

**ASSESSING THE POST CONFLICT SOCIOECONOMIC
IMPACT ON LOCAL COMMUNITY:
A CASE STUDY OF SWAT VALLEY, KP, PAKISTAN**



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Table of Contents

AKNOWLEDGEMENT	i
TABLE OF CONTENTS	ii
LIST OF FIGURE	iii
LIST OF TABLES	iv
ABSTRACT	v
Chapter 01	1
INTRODUCTION	1
1.1 Statement of Problem.....	3
1.2 Objectives of the Study.....	4
1.3 Hypothesis of the Study	4
1.4 Organization of the Study	4
Chapter 02	5
LITERATURE REVIEW	5
Chapter 03	13
DATA AND METHODOLOGY	13
3.1 Data.....	13
3.2 Survey Questioner.....	13
3.3 Study Area:.....	14
3.4 Sample Selection.....	15
3.5 Methodology.....	16
3.5.1 Descriptive analysis.....	16
3.5.2 Regression analysis	16
3.5.3 Regression diagnostics	19
Chapter 04	22
RESULTS AND DISCUSSION	22
4.1 Descriptive Results.....	22
4.2 Regression analysis	35
Chapter 05	41
CONCLUSION AND POLICY RECOMMENDATIONS	41
REFERENCES	45

LIST OF FIGURE

Figure no 1: Swat Map.....	14
Figure no 2: Schematic representation of sample.....	15

LIST OF TABLES

Table 4. 1	Age and education of household head.....	22
Table 4. 2	Marital status of the Households Head	23
Table 4. 3	Household Size, Male Female ratio, Average Age and Education	23
Table 4. 4	Household Losses from Conflict.....	24
Table 4. 5	Supply Disruption, Smuggling, Price Increase, and Resource Depletion due to conflict	25
Table 4. 6	Home Ownership of the Household Head.....	26
Table 4. 7	Household Monthly Income, working hours per day and location Information	26
Table 4. 8	Availability of Basic Facilities to the respondent	27
Table 4. 9	Sources of Income of the Household	28
Table 4. 10	Respondent Occupation, and Income position	29
Table 4.11	Households money, time spend and Distance to home from workplace and home	30
Table 4. 12	Respondents Average Monthly Expenditure.....	31
Table 4. 13	Impact of conflict on educational preferences	31
Table 4. 14	Respondent access to media	33
Table 4. 15	Respondents' expectations about future Conflict.....	34
Table 4.16	Results of the Logistic Regression model (Dependent variable = Demand for Schooling).....	35
Table 4. 17	Diagnosing severe Multicollinearity	36
Table 4. 18	White Heteroskedasticity test.....	37
Table 4. 19	Results of OLS (Dependent Variable: Differences in income)	37
Table 4. 20	Diagnosing Multicollinearity	38
Table 4. 21	White Heteroskedasticity test.....	38
Table 4. 22	Results of GLS regression (dependent variable: Differences in savings)	39

ABSTRACT

This study has been aimed to know the post conflict scenario in Swat valley. For this purpose, a sample of 199 respondents was selected from six major areas of the Swat valley. These areas include Tehsil Kabal, Babozai, Shamoza, Matta, Khwazakhela, and the district headquarters Swat. A detailed pre tested questionnaire, has been designed to collect data on various aspects of the terror conflict in the Swat region. The study feature both descriptive analysis and regression analysis, based on the survey data.

Stud assessed both direct and indirect costs of the conflict in the Swat valley. The most noticeable results include a considerable surge in prices of food items, a decrease in monthly earnings of those who suffered direct losses from the conflict and negative tendencies emerging in the households regarding female conventional education. On the positive side, Study have found that availability of basic necessities have been improved after the conflict and same is the case with road and market accessibility. Similarly, restrictions on all types of media are abolished (informally because they never existed) and now all types of media is available to the masses.

Based on these findings and many more (documented in the theses), Study recommend that the government should ensure speedy justice to the public, should invest in education and then provide fruitful opportunities to the young. Moreover, female education should be subsidized/encouraged or made mandatory and media should be kept under the naked eyes so that only positives are achieved from the greater accessibility to the media.

Chapter 01

INTRODUCTION

Conflict can be defined as a state of dispute caused by the actual or perceived diversity in needs, values or interests (Mustafa, 2013). Naturally then, conflict at the national level is most likely to arise in regions having poor governance, unstable political environment, weak democratic institutions, and where a multiplicity of people from various backgrounds live together. In Pakistan conflict is multidimensional and deep rooted. Mostly, conflicts are related to the social and economic imperatives. They are internal to the state and as a result they have remained unaddressed and required political and economic solution (Mustafa, 2013). Armed conflict affect severely the living condition of household during and many year after the conflict and result in large number of social losses, destruction of infrastructure, services, various asset, social cohesion, values and norms and create fear.

Pakistan remains one of the most disaster prone countries in South Asian region due to many natural and man induced calamities. These calamities include periodic flood, drought and occasional earthquakes which caused considerable damage and dislocation to life and property. In Pakistan, different types of conflict occurred from time to time but recently these were intensified after the occurrence of 9/11 event and Pakistan joining hand with the USA forces in the name of so called “war on terror” (PIPS, 2010). The most recent and most dangers man induced conflict started in the name of “Tehrike Taliban”, Malakand division. For over three to four years, residents of Malakand division have been affected by the rise in dominance of “Tehrike Taliban” and ensuring power struggle between the “Tehrike Taliban” and Government of Pakistan. The whole Swat valley was adversely affected by the conflict in 2008-09. The

conflict has affected every sector of the local economy such as local business, education, social interactions and the likes. A military operation in the area was initiated in May 2009 to find a solution to the mushrooming Talibanization in Malakand Division, which caused the displacement of more than 2.5 million people from their home town (Aziz, 2010).

One of the immediate consequences of conflict is population displacement (Ikram, 2011). Reportedly, 35 million people were displaced worldwide because of the armed conflict in 2002 (USCR, 2004) and another 25 million in 2004 (UNCHR, 2005). The operation and the conflict between the security forces and the militants led to the displacement of nearly 3 million people from the Malakand division. The worst affected areas were Buner, Swat and Lower Dir besides others. The local inhabitants left their homes and were displaced into different areas such as Mardan, Swabi, Peshawar and other parts of the country. The total population of Malakand division is 4.25 million out of which nearly 3 million were displaced. These displaced people suffered various shocks such as the cost of displacement, damages to properties, agriculture and local infrastructure. Most of the families shifted to friends and relatives homes in other parts of the country, while other shifted to government schools and other buildings. A large segment of the population was also shifted to the refugee camps in Mardan, Swabi, Dargai and Peshawar. The people of temperate region further suffered as they shifted to weather locations. Women and children and men were exposed to various diseases. Back at home these people left all of their physical assets and other belongings. In the new locations they could hardly find any livelihood sources, any educational facilities and their overall socio-economic were disturbed severely.

1.1 Statement of Problem

The conflict in Malakand division has adversely affected the local economy and livelihood of local people. Properties were damaged, crops and live stock were stolen or misappropriated, shelters were destroyed. Due to conflict the saving and investment opportunities are vanished, because of the damage of infrastructure and market. At the household level individuals' houses have been badly damaged, their property either stolen or damaged. The source of income such as wage work, self-employment, agriculture income, private investment and as well as developmental work ceased in the area. Because of the conflict and the resulting displacement, educational institutions have been demolished. Moreover the fear created by the scenario affected the children's enrolment and preferences of the local community toward the education system.

Media is a powerful source of influencing individual behavior, as was the case before the initiation of the conflict. The terrorists used the illegal FM (Frequency Modulation) radio before the initiation of the conflict and then during the conflict with very effective results. The technology was used to gain popular support and raise donations for carrying out the terrorist activity in the name of Islam. The results were encouraging in influencing community attitude and behavior in favor of the local Taliban.

Taking into account the importance of the issue and the dearth of studies on the aspect and impact of conflict on preferences of the local community towards different educational systems, life style, use of media and household consumption pattern, the present study has been designed with the following objectives:

1.2 Objectives of the Study

The specific objectives of the study can be stated as follow:

1. To assess the changes in the earning of income, saving, and investment of local community.
2. To know any alterations in the preferences of local community towards educational system (Modern and religious)
3. To explore the role of social networks including media on community attitude and behavior after the conflict.
4. To put forth relevant policy recommendations.

1.3 Hypothesis of the Study

1. No change is caused by the conflict in the earning of income, saving, investment of local community.
2. No variation in the preferences of local community toward education system (modern and religious).
3. Social network including media have no effect on community attitude and behavior.

1.4 Organization of the Study

The theses consist of five chapters. Chapter 1 will introduce the problem under consideration. Chapter 2 reviews the relevant literature with a focus on identifying the characteristics of conflict that are roughly similar to the conflict in Malakand division, and also identify the areas where further research is needed. Chapter 3 outlines the methodology of the study in detail. Chapter 4 deals with the results obtained from the survey data, and chapter 5 conclude the dissertation.

Chapter 02

LITERATURE REVIEW

A vast body of literature exists on the different aspects of terror conflicts and their impact on the local communities. Most of the literature deals with what causes conflicts (such as the well known conflict theories). Although the focus of this research report is on the impacts, rather than causes, of conflict, some of the conflict theories are discussed at the end of this chapter. However, the major focus would be on the post conflict assessment studies. These studies range from the macro level aspects such as impact of conflict on economic growth and poverty to the micro level aspects such as its impact on individual's behavior. As pointed out by Justino (2008), armed conflict affects the household's welfare by changing their political, social and economic behavior directly (killing, injuries, destination of asset, forced displacement etc) and indirectly (destruction of employment market, change in local and national institution).

Miguel and Roland (2006) studied the long run impact of U.S Bombing in Vietnam by comparing various districts varying in the number of the U.S bombs received and came up with the conclusion that the U.S bombing does not have a robust negative impact on poverty rates, consumption levels, infrastructure, and literacy or population density through 2002. These findings are unique in the sense that other research, such as Ganegodage and Rambaldi (2012), shows very contrasting results. However, as documented by Chen *et al.* (2008), the long run impact of conflicts depends on what happens once the conflict is over. That is, if the end of conflict marks the beginning of lasting peace, as happened in Vietnam, then one can expect speedy recovery and hence no significant long term impacts of conflicts. However what happens if the end of conflict leaves the future prospects uncertain is a question that needs to be answered.

Armed conflict impact on individual expectation is different because of their characteristics and circumstances (Verwimp *et al.* 2009). Individual expectation on consumption, saving and investment decision are different depending on how they are exposed to conflict (Collier *et al.*, 2003). On the one side, in some cases, individual remain in the conflict trap because of destruction of various assets (human capital displacement, property and infrastructure damage etc) which effect the individual expectation negatively. Consequently with the improvement in security and various development aids, once conflict is over, rebuild the livelihood of the households and hence enhances future welfare.

Justino and Verwimp (2006) compare the pre and post war condition of household in term of their assets and conclude that violent conflict negatively affect the household welfare. Developing countries which experiences political shocks, economics shocks, violent conflict and international war effect million of people across the world and vanished various opportunities of economic growth and human development (Collier, 1999; Fearon and Laitin, 2003).

The short run or the immediate effects of conflict on various socio-economic indicators are well documented in Chen *et al.* (2008) and Rabbi *et al.* (2011). These studies cover a wide range of socio-economic variables as basic indicators of economic performance, health and education, political development, demographic trends, and conflict and security issues. For each indicator the post- and pre-war situations are compared and the findings indicate that conflict has devastating effects on all the variables under consideration.

The micro level studies mainly focused on the impact of armed conflict on tourism, children health and education, consumption patterns, local business, interregional trade and on other behaviors. Badiuzaman *et al* (2011) mentions that there is an inverse relationship between violent conflict and consumption decision of household, as the increase in war intensity leads to

decrease in consumption of both food and non food items. This may be the outcome of increased savings (if we assume that economic opportunities are not affected by the conflict) in order to cope with future uncertainty, or may be due to the fact that there are few earning opportunities available during conflict. Thus, we may expect an increase or a decrease in savings, depending on the circumstances, due to conflict.

Tourism was used to be the backbone of the local economy in Malakand division before conflict. But since tourists are less likely to choose destinations with higher threats of terrorist attacks (Frey *et al.* 2004), the tourism industry was adversely affected by the armed conflict in Malakand division (Rabbi *et al.*, 2011). The evidence on the effect of terror on the tourism revenues is wide spread and studies indicate that there is a substantial reduction in the revenues from tourism (Enders *et al.* 1991). Terrorism has been found to have a negative effect on the tourist destination (Pizam and Smith, 2000). Several other studies have also focused on the impact of terrorism on tourism (Pizam and Smith, 2000) and tourism demand (Arana and Leon, 2008).

Armed conflict has a significant impact on economic growth. Migual *et al.* (2003) study analyzed that civil conflicts in African countries have significant negative impact on economic growth. Both political instability and violence conflict obstruct public and private investment (Justino, 2009). Due to the insecure environment, and the large number of people displacements, funds and human resources flew away from regions having troubles which reduce investment. Badiuzaman *et al.* (2011) study shows a non liner relationship between violence, livelihood decision making, investment and human capital formation. The author uses children education as a proxy for human capital formation and the type of crop cultivated as a proxy for productive investment. The results show that, in the short run, cash crop and land use increase but in long run human capital increased which indicate a post 'phoenix' factor.

The effects of armed conflict on schooling can be studied from three different perspectives. That is, what happens to the demand for schooling during and after the conflict? How attainment in schooling is affected by the conflict? And does conflict affect male-female education equally or is gender biased? Education improves individual welfare and plays an important role in the socioeconomic development. In particular, its role in human capital formation is an area beyond any doubt. Barrera *et al.* (2004) show the relationship between violence conflict and education in three ways. First it reduces the individual utility. Second, it destroys the human capital, decreases investment, and reduces productivity. Thirdly, it brings about significant gap in school enrolment. Deuenas *et al.* (2007) mentions in his study that due to conflict the dropout rate of children increases.

The second question is studied by Swee (2008) who finds that armed conflicts adversely affect school attainment which negatively affects the long run individual welfare. Jorge *et al.* (2008) in his study mention that civil war in Rwanda resulted in a great loss of human capital which has adversely affected investment in health and child schooling. Similar results are also reported by Krueger and Lindahl (2001).

The third question is studied by Bekalo *et al.* (2010), and by Ikram *et al.* (2011) in the context of Malakand division during the conflict, and concludes that female education was more affected by the conflict than male education. Matching results has been also reported by Shemyakina and Octubar (2011). While we have occasional studies addressing the last two questions regarding the impact of conflict on schooling, the first question, particularly in the context of Malakand division, is unanswered and an effort would be made to identify in the present study that how demand for schooling is affected by the armed conflict.

Voors *et al.* (2010) studied the impact of violent conflicts on behavior. In particular, they considered the impact of violent conflicts on attitude towards neighbors, risk seeking and on their saving and investment decisions. Their findings suggest that violent conflicts causes the development of selfless relations with the neighbors, makes the individuals more risk averse. With respect to saving investment decisions, they concluded that violent conflicts causes people to place a higher discount rate on the future, implying less saving and investment. Violent conflict changed individual expectation depend on how they exposed to conflict which is a fundamental thing to understand individual behavior. Corlos *et al.* (2011) suggests that the intensity of the conflict explains how individual behavior is formed afterwards. In particular, the more intense is the conflict, the less individuals expect chances of recovery and hence attitude is framed negatively.

The role of media in escalating or reducing the severity of conflict has been studied by Paluck (2007) and Aziz (2010). Media can be utilized to raise positive sentiments in favor of the conflict, as happened in Swat valley before and during the conflict (Aziz, 2010), but it could also be used to influence behaviors in the desirable direction.

Paluck (2007) research on Rwanda show that media have less impact on listener personal belief but in spite of that, have a greater impact on social norms such as trust, sympathy, cooperation, intergroup prejudice behavior. Carig *et al.*(2002) uses various methodologies to assess the impact of media during conflict, such as longitudinal, cross sectional, field experiment and laboraty experiment, and concludes that the use of media violence lead to aggressive behavior. There is a positive relation between media violence exposure and aggression (Anderson & Bushman, 2002).

While assessing the role of media for peace, Tully (2013) designed a study based on the outcome of a television show of 19 episodes. The show featured participants from various backgrounds who were affected by the 2007 post Kenyan elections violence. The author reports that once the participants recognized that the said conflict has affected each sub group equally, their feelings for each other changed all together. This suggests that media can be used effectively for conflict resolution. But the trustworthiness of the communicator, for both parties in the conflict, is an important element which enhances the role of peace media for conflict resolution.

The dominant practice in the literature is to search for various causes - social, political, economic and demographic – of conflict. Amongst the well known of these are conflict theories. Conflict theory has been used to explain a wide range of social phenomena including war and revolution, wealth and poverty, discrimination and domestic violence. A central theme of the conflict theories is that inequality in society, caused by race, sex or resources, leads to conflict. In other words, some segments of the society benefits at the expense of other segments of the society (usually minorities but not necessarily) which leads to tension and conflict amongst the groups. There are various theories in which few of them describe as below.

Karl Marx (2005) in his theory opines that the degree of inequality in resource distribution lead to generate conflict. In his view, more the degree of unequal distribution of scarce resource, the more should one expect conflict between the dominant and the subordinate group. Inequality in resource distribution leads to form various interest groups within the society, each group striving for the interest of its own group. The weaker would organize with increase in the ideological unification which, in turn, should developed their political leadership structure. The more the polarized the dominant and subordinate the more will the conflict be violent which bring structural change in society.

Ballantine *et al* (2008) Weber in his theory stratified the society from three dimensions. Various members of the society can be classified on the basis of wealth, prestige and political power (with a high degree of correlation between the three). According to Weber, economically powerful and people enjoying higher positions in the society are capable to influence government policy making for their individual (or group) benefits. These powerful groups mobilize their subordinates (the weaker groups or individuals) by using their political powers. And this very use of political power for self benefit and against the weaker ones leads to violent conflict. Violent conflict, according to Weber, then leads to social change.

Dahrendrofs (1959) conflict theory, similar to Weber ideas, centers around the idea of authority. He believed that understanding authority is the key to understanding social conflict. In Dahrendrofs view, society can be divided into two groups “Command class” and the “Obey class”. The command class exercise the authority and the obey class not only has to follow the authority but are also subservient to command class. Dahrendrofs argue that society had two aspect consensus and conflict order and dissension, integration and conflict etc, consensus which leads to conflict and conflict which lead to consensus. In his view conflicts which come throw between two groups leads to change social structure and development.

Concluding, it is safe to say that literature on the short run socio economic impacts of conflict is one sided, that is, each study we have considered opines that conflict has devastating short run socio economic impacts on the local economy. However, there is a difference in opinion regarding the long run socio economic impacts of conflict. But as Keynes puts it, “we all are dead in the long run” and so these are the short run impacts that counts. Moreover, we have seen that there are very few studies in Pakistan which targets knowing the impacts of conflict on various socio economic indicators and the existing studies target some specific areas, leaving a

huge gap to be covered. Thus this study will be a major attempt to know the various socio economic impacts, ranging from variations in income, consumption and investment caused by the terror episode in Swat to changes in educational preferences and the role of media in shaping behaviors and attitudes, of the terror conflict in Swat valley.

Chapter 03

DATA AND METHODOLOGY

This chapter sets the road map of the current research study. In particular, the chapter outlines a brief overview of the study area, explains what type of data was used for descriptive and inferential analysis, how sample size is selected and the way data has been collected.

3.1 Data

The study will utilize both primary and secondary data. Secondary data regarding the number of civilian casualties, number of schools destroyed and the likes, in each sub areas under consideration was collected from relevant sources. A comprehensive questionnaire was designed (Appendix 1) in order to collect information about post conflict educational preferences, changes in life styles, consumption and saving behavior, income, media and investment.

3.2 Survey Questioner

A comprehensive questioner for collecting qualitative and quantitative data from the respondents of targeted area was constructed for data collection. There were six sections in the questioner.

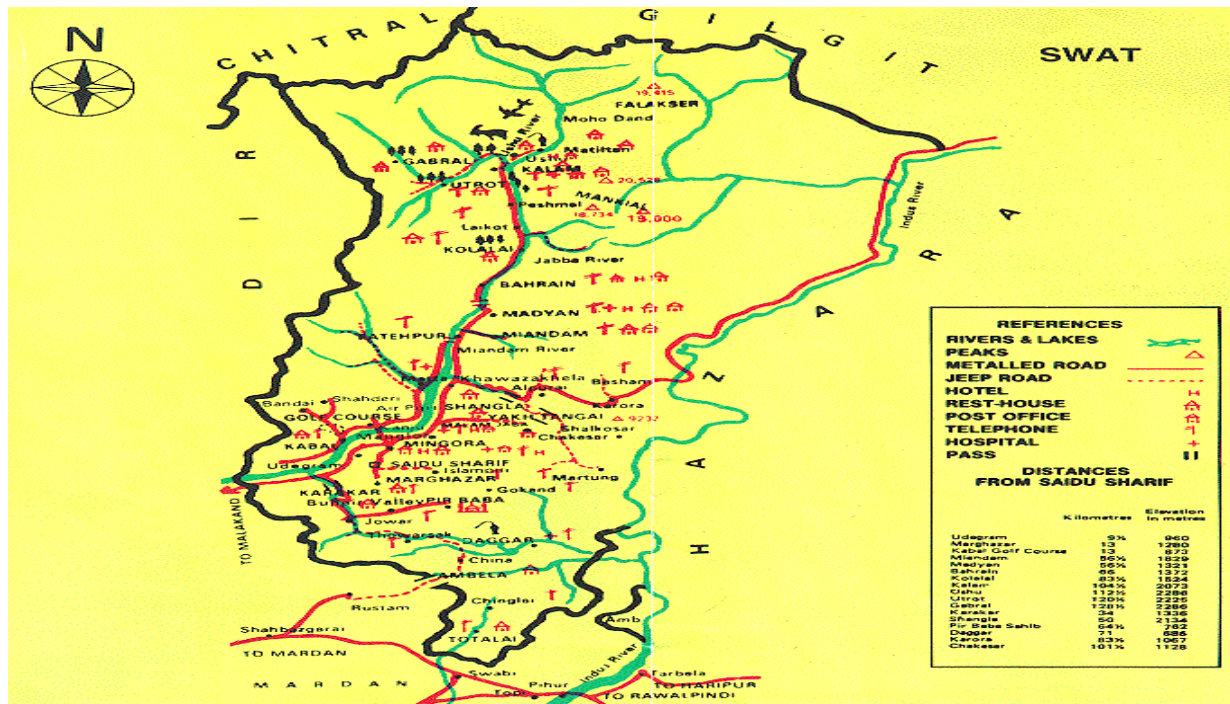
- 1) Information about the head of household
- 2) Information about the location of the respondent
- 3) Household information and family profile
- 4) Information about schooling
- 5) Information about household Economic losses from the conflict
- 6) General information

The questionnaire was first tested before the collecting of actual data among 10 individual that migrated from the affected area and live in Barakahu Islamabad, and necessary modification s were subsequently made before the final survey.

3.3 Study Area:

The reason why we have selected Swat valley for the study is crystal clear, being the center of the Taliban movement in the recent years. Swat valley is an administrative district in Khyber Pakhtunkhwa province. Capital of swat is Saidu Sharif but Mingora is its main town. Swat district was the princely state in Khyber Pakhtunkhwa which has been dissolved in 1969. Amongst the various Tehsils of the district, we have selected Tehsil Babozai, Tehsil Shamoza, Tehsil Matta, Tehsil Kabal, Tehsil Kwazakhila, and the region known as district headquarters (Mingora and adjacent areas). The map of Swat valley has been given below for easy reference.

Figure 1 : Map of Swat

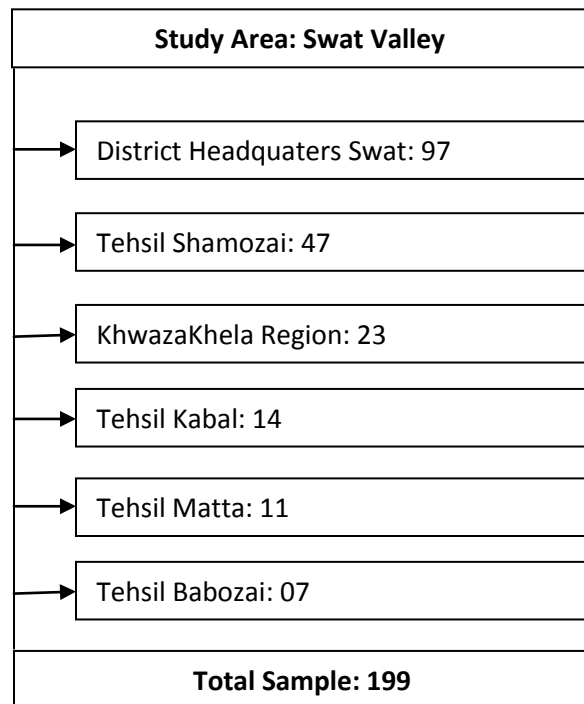


3.4 Sample Selection

Total sample size selected for this study is 199 respondents. In most of the cases, the respondents are head of the households as they are likely to be more involved in their households. However, where household head was not available, for one reason or another, another adult of the household has been approached for collecting the relevant data.

The figure shows that majority of our respondents comes from the district headquarters Swat, followed by respondents from Tehsil Shamozaï and so on. There are two important reasons for selecting more respondents from the district headquarters and Shamozaï. The first one is the ease with which respondents can be approached in these regions and the second one is that areas in and around district headquarters and Shamozaï are the most affected areas of the Valley.

Figure 2: Schematic representation of sample



3.5 Methodology

For empirical analysis study use a two tier methodology. Questions were analyzed using descriptive analysis and then by using the more sophisticated regression analysis.

3.5.1 Descriptive analysis

In this section, basic characteristics of the respondents were analyzed using descriptive measures such as mean, mode and variances. Basic characteristics of the respondents include their area of residence, age, education of the household head and of overall household and so on. Moreover, an effort were also made to compare means of various variables of interest before and after conflict, so that a rough idea is comprehended regarding the impact of the conflict. Where possible, study also traced out changes in various variables before and after conflict.

3.5.2 Regression analysis

The study also capitalized on regression and correlation analysis. Since the study is designed to achieve multiple objectives, hence we various regression specifications, were utilised depending on which objective is under consideration. For example, if our objective is to assess the preferences of local community regarding various educational system (i.e. school versus Madrassa), a typical regression model, i.e. a binary response model, be stated as;

$$Y_i = \beta_0 + \sum_{i=1}^N \beta_i X_i + \varepsilon_i \quad (1)$$

Where Y_i is the model's dependent variable and the X 's are explanatory variables. Depending on which objective of the study is under consideration, the Y 's assumed either the value of 1, which signifies the presence of a characteristic, or zero which implies the absence of the characteristic under consideration. For example, if Y_i represent the demand for a specific type of education, i.e. modern vs. Religious, the model could be specified as;

$$Y_i = \beta_0 + \beta_1 A_i + \beta_2 CC_i + \beta_3 PCI_i + \beta_4 EH_i + \beta_5 FT_i + \varepsilon_i \quad (2)$$

In equation (2), Y_i represent demand for a specific type of schooling of the i^{th} household, A_i represent awareness of the i^{th} household which is a composite variable, CC_i is the cost of conflict to the i^{th} household, PCI_i is the per capita income of the i^{th} household, EH_i is the education level of the i^{th} household head, FT_i is family type of the i^{th} household. In the above specification, A_i and CC_i are the interest variables while the rest are control variables. If $Y_i = 1$ represent demand for modern type of education, then a positive and significant β_1 would imply a positive and significant relationship between demand for modern education and awareness. Similarly, a positive and significant β_2 would imply a positive relationship between the cost of conflict and demand for modern education.

The priori sign restrictions cannot be imposed on β_1 and β_2 due to the presence of both negative and positive sentiments of the local population regarding the cause of the conflict. That is, we can expect both to be negative, implying that awareness and conflict have negative impacts on demand for modern education. But at the same time, both can be positive as well. However, our priori expectations regarding both parameters are positive.

Other objectives of the thesis include assessing income and saving differences before and after conflict. For this purpose, a simple ordinary least square regression can be stated as;

$$Y_i = \beta_0 + \sum_{i=1}^n \beta_i x_i + u_i \quad (3)$$

Where Y_i signifies differences in either income or saving of the i^{th} individual before and after the conflict, X_i is a vector of explanatory variables and U_i is the error term. For example, if Y_i represent differences in income, then a typical regression model, based on economic theory, could be specified as;

$$DI_i = \beta_0 + \beta_1 DWH_i + \beta_2 CC_i + \beta_3 PI_i + \beta_4 PSB_i + U_i \quad (4)$$

Where DI is the difference in incomes of the individual households before and after conflict, DWH are the before-after differences in working hours of the households, CC is the cost of conflict excluding human casualties, PI is the perceived inflation and PSB is the purpose of saving of the household before conflict. All of these are relevant variables which can potentially cause difference in income overtime. Here the CC is the variable of our interest and the rest of the variables are included as control variables. On priori, we expect a negative relationship between CC and differences in income.

Similarly, if we want to investigate the effects of conflict on the savings of the household, the model could be specified as;

$$DS_i = \beta_0 + \beta_1 DI_i + \beta_2 CC_i + \beta_3 AE_i + \beta_4 CE_i + U_i \quad (5)$$

Where DS stands for differences in savings (before-after), AE is average household education, and CE is conflict expectations. The rest of the variables are explained above. Here DI and AE are the control variables while CC and CE are the variables of our interest. As explained in the literature review chapter, both the variables can turn with either a positive or a negative sign. For example, the cost of the conflict to the household may be such that it necessitates more savings (rebuilding of house for example), or it is equally possible that the household has acquired a large debt to finance displacement and living, in which case savings should be negative. Likewise, if the household expect another episode of conflict in the area, it could affect savings either way.

3.5.3 Regression diagnostics

The estimated parameters $\hat{\beta}_i$'s, in the above specifications, are best, linear and unbiased if the underlying assumptions of the ordinary least squares are satisfied. These assumptions include the zero mean value and constant variance of the disturbance term, zero covariance between the error term and the explanatory variable(s), no perfect linear relationship among the explanatory variables and correct functional form. There are certain other assumptions of OLS, such as no autocorrelation, but those are not relevant to the data structure at hand. Thus in order to derive best linear and unbiased parameter estimates of the unknown population parameters, various tests will be used to detect a particular problem in the data and necessary transformation is done afterwards. Thus before estimating the multiple regression model, the following necessary tests will be carried out and data treatment will be based on the results of those tests.

a. Multicollinearity

High (but not perfect) correlation between two or more of the independent variables is called multicollinearity. Multicollinearity can increase estimates of parameter variance; yield models in which no variable is statistically significant even though R^2 is large; produce parameter estimates of the “incorrect sign” and of implausible magnitude; create situations in which small changes in the data produce wide swings in parameter estimates; and, in truly extreme cases, prevent the numerical solution of a model (Belsley et al., 1980 and Greene, 1993).

The Variance Inflation Factor (VIF) and tolerance are both widely used measures of the degree of multicollinearity of the i^{th} independent variable with the other independent variables in a regression model (Brien, 2007). Let X_i and X_j be two independent variables in a regression model, the VIF is defined as;

$$\text{VIF} = \frac{1}{1-r_{ij}^2} \quad (6)$$

VIF shows how the variance of an estimator is inflated by the presence of multicollinearity. As r_{ij}^2 approaches 1, the VIF approaches infinity. That is, as the extent of collinearity increases, the variance of an estimator increases, and in the limit it can become infinite. As can be readily seen, if there is no collinearity between X_i and X_j , VIF will be 1.

As a rule of thumb, when the value of VIF is greater than 10, it is considered as a symptom of severe multicollinearity (Brien, 2007). When VIF reaches these threshold values researchers often attempt to reduce the collinearity by eliminating one or more variables from their analysis; using Ridge Regression to analyze their data; or combining two or more independent variables into a single index. Thus we follow the same rule of thumb in this study and as a treatment method, we will eliminate the independent variables that are causing severe multicollinearity.

b. Heterskedasticity

One of the important assumptions of the classical linear regression model is that the variance of each disturbance term U_i , conditional on explanatory variable(s) is some constant number. In contrast when the variance of each U_i is not a constant but varies with varying X values (where X is an explanatory variable), then we are faced with the problem of Heteroskedasticity.

It can be proved that the estimated parameters $\hat{\beta}_i$ are still linear and unbiased estimators even in the presence of Heteroskedasticity (Wooldridge, 2008). However, they do not possess the property of minimum variance in the presence of Heteroskedasticity.

The major sources of Heteroskedasticity are the presence of outliers in the data set, incorrect specification of the regression model, and the likes. Since we have already taken care of both of these issues, there is less likelihood of the presence of Heteroskedasticity in our data set.

However, as a precautionary measure, we will check for the presence of Heteroskedasticity using White Heteroskedasticity test. Let we have two independent variables; X_i and X_j , then the White's Heteroskedasticity test is based on the following auxiliary regression;

$$U_i^2 = \beta_0' + \beta_i X_i + \beta_j X_j + \alpha_i X_i^2 + \alpha_j X_j^2 + \delta_{ij} X_i X_j + V_i \quad (7)$$

That is, first residuals are obtained from the original multiple regression which are then regressed on the original explanatory variables, their squared values, and the cross products of the explanatory variables (Asteriou and Hall, 2007). The null hypothesis of the test is;

$$H_0: \beta_0' = \beta_i = \beta_j = \alpha_i = \alpha_j = \delta_{ij} \quad (8)$$

If the computed value of the test is significant at 5% level of significance, then we reject H_0 which implies Heteroskedasticity in the model. And if we found any evidence of Heteroskedasticity, then we will transform the variance in such a way that Heteroskedasticity is cured (Wooldridge, 2008).

Chapter 04

RESULTS AND DISCUSSION

This chapter outlines the results that are obtained from the survey data. The results are presented in two different sections. One section, named as descriptive results, contains information about the basic characteristics of the respondents and their households. Various measures of central tendency and dispersion are used in this section. The second section, named as regression analysis, deals with regression analysis and the associated inferences that can be drawn from regression results.

4.1 Descriptive Results

The descriptive results, in this section, follow a systematic way. First those results are presented which describes the basic characteristics of the sample and which has nothing to do with conflict comparisons. Next we turn to those results which shed important light on before after comparison. This would give us a rough idea of how the conflict episode in Swat valley has affected various variables of our interest.

To begin with, Table (4.1) reports results about age and education of the household head (in most cases, the respondent). We see that the minimum age is 20 years, the maximum 80 years and on average, we have acquired information from people in the mid forties, which makes our sample very reliable.

Table 4. 1 Age and education of household head

	Minimum	Maximum	Mean	Std. Deviation
Age of the HoH	20	80	45.4774	12.87854
Education of the HoH	Nil	18	6.2462	5.72825

Source: Survey data

The maximum years of education of the respondent (or head of the household) is 18 years (MS, M.Phil or equivalent) while the minimum education level is 0, which means illiterate respondents. The average education in the sample is above six years which is a little on the lower side.

Result in table mention the marital status of respondents, where only 11 percent of the respondents are unmarried and 88.9 percent married. On Average mostly household head are married. This shows that there are only a few cases where the original household head was not available and we collected information from another adult household member.

Table 4. 2 Marital status of the Households Head

	Frequency	Percent
Single	22	11.1
Married	177	88.9
Total	199	100.0

Source: Survey data

Household size, male female ratio of the household, average education and average age of the households presented in Table (4.3).

Table 4. 3 Household Size, Male Female ratio, Average Age and Education

Variables	Minimum	Maximum	Mean	Std. Deviation
Size of the household	2.00	10.00	5.66	2.012
Male female ratio of the household	.50	6.00	1.48	1.080
Average age of the household	10.17	52.00	23.56	6.965
Average education of the household	.00	12.86	5.70	3.122

Source: Survey data

The sample survey showed that the minimum size of the household was two members while the maximum was a ten member's household. The average household size, in the sample, was 5.66

which is almost six persons per household. The male female ratio in the household informs us whether female are outnumbered by male in a household (a higher than 1 value) or otherwise (a value less than 1). The ratio ranges from the minimum 0.50 to 6, where the average ratio is 1.48, signifying the fact that, in the sampled households, there are more male members than female members in a typical household. Similarly, the average age and education of the household ranges from 10 to 52 and zero almost 13 respectively.

The human and material losses to the sampled households that resulted from the conflict episode in the Swat valley is presented in table 4.4. The human losses was measured by the number of causalities suffered by each household (male, female and children) while the rest of the losses are measured in terms of rupees. Definitely, there are households, as reported in the table, who suffered no losses whatsoever, but there are households who suffered huge losses due to conflict. If we look at the mean column, then it implies that every household, on average, suffered some causalities in terms of their family members (either dead or injured) and have also suffered from losses to their valuables.

Table 4. 4 Household Losses from Conflict

Source	Minimum	Maximum	Mean	Std. Deviation
Male	.00	1.00	.0455	.20883
Female	.00	1.00	.0101	.10000
Children	.00	1.00	.0050	.07089
Livestock	.00	300000.000	9487.400	36109.802
Shops	.00	8000000.000	5379.000	572958.000
Fields	.00	546000.000	8540.400	46471.932
Houses	.00	2500000.000	59394.000	240987.000
Others	.00	600000.000	8172.600	59373.521

Source: survey data

Table 4.4 reported the direct negative impacts of conflict on households. Conflict also has indirect impact on households which was estimated by approximating the supply disruptions, smuggling, price hikes and resource depletion caused by the conflict and presented at Table 4.5.

Table 4. 5 Supply Disruption, Smuggling, Price Increase, and Resource Depletion due to conflict

Source	Response	Frequency	Percent
Supply Disruption	Yes	146	73.3
	No	53	26.6
Smuggling	Yes	71	35.7
	No	128	64.3
Price Increase	Yes	74	37.2
	No	125	62.6
Resource Depletion	Yes	111	55.8
	No	88	44.2

Source: survey data

The survey shows that majority of the respondents reported that the conflict has caused supply disruptions (74%), it provided opportunity to increase smuggling activities, especially of wood and precious stones (36%), resulted in price hike (38%) and also caused resource depletion (56%).

Next we turn to the before after comparisons of various variables of interest to better gauge the impacts of armed conflict in the Swat valley. First in this list is the home ownership and its condition before and after the conflict episode which is presented at Table 4.6. One would expect that the status of home ownership or its condition should change, at least temporarily, if we compare the results before conflict and after conflict as some of the owned houses would be damaged and households would temporarily reside in homes that were rented or were Kacha houses. Surprisingly survey show no such happenings resulting from the terror episode in Swat

valley. There was no significant change in either home ownership or its conditions, as reported by the respondents, as a result of the conflict.

Table 4. 6 Home Ownership of the Household Head

Home Ownership		Before Conflict		After Conflict	
		Frequency	Percent	Frequency	Percent
Owned	Kacha	64	32.3	63	31.7
	Pakka	134	67.7	136	68.3
Rented	Kacha	199	100.0	199	100.0
	Pakka				

Source: survey data

Table (4.7) compares respondent monthly income, working hours and location information before and after the conflict. While we see no significant difference in the working hours per day, we see a considerable improvement in monthly income of the household after conflict.

Table 4. 7 Household Monthly Income, working hours per day and location Information

	Before Conflict				After Conflict			
	Min	Max	Mean	St. Dev	Min	Max	Mean	St. Dev
Working hours per day of the HoH	Nil	12	7.156	2.617	Nil	12.0 0	7.36	2.3
Monthly Income of the HoH	Nil	1.50	17050	16692	Nil	150 000	24243	19593. 4
Drive time to City	Nil	15.	5.68	2.899	Nil	100	20.40	18.2
Distance from City (km)	Nil	7.00	.76	.702	Nil	55	8.66	10.6
Distance (km) from the nearby road	Nil	7.00	1.55	1.99	Nil	7.00	.76	.7
Distance (time) from the nearby road	Nil	20	7.45	4.334	Nil	15	5.66	2.8
Distance (km) from the market	Nil	55	8.66	10.51	Nil	7.00	1.55	1.9
Distance (time) from the market	Nil	100	20.39	18.231	Nil	20	7.55	4.3

Source: survey data

The mean value of monthly income before conflict was Rs. 17050 but it has increased to Rs. 24243 after the conflict. This is understandable, as there was plenty of income earning opportunities, such as in the construction sector, which has caused monthly income to increase after conflict. The other parameters that we are considering also give mixed results. For example, while distance from the nearby road, in terms of time and kilometers, and distance from the nearby market has decreased, thanks to the rebuilding efforts of Pakistan army, the government and other agencies, the drive time to the city has increased as a result of the conflict. This is cheaply because of the security issues and the resulting check posts by the security agencies everywhere.

The reports availability of basic health facilities to the households and traces out any significant changes in these as a result of the conflict is presented at table 4.8.

Table 4. 8 Availability of Basic Facilities to the respondent

Basic Facilities	Response	Before Conflict		After Conflict	
		Frequency	Percent	Frequency	Percent
Drinking Water	Yes	189	95.0	198	99.5
	No	10	5.0	1	.5
Basic Health	Yes	156	78.4	165	82.9
	No	43	21.6	34	17.1
Electricity	Yes	179	89.9	193	97.0
	No	20	10.1	6	3.0
Education	Yes	197	99.0	196	98.5
	No	2	1.0	3	1.5
Transport	Yes	198	99.5	199	100.0
	No	1	.5	0	0
Market	Yes	168	84.4	169	84.9
	No	31	15.6	30	15.1

Again, we note that the situation on majority of these parameters have also improved if we compare the before after results. Again, this could have been the result of the rebuilding effort.

The changes in income from various sources before and after conflict comparison is presented at table 4.9.

Table 4. 9 Sources of Income of the Household

Sources of Income	Before Conflict				After Conflict			
	Min	Max	Mean	St. Dev	Min	Max	Mean	St. Dev
Agricultural Income	Nil	25000	1701	4271.5	.00	35000	2397	5996.0
Income from livestock	Nil	12000	281	1657.9	Nil	15000	406	2352.6
Income from agricultural labor	Nil	15000	326	1950.8	Nil	20000	442	2624.9
Income from self employment	Nil	150000	9075	18164.	Nil	150000	11657	22353
Income from remittances	Nil	35000	854	4716.6	Nil	53000	1282	6667.7
Income from private employment	Nil	50000	2045	7056.4	Nil	64000	3321	9923.0
Income from Govt. Employment	Nil	65000	3621	9417.7	Nil	80000	4932	13092
Income from labor work	Nil	25000	2321	4558.9	Nil	30000	3848	6805.5
Income from other sources	Nil	65000	3612	8362.0	Nil	500000	7818	37008
Total Income	Nil	150000	23858	18549.	8700	270000	34765	28093

Source: survey data

Income from all sources has increased after conflict but the most noticeable increase in income is from self employment, private employment, income from labor work and income from other sources. This is expected, as rebuilding and rehabilitation works provided opportunities to the labor work, private employment and the likes. But if we notice sources of income that are related to agriculture, then the increase in income is modest and may disappear altogether if we consider the double digit inflation in the previous decade in the country.

Next we turn to know almost the same information as above in a different way. We want to know that whether conflict has affected the profession wise distribution of the respondents or not. This information becomes vital because we have noted in Table 4.9 that the after conflict monthly income increased in all but a few income sources has been made more attractive. If this is true, then there should be some profession/occupation wise redistribution of the respondents. In this connection some interesting result are presented at Table 4.10. First, we note that unemployment has been reduced after the conflict from 9 to only 4 respondents. Second, we see that private employment increased also.

Table 4. 10 Respondent Occupation, and Income position

		Before Conflict		After Conflict	
		Freq	%	Freq	%
Respondent Occupation	Unemployed/jobless	9	4.5	4	2.0
	Labor/daily wagers	101	50.8	102	51.3
	Government Employee	21	10.6	24	12.1
	Private Employee	17	8.5	20	10.1
	Business/Self employed	51	25.6	49	24.6
Respondent Income Position on Scale	Low Income	103	51.8	56	28.1
	Middle Income	84	42.2	119	59.8
	Higher Income	11	5.5	24	12.1
	No Response	1	.5		

Source: survey data

Table 4.10 also contains information about household position on the income scale. In particular, it can be noted that the number of households in the lower income group (whose monthly income is below PKR 20000) has decreased by almost 50 percent, while the number of household in the middle income group (Rs. 20000 to 50000) and high income group (Rs. 50000 and above) has increased by almost the same amount. This implies that households grabbed opportunities that were not available to them before the conflict.

Related to table number 4.7, table 4.11 eleven evaluate the indirect cost of conflict in two other perspectives. That is, we want to know whether there is any change, in terms of money, time and distance, that has been brought about by the conflict when respondents or their household members commute from their business place to home (or the other way around) and from home to school. Again, the only difference that we see is in terms of money which could be attributed to the higher transportation costs (petroleum price hike).

Table 4.11 Households money, time spend and Distance to home from workplace and home

		Before Conflict				After Conflict			
		Min	Max	Mean	St. Dev	Min	Max	Mean	St. Dev
Distance from Workplace to Home	Money	.00	60.00	11.22	16.51	.00	80.00	19.28	28.32
	Time	.00	70.00	13.4	19.26	.00	70.00	12.58	17.92
	Distance	.00	42.00	9.1	13.85	.00	42.00	9.08	13.78
Distance from School to Home	Money	.00	400.0	3.2	30.04	.00	600.0	5.42	48.15
	Time	.00	33.00	.57	3.47	.00	35.00	.53	3.48
	Distance	.00	9.00	.14	.895	.00	9.00	.14	.893

Source: survey data

Table 14.2 reports average monthly expenditure of the sampled households on various heads, including food, clothing, health and education. Column 2 and 3 reports mean value of monthly

expenditure on each category before the conflict and after the conflict respectively, and the last column report the change in expenditure witnessed after conflict.

Table 4. 12 Respondents Average Monthly Expenditure

Expenditure on	Mean Before Conflict	Mean After Conflict	% change
Food	9890.9	12923	30.321
Clothing	1751.0	2143	3.92
Health	719.73	722	0.0227
Education	1972.0	2474	5.02
Utility	1567.1	2087	5.199
Recreation	608.66	779	1.7034
Transport	2394.0	3156	7.62
Misc	38.191	.0000	...
Total Exp	19308	24286	49.78

Source: survey data

Clearly, total expenditure increased by almost 50 percent after the conflict. Expenditure on food is the dominant category contributing to this huge increase in the monthly expenditure, followed by transportation, utilities and education. Given that income has also increased during this period, but not by as much as the increase in consumption, this should have worsen off the residents of the valley economically.

Table 4. 13 Impact of conflict on educational preferences

		Before Conflict				After Conflict			
		Min	Max	Mean	St. Dev	Min	Max	Mean	St. Dev
Male	School	.00	5.00	1.4472	1.19171	.00	6.00	1.4673	1.22997
	Madrasa	.00	4.00	.9799	1.10992	.00	6.00	.8693	1.23624
Female	School	.00	3.00	.7186	.92179	.00	3.00	.6818	.91506
	Madrasa	.00	5.00	.5808	.88475	.00	5.00	.6281	.97048

Source: survey data

One of the main objectives of this work is to assess whether conflict has caused any changes in preferences regarding the choice of school. It is well known that the episode of talibanization in Swat discouraged schooling by demolishing schools and threatening parents for sending their children to schools rather than madrassa's. therefore it is possible than the threatened parents may not wish to send their children to schools but it is equally possible that, since the threat is over by now, the parents send their children to schools rather than madrassa to avoid the development of terror tendencies in their children.

Table 4.13 compares the choice of schooling for male and female children before and after the conflict. We see very interesting patterns with regard to the choice of school. In particular, every sampled household, on average, sent 1.45 male children to schools and 0.98 children to madrassa before conflict. But this composition changed to 1.47 male children to school and only 0.87 to madrassa after conflict. This implies that demand for conventional schooling has increased and for madrassa decreased as result of the conflict. But the situation is entirely different for female children. That is demand for madrassa education has improved and conventional schooling decreased as a result of the conflict for female children this implies that the conflict episode has different effects on the demand for schooling for the two sexes.

Next we investigate that how the conflict in Swat affected access to media, as media is considered to be a very powerful source of forming opinions and resolving conflicts. Table 4.14 compares respondent's access to various sources of media before conflict and after conflict. Apparently, access to all sorts of media has increased after the conflict, thanks to the media friendly policies of the then government of Pakistan. The only worrying thing is the considerable decrease in social gatherings after the conflict. Social gatherings, such as gatherings in Hujra or Masjid, are conventionally used as a sources of educating the young and informing the general.

But this conventional source of information sought a gradual decrease as a result of conflict. Can we interpret it as a gradual reduction in trust amongst the society members? May be.

Table 4. 14 Respondent access to media

			Before Conflict		After Conflict	
			Frequency	Percent	Frequency	Percent
Print Media	Local	Yes	81	40.7	96	48.2
		No	118	59.3	103	51.8
	National	Yes	47	23.6	84	42.2
		No	152	76.4	115	57.8
	International	Yes	1	.5	1	.5
		No	198	99.5	198	100.0
Radio	Local	Yes	100	50.3	100	50.3
		No	99	49.7	99	49.7
	National	Yes	73	36.7	100	50.3
		No	126	63.3	99	49.7
	International	Yes	18	9.1	34	17.1
		No	179	90.9	165	82.9
Television	Local	Yes	110	55.3	119	59.8
		No	89	44.7	80	40.2
	National	Yes	109	54.8	121	60.8
		No	90	45.2	78	39.2
	International	Yes	37	18.6	36	18.1
		No	162	81.4	163	81.9
Internet		Yes	44	22.1	55	27.6
		No	155	77.9	144	72.2
Social Gathering		Yes	79	39.7	69	34.7
		No	120	60.3	130	65.3

Source: survey data

Before leaving this section, we turn to the most important questions. We asked the respondents if they expect a similar conflict in the future, and if their answer was in affirmative, then we asked about their observations upon which they have formed their future expectations. Their responses are recorded in table 4.15 below.

Table 4. 15 Respondents’ expectations about future Conflict

		Frequency	Percent
Respondent Future Expectations on Conflict	Poor Governance	44	44.4
	Political Instability	16	16.2
	Poor Policy of the Govt.	21	21.2
	Uncertainty	18	18.2
	No Response	100	
Steps To prevent Conflict	Employment/Equality/Development/welfare	45	28.7
	Governance/Judicial System/Law and Order	66	70.7
	Local Unions/Islamic Law/ Education/Peace	46	100.0
	No Response	42	

Source: survey data

Amongst the respondents who believe that there could be another episode of conflict in the valley, 45 percent of the respondents based their opinion on the poor governance in the area which could potentially cause another conflict episode. The rest of the opinions, as listed in table 4.15, are more or less the same. Every respondent think that the government is not doing enough to prevent another such episode.

Thus the next natural question emerges of what the government should do to prevent conflict in the future. The sample responses, in this respect, are also listed in table 4.15. A good amount of the respondents were of the opinion that the government should focus on law and order in the area and should introduce some judicial reforms so that easy and quick access to justice is made possible. Similarly, some of the respondents reported that the government should provide an enabling environment such that employment opportunities are generated, alongside investment in education.

4.2 Regression analysis

In this section, we present the results of the three regression models proposed in the methodology chapter. The dependent variable in the first model is demand for a specific type of school which assumes the value of 1, if a particular household prefers conventional schools over Madrassa and zero otherwise. The dependent variables in the second and third models are differences in income and differences in savings respectively. In each case, we will carry out some diagnostic tests to confirm whether the results are reliable or not.

Table 4.16 Results of the Logistic Regression model (Dependent variable = Demand for Schooling)

Variable	Coefficient	S.E	Z	P- value	Odd Ratios
CC	0.0017	0.0009	1.81	0.070	1.0016
EH	0.0326	0.0286	1.14	0.256	1.0330
FT	0.0828	0.3379	0.25	0.806	1.0863
DI	0.0171	0.0154	1.11	0.267	1.0172
AS	-0.0623	0.0512	-1.22	0.224	0.9395
C	-0.1638	0.435	-0.38	0.707	...

Log Likelihood = -131.819 Pseudo $R^2 = 0.041$ LR $\chi^2 = 11.10$ Prob = 0.04

To start with, table 4.16 reports the results of the logistic regression model (equation 2), where the dependent variable is demand for a specific type of schooling. The dependent variable assumes the value of 1 if the choice is conventional schooling and zero if the choice for educating a child is a Madrassa. The explanatory variables of the model are cost of conflict excluding human casualties (CC), education of the head of the household (EH), family type (FT) which is a binary variable assuming the value of 1 if the household in question lives as a nuclear family and zero otherwise, differences in income before and after the conflict (DI), and awareness (AS) which is a composite variable constructed from access to media, using the principle component analysis.

Before interpreting the individual coefficients or their associated odd ratios, a word regarding the associated statistics which explains the model's fit. The LR chi-square value is significant at 5 percent level and hence the model fits the data relatively well. The Pseudo R-square is on the lower side but note that this is a binary logistic model and lower R-square values is a norm in such regressions.

If we look at the individual coefficients, then we observe that only one of the explanatory variable is statistically significant, and the is also on 7 percent level. None of the other variables, although with standard signs, are statistically significant at any acceptable level. This implies that the only thing that influences demand for education, in our model, is the cost of conflict. That is, the more the cost of conflict to the household, the more the household is likely to send their children to the school rather than Madrassa.

The dependent variable, in the next two specifications, is a continuous variable and hence we will first check for Multicollinearity and Heteroskedasticity, and if found, then estimation will follow after some necessary transformations. First, consider table 4.17, which shows the results of equation 4, where the dependent variable is differences in income, for checking Multicollinearity. Since none of the VIF is greater than 10, we can safely conclude that there is no problem of Multicollinearity in the model and hence we do not need to take steps to cure it.

Table 4. 17 Diagnosing severe Multicollinearity

	Coefficient	t value	Sig.	Tolerance	VIF
(Constant)	11.733 (1.807)	6.492	.000		
Diff_WH	2.510 (.929)	2.703	.007	.968	1.033
Cost_Conflict	-.013 (.002)	-5.552	.000	.957	1.045
Sav_BC	7.435 (3.890)	1.911	.057	.970	1.030
Per_Inf	-.011 (.018)	-.586	.559	.990	1.010

Source: survey data

Similarly, table 4.18 reports the results of the White Heteroskedasticity test. The null hypothesis of the test is that there is no hetero in the model. Since the p-value is greater than 5 percent, therefore we accept the null hypothesis of no Heteroskedasticity.

Table 4. 18 White Heteroskedasticity test

F-statistic	0.019920	Probability	0.999992
Obs*R-squared	0.145326	Probability	0.999992

Thus, apparently there is no problem of Multicollinearity and Heteroskedasticity in our model and hence we can rely on the results. The results are presented in the following table.

Table 4. 19 Results of OLS (Dependent Variable: Differences in income)

Variables	Coefficient	S.E	t value	Sig.
(Constant)	11.733	1.807	6.492	.000
Differences in working hours per day	2.510	.929	2.703	.007
Cost of Conflict	-.013	.002	-5.552	.000
Purpose of savings	7.435	3.890	1.911	.057
Perceived Inflation	-.011	.018	-.586	.559

Adjusted R-square = 0.181, F-Statistics = 11.27, Prob = 0.00000

Source: survey data

The dependent variable in the model is difference in income of household before conflict. The regression result indicates that all the explanatory variables are statistically significant at 5 and 1 % except perceived inflation. When the difference in working hour of the household is changed by 1 unit then the difference in income will changed by 2.5 unite. It indicates a positive relationship between in working hour and in difference in income. Similarly the relationship between difference in income and purpose of savings is also positively related. We have measured purpose of savings as dummy variable, where the value of 1 has been assigned to productive purposes such as investment and education purposes and zero otherwise. It is

significant at 10 %. The cost of conflict has negative impact on difference in income, i.e. When cost of conflict is increased by one unit then difference in income will decreased by 0.013 unit. The F statistic, reported at the end of the table, signifies the fact that the overall fit of the model is good, since its value is statistically significant at 1 percent level.

Next we turn to the results of equation 5 which are appended in the following tables. Table 4.20 reports the results of the model for diagnosing Multicollinearity. Since the VIF in all cases is well below 10, therefore, there is no multicollinearity.

Table 4. 20 Diagnosing Multicollinearity

	B	t value	Sig.	Tolerance	VIF
(Constant)	-4.463 (1.049)	-4.254	.000		
Diff_Inc	.940 (.022)	42.165	.000	.838	1.193
Cost_Conflict	.002 (.001)	2.550	.012	.852	1.174
Avg_Edu	-.135 (.145)	-.928	.354	.975	1.026
Conf_Expec	-1.178 (.891)	-1.322	.188	.995	1.005

Source: survey data

Table 4.21 reports results of the White Heteroskedasticity test. Since the p-value is below 5 percent, hence we reject the null hypothesis of no Heteroskedasticity and conclude that the original model suffers from the problem of Heteroskedasticity.

Table 4. 21 White Heteroskedasticity test

F-statistic	2.353319	Probability	0.025106
Obs*R-squared	15.79392	Probability	0.027067

When a model suffers from the problem of Heteroskedasticity, the appropriate solution is to transform the model in such a way that the transformed residuals are no more heteroskedastic. The

two solutions that has been suggested in the literature are the weighted least square (WLS) and the generalized least squares (GLS). Both the techniques are the same if we use as weights, in the WLS method, the standard errors of the estimates. Therefore we use the GLS (i.e. White Heteroskedasticity-Consistent Standard Errors & Covariance) method and the results are appended in the following table.

Table 4. 22 Results of GLS regression (dependent variable: Differences in savings)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.435829	1.173198	-3.780973	0.0002
DI	0.941391	0.056024	16.80339	0.0000
CC	0.001993	0.000777	2.566972	0.0110
AE	-0.135710	0.203254	-0.667687	0.5051
CE	-1.210922	0.896389	-1.350889	0.1783

Adjusted R-square = 0.91, F-Statistics = 500.92, Prob = 0.00000

Of the four explanatory variables that we have considered to predict differences in savings, two of the very important variables turned out to be statistically significant. The first one is differences in income, which shows a positive and significant relationship with differences in savings. This result is the standard one, as more income implies more consumption and more savings. That is, the household has the flexibility to save at higher levels of income.

Cost of conflict is another important variable, affecting differences in savings of the household positively. This is an interesting result, because we have mentioned before that conflict can cause both savings to fall or to increase. In our case, the cost of conflict has actually caused differences in savings to be positive. This implies many things, amongst which is the precautionary motive of savings. That is, households who have experienced greater cost of the conflict may be saving

more to cope with such circumstances in the future. Or they may be saving more in order to rebuild their damaged properties.

The value of F-statistic (500.92) mentions that all the explanatory variables have jointly effect variation in saving. The value of R square (0.91) indicate that there is 91 percent variation in saving occur due to the explanatory variables.

Chapter 05

CONCLUSION AND POLICY RECOMMENDATIONS

The most researched topic in the modern times of today, beyond any doubt, is conflict, its causes, consequences and how conflict resolution can be reached. To add a piece of research to this ongoing endeavor, this study has been designed to know, primarily, the impact of the terror conflict experienced in Swat valley recently. The variables of our primary interest included variations caused by the conflict in demand for various types of schooling, variation caused by the conflict in income and sources of income, variations caused by the conflict in the saving behavior and so on.

For this purpose, study selected a sample of 199 respondents from six major areas of the Swat valley. These areas include tehsil Kabal, Babozai, Shamozai, Matta, Khwazakhela, and the district headquarter Swat. A detailed questionnaire, with consultation of my supervisor, has been designed to collect data on various aspects of the terror conflict in the swat region. Particular details were asked about various economic losses from the respondents, so that can be used for empirical analysis. The data once obtained, were then utilized for descriptive, as well as regression analysis in the theses.

The research feature both descriptive analysis and regression analysis. The major conclusions that can be drawn from the descriptive analysis are;

- Conflict has profound impact on all household because an average, every household in the sample survey has suffered some losses due to conflict. Those losses include both human (number of dead or injured family members) and non human losses. The non

human losses include the value of livestock lost due to conflict, shops and houses damaged, and agricultural fields destroyed by the conflict.

- Majority of the respondents reported that conflict has caused disruptions in the supply of important food items, facilitated smuggling, caused resource depletion and also resulted in price hikes of the important food items.
- Monthly income and working hours per day of the households has increased considerably after conflict.
- Drive time and cost of commuting from working place to home, from home to school, to the market and the city has been increased by the terror conflict but distance from the nearby road, and to the market has been reduced after the conflict episode (rebuilding effort).
- The availability of basic health facilities within the standard distances has been improved since the conflict.
- Income from almost all sources increased after the conflict but more noticeably, income from self employment, private employment and labor work increased more than the other sources. This made these sectors attractive and hence we have also observed some occupational switching.
- Monthly expenditure of the respondents has increased after the conflict but the most noticeable increase in monthly expenditure is due to food expenditure which accounts for more than 30 percent of the increased expenditure.
- Demand for conventional schooling has increased and for Madrassa decreased, when we consider male children, as result of the conflict. But the situation is entirely different for female children. That is demand for Madrassa education has improved and conventional

schooling decreased as a result of the conflict for female children. This implies that the conflict episode has different effects on the demand for schooling for the two sexes.

- Access to all types of media, except social gatherings, has increased after the conflict. It implies a greater role of media for making opinions against conflict in the future.
- Majority of those respondents who expect terror episode returning to the Swat valley reported that poor governance is the major cause of such episodes and government had done nothing to prevent such events in the future. According to them, the government should ensure speedy justice to the masses should invest in education and provide opportunities to the young so that terrorist tendencies don't emerge in the future.

The major conclusions that can be drawn from the three regression models are summarized as follows;

- Households who have experienced greater losses from the conflict are more likely to send their children to schools rather than Madrassa.
- Differences in incomes and savings of the households, before and after conflict, are explained positively by the differences in working hours per day.
- Household's who experienced more losses from the conflict experienced a reduction in their income and savings. That is, cost of conflict may have suffered the household so much severely that while the income and the savings of the rest of the population is increasing, their income and saving is decreasing.
- Households who have saved for productive proposes before the conflict have seen a surge in their monthly income and savings afterwards.

From the above findings and conclusions, a few very relevant policy questions emerges which needs to be addressed. For example, we have noticed that the terror episode resulted in price

hikes and, as a consequence, the monthly expenditure on food items increased beyond limits. And provided that we have also established the result that the incomes and savings of those who are more severely affected by the conflict are still moving in the downward direction, there is a need for price controls in the terror torn areas so that their miseries are reduced. Moreover, notwithstanding the efforts of the government and of the international community, there is still a huge need for rehabilitation efforts of those who have been severely affected by the conflict.

Similarly, we have noticed that most of the households send their male children to schools after the conflict, but the situation is reverse for female children. The international community and the government, here, also have a role to play by encouraging female conventional schooling because this would have a long lasting effect on the war against terror.

Media, whether it is local, national or international, is made accessible to the local community after the conflict. This makes media a powerful source for inculcating patriotism amongst the young and informing them against the negatives of the terrorist tendencies. Thus government needs to direct, and in some cases control, the media so that desirable results are obtained and undesirable results are minimized.

At the end, I would recommend that the government should introduce some needful reforms in the judicial system so that timely and speedy justice is ensured to the masses. Justice denied or justice delayed is one of the major sources of terrorist tendencies.

REFERENCES

- Anderson, C.A., and Bushman, B.J.,(2002) The Effect of Media Violence on Society. *Science*, 295, P.2377-2378.
- Araña, J.E., and Leon, C.J., (2008) The Impact of Terrorism on Tourism Demand. *Annals of Tourism Research*. 35(2). P. 299-315.
- Aziz, K., (2010) Swat: The Main Causes of the Breakdown of Governance and Rise of Militancy. *Regional Institute of Policy Research and Training*.
- Barrea, O., Felip., and Ana, M.I., (2004). Dose Violence Reduce Investment in Education?: A Theoretical and Emperical Approach.*Documentos CEDE00238*.
- Ballantine, J. H., & Spade, J. Z., (2008) *Schools and Society: A Sociological Approach to Education*. 3rd Ed. United Kingdom: Sage Publications, inc.
- Badiuzaman., John, C., and S.M, Murshed., (2011) Household Decision- Making under Threat of Violence: A Micro level study in Chittagong Hill Tract of Bangladash. *MICROCON Resarch working paper*.
- Bekalo, S.A., Michael, B., and Geoff, W., (2010) Post Conflict Education Development in Somaliland. *Working Paper*.
- Carlos, B., Tilman, B., Tony, M., (2011) Conflict Experience and Househole Expectation on Recovery: Survey Evidence from Northern Uganda. *Microcon Research Working Paper 40*.
- Census Report of KPK (NWFP) Pakistan (1998). Emergency Response Unit. www.Pakistanidps.wordpress.org.

- Chen, S., Loayza, N.V., and Reynal-Querol, M., (2008) The Aftermath of Civil War .*World Bank Economic Review*.22 (1) P. 63-85.
- Collier, P.L., Elliot, H., Hergé, A., Hoeffler, M., Reynal- Querol., and N, Sambanis., (2003).
Breaking the Conflict Trap: Civil war and Development Policy. *In A co- publication of the World Bank and Oxford University Press.*
- Criega, A., Anderson., and Douglas, A., Gentile., (2002) Media Violence, Agression, and Public Policy. www.sciencemag.org
- Duenas., Lusía, F., and Fabio, S., (2007) Dose Armed Conflict Affect the poorest: The Case of School Dropout in Eastern Colombia. *Working Paper, University de los Andes.*
- Enders, W., and Sandler, T., (1991) Causality between Transnational Terrorism and Tourism: The Case of Spain. *Terrorism* (1).P. 49-58.
- Frey, B.S., (2004) Calculating the tragedy: Assessing the cost of terrorism. *Cesifo working paper*. www.CESifo.de. P.1-16
- Ikramullah., Rabbi, F.. and Rehman, N., (2011) A Comparison of Private and Government Schools: Gender disparity in Parental Investment in Education in Rural Pakistan. *Issues and Challenges in Rural Development.*
- Ikramullah., Shair, G., and Rehman, N., (2011) Economic and Social Dimensions of Rural-Urban Migration in Pakistan: Results from a Recent Survey in the North West Pakistan. *IJBSS.*
- Jorge, M., Agouri., and Muhammad, F.M., (2014) War and the Destruction of Human Capital. *Hicn Working Paper.*

- Krueger, A.B., and M, Lindahl., (2001) Education for Growth: Why and For Women? Journal of Economic Literature. 39(4). P. 1101-1136.
- Kumudini, R., Ganegodage., and Alicia, N., Rambaldi., (2012) NEconomic Consequences of War: Evidents from SriLanka. *University of Queensland Australia*.
- Marx, K. (2005) Marx and Conflict Theory: Analysis of Power in Society. Available from: www.academia.edu. [Accessed on: 16 May, 2015].
- Mellissa, T., (2013) Conflict Resolution and Reconciliation through Recognition: Assessing an Integrated peace Media Strategy in Kenya. *Journal of Applied Communication Research*.
- Miguel, E., and Roland, G., (2006) The Long run Impact of Bombing Vietnam. *Working paper National Beaurο of Economic Research*. <http://www.nber.org/papers/w>.
- Miguel., Edward., Satyanath, S., and Seergenti, E., (2003) Economic Shock and Civil Conflict: *An Instrumental Variables Approach Bread Working Paper*.
- Mustafa, U., (2013) Determinants and Implication of Major Conflicts in Pakistan. *Millennial Asia. SAGE Journal*.
- Olga, N., Shemyakina., (October 2011) Labour Market, Edducation and Conflict in Tajikistan. *Hicn Working Paper 106*.
- Paluck, E. L, (2007) Reducing intergroup Prejudice and Conflict with the Mass Media: A Field Experiment in Rawanda. *P.hD Dissertation.Yale University*.
- Patricia, J., (2009) The Impact of Armed Conflict on Household Welfare and Policy Responses. *Journal of Peace Resarch*.

PIPS., (2010) Pakistan Security Report 2010”, Pak institute for peace studies (PIPS). *P.O.Box 2010 islamabad.*

PIPS., (2011), Pakistan Security Report 2011”, Pak institute for peace studies (PIPS). *P.O.Box 2010 Islamabad.*

Pizam, A., and Smith, G., (2000) Tourism and Terrorism: a quantitative analysis of major terrorist acts and their impact on tourism destinations. *Tourism Economics. P. 123-138.*

Rabbi, F., Ikramullah., and Shah, Y., (2011) Households Post-Conflict Economic losses and Food Security: Empirical study from Conflict zone in North West Pakistan. *Issues and Challenges in Rural Development.*

Swee, L.K,(2008) On War and Attainment: The Case of Bosnia and Herzegovina.

UNESCO Institute for Statistics (2010) Data Centre. <http://stats.uis.unesco.org>.

USCR (2004) World Refugee Survey (2004) Washington DC: US Committee for Refugees

Verwimp, P., P, Justino., and T, Bruck., 2009 The Analysis of Conflict : A Micro- Level Perspective. *Journal of Peace Research.*

Virginia, A., and S., WorchelSource., (spring, 1978),; Effect of Media, Communicator, and Message Position on Attitude change. [Http:// www.jstor.org/stable/ 2748091](Http://www.jstor.org/stable/2748091)

Vladimir, B., (2006) Media effect during violent conflict: Evaluating media Contribution to Peace Building. *Conflict and Communication online.*

Assessing the Post Conflict Socioeconomic Impacts on Local Community: A Case Study of Swat Valley, KPK, Pakistan

Note: *This information will be treated as confidential. No part of this data will be made available to any person in any form and will be used for research purposes only.*

Part A: Information about the Head of the Household

A01: Name of the Household Head:	A02: Age (in complete years).....	A03: Education.....
A04: Sex <input type="checkbox"/> Male <input type="checkbox"/> Female	A05: Marital Status <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	
	Before Conflict	After Conflict
A06: Occupation		
A07: Working hours per day		
A08: Income		
A09: Family Type	<input type="checkbox"/> Joint <input type="checkbox"/> Nuclear	<input type="checkbox"/> Joint <input type="checkbox"/> Nuclear

Part B: Information about the location of the respondent

B01: Name of the Location		B02: Approximate Population		
	Before Conflict		After Conflict	
	Time (Min)	Km	Time (Min)	Km
B03: Distance from City				
B04: Distance from the nearby road				
B05: Distance from the Market				
B06: Availability of Basic Facilities				
	Before Conflict	After Conflict	Tick (√) if	
a. Access to clean water			Available within home	
b. Access to basic health			Available within 05 km	
c. Electricity			Available within home	
d. Education			K-12 available within 05km	
e. Transport			Available within 01 km	
f. Market for basic food			Available within 01 km	

Part C: Household Information and Family Profile

C01: Household composition and Education Profile					
No	Name of family Member	Sex	Age	Highest Education	Relationship with HoH
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
C02: Employment and Earnings					
			Before Conflict	After Conflict	

Assessing the Post Conflict Socioeconomic Impacts on Local Community: A Case Study of Swat Valley, KPK, Pakistan

Sources	No of family members	Approx Monthly Income	No of family members	Approx Monthly Income
a. Agriculture/Farming				
b. Livestock				
c. Agricultural Labor				
d. Self Employed				
e. Remittances				
f. Employment (Private)				
g. Employment (Govt.)				
h. Labor Work				
i. Aid (official and unofficial)				
j. Zakat				
k. Rent				
l. Others (Specify)				
Grand Total				

C03: Average household expenditure

Major Heads	Before Conflict		After Conflict	
	Amount in Rs	%age of total	Amount in Rs	%age of total
a. Food				
b. Clothing				
c. Health				
d. Education				
e. Utility Bills				
f. Recreation				
g. Transport				
h. Misc				
Total				

C04: Home ownership and Condition

Ownership Type	Before Conflict		After Conflict	
	No. of Rooms	Kacha/Pakka	No. of Rooms	Kacha/Pakka
a. Owned				
b. Rented				
c. Other (specify)				

C05: Household's Position on the income Scale

Income Brackets	Before Conflict	After Conflict
a. Low Income (8000-20000)		
b. Middle Income (20000-50000)		
c. High Income (50000-above)		

C06: Mood and Purpose of Savings (if any)

Mood of Savings ¹		Purpose of Savings ²	
Before Conflict	After Conflict	Before Conflict	After Conflict

1. Banks, Group Committee, cash at home or any other

2. To repay family debt, precautionary, marriage(s), home construction, business, education, religious obligations, to purchase land, to lend on interest or any other

Part D: Information about Schooling

D01: Number of Children attending School or Madrassa (provide number)

Children	Before Conflict		After Conflict	
	School	Madrassa	School	Madrassa
Male				
Female				

D02: Provide at least one reason why you choose School/Madrassa to educate your Children?

a.	
b.	
c.	

Assessing the Post Conflict Socioeconomic Impacts on Local Community: A Case Study of Swat Valley, KPK, Pakistan

D03: Provide at least one reason why you do not send your children to School/Madrassa?	
a.	
b.	
c.	
D04: What Motivates you to educate your children?	
a.	
b.	
c.	

Part E: Information about Household Economic Losses from the Conflict

E01: Have you bear any kind of losses to the house/ property/ livestock/ belongings? <input type="checkbox"/> Yes <input type="checkbox"/> No									
E02: If yes, then specify.									
	Type	Losses	Value/ Number	Compensation from Govt.			Compensation from NGOs		
				Kind	Cash	Loan	Kind	Cash	Loan
1	Human	1. Male							
		2. Female							
		3. Child							
2	Livestock								
3	Shops								
4	Fields								
5	Houses								
6	Others								
E03: Has Govt. announced any subsidy/concession for your area after conflict? <input type="checkbox"/> Yes <input type="checkbox"/> No									
E04: If yes, then what kind/item? 1..... 2....., 3....., 4.....									
E05: Whether prices of the following have gone up/down in the conflict region? <input type="checkbox"/> Yes <input type="checkbox"/> No									
S.No	Type	Value before conflict (Rs)			Value After Conflict (Rs)				
1	Land (.....)								
2	Houses								
3	Food items								
4	Necessities								
E06: Due to conflict, is there any kind of supply disruption if basic necessities? <input type="checkbox"/> Yes <input type="checkbox"/> No									
E07: Whether conflict has caused smuggling from your area to other area/country? <input type="checkbox"/> Yes <input type="checkbox"/> No									
E08: Whether price of commodities in your area have increased due to increases smuggling? <input type="checkbox"/> Yes <input type="checkbox"/> No									
E09: Whether Activist groups have caused any resource depletion like cutting forests or extracting mineral resources? <input type="checkbox"/> Yes <input type="checkbox"/> No									
E10: Whether due to conflict, the road rout to your area has changed? <input type="checkbox"/> Yes <input type="checkbox"/> No									
E11: If yes, then how it has affected your routine?									
S.No	Type	Money Spent		Time Spent		Distance Covered			
		Before Conflict	After Conflict	Before Conflict	After Conflict	Before Conflict	After Conflict		
1	How you reached to your home								
2	How your children get to their School/College etc								
E12: Is there any check post in your route established by Law enforcing agencies? <input type="checkbox"/> Yes <input type="checkbox"/> No									
E13: If yes, then how much time is lost due to routine checking? _____Minutes									

Assessing the Post Conflict Socioeconomic Impacts on Local Community: A Case Study of Swat Valley, KPK, Pakistan

Part F: General Information

F01: Which of the following information/entertainment sources did you use at home?						
Sources	Before Conflict			After Conflict		
	Local	National	International	Local	National	International
1. Print Media						
2. Radio						
3. Television						
4. Internet						
5. Social gathering						
F02: Do you think the conflict episode has changed your behavior towards your neighborhood? <input type="checkbox"/> Yes <input type="checkbox"/> No						
F03: If yes, then how?						
<input type="checkbox"/> I am more concerned about what happens in the neighborhood after the conflict						
<input type="checkbox"/> My relations with the neighborhood has improved						
<input type="checkbox"/> I am looking at my neighbors suspiciously						
F04: Do you expect another episode of terror conflict in the Swat valley? <input type="checkbox"/> Yes <input type="checkbox"/> No						
F05: If yes, then your predictions are based on what observations?						
F06: What steps, in your opinion, are necessary to prevent another terror conflict episode?						
1.	2.		3.			
4.	5.		6.			

Thank you very much for your cooperation