutions can serve as an impetus for the commercial activity, besides giving a positive signal to the international investors. In particular, Dubai has been established as the world's leading commercial centre due to the policies that favour the trend of commercialization. Hong Kong, Singapore and Bangkok are the other leading examples.

The city of Mandaluyong, Philippines, had become 17.5% commercial by 2004, up from 7.9% commercial in 1990. The development of the city is directed towards full commercialization, not only due to attracting more investors, but also with the tendency of the residents to engage in more economically productive activities. It is manifested by the proliferation of commercial activities within residential zones—a clear example of government-supported commercialization.

The present situation in Pakistan is in stark contrast to the abovementioned examples. As pointed out by Haque and Nayab (2007), zoning often seems to favour the large housing at the expense of commercial development. Commercialization is arbitrary, cumbersome and expensive in Pakistan. As a result, zoning and or estate development appears to be a rent-seeking business.

For example, the areas around hotels in Lahore, Rawalpindi and Islamabad remain underdeveloped because zoning is changed for each individual plot and not for an entire area. In developed countries, this space is used for clustering commerce. This calls for the need to model and develop cities in a manner that is conducive to generating economic activity. However, this has not been the case in Pakistan, where the recent trends in urban development are giving rise to urban sprawl and people are being driven away from commercial hubs.

According to Haque and Waqar (2006), urban zoning in Pakistan remains uninformed of modern city and commercialization needs. This is perhaps the biggest constraint to serious domestic commercial development. The government continues to regard all forms of domestic commerce as an orphan child, demanding high commercialization charges and leaving it only with residual space.

Zoners are strongly biased towards large single-family homes on the style of large American suburbia. The only difference is that they do not allow shopping malls in this suburbia. In such cities, there is no space for large retail houses, warehouses, storages, offices or mixed use, where the poor and the middle classes can live. In fact, there are no city centres as mixed use, where commerce and the middle class commingle, is not allowed. In any case, the government continues to own city centres.

This view is in line with the emerging trends in developed countries. In the UK, guidelines make city centres the preferred locations for new retail development. In the U.S., a growing number of states are adopting neo-traditional or new urbanism, where municipalities change their zoning laws in such a way that new developments are modelled after traditional towns.

In such towns, homes, stores and offices can be built within walking distance of each other. In 2000, more than 250 such developments were either planned or were under construction. Many states in the U.S. are encouraging this kind of development since it consumes far less land and suburban sprawl, and provides places for people of all incomes to engage in profitable activities.

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Are Pakistanis Better Off than Indians and Bangladeshis?

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The *Pakistan Demographic and Health Survey 2006-07* report shows that more than 10% households in urban areas of the country own a motor vehicle (car, truck or tractor), while the average nationwide ownership of motor vehicles is only 6.7%. In other words, the ownership of motor vehicles is considerably lower in rural areas of the country than in its urban areas.

The Demographic and Health Survey (DHS) is conducted by Measure Evaluation, a project of the University of North Carolina, in scores of developing countries worldwide after every five year with the financial support of the United States Agency for International Development (USAID). Since these sample surveys are designed using national sampling frames, their findings generally reflect the situation in a country fairly.

The DHS primarily gathers data on population and reproductive health issues, but also on durable holdings of the responding households, which gives a rough measure of their economic status. However, the number of variables studied is not consistent among the surveys, thus limiting the scope of inter-country comparisons.

Few Indians are Very Rich, Most are very Poor

To understand the significance of the findings of Pakistan's latest DHS report, it seems prudent to compare them with matching data from countries having similar socioeconomic features, such as India and Bangladesh. For example, the *India Demographic and Health Survey 2005-06* report shows that only 6.1% households in urban areas of the country own a motor vehicle, while the average nationwide ownership of motor vehicles is much lower at only 2.7%. These numbers do not account for multiple auto ownership in either India or Pakistan. The same information is not available in the *Bangladesh Demographic and Health Survey 2004* report.

Pakistani households are also ahead of their Indian and Bangladeshi counterparts in the average nationwide ownership of radios, motorcycles, sewing machines, watches / clocks, telephones, computers and refrigerators (Table 1). Generally, Bangladeshi households lag behind their Pakistani and Indian counterparts in these acquisitions, though there are some exceptions.

Urban households in Pakistan also hold an edge over their Indian and Bangladeshi counterparts in the ownership of televisions. More than four-fifths (80.5%) of the urban households in Pakistan reported owing a television, compared with 73.2% in India and only 49.1% in Bangladesh. However, the average nationwide ownership of televisions is slightly higher in India (44.2%) than in Pakistan (42.9%).

More urban households in India (38.9%) and Bangladesh (36.5%) reported owning a radio than their counterparts in Pakistan (28.8%), though the average nationwide ownership of radios is slightly higher in Pakistan (31.7%) than in India (30.9%) and Bangladesh (30.4%). This implies

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that more rural than urban households in Pakistan own a radio, contrary to the situation in India and Bangladesh. This trend could be attributed to a number of factors: urban households in Pakistan may not be aware of the existence of radio in their audio equipment like cassette recorders; they may not be reporting the ownership of radios because of the misperception that a license is required for this purpose, which they do not have; and with a television in the house, very few people want to listen to the radio.

Since Pakistan and Bangladesh have limited or no capacity to produce most household durable goods, their ownership in these countries generally comprises imported items. On the other hand, India has for decades followed policies against imports to protect its domestic industry. Consequently, it took a long time before these goods were available on a large scale in India.

While Indian households owned cheap and low-quality locally-manufactured products, their Pakistani and Bangladeshi counterparts enjoyed better quality imports and benefited from the latest technologies. At the same time, however, Pakistan and Bangladesh spent their precious foreign exchange earnings on importing consumer goods rather than on machinery and factory equipment, a luxury they could hardly afford for their burgeoning populations. In addition, many of these items were brought in these countries by migrant workers from overseas.

Table 1
Percentage of Household Durable Goods Owned in Selected Countries (Demographic and Health Survey)

	Pakistan (2006)		India (2005-06)		Bangladesh (2004)	
Item	Urban	National	Urban	National	Urban	National
Car / Truck / Tractor	10.2	6.7	6.1	2.7	-	-
Radio	28.8	31.7	38.9	30.9	36.5	30.4
Television	80.5	42.9	73.2	44.2	49.1	22.9
Bicycle	37.5	40.7	50.1	56.5	18.3	24.2
Motorcycle	28.4	18.4	30.5	17.2	4.0	1.9
Sewing Machine	75.6	60.4	30.9	18.6	12.6	5.4
Chair / Bench	66.4	54.9	76.1	54.3	67.9	64.7
Watch / clock	88.2	80.7	91.0	77.8	79.3	66.0
Telephone	65.9	45.7	36.3	16.8	15.6	4.8
Computer	18.5	8.1	8.0	3.0	-	-
Refrigerator	61.7	36.7	33.5	15.3	-	-

The findings of DHS reports show that Pakistani households are relatively wealthier than their Indian and Bangladeshi counterparts. However, it is pertinent to determine whether affluence or poverty in these countries is because of unequal distribution of wealth. The only variable available to us in this connection is the disparity between urban and rural areas of these countries. The difference in the ownership of motor vehicles is almost the same between urban and rural areas of both Pakistan and India.

The ownership of televisions was relatively higher in urban households of Pakistan than in their Indian counterparts. In Bangladesh, the ownership of televisions in rural areas was less than half of urban areas, indicating the greatest disparity of wealth among the three countries. To conclude, one may say that the differences in the ownership of household durable goods between rural and urban areas of Pakistan, India and Bangladesh are not significant enough to suggest that affluence or poverty in these countries is because of unequal distribution of wealth.

The Big Picture

The household wealth is undoubtedly an important indicator of a country's economic status, however it does not say much about prosperity in the future. The three countries studied faced similar socioeconomic and development challenges when they attained freedom 60 years ago. However, after all this time, one may want to know how each country has tackled those challenges? Who made better decisions? Whose policies are likely to pay off in the long-run in terms of development and social well-being?

Unfortunately, there are not many reliable and trustworthy data sources except what international institutions have produced. Chief among these sources is the *Human Development Report* (*HDR*), published annually by the United Nations Development Programme (UNDP). The huge volume – painfully researched, documented and produced – provides more than two dozen tables on the status of a range of indicators a country should look at, to be able to gauge its progress and compare its status with that of its neighbours.

A snapshot of some of the indicators selected from the *HDR* published in 2000 and 2007/2008 is given in Table 2. The macro picture presented by the numbers does not show Pakistan having an edge over India and Bangladesh, except in the number of internet users per 1,000 (67 compared with 55 in India and only 3 in Bangladesh).

The *HDR* has established a composite Human Development Index (HDI) to measure relative socioeconomic status of a country, based on several specific variables chosen from sectors such as education, income, health, etc. The country that has the highest achievement is ranked at 1. Pakistan was ranked at 135 out of 173 countries in 2000, but its ranking dropped to 136 in 2007/08. During this period, Bangladesh improved its ranking from 146 to 140; while India remained at 128.

Table 2
Economic and Social Indicators of Selected Countries (Human Development Report)

	Pakistan		India		Bangladesh	
Indicator	2000	2007/08	2000	2007/08	2000	2007/08
Human Development Index *1998/2005*	135	136	128	128	146	140
Unemployed (% of labour force) *2007*	Na	7.7%	Na	4.3%	Na	4.3%
Expenditure on education *1997/2007*	2.7%	2.3%	3.2%	3.8%	2.2%	2.5%
Internet users (per 1,000 people) *2005*	Na	67	Na	55	Na	3
Youth literacy rate *1998/2005*	61.4%	65.1%	67.9	76.4%	49.6%	63.6%
Infant mortality rate *1998/2005*	95	79	69	56	79	54

The *HDR* 2007/2008 shows that Pakistan has a much higher percent of unemployed than India and Bangladesh. Pakistan also incurs the lowest public expenditure on education (as a percentage of GDP) among the three countries, which is manifested in its youth literacy rate (percentage of those aged 15-24) of 65.1%, compared with 76.4% for India.

Pakistan made good progress in decreasing its infant mortality rate (per 1,000 live births) from 95 in 2000 to 79 in 2007/08, but it seems to be insignificant in comparison with the progress made by Bangladesh.

The trends highlighted in DHS reports can be viewed as both positive and negative. For example, on the negative side, 59.3% of Pakistani households do not have a bicycle, 19.3% do not have a watch / clock, 92.1% have a computer and 63.3% do not have a refrigerator.

Similarly, in India, 97.3% of households do not have a motor vehicle, almost 55.8% do not have a television, 81.4% do not have a sewing machine, 22.2% do not have a watch / clock, 83.2% do not have a telephone, 97% do not have a computer and 84.7% do not have refrigerator. In Bangladesh, questions were not asked about motor vehicles, computers and refrigerators. On average, three out of four Bangladesh households do not have televisions, radios and bicycles; and the majority has just chairs / benches (64.7%) and watches / clocks (66%).

Conclusion

Pakistan's economy is in dire straits. Even though many of its households are better off than their counterparts in India and Bangladesh, the country's achievements in terms of education, health and social well-being are not so promising. The government recently kneeled down to the International Monetary Fund (IMF) for a life-saving loan, which is usually granted on conditions that most countries find humiliating.

India, despite its fast-paced economic growth in recent years, is oblivious to the plight of its people and instead incurring expenditure on fruitless pursuits such as sending rockets to the moon. Bangladesh has survived by abundance of foreign aid. Its health programmes seem to be working and showing results.

To sum it up, the three countries included in this comparative study have undoubtedly made remarkable progress on many fronts, especially considering their high rates of population growth and archaic bureaucratic machinery, coupled with corruption and ineptitude. While the increase in population is slowing down a bit, other challenges remain. Only a competent, committed and honest leadership could bring about the change these countries so desperately need.

Understanding Myth in the Socio-Historical Perspective: An Anthropological Review

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For the early anthropologists, myth was something untrue, a figment of the imagination, something which was dreamed up by elementary, uncultured minds. However, the last century saw a full appreciation and interest in the value of myth. Consequently, myth is now recognized as a serious expression of some sacred truth; and its significance in human life is studied not only by anthropologists, but also by classicists, historians of religions, theologians, psychologists, folklorists and biblical scholars.

Early anthropologists focused on the functions of myth and the ways in which it has come into existence. Malinowski (1954) believed that myth and social reality were functionally interrelated; myth confirmed, supported and maintained the social state of affairs. Moreover, myth provided an account of origins—of the world, of people and of their conventions. The structuralists, who succeeded Malinowski, while discarding such over functionalism, nevertheless retained a somewhat more abstract version of myth. They maintained that myth provided the conceptual, rather than the normative, support for a social world.

Amazing similarities exist in myths from different regions and parts of the world. These myths are fundamental responses of the people to their environment, and existential situation and experiences, as well as the embodiment of their longings; some are quasi-historical, others the response to religious beliefs and to cultural, psychological urges, both social and personal. Myths have been handed down by word of mouth, in rituals, festivals, religious drama and literature, becoming a creative force, perpetuating the powers of which they are an expression (Cooper, 1993).

Scholars like Eliade and Campbell have brought a wealth of myth and legend into the present day, revealing a breadth and depth in ancient traditions, particularly in the hitherto neglected tribal lore of people who identify with nature and present a whole mythology of their own, which fills the gap in the over-rational European experience (Eliot, 1990). As a result, a keen interest in these mythologies is now apparent everywhere.

Campbell (1986) recognizes the problem societies face in assuring that the development of each member's consciousness proceeds in a way that maintains a collective reality base relative to the environment:

> Thus a mythology is a control system, on the one hand framing its community to accord with an intuited order of nature and, on the other hand, by means of its symbolic pedagogic rites, conducting individuals through the ineluctable psycho-physiological stages of transformation of a human lifetime – birth, childhood and adolescence, age, old age, and the release of death – in an unbroken accord simultaneously with the requirements of this world and the rapture of participation in a manner of being beyond time (p. 20).

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Almost all myths are transmitted from person to person and from generation to generation for some considerable period before being written down. The Brothers Grimm (1812-22), famous collectors of folktales in Germany in the first half of the nineteenth century, believed that folktales collected from the modern European peasants were degraded versions of ancient Indo-European myths. However, the majority of later scholars disagree with the Grimm Brothers that myth is still prominent in the form of folktales in peasant societies.

According to Dundes (1996), "In the study of folklore, a myth is a sacred narrative explaining how the world and humankind came to be in their present form (p. 147)." Schorer (1959) believes that myths are:

> …the instrument by which we continually struggle to make our experience intelligible to ourselves. A myth is a large, controlling image that gives philosophical meaning to the facts of ordinary life. Without such images, experience is chaotic, fragmentary and merely phenomenal (pp. 25-26).

On the other hand, Eliade (1978) believes that the world is at last beginning to know and understand the value of myth and to appreciate the heritage from societies where myth is the very foundation of social life and culture, in which, being real and sacred, it becomes exemplary. Moreover, he attributes modern human beings' anxieties to their rejection of myths and the sense of the sacred. Carroll (1996) identifies three characteristics common to the anthropological use of the term 'myth':

> First, a myth is a story; second, this story is concerned with the sacred in Emile Durkheim's sense of the word, that is, with persons or things surrounded with reverence and respect in the society where the story is told; and third, the events described in this sacred story are set initially in a previous age that is qualitatively different from the present age (p. 828).

Many folklorists have studied the subject of myth in detail. Some of them have traced the origin of folktales from myths (as we have talked about the Grimm Brothers' perception), while others have focused on the comparative perspective of myth. Some folklorists believe that by plotting the geographical distribution of all the versions of some particular myth within a culture area, and paying careful attention to which motifs are acquired and which are lost as one moves from society to society, they can identify the society in which the myth originated and reconstruct its original version.

Theoretical Concept of Myth

Tylor (1871) interprets myth as an attempt at a literal explanation for natural phenomena—unable to conceive of impersonal natural laws, early human beings tried to explain natural phenomena by attributing souls to inanimate objects, giving rise to animism. The primitive man saw the spirits in some natural objects such as the sun, the moon, the stars, trees, stones and animals. Human thought evolved through various stages, starting with mythological ideas and gradually progressing to scientific ideas. Myths are the stories that the human imagination constructed around these animated natural objects.

Frazer (1922) believes that all societies had passed through a magical stage of social evolution, in which they were ruled by divine kings. Under the influence of magical thought, people at this stage saw an intimate connection between their divine king and the forces of nature. Any declining in natural forces (as appeared to happen, for example, with the approach of winter) was

because of weakening of the king. To ensure that nature remained strong and beneficent, they killed and replaced their king annually. As societies moved to later stages of social evolution, memories of this early experience with divine kings gave rise to myths about gods who died and were born again (Carroll, 1996). Talking about the sacred marriage of gods, Frazer (1922) narrates the Egyptian custom of drowning a girl as a sacrifice to the Nile:

> In this last custom, the death of the woman is regarded as a sign that the god has taken her to himself. Sometimes, apparently, it has not been left to the discretion of the divine bridegroom to take or leave his human bride; she was made over to him once for all in death. When the Arabs conquered Egypt, they learned that at the annual rise of the Nile the Egyptians were wont to deck a young virgin in gay apparel and throw her into the river as a sacrifice, in order to obtain a plentiful inundation. The Arab general abolished the barbarous custom (p. 151).

From the old Egyptian concept of sacrificing a girl to the river god, Frazer abstracted his idea that all mythical concepts originated from certain rituals. Though the majority of classical anthropologists described myth as the source of origin of prominent rituals, modern ones see it in a separate domain. Frazer (1922), however, describes myth as a misinterpretation of magical rituals. Human beings began with an unfounded belief in impersonal magical laws. When they realized that their application of these laws did not work, they gave up their belief in natural laws, in favour of a belief in personal gods controlling nature, thus giving rise to religious myths. Meanwhile, human beings continued to practice formerly magical rituals through force of habit, reinterpreting them as re-enactments of mythical events.

Malinowski (1979) argues that the primary function of myth was to provide a sacred charter that legitimated the existing claims to status and power. These claims had come into existence as a result of purely sociological processes, which means that Malinowski's approach to myth did not rely on imagined, undocumented rituals in the distant past. Malinowski also suggested that myth contributed to social stability (Carroll, 1996). Malinowski's focus was on the functional aspect of myth, and his work was later carried forward by Herskovits (1947) and Jacobs (1959).

Favouring familiar psychological theories of daydreaming and compensation, and comparing myth with daydreaming, Benedict (1934) concludes that polygamy in the monogamous community, or testing or rejecting the suitors where the suitors were accepted readily, was a grandiose daydream, a dream of power, a dream of fantasy. So, according to Benedict, in myth and folktales, the wishes of any community or people were fulfilled. In her ethnography, she tried to find the contrast between the actual norms and the utopia which myth and folktales presented.

"It would seem that mythological worlds have been built up only to be shattered again, and that new worlds were built from the fragments (Boas, 1898, p. 18)." By studying the myths of any traditional or primitive society, we can construct its kinship, economic structure and social organization. However, Lévi-Strauss contended that Boas failed to stipulate a relationship between myth and other social phenomena (Weiner, 1994). According to Lévi-Strauss:

> The myth is certainly related to given facts, but not as a representation of them. The relationship is of a dialectic kind, and the institutions described in the myths can be the very opposite of the real institutions. This conception of the relation of the myth to reality no doubt limits the use of the former as a documentary source. But it opens the way for other possibilities; for in abandoning the search for a constantly accurate picture of ethnographic reality in the myth, we gain, on occasions, a means of reaching unconscious categories (1976, pp. 172–173).

In his structural study of myth, Lévi-Strauss was careful to point out that a myth could only be compared with another myth. Weiner (1994) discusses Lévi-Strauss' point of view about the relationship between myth and language, as well as myth and music, and their role in creating worldview and morality of any society:

> Lévi-Strauss approached the question of the relationship between language and world correctly: by rephrasing it as a problem of the relationship between one kind of language and another. He therefore forced us to consider the broader analytic problem of representation itself, and of how anthropologists construct the relationship between myth and the rest of social discourse, and, more generally, between vehicles of representation and that which is represented. Lévi-Strauss sees myth as similar to music: it shares superficial syntactic and contrapuntal similarities with language but is essentially non-linguistic in form and effect. It could accordingly be said that a myth must stand outside language if it is to represent something other than itself. We would then have to agree, as did Lévi-Strauss, with Richard Wagner, who thought that music and myth have the power to convey messages that ordinary language cannot. But both Wagner and Lévi-Strauss felt that these extra-linguistic forms ultimately functioned to unify and coordinate the worldview and morality of a community. In other words, though the forms of myth and music are not conventional, their effects are. And this is just another version of the functionalist paradox (p. 595).

Kirk analyzes the relationship between myth and language differently, and stressed that it would be wrong to perceive the meaning of myth with the sentence structure of language:

> The linguistic analogy, so heavily used in structural studies in general and by Lévi-Strauss in particular, is undecided and confusing in its application to myth. The function of language is to convey content, not to convey its own grammatical and syntactical rules—its own structure, that is. Therefore it is wrong to imply that the meaning of myth is conveyed by its own structure, corresponding with syntax in language. If the myth-language analogy is valid, then myths, like language, will convey messages distinct from their own structure (1978, p. 43).

Moreover, Lévi-Strauss (1963) argues that our sociological and psychological interpretations of mythology had hitherto been far too facile:

> If a given mythology confers prominence to a certain character, let us say an evil grandmother, it will be claimed that in such a society grandmothers are actually evil and that mythology reflects the social structure and the social relations; but should the actual data be conflicting, it would be readily claimed that the purpose of mythology is to provide an outlet for repressed feelings. Whatever the situation may be, a clever dialectic will always find a way to pretend that a meaning has been unraveled (p. 67).

He, therefore, suggested that the basic function of myth was to furnish a culture with a 'logical' model by means of which the human mind can evade unwelcome contradictions. Lévi-Strauss also applied this hypothesis to the Oedipus myth and the Zuni emergence myth. According to Lessa and Vogt (1979), Lévi-Strauss suggested that the analysis proceeded by dividing the myth into the shortest possible sentences, and writing each sentence on an index card bearing a number corresponding to the unfolding of the story.

Müller (1918) argues that most Indo-European myths came into existence through a 'disease of language'. According to his concept, the original Indo-Europeans used a variety of metaphors to describe celestial phenomena. Some of these metaphors involved words that were

rarely used, thus their meanings were forgotten over time. In trying to make sense of metaphors, which were still being passed on, later Indo-Europeans assumed that the different terms that had originally denoted, say, the sun or the moon, were the names of different gods.

In this way, the metaphor seemed to be relating to an incident involving these gods. This incident then became the most important part around which a full-fledged story coalesced. Müller's speculation that myths arose due to the lack of abstract nouns in ancient languages had not achieved much success over the time (Carroll, 1996).

Segal (1998) discusses Jung's understanding of the concept of myth. According to him, Jung tried to understand the psychology behind world myths, and argued that all humans shared certain innate unconscious psychological forces or archetypes. Jung believed that the similarity between the myths from different cultures revealed the existence of these universal archetypes.

Freud stressed that dreams represented the disguised fulfillment of unconscious wishes. He argued that Sophocles' play *Oedipus Rex* revolves around the theme that Oedipus unknowingly kills his father and marries his own mother. By identifying with Oedipus, men could discharge vicariously two desires buried in their unconscious, namely, desire to eliminate the father and enjoy intimate physical contact with the mother. Basing his ideas on this hypothesis, Freud suggested that human beings could understand the psyche of all prevailing myths.

Most other psychoanalytic theories, however, differ from that of Freud, since they are based on the assumption that if we want to understand the common psyche of all myths, we have to look at people's suppressed emotions and unconscious wishes.

Prominent Myths of the Ancient World

Based on the above discussion on prominent theories of myth, presented by sociologists, anthropologists, psychologists and linguists, we can say that every culture has evolved its own mythology, defining its character and offering a way to understand the world. Every culture has some mythical heroes, who later become their gods or equivalent of gods. A classic hero is a champion in every sense of the word, overcoming trials, ridding the world of troublemakers, blazing trails and winning against all odds. Now we present some of the most prominent myths from the ancient world, with a view to understanding the relationship between myth and the human life:

Greek

Zeus, a son of the *Titans, Cronos* and *Rhea*, was the supreme deity in Greek mythology. The tyrannical *Cronos* insisted on swallowing all of *Zeus'* older brothers and sisters as soon as they were born, but *Zeus* escaped this fate when his mother *Rhea* offered *Cronos* a stone wrapped up in swaddling clothes to swallow instead. The wise *Metis*, a daughter of *Oceanus*, gave *Zeus* the idea of a potion that would make *Cronos* vomit up all the children he had swallowed. *Zeus* succeeded and, after defeating his father *Cronos*, divided the world between himself and his brothers *Hades* and *Poseidon*. *Zeus* chose to rule the sky, *Hades* the underworld and *Poseidon* the sea.

Apollo, a son of *Zeus* and the *Titaness Leto*, was one of the most important deities in both Greek and Roman mythologies. He was the god of prophecy, archery and music. A fight with the *Python*, a gigantic earth serpent, at *Delphi* gave *Apollo* the seat of his famous *Oracle*. *Python* was an offspring of *Gaia* (also *Gaea*), the earth, which issued revelations through a fissure in the rock so that the *Pythia*, the priestess at *Delphi*, could give answer to any question that might be asked. After slewing *Python, Apollo* took its place, though he had to do penance in *Thessaly* for the killing.

Achilles, the greatest of all the Greek warriors, had legendary anger and powers. Both *Zeus* and *Poseidon* wanted to have a son by the beautiful *Thetis*, but *Prometheus*, the fire god, warned them that her offspring would be greater than his father. Anxious to avoid the emergence of a power superior to themselves, the gods carefully arranged the marriage of *Thetis* to a mortal. Because she was so attached to *Achilles*, *Thetis* tried to make him immortal by dipping the new-born baby in the *Styx*, the river that ran through *Hades*, the world of the dead. Since *Thetis* had to hold *Achilles* by the heel, this one spot was left vulnerable, and, at *Troy*, brought about his death from a poisoned arrow shot from the bow of *Paris*.

Atlas, a *Titan*, was the son of *Lapetus* and the Oceanid *Clymene*. The ancient Greek thought that he held up the sky; *Atlas* means 'he who carries'. *Atlas'* most famous encounter was with *Heracles*, the hero one of whose labours was to obtain the golden apples of the *Hesperides*, female guardians of the fruit that *Gaia* presented to *Hera* on the occasion of her marriage to *Zeus*. *Atlas* offered to fetch them for *Heracles* if the hero took over his job of holding up the sky. When *Atlas* returned with the golden apples, he wanted *Heracles* to continue since he was doing so well. *Heracles* pretended to agree and then asked if *Atlas* would take the world for a moment, so that he could adjust the weight on his shoulder, thus tricking *Atlas* into resuming his lonely duty.

Heracles, the son of *Zeus* and *Alcmene*, was the greatest of all the Greek heroes (the Romans knew him as *Hercules*). Because *Zeus* needed a mortal champion in the forthcoming battle between the gods and the giants, he fathered *Heracles* at the court of *Thebes*. The chosen mother was *Alcmene*, the Theban queen. The 12 legendary labours of *Heracles* have great significance in Greek mythology.

Oedipus was the unlucky son of king *Laius* and Queen *Jocasta* of *Thebes*. Because as a guest at the court of *Pelops*, *Laius* had taken sexual advantage of *Pelops'* young son *Chrysippus*, a curse was laid on the ruling house of *Thebes*. The *Oracle* warned *Laius* that any son *Jocasta* bore would kill him. For a long time, the king and queen abandoned the marriage bed, but drink one night caused *Laius* to throw caution to the winds and a son was duly conceived. At birth, the infant was pierced in the feet and left to die on a distant mountainside, a fairly common practice for unwanted children in ancient Greece. However, a shepherd found the baby and took it to king *Polybus* of *Corinth*, who, having no children, adopted the boy. When *Oedipus* grew up, he went to the *Oracle* at *Delphi* to ask about his parentage. On being told that he was destined to kill his father and marry his own mother, the horrified *Oedipus* fled north but encountered *Laius* en route. *Oedipus* killed everyone there and arrived in *Thebes*, where he discovered that the people were greatly distressed at the news of *Laius'* death and terrified of the *Sphinx*, an ugly monster. When the regent *Creon* announced that whoever rid the city of the *Sphinx* would be offered the throne and the hand of *Jocasta*, *Oedipus* decided to try or die in the attempt. By outwitting the *Sphinx* and causing its death, Oedipus fulfilled his own destiny—earlier he had killed his father and now he married his own mother. For some time, *Oedipus* and *Jocasta* lived happily together, having a family of two sons, *Polynices* and *Eteocles*, and two daughters, *Antigone* and *Ismene*. Then a dreadful plague settled on *Thebes*, and *Creon* was sent to ask the *Oracle* at *Delphi* for a remedy. The divine command he brought back to the city was to drive out the murderer of *Laius*. Though the famous seer *Tiresias* announced that *Oedipus* was the guilty one, the latter would not believe this was true until he traced those involved in his own exposure as a child. Convinced at last of his crime, *Oedipus* blinded himself and left *Thebes*. His mother and wife, *Jocasta*, had already committed suicide. In the company of his daughter *Antigone*, a broken *Oedipus* eventually found spiritual peace in a sacred grove at *Colonus*.

Roman

Jupiter was the most important character in Roman mythology. He was the sky god—the equivalent of *Zeus* in Greek mythology. The cult of *Jupiter* began under the *Etruscan* kings, who were expelled from Rome around 507 BC. At first, *Jupiter* was associated with the elements, especially storms, thunder and lightning, but he later became the protector of the Roman people and was their powerful ally in wars.

Venus, the goddess of sexual desire, played a major role in Roman epic poems. In the famous poem entitled *Aeneid*, *Venus* intervened on several occasions to help her son *Aeneas*. She was accompanied by *Cupid*, the god of love who is usually depicted in art as a beautiful winged boy with bows and arrows. However, some of *Cupid's* arrows turned people away from those who fell in love with them.

Beowulf was the Germanic hero who slew two water monsters. He was said to be the nephew of the king of *Geats*, whom some interpret as the *Jutes*. *Beowulf's* story is set in Denmark. One night, a dreadful creature *Grendedl* came to the hall of King *Hrothgar* and ate one of the warriors sleeping there. Though invulnerable to weapons, *Grendedl* was seized by *Beowulf* and held in a powerful grip, from which it could only break away by losing an arm. *Grendedl's* mother, an even more dreadful creature, returned to attack and ate another sleeping warrior. In pursuit, *Beowulf* followed her into a lake and dived down to her cavern-like lair. His last encounter took place with a dragon. Though *Beowulf* managed to kill the dragon, it was at the cost of his own life.

Egyptian

Isis, titled as the 'Queen of Heaven', was the most important deity in Egyptian mythology. She was the Egyptian mother goddess, the daughter of *Geb* and *Nut*, and the sister and consort of *Osiris*. *Isis* is usually depicted in art as having huge, sheltering wings, a personification of the throne. She helped *Osiris* in civilizing Egypt by teaching women how to grind corn, as well as how to spin and weave. *Isis* also taught people how to cure illnesses and instituted the rite of marriage.

Re was the sun god in Egyptian mythology. His journey started from his death at sunset to his rebirth at sunrise. *Re* had to travel underground through the dark hours of the night; each hour's doorway being guarded by frightening and obnoxious demons. Many parts of this journey are represented on the wall paintings in the royal tombs in the Valley of the Kings. Each hour is associated with different gods or animals. In the First Hour, baboons open the doors for *Re* and a dozen serpent goddesses provide light. Grain gods feature in the Second and Third Hours, as do snakes in the Fourth and Fifth Hours. In the Sixth Hour, *Re* takes on *Khepri*, the sacred beetle which is believed to roll the sun's disk across the sky in the daytime. So *Re's* journey continues with its various difficulties – cats wielding large knives and beheading evil serpents, and goddesses spitting fire at *Re's* enemies or decapitating them – until the final Twelfth Hour is reached.

Hindu

According to Hindu mythology, the universe is pervaded by *Devas*, the gods friendly to humankind. They each have responsibility for an aspect of nature which in their personal form they embody, such as *Agni*, the god of fire. Another example is that of the goddess *Ganga*, the spirit of the river *Ganges*. The daughter of the Himalayas, *Ganga* was taken up to the heaven and brought back to the earth by the penances of *King Bhagirathi* to be caught in *Shiva's* hair. *Ganga's* devotees believe that she washes away sins.

Vishnu is the god of balance in Hindu mythology. He enters the universe whenever there is disturbance in its balance, and restores the true religious teachings and protects righteousness. *Vishnu* is characterized as full of mercy and patience, and his symbols are the lotus flower and the conch shell by which he blesses the good. The 10 incarnations of *Vishnu*, called *avatars*, are: i) *Matsy* (the fish), ii) *Kurma* (the tortoise), iii) *Varaha* (the boar), iv) *Narasimha* (the male lion), v) *Vamana* (the dwarf), vi) *Parasurama* (the warrior), vii) *Rama* (the good king), viii) *Krishna* (the cowherd), ix) *Buddha* (the teacher), and x) *Kalki* (the slayer who will come at the end of this age riding a white horse to kill the demons and inaugurate a new cycle of the universe).

Shiva, on the other hand, is the god of death and destruction. He carries a small drum on his bull *Nandi* to accompany his dance of destruction. On *Shiva's* head are a crescent moon and a symbol of the descending waters of the *Ganges*, which he caught in his hair to save the mountain from being crushed by its weight. The followers of *Vishnu* and *Shiva* believe that they both have the same supreme divinity.

Creation Myths in Different Faiths and Cultures

Every faith and culture has its own version of how the universe and the world came into being. These myths have afforded humankind a way of orienting itself within the awesome size and complexity of space and time. Now we present creation myths in some major faiths and cultures:

Abrahamic Religions

In all Abrahamic religions, God created everything in six days and rested on the seventh. In the beginning was a dark, formless, watery abyss. The *Book of Genesis* describes the stages of creation as: creation of light and dark; the division of the waters from the sky; the separation of land and sea; the clothing of the earth with vegetation; the production of fish and birds; the production of land animals; and then finally the creation of human beings in the image of God with dominion over all other creatures. According to the *Holy Quran*, Allah said 'be' (*kun*) and all was created – the earth, the seven heavens, and the first man and woman – in two days and the cosmos in six days.

Hinduism

It is difficult to discover the Hindu creation myth; the *Rig Veda* offers no single solution to the creation of the universe, but refers to primordial state of neither being nor nonbeing—just darkness, a primal ocean. In one of the many Hindu creation myths, *Brahma* created the universe and has to do so every *Kalpa* (4.32 billion years in Hindu mythology). In daytime, *Brahma* creates the universe, but by night it again reverts to chaos; and he has to create it anew each morning.

There are many accounts of creation in Hinduism, but it is generally seen as an unending process in cycles. There exists an ordered universe in which *rta*, a fundamental balance, prevails, but it must be sustained through appropriate sacrifices and conduct.

The 'churning of the waters' is one of the most famous of Hindu myths. Deep in the ocean laid *Amrita*, the elixir of immortality, which the gods on *Mount Meru* greatly desired. So *Vishnu* turned himself into *Kurma*, a giant tortoise, and the gods upturned *Mount Mandorea* and set it on his back. Then they coiled *Vaksuki*, the snake, around the mountain. The *Devas* pulled at the other end, rotating *Kurma* like a giant paddle and churning the waters until they became milky as butter. Many precious things, including the sun and the moon, were created from this watery turmoil. *Lakshmi*, the wife of *Vishnu*, and *Dhanvantari*, the physician of the gods, finally brought out the *Amrita*.

Shintoism

According to the Shinto creation myth, the earth was formed by *Izanami* and *Izanagi* at the behest of the gods of creation. Looking down from the floating 'Bridge of Heaven' (the rainbow), they stirred the ocean with a jeweled spear, creating *Onogoro*, the first island. Here they erected a pillar, walked around it in opposite directions, mated, and *Izanami* gave birth to the island of Japan besides many gods and goddesses. But in giving birth to *Kagutsuchi*, the fire god, she was badly burned and died. A furious *Izanagi* killed *Kagutsuchi* and descended into the underworld to bring *Izanami* back. When he found her, she agreed to return on the condition that *Izanagi* would not look at her. But her husband disobeyed, using a tooth from his hair comb to make a torch in the darkness of the underworld, revealing *Izanami* to be rotting and covered with maggots. A horrified *Izanagi* fled, blocking the exit after him with a huge rock.

Izanagi fathered three children: *Amaterasu*, the sun goddess and the ruler of the heaven; *Tsuki-yomi*, the moon god and the ruler of the night; and *Susano*, the storm god and the ruler of the ocean. *Susano*, after challenging *Amaterasu* and losing, attacked her sacred hall, where she and her maidens wove the fabric of the universe. This caused *Amaterasu* to retreat to a cave, plunging the world into darkness. To bring *Amaterasu* back, the gods tricked her into believing that they were welcoming a deity even greater then her; but this was, in fact, her own reflection in a mirror.

Zoroastrianism

According to the Zoroastrian creation myth the ultimate, Supreme Being, existing in the primal void, was *Zurvan*. He fathered twin sons, *Ahura Mazda*, who lived in the light, and *Ahriman*, who lived in the dark. *Ahura Mazda*, wise and all-knowing, created the sun, the moon and the stars; and brought into being the Good Mind that works within all living creatures. *Ahura Mazda* also made *Gayomart*, the first human and the first fire-priest. *Ahriman*, on the other hand, created demons to attack *Ahura Mazda*, who sent him back into the darkness. *Ahriman* responded by creating sin and evil, besides pestilence, disease, pain and death.

Greek

According to the Greek creation myth, initially all was chaos, an infinite, turbulent mass of space, with the cosmic egg as the unifying force. This produced *Eros*, the first god who later became the god of love. Then *Gaia*, the earth, came into being, as did *Tartarus*, the region below the earth. *Erebus* (the darkness) and *Nyx* (the night) came next and produced *Aether* (the air) and *Hemera* (the day), and all these collectively created the Mediterranean Sea. However, *Nyx* alone created *Thanos* (death), *Nemesis* (retribution) and *Erix* (strife).

Gaia's children included *Uranus* (the sky), with whom she produced the 12 *Titans* and other races of giants. The *Titan Prometheus* created humankind in the likeness of the gods. *Cronos*, the king of the *Titans*, seized control of the heavens and the earth, but his youngest son, *Zeus*, rebelled and conquered the *Titans*. *Zeus* thereupon assumed rule of the sky and the earth, with the other gods on the *Mount Olympus*.

Egyptian

According to the Egyptian creation myth, in the beginning was the infinite, dark ocean of *Nun*, in which all the elements of life existed. *Re*, the supreme creator, created himself first. Next, he created *Shu* (the air) from his breath and *Tefnut* (the moisture) from his spittle. *Re* caused the

waters of *Nun* to recede, revealing an island, whereupon he called forth from *Nun* all living things and gave them names. *Shu* and *Tefnut* bore two children: *Geb* (the earth) and *Nut* (the sky).

Geb and *Nut* mated and in doing so angered *Shu*, who pulled *Nut* away, holding her up while holding *Geb* down. *Nut* arched her body to form the dome of the sky, and every night she swallows the sun and gives birth to it again in the morning; while the children of *Geb* and *Nut* are the stars. According to the Egyptian creation myth, *Re* will rule the world until the end of times, when all will revert to *Nun*.

Babylonian

According to the Babylonian creation myth, gods emerged from a sacred, inchoate mass, including *Apsu* (sweet river water) and his wife *Tiamat* (salty sea); *Mummu* (the womb of chaos); *Lahmu* and *Lahamn* (silt, water and earth mixed); *Ansher* (the horizon of the sky); *Kishar* (the horizon of the sea); *Anu* (the heavens); and *Ea* (the earth). A conflict took place, with *Ea* overpowering *Apsu* and *Mummu*, and *Tiamat* creating monsters. Then *Marduk*, the sun god and a child of *Ea*, offered to fight *Tiamat* and won after a long, hard battle. From *Tiamat's* corpse, *Marduk* made the arch of the sky and the world, thus structuring the universe. Finally, he created human beings by killing *Tiamat's* second consort, *Kingu*, and mixing his blood with dust.

Chinese

According to the Babylonian creation myth, an egg contained the universe, in which *Yang* and *Yin* formed *Pan Gu*, who came to life, broke the shell and emerged. While the lighter parts of the broken shell floated upwards to create the sky, the heavier parts dropped to form the earth. Between them was *Pan Gu*, growing to fill the space as the sky and the earth moved apart until they attained their final positions. After an exhausted *Pan Gu* expired, his body became the world as we know it: his flesh became the land, his tears became rivers and seas, his torso and limbs became mountains, his hair became trees and plants, his breath became the wind, his voice became thunder and lightning, his eyes became the sun and the moon, and his fleas became the humankind.

Polynesian

According to the Polynesian creation myth, *Rangi* (the sky father), *Papa* (the earth mother) and *Tangaroa* (the sea god) created the world. *Maui*, the hero, fished up the islands of the Pacific from the bottom of the sea with a great fishing hook, and then pushed up the heavens.

Conclusion

In conclusion, we can say that myth expresses, enhances and codifies belief; safeguards and enforces morality; vouches for the effectiveness of rituals and contains practical rules for the guidance of humans. Myth is, thus, a vital ingredient of human civilization—it is not an idle tale, but an active force; it is not an intellectual explanation or an artistic imagery, but a pragmatic charter of primitive faith and moral wisdom.

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Reference Examples

Books:

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Centre for Population, Urban and Environment Studies
University of Gujrat

Pakistan's population size, composition and its spatial distribution is destined to exert a powerful influence on the country's environment and socioeconomic development. For instance, changes in population size and age structure influence marketing strategies and consumption patterns of human and natural resources. Carefully gathered demographic data is invaluable for the government in planning public sector services. Policymakers use population data for its impact on demarcation of constituencies, allocation of resources, and on voting trends tied to factors such as age, gender, residence and ethnicity, among others.

Population Sciences is a multidisciplinary area concerned with changes in population size, distribution and structure due to births, deaths and migration. In recent decades, the scope of population sciences has greatly expanded to include such topics as reproductive health and family planning; household and family composition; labour market and labour force composition; economic development; social stratification; environment and urbanisation, etc.

Pakistan is going through a demographic transition and is confronted with a host of issues. The ageing population is increasing due to declining trends in fertility and mortality. The age structure is rapidly changing also because of urbanisation and other forms of migration as a consequence of industrialisation and replacement of traditional means of subsistence with modernisation and diffusion of technological skills and knowledge across the globe.

Moreover, demographic changes can be major forces of economic, cultural and environmental change. Population ageing, for example, will have an enormous impact on social security expenditure and the demand for health care. Understanding the issues leads to recognition of the interactions between population and government policies – an important part of planning for environmentally sustainable development.

As governments deal with a range of population-related issues, while making policies and initiating development program, there is an urgent need for research on the issues raised by demographic experience, and for providing a scientific basis for policy formulation. The aim of the Centre for Population, Urban and Environment Studies (CPUES) is to conduct research in multiple areas of population. The Centre provides a platform for the University's faculty to pursue research and teaching devoted to the understanding of population phenomenon. This Centre also helps formulate workable strategies and suggest recommendations, based on empirical findings, to policy-making institutions to address various issues confronting the Pakistani society.

Objectives

- Conduct empirical research in various disciplines such as Demography, Sociology, Economics, Business Demography, Environment and Industry;
- Develop capacity and skills of young faculty members by engaging them in research activities, and by enhancing their analytical capacities;
- Provide its database to national organisations and government departments to evolve public policy on the basis of findings of empirical studies; and
- Establish UOG's linkages with other national and international organisations.