Secure Livelihoods Research Consortium

Researching livelihoods and services affected by conflict

Tracking change in livelihoods, service delivery and governance:

Evidence from a 2012-2015 panel survey in Pakistan

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About us

Secure Livelihoods Research Consortium (SLRC) aims to generate a stronger evidence base on how people make a living, educate their children, deal with illness and access other basic services in conflict-affected situations. Providing better access to basic services, social protection and support to livelihoods matters for the human welfare of people affected by conflict, the achievement of development targets such as the Sustainable Development Goals and international efforts at peace- and state-building.

At the centre of SLRC's research are three core themes, developed over the course of an intensive one-year inception phase:

- State legitimacy: experiences, perceptions and expectations of the state and local governance in conflict-affected situations
- State capacity: building effective states that deliver services and social protection in conflict-affected situations
- Livelihood trajectories and economic activity under conflict

The Overseas Development Institute (ODI) is the lead organisation. SLRC partners include the Centre for Poverty Analysis (CEPA) in Sri Lanka, Feinstein International Center (FIC, Tufts University), the Afghanistan Research and Evaluation Unit (AREU), the Sustainable Development Policy Institute (SDPI) in Pakistan, Disaster Studies of Wageningen University (WUR) in the Netherlands, the Nepal Centre for Contemporary Research (NCCR), and the Food and Agriculture Organization (FAO).

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SLRC Working Papers present information, analysis and key policy recommendations on issues relating to livelihoods, basic services and social protection in conflict affected situations.

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Preface

As a multi-year, cross-country research programme, one of the overarching aims of the Secure Livelihoods Research Consortium (SLRC) is to contribute towards a better understanding of what processes of livelihood recovery and state-building look like following periods of conflict, and how positive outcomes are achieved. Understanding socioeconomic change of this nature is possible only when appropriate evidence exists. This, in turn, requires the availability of reliable longitudinal data that is able to measure shifts, fluctuations and consistencies in the performance of a given unit of analysis (e.g., an individual, a household, an economy) against a set of outcome indicators between at least two points in time. With a six-year timeframe, SLRC is uniquely placed to contribute to understanding how change happens over time.

To this end, the Consortium has conducted original panel surveys in five countries: The Democratic Republic of Congo (DRC), Nepal, Pakistan, Sri Lanka and Uganda. In two other countries, Afghanistan and South Sudan, we are following a slightly different process by tagging on to planned or existing panel surveys.

Two rounds of data collection took place between 2012 and 2015. Despite the difficult circumstances in which the survey teams worked – all of them either fragile or conflict-affected – the research teams in all countries managed to find six out of every seven people they sought to re-interview in 2015. Out of a total of 9,767 respondents interviewed in the cross-country programme in the first round, 8,404 were re-interviewed in the second. The initial sample sizes were inflated to allow for attrition so that, even with some respondents not interviewed, the sample remains representative at a specific administrative or geographical level in each country at the time of the first round and is statistically significant.

All told, the SLRC panel presents an opportunity to go beyond cross-sectional analysis, generating information about changes in the sample over time and the specific trajectories that individuals and their households have followed. More specifically, the surveys are designed to generate information about changes over time in:

- People's livelihoods (income-generating activities, asset portfolios, food security, constraining and enabling factors within the broader institutional and geographical context)
- Their access to and satisfaction with basic services (education, health, water), social protection and livelihoods assistance
- Their relationships with governance processes and actors (participation in public meetings, experience with grievance mechanisms, perceptions of major political actors).

Undertaking a cross-country, comparative panel survey in difficult environments is far from straightforward. For purposes of transparency and clarity, we highlight two major limitations of our research. The first was raised in the original baseline reports – namely, that in producing standardised regression analyses that allow comparisons to be made across countries, we lose flexibility in the country-specific variables we can include. The trade-off between comparative and country analysis is even more pronounced after two waves of data are collected because we require consistency in the choice of model (particularly the choice between Random Effects and Fixed Effects models) across countries. Second, panel analysis requires substantial numbers of respondents who change their responses between rounds (for example, from a negative to a positive view of a particular government actor). In some cases, there has simply not been enough change to run a full analysis on these variables.

These limitations signal the complexities of panel data collection analysis. On the whole, however, the survey makes an analytical contribution to our understanding of how livelihoods and wellbeing, access to and satisfaction with services, and perceptions of government actors change over time in fragile and conflict-affected situations.

Acronyms

ANP	Awami National Party
BMZ	German Development Ministry
CSI	Coping Strategies Index
DFID	Department for International Development (UK)
EU	European Union
FCS	Food Consumption Score
GOKP	Government of Khyber Pakhtunkhwa
JI	Jamaat-e-Islami (political party)
KP	Khyber Pakhtunkhwa
MSI	Morris Score Index
PaRRSA	Provincial Relief, Rehabilitation and Settlement Authority
PDMA	Provincial Disaster Management Authority
PKR	Pakistani Rupees
PML-N	Pakistan Muslim League (Nawaz)
PPP	Pakistan Peoples' Party
PTI	Pakistan Tekrik-e-Insaf
SDPI	Sustainable Development Policy Institute
SLRC	Sustainable Livelihoods Research Consortium
SSN	Social Safety Net
UC	Union Council

Executive summary

The Sustainable Livelihoods Research Consortium (SLRC) conducted two rounds of surveys in the conflict-affected Swat and Lower Dir districts in Khyber Pakhtunkhwa (KP) Province, Pakistan. The first round of surveys was implemented in 2012 and the second in 2015. The main objective of the survey is to produce information on changes in people's livelihoods, their access to basic services, social protection and livelihood assistance, and their perceptions of governance.

Swat and Lower Dir districts were severely affected by violent, armed, civil conflict, quickly followed by a series of natural disasters. The violent conflict was the result of the gradual infiltration of the area by the militant organisation, Tehrik-e-Taliban Pakistan (TTP), which had built up a presence in the region during the early 2000s. By 2007, through direct attacks on public institutions, they had managed to take control of most parts of Swat district, enforcing their particular version of Sharia law. Following their success in Swat, they also started to advance towards adjoining districts (particularly Lower Dir).

In response to this direct challenge to state authority, in 2008 the Government of Pakistan started a massive military operation after evacuating most of the civil population from the district. More than 2 million people were internally displaced (IDPs), resulting in both immediate hardship and longer-term loss of livelihoods. After a large-scale campaign, the Pakistani army was able to reassert state control over the TTP-occupied areas and most of the militants were either killed or escaped to Afghanistan.

Following the end of the military operations, the IDPs began to return home, but while they were returning devastating floods (July 2010) swept through KP, adding to their misery and vulnerability. Swat was particularly badly affected. War and the subsequent floods destroyed most of the infrastructure in Swat and Lower Dir districts and created one of the worst humanitarian crises in Pakistan's history. Most of the livelihood sources – such as casual labour, small businesses, farming, and fruit and vegetable markets – were severely affected.

A large number of international and national aid organisations responded to the humanitarian crises with a variety of aid programmes. These programmes provided immediate assistance to many of the returning IDPs but, by themselves, could not restore either livelihoods or basic services. The focus then shifted to long-term rehabilitation, implemented largely through local NGOs and government agencies. This paper explores people's perceptions of state legitimacy, at a point of transition from humanitarian to development assistance and from outside agencies to governmental programmes in the context of decentralisation.

The subject of this study is the relationship between the delivery of services, social protection and livelihoods assistance, and state legitimacy (measured here using perceptions of government performance) in a fragile and conflict-affected state. This has been the subject of extensive research and debate (Carpenter et al. 2012). We focus on two overarching questions relating to this topic:

- How does the way services are delivered and livelihoods are supported affect people's views on the legitimacy of the state?
- What do livelihood trajectories in conflict-affected situations tell us about the role of governments, aid agencies, markets and the private sector in enabling people to make a secure living?

The research undertaken by SLRC contributes to understanding both of these questions in ways that are pertinent for national governments and for international organisations.

The survey sample

In the second round of surveys in 2015, trained trackers were deployed to trace the respondents from the first round in 2012. 1,762 of the initial 2,114 respondents were re-surveyed – an overall attrition of 17 percent. Nonetheless, because the initial sample had been inflated to allow for 'drop-out', the survey remained representative at the Union Council (UC) level. A total of 705 households from two UCs in Lower Dir and 1,057 from three UCs in Swat were included in the survey (34 percent of the respondents were female). The same set of questions was asked in both waves with some minor changes/adaptations in the second round.

The changing context

The research targeted communities that had been affected by conflict and which had subsequently had some form of external assistance for livelihoods and service rehabilitation. Therefore, In Wave 1 (2012) we included only those UCs that had been affected by the war between the TTP and the Pakistani army. For this reason, almost all respondents (99 percent) in Wave 1 reported that they had experienced fighting during the previous three years. This decreased to only 4 percent in Wave 2.

Our survey revealed improvements in markets and reductions in inflation/price hikes, loss of crops/livestock and soil degradation. Similarly, there was a reduction in reported crime. However, an increase in health-related shocks was reported, probably due to the outbreak of dengue fever in KP during 2013 and 2014.

Interestingly, although there were fewer reported incidences of fighting and crime in Wave 2, substantially fewer respondents felt 'very safe' (in their village or outside). Perceptions differ between Swat and Lower Dir: comparatively more sampled households in Lower Dir feel 'less safe' outside their village. More female respondents in Wave 2 judged it to be 'very safe' in their village, but fewer felt 'very safe' outside.

Changing livelihoods and wellbeing

We asked respondents about livelihood activities, household assets, measured using the Morris Score Index (MSI), and food insecurity, measured using the Coping Strategies Index (CSI) and the Food Consumption Score (FCS). Then we compared the data with Wave 1 to identify the changes between waves. Five sets of key findings emerged.

First, migration continued to be the main livelihood activity (largest income source) reported in both waves and more than one third of the sampled households received remittances. However, significantly fewer households reported overseas labour as the main source of household income in Wave 2, even though the share of overseas labour in total household income increased slightly. The role of remittances in fulfilling basic needs (food, education) and in promoting and sustaining household wellbeing, became less significant during this period, with an increase in respondents changing from 'remittances helped a lot' to 'remittances helped a bit'.

Second, the number of households reporting non-farm based causal labour as the 'main source of income' decreased and more households reported agriculture-based causal labour (fruit picking, packaging) as their main source of livelihood. However, comparatively more households were earning income from non-farm based livelihoods such as skilled labour and government jobs in Wave 2.

Third, while borrowing (loans/credit) was an important coping strategy in both waves, more households were in debt in Wave 2. In particular, there was a considerable increase in the number of households which borrowed money to meet health-related expenses. Most of the respondents reported that their family/friends would lend them money in case of emergency health-related problems. Being indebted

has a significant association with food security and food consumption (food diversity). The sampled households which did not owe money during the first round of surveys but owed money in Wave 2, were likely to have higher food insecurity (CSI) and rely on a less diverse range of foods (most probably cheaper ones). However, it is not possible to determine whether food insecurity compels households to borrow money or whether being in debt leads to food insecurity.

Fourth, the results for the CSI indicate that there was an overall increase in food insecurity between waves. Despite this, food diversity improved and more than half of households switched to better food consumption patterns (higher FCS). Perceptions of safety are significantly linked to food security and improved perceptions of safety (from being unsafe to safe) appeared to have a positive impact. Education also emerged as an important variable: the higher the average education levels of households, the better off they tend to be in terms of food security and food diversity. Interestingly, overseas migration and remittances did not have a significant impact on either outcome. On the other hand, households which did not receive livelihood assistance in Wave 1 but did subsequently, were less food insecure (lower CSI) and tended to have a better FCS.

Fifth, household assets (MSI) increased on average in Wave 2. Households in Swat had a higher MSI in Wave 1, but were overtaken by households in Lower Dir in Wave 2. The households which did not own cultivable land in Wave 1 but did in Wave 2, were likely to have more assets (a higher MSI). Similarly, households which did not receive livelihood assistance (seeds and fertilisers) in Wave 1 but did in Wave 2, increased their assets. Education also has a significant impact on MSI: households whose average education level increased, were likely to increase their assets. However, primary education has no impact on MSI, and in fact, the results indicate that those households whose members have (on average) a primary-level education, have fewer assets than those with (on average) 'no education'.

Basic services, social protection and livelihood assistance

Changes in access to and satisfaction with basic services such as health, education, drinking water, social protection and livelihood assistance have been included in our analysis. We measure access to a service primarily using the time it takes to reach it (in minutes), and for social protection and livelihood assistance we measure whether or not a household received any assistance in the previous 3 years. The survey on the delivery of services also generated data on experiences of problems with basic services. Five sets of key findings emerged:

First, for health services, the average travel time to the nearest health centre/clinic increased slightly. The number of visits to a health centre by each household between the two waves also increased, which might be due to the outbreak of dengue fever in Swat during 2013 and 2014. Overall levels of satisfaction with health services increased and satisfaction with the availability of medicines, the number of qualified personnel and waiting times also improved. The respondents who were not satisfied with these variables in Wave 1 but were satisfied in Wave 2, tend to be satisfied with the overall quality of health centres. Perceptions of safety are also significantly associated with access to and satisfaction with health services – with improvements in neighbourhood safety, the households in our study area were more likely to reduce travel times to a health centre (they might be using a different clinic, or using the same clinic, but taking a different form of transport or using a more direct route). There was an increase in households who had to pay informal fees for health and educational services. The respondents who started to pay formal or informal fees between waves are likely to be less satisfied with the overall performance of health centres in Wave 2. Households which became more food insecure (in Wave 2) are likely to be less satisfied with health services, compared to those who did not.

Second, for educational services, there was also a slight overall increase in travel time to the nearest school. Levels of satisfaction with schools increased, particularly in terms of the number of teachers, the quality of teaching staff, teacher attendance, class size and the quality of school equipment.

Interestingly, perceived levels of safety are negatively correlated with satisfaction with schools. Respondents who saw improvements in safety in their area between waves were more likely to be dissatisfied with the school. The use of private schools increased. No significant association is found between awareness of meetings related to education and satisfaction with educational services.

Third, for drinking water, there was a significant increase in households whose source of drinking water is maintained by the community. Satisfaction with the quality of water increased and this is significantly and positively associated with perceptions of safety.

Fourth, recipients of social protection significantly increased in number. The perceived impact of transfers was high in both waves and the majority of households that received assistance from the Benazir Income Support Programme (BISP), Pakistan's main social protection programme, reported a positive impact. The households which did not receive income from farming (cultivating their own land) in Wave 1 but earned money from this source in Wave 2, were less likely to receive a social protection transfer. The same is true for households that earned income from selling goods, causal labour and skilled labour.

Migration and remittances are significantly associated with access to social protection. Households without a migrant family member in Wave 1 but with at least one in Wave 2, were less likely to be the recipient of any form of social protection. Similarly, households which did not report experiencing economic shocks in Wave 1 but did in Wave 2, were less likely to receive social assistance. Moving from a state of food insecurity to food security also implies a reduction in social protection transfers.

Fifth, there was a significant decrease in the number of households receiving livelihood assistance. Migration and remittances are significantly (but negatively) associated with access to livelihood assistance. Households that did not receive remittances during the previous 3 years in Wave 1 but did in Wave 2, were less likely to receive livelihood assistance. Thus, we can argue that migration tends to offset the need for social transfers and livelihood assistance.

Changing perceptions of governance

Changes in perceptions of governance from Wave 1 to Wave 2 were analysed in terms of trust and legitimacy. Respondents were asked whether 'the government cares about my opinions' and 'the decisions of government reflect my priorities', for both local and central government.

It is important to note that in each wave, different parties were in power, and the political and institutional context was very different. In Wave 1 there were no elected local governments in power but in Wave 2 both districts had a newly-elected government. At the federal and provincial level, the Pakistan People's Party (PPP) and the Awami National Party (ANP) were in power respectively during Wave 1. However, new elections were held in 2013 and the Pakistan Muslim League (PML- N) and the Pakistan Tehrik-e-Insaf (PTI) formed the governments at the federal and provincial level. The perceptions of local residents may, therefore, have been influenced by these changes.

Although the majority of respondents were satisfied with the provision of basic services (health, education, water, social protection), and levels of satisfaction actually increased in Wave 2, perceptions of local and central governments for most of the respondents remained negative – in other words, most people did not feel that local and central governments cared about their opinion / reflected their priorities. It is also interesting to note that female respondents were less positive, perhaps due to a lack of public representation.

The experience of shocks is an important determinant of perceptions of governance. Respondents in households which experienced agricultural and economic shocks in Wave 2 (but did not experience them Wave 1) were more likely say 'no' to the statement that 'local government cares about my opinions'. Those who did not experience shocks (in Wave 1) but who later experienced them in Wave 2 were more likely to feel that 'the decisions made by the central government do not reflect my priorities'.

The negative perceptions of central government in relation to economic shocks perhaps relate to expectations on the government to compensate.

Respondents who experienced more problems with basic services in Wave 2 (than in Wave 1) were likely to say 'no' to the statement 'local government cares about my opinion'. Payment of official fees is also significantly associated with perceptions of governance. Respondents who started paying official fees for health centres between waves were likely to have a negative response to the statement 'local government cares about my opinion' and 'decisions made by the local and central government reflect my priorities'.

Wealthier respondents (whose assets increased in Wave 2) were more likely to agree that the decisions taken by local government reflect their priorities. Similarly, respondents with household members who received a social protection transfer in Wave 2 tended to have a more positive opinion of local governments.

Findings

This project report is based on three core areas of interest:

- People's livelihoods (income-generating activities, asset portfolios, food security, constraining and enabling factors within the broader institutional and geographical context)
- Their access to and satisfaction with basic services (education, health, water), social protection and livelihoods assistance
- Their relationships with governance processes and actors (participation in public meetings, perceptions of major political actors).

As noted earlier, there is a growing interest in the development literature in the potential connections between state-building, service delivery and state legitimacy in the fragile states. This study of the experiences in Swat and Lower Dir highlights the complexity of providing simple or clear answers to the relationships between livelihoods, services and governance.

A few key points can be summarised:

Some, though not all, education, water and health sector activities in post-conflict settings may contribute to perceptions of greater state legitimacy. This could be because they signal an increased willingness of the state to act positively on behalf of its citizens. This may lead to a virtuous circle, helping to strengthen the legitimacy of state institutions and improving citizen trust in the state. However, the perceptions reported in the surveys are more complex, and a range of issues, from the payment of fees to travel distance, some of which are outside the control/capacity of local governments, will have an impact. In addition, as noted earlier, the election of new national and provincial governments, and how people perceive their relationship with these parties, will also affect their judgement. In this context, how do we clarify citizens' expectations of the state, and vice-versa, and how can we make these expectations more realistic and manageable? These are questions worthy of further research.

Legitimacy is not just about services or livelihoods, but also about safety and security – and more broadly, the politics and deeply-rooted historical experiences and perspectives, of a district or region. The literature on building state–society relations in conflict-affected areas has grown (Oosterom, 2009), as has the work on better defining the different aspects of local government, local governance and relations with local communities.[1] Just as there are national political settlements (DFID, 2008), there are also local and regional political settlements as well (Parks et al. 2013). With the changes in political

[1] Local Government refers to the political and administrative authorities that have responsibility for specific roles within a specific geographic area, including both local staff and offices of central ministries and local municipal, village and district offices. (adapted from Dabo et al. 2010). The phrase 'Local Governance' more broadly covers the relations between citizens and local authorities, including the institutions, mechanisms and processes, through which citizens and their groups can articulate their interests and needs, mediate their differences and exercise their rights and obligations at the local level. (adapted from UNDP, ibid.)

parties, particularly at the provincial level, it is difficult to determine how changing perceptions of governance are related to past responses to the conflict and the subsequent disaster, to support for or opposition to the new government, or to changes in experiences of different services. What is notable in the study area is that security and safety are important for local communities and respondents.

In regards to the study area and state legitimacy, as well as livelihoods, people's perceptions of security/insecurity are an intriguing and important finding from this research. Frequently, issues of crime and violence have been treated as separate matters by international donors. The OECD INCAF have been slow to integrate new understandings of their interconnectedness into their formulation for assessing fragility and so have different donors (Scheye and McLain 2007).

Changes over time mean that government and donor programmes have to adjust – from a humanitarian response to an approach that addresses longer-term developmental challenges. This involves not only a transition in funding modalities and time frames, but also adjusting to how people in conflict-affected areas have agency and make decisions. For example, people are spatial and mobile (Hammer 2014), and thus there is an important spatial dimension to where and how displaced households move and return, as well as migrate for income, which has implications both for the vulnerability of affected (host) populations and for service delivery programmes. The study highlighted some aspects of different types of migration and the impact of remittances:

- Mobility
- Coping mechanisms, loans and remittances
- Access to services and markets
- Security and safety

The spatiality/mobility aspect has implications for how a mass displacement and return impacts existing livelihoods, markets and service delivery systems. Displaced households and communities actively develop livelihood and protection strategies to reduce risk (vulnerability) and increase their resilience. These strategies are developed in response to specific and spatially-related risk factors, and economic or social pull factors, which then requires the ability of government agencies and donors to engage with ongoing mobility and livelihood decisions.

In post-conflict situations, the return of displaced persons, together with the uncertainties of rural livelihoods, implies a likelihood of instability, insecurity and political tensions. There will be an increasing demand for functioning markets, livelihood opportunities, services, food security, and personal/community safety. The need to address post-conflict recovery in Swat and Lower Dir in an integrated manner is consistent with the experiences of other countries emerging from protracted conflict, with few remaining services or little infrastructure. In such situations, the interventions that work tend to be those that respond to basic livelihood needs while reinforcing services and promoting safety.

Opportunities arise from the creation of an enabling environment for a transition from a humanitarian-structured aid response to a longer-term approach, with an emphasis on creating and supporting local livelihood opportunities, while recognising the role of mobility and remittances. Initially, local livelihoods may be provided through targeted investment in labour-intensive building/rebuilding of basic rural infrastructure (schools, health centres/clinics, water sources and markets).

The need for investment is well recognised. The problem is implementing it in ways that address the urgent demand for post-conflict dividends that respond to community priorities, while recognising that communities and their organisations should take the lead in implementing post-conflict recovery efforts. However, civic engagement and participation – both of which are key for strengthening underlying institutions at the local level (SDPI, 2016) – are frequently ignored by both aid agencies and governments.

1 Introduction

In 2012/13, the Secure Livelihoods Research Consortium (SLRC) designed and implemented the first round of a panel survey in five conflict-affected countries[2], generating cross-country data on livelihoods, access to and experience of basic services, exposure to shocks and coping strategies, and people's perceptions of governance. In Pakistan, the first round of the survey was conducted during September and October 2012 in the conflict-affected Swat and Lower Dir districts in Khyber Pakhtunkhwa (KP) Province. In 2015, 1,762 of the original 2,114 respondents in the Pakistan sample were re-interviewed, providing a second wave of data for longitudinal analysis. This paper presents the findings of the panel survey across the two waves.

The survey was conducted in three Union Councils (UCs) in Swat (Baidara, Bar Aba Khel and Charbagh) and two UCs in Lower Dir (Haya Sarai and Lal Qilla) during August and September, 2015. All the settlements/villages in each UC were sampled and the same number of respondents was selected from each settlement/village. The aim was to interview the same respondents who had been interviewed in 2012, even if they had moved. The same methodology was used, with slight changes to the questionnaire. Interviewing the same people allows us to measure changes over time between the two waves.

The paper is structured as follows. Section 2 provides a background to the survey, situating it in relation to the overarching themes of SLRC's research programme, outlining the objectives of the survey and presenting the analytical frameworks used to guide analysis of the survey data. Section 3 presents the survey methodology for Pakistan in greater detail, discussing the specific sampling methods used and describing the basic characteristics of the final sample. Section 4 describes some of the major changes that have taken place in Pakistan between the first and second waves of data collection that may have a bearing on changing livelihoods and wellbeing, access to and satisfaction with services, and perceptions of government actors. Sections 5 to 7 constitute the analytical core of the paper, exploring which factors influence livelihood status; which factors influence people's access to and experience of services and social protection; and which factors influence people's perceptions of governance. Section 8 concludes with preliminary policy implications and suggestions for further research.

[2] The Democratic Republic of Congo, Nepal, Pakistan, Sri Lanka, and Uganda.

2 Background, objectives and analytical frameworks

This section is split into three parts. The first provides some background to the survey by situating it in relation to SLRC's broader research agenda. The second outlines the objectives of the panel survey. The third describes the basic analytical frameworks used to analyse the survey data.

2.1 The SLRC research agenda

The cross-country panel survey is directly relevant to the first and third themes of SLRC's six-year global research programme:

1. *Legitimacy.* What are people's perceptions, expectations and experiences of the state and of local-level governance? How does the way services are delivered and livelihoods are supported affect people's views on the legitimacy of the state?
2. *Capacity.* How do international actors interact with the state and local-level governance institutions? How successful are international attempts to build state capacity to deliver social protection, basic services and support to livelihoods?
3. *Livelihood trajectories.* What do livelihood trajectories in conflict-affected situations tell us about the role of governments, aid agencies, markets and the private sector in enabling people to make a secure living?

2.1.1 Legitimacy: people's perceptions of governance and the role of service delivery

Establishing, building or strengthening state legitimacy is a major element of state-building. The Organisation for Economic Cooperation and Development (OECD) (2010: 3), for example, notes that, 'State legitimacy matters because it provides the basis for rule by consent rather than by coercion'. Indeed, a lack of state legitimacy is seen as a major contributor to state fragility because it undermines state authority. For donors, while there is little they can do to influence state legitimacy, they do have an interest in developing a clearer understanding of the following: What leads to legitimacy? What, if anything, can they do to strengthen state–society relations? And what might be the (unintended) positive and negative impacts of their programming on state legitimacy

Literature reviews carried out during SLRC's inception year found very little evidence for the frequent assertion that improving access to services and social protection in conflict-affected situations contributes to state-building (see, in particular, Carpenter et al., 2012). The relationship between delivering services and state–society relations remains poorly understood. Given the cited importance of legitimacy in state-building processes,[3] it is both surprising and concerning that we have so little robust knowledge about what leads to state legitimacy.

The results from the first round of the SLRC survey in Pakistan, however, reveal that the more problems experienced by the respondent with a service, the worse their perception of the government. Similarly, the respondents in our study tend to think more positively about the government when there are proper mechanisms to address grievances and to make complaints. There is also a statistical relationship between participation in meetings and perceptions about government (Denney et al., 2015; Shahbaz et al., 2014).

[3] As the European Report on Development (2009: 93) notes, 'State-building efforts are bound to fail if, in strengthening institutional capacities, the legitimacy of the state is not restored'.

In the context of conflict-affected regions in KP (particularly in Swat), some authors have argued that the decline in service delivery by the state – including access to justice – is the main factor in the rise of militancy (Hayat, 2014).[4] According to Slater et al. (2016: 1), 'In fragile contexts, service delivery gaps are often filled by non-state actors, including civil society organisations, armed groups and religious communities'. However, there is little evidence of whether improved service delivery results in state legitimacy (ibid).

Despite these gaps, state-building – which encompasses both legitimacy and capacity – provides the organising framework for much of the international engagement in conflict-affected situations. In tackling this question, we are thus taking up the OECD's call for donors to 'seek a much better understanding – through perception surveys, research and local networking – of local people's perceptions and beliefs about what constitutes legitimate political authority and acceptable behaviour' (OECD, 2010: 55).

2.1.2 Livelihood trajectories: tracking change and identifying determinants

Literature reviews carried out during SLRC's inception year identified empirical and longitudinal research on livelihoods in conflict-affected situations as a key evidence gap. Although good, in-depth case studies on livelihood strategies in particular contexts can sometimes be found, these are usually just snapshots. Qualitative case study approaches are also insufficiently linked to quantitative survey data. The reviews also revealed a significant gap in any comparative analysis of the effectiveness and impact of interventions to support livelihoods (see, in particular, Mallett and Slater, 2012). There is some evaluation and academic literature that examines the impact of particular projects or programmes, but very little that looks at the overall significance of aid in people's livelihoods and compares the impact of different approaches.

The SLRC working paper by Suleri et al. (2016) – based on a qualitative study of the recovery of fruit and vegetable markets in post-conflict Swat – indicates some positive impacts of livelihood interventions by donor agencies on improving farming practices (new improved varieties, application of better fertilisers, pest control and trainings). Coupled with improved security, these have helped in re-establishing local markets. Another working paper by Shah and Shahbaz (2015), examined livelihood interventions in the conflict-affected areas in KP. The results indicate that short-term relief interventions helped address the immediate needs of conflict-affected communities. However, the lack of a systematic needs assessment remains a hurdle in the efficiency of long-term interventions. Elahi (2015) analysed societal changes in Swat in a post-disaster context (floods of 2010). He argued that the participatory practices of projects applied before the crisis resulted in some positive impacts on livelihood improvement, but post-disaster rehabilitation and reconstruction efforts did not generally adopt a similar participatory approach. He underlined the need to conduct more in-depth studies in crisis-affected areas to understand the impact of humanitarian aid on changes in livelihoods.

SLRC's research programme aims to fill some of these gaps by building a picture of how people make a living in particular contexts and tracking how this changes over time.

2.2 Objectives of the panel survey

Our approach to examining legitimacy centres on documenting and analysing people's views of governance actors in conflict-affected situations. A cross-country panel survey incorporating perception-based questions allows us to investigate difficult-to-measure, subjective issues such as trust and satisfaction, and provides both a comparative snapshot and a longitudinal perspective.

[4] http://ipr.org.pk/wp-content/uploads/2014/09/Strategy-not-Tactics-Final.pdf

To gain a deeper understanding of livelihood trajectories, SLRC is undertaking rigorous, longitudinal livelihoods research. Our aim is to build a picture of how people make a living in particular contexts, to track how this changes over time and to shed light on what causes change. We want to know whether people are recovering and starting to build stronger and more secure livelihoods; or whether they are stuck in difficult circumstances or sliding into destitution; and how the broader political, economic and security environment affects this. The SLRC cross-country panel survey therefore combines elements of both perception and livelihood surveys, enabling a dual focus on governance and legitimacy, and livelihood trajectories.

2.3 Analytical frameworks

Three basic analytical frameworks emerged from the survey design process, outlined below (and in greater depth in the baseline synthesis paper (Mallett et al. 2015).

2.3.1 Livelihood and wellbeing status

Livelihoods and wellbeing are broad concepts and cannot be meaningfully captured by a single indicator. We have chosen to measure it in two different ways, by looking at:

- Food security
- Household asset ownership as a proxy for wealth

We use two measures of food security: the Coping Strategies Index (CSI) and Food Consumption Score (FCS). A recent analysis of five food security indicators using 21 representative data sets spanning ten countries has shown that these two indicators capture different aspects of food security – considered them together, therefore, provides a more comprehensive picture (Vaitla et al., 2015).

The CSI, also sometimes referred to here as the food insecurity index, is a tool for measuring current food access and quantity: the higher the CSI the worse-off the household (Maxwell and Caldwell, 2008). Five coping strategies and their relative severity have been identified as (generally) internationally applicable and can be seen as proxies for food insecurity (Maxwell and Caldwell, 2008). The overall CSI score for each household is calculated by multiplying the number of times in the past month that each coping strategy was used by the severity of the coping strategy, and then summing the products. The final index score is a weighted sum reflecting the frequency with which households have adopted particular behaviours over the course of the previous 30 days. The survey questions, designed to capture these behaviours, are given in Table 1. Even though the food insecurity index was measured in exactly the same way in all countries, we will not be comparing average scores across countries, not least because the survey was conducted in different seasons. Rather, we will focus on the extent and direction of change in coping strategies, to explore where and why some households are on an upward trajectory, while others may be backsliding or static.

Table 1: Composition of Coping Strategies Index from survey instrument

In the past 30 days, if there have been times when you did not have enough food or money to buy food, how often has your household had to:	Only one response allowed: *1. Never* *2. Rarely (once or twice in the past 30 days)* *3. Sometimes (three to ten times in the past 30 days)* *4. Often (more than ten times in the past 30 days)* *5. Always (every day)*
a. Rely on less preferred and less expensive foods?	
b. Borrow food, or rely on help from a friend or relative?	
c. Limit portion size at mealtimes?	
d. Restrict consumption by adults in order for small children to eat?	
e. Reduce number of meals eaten in a day?	

The Food Consumption Score (FCS) is a measure of food quality. It measures diet diversity based on food groups consumed, with more nutrient-dense food groups weighted more heavily (Vaitla et al., 2015). More specifically, the FCS is a composite score based on the number of days that particular food groups were consumed in the last 30 days, weighted by the nutritional importance of each food group.

The second outcome indicator, household wealth, is proxied by the assets owned by the household using the Morris Score Index (MSI) (Morris et al., 1999). The MSI is a weighted asset indicator that weights each durable asset owned by the household by the share of households owning the asset. What this essentially means is that households are considered better-off when they own assets not owned by most households in the sample. The MSI includes all productive, household and livestock assets; the assets differed across countries. The index has proved to be a good proxy for household expenditure in rural Africa (ibid) and has been used in many other settings too – for example in transition countries like Albania (Hagen-Zanker and Azzarri, 2010).

It is also likely that relationships may exist between asset ownership and food security, our respective proxies for livelihood status and wellbeing. For example, Tschirley and Weber (1994) find that, in previously war-affected parts of Mozambique, landholdings constituted a key determinant of a household's calorie consumption; and across the border in southern Zimbabwe, Scoones (1995) reports strong correlations between wealth rankings and livestock ownership, farm asset holdings and crop harvests. Further afield, Takasaki et al. (2001) observe strong associations between levels of household wealth and the kinds of livelihood activities engaged in by households in rural Peru. Similarly, during the SLRC Pakistan baseline survey we found significant negative association between assets (MSI) and food security (CSI): comparatively wealthier households (with more assets) tend to be less food insecure (Shahbaz et al., 2014).

Following a lengthy process of deliberation and expert consultation, we propose that changes in livelihoods and wellbeing can be explained, at least in part, by the sets of factors outlined below. Some basic hypotheses related to these factors are listed at the end of this sub-section.

In the panel synthesis report (forthcoming), we argue that changes in a number of different factors can explain changes in livelihood status:

- *Household factors*: These include household-level demographic, religious, ethnic and educational characteristics as well as histories of migration.
- *Contextual factors*: These include location, experience of fighting in the area, and perceptions of safety in the neighbourhood and in travel (i.e. moving to work), as well as other indicators of livelihood opportunities/constraints.
- *Shock factors*: These include natural hazards and economic shocks, as well as crime and conflict as experienced by households.
- *Service access and quality factors:* These include the different levels of access to basic services, social protection and livelihood assistance, and the quality of these services or transfers.

The aim of the quantitative analysis is to estimate if and to what extent the above factors determine the main outcome (household assets/food insecurity) following the hypotheses shown in Box 1.

Box 1: Hypotheses on changing livelihoods and wellbeing

- Households which do not owe money (credit) in Wave 1, but owe money in Wave 2 will have a higher CSI score (i.e. higher food insecurity) and a lower FCS (they rely on less diverse food).
- Food security increases as perception of safety improves.
- Households in which a member has recently moved to another country (external migration) improve their assets and reduce food insecurity.
- The households which did not receive livelihood assistance in Wave 1 but received livelihood assistance in Wave 2 have improved food security and a higher FCS.
- Households which did not receive livelihood assistance (in the form of seeds and fertilisers) in Wave 1 but received assistance in Wave 2 have increased their assets.

2.3.2 Access to and experience of services, social protection and livelihood assistance

We are interested in which factors determine access to and experience of services. Because the survey covered a large range of services, we made use of simple, relatively blunt, proxies for access. In the case of health, education and water, we considered return journey times (in minutes) to health centres or hospitals, primary schools and water sources. Respondents were asked about the distance to boys' and girls' schools separately (to account for the possibility of boys and girls using different schools). The average (mean) distance was used where appropriate. For social protection and livelihood assistance, we considered whether households had received any form of support in the past year – support in the form of seeds, agricultural tools, fertilisers, pesticides, extension services, etc., is considered as livelihood assistance, and support in the form of cash transfers, pensions, social security networks (SSN), etc., is seen as social protection.

Variations in access to services can be explained by a number of different factors. These include:

- *Individual and household factors*
- *Contextual factors*
- *Shock factors*
- *Service access and quality factors:* Implementation and performance (for example, regularity of provision or who provides the service) may affect access to basic services, social protection and livelihood assistance. We expect that distance to basic services is likely to affect experience of services.
- *Service implementation and performance features*: These include the provider of a service, problems experienced with the service, and the respondent's knowledge of grievance mechanisms and community meetings related to the service.

The aim of the analysis is to test the hypotheses in Box 2, to determine if and to what extent changes in the above factors change access to and experience of services, social protection and livelihood assistance. We measure experience in terms of overall satisfaction with the service provided and how respondents themselves perceived the impact of the service (in terms of social protection and livelihoods assistance).

Box 2: Hypotheses on changing access to and satisfaction with services

- Respondents with increased knowledge of community meetings (between Wave 1 and Wave 2) related to basic services, social protection and livelihood assistance, are more satisfied with these services.
- An increase in satisfaction with the number of teachers, quality of teaching staff, teacher attendance, class size and the quality of school equipment is positively associated with satisfaction with schools.
- Starting to pay fees (between Wave 1 and Wave 2) for the health centre is negatively associated with satisfaction with the health centre.
- An improvement in perceived safety is associated with an increase in household satisfaction with basic services.
- Households without a migrant family member in Wave 1 but with at least one member who has migrated to a foreign country in Wave 2, are less likely to be the recipient of social protection.

2.3.3 People's perceptions of governance and the role of service delivery

Pakistan has a three-tier governance structure: national (or federal), provincial and local. It is important to note that the Pakistan Muslim League (PML-N) is the ruling party at the federal level but the Pakistan Tehrik-e-Insaf (PTI) holds power at the provincial, and at the local level in most of the districts of Khyber Pakhtunkhwa.

The analysis of what influences people's perceptions of governance is complicated. We propose that perceptions of governance be determined by individual and household characteristics, context and shocks experienced. To examine these perceptions, we used two main indicators:

> *'To what extent do you feel that the decisions of those in power at the local/central government reflect your own priorities?'*
>
> *'Do you agree with the following statement: the local/central government cares about my opinions?'*

We explored governance on two levels[5] – in this case, local[6] and national. We then look at the explanatory role of basic services, social protection and livelihood assistance, specifically in terms of: 1) access, 2) user experience and 3) implementation and performance.

We propose that changes in the following factors (all discussed above) may determine changes in people's perceptions of governance (see also Box 3):

- *Individual and household factors.*
- *Contextual factors.*
- *Shock factors.*
- *Service access and quality factors.*
- *Service implementation and performance features*.

[5] For the purposes of cross-country comparison, we looked at local and central governments (ignoring the provincial government).

[6] By local government we mean the government at the district or Union Council level (UC members are elected at the village level).

Box 3: Hypotheses about changing perceptions of government

- Respondents whose household assets have increased have more positive perceptions of local and central government; and respondents from households with increased food insecurity have worse perceptions of local and central government over time.
- Respondents who now feel safer in Wave 2 (as compared to Wave 1) have more trust (positive perceptions) in central and local governments.
- Respondents in households which experienced shocks (agricultural and economic) in Wave 2 have more negative perceptions about local and central governments. Similarly, an increase in the local crime rate leads to more negative perceptions of governance.
- The respondents in households who had to pay fees for health services in Wave 2 (but did not pay in Wave 1) have more negative perceptions of governance.
- Respondents who experienced more problems with basic services in Wave 2 (as compared to Wave 1) have more negative opinions about local and central governments.
- Respondents who know about more service-related meetings in Wave 2 (as compared to Wave 1) are more likely to have a positive perception of central government.
- Experiencing more problems with basic services over time is linked to worsening perceptions of governance.
- Respondents in households which started receiving livelihood assistance in Wave 2 (and who did not in Wave 1) have better perceptions of government.

3 Methods

Cross-sectional surveys provide a snapshot of a situation at a particular point in time. Longitudinal surveys provide information on changes and trajectories over time. The SLRC survey is a panel survey, a particular type of longitudinal survey where the same individuals are followed over a succession of survey rounds – in our case 2012/13 and 2015. The main advantage of panel surveys is that they allow for the direct study of change for individuals or within households. This method enables us to examine relationships between events and developments and see if they remain consistent over time, thus facilitating an understanding of causality. This is substantially different to observing an event and people's circumstances only at a single point in time.

However, panel surveys present their own set of methodological challenges. Some of these challenges are similar to those of other types of surveys -- non-response to some of the questions within a survey, for example. Attrition (drop out from the sample) is perhaps the major threat, but there are others. In this section, we discuss the challenges and how we dealt with them. The section is split into four parts, focusing respectively on: design, data collection, sampling and weighting, and analysis.

3.1 Design process

The first wave of the SLRC survey took place in 2012. Details on the methods can be found in the SLRC process paper and baseline synthesis report (SLRC, 2015; Mallett et al., 2015). The survey was designed partly with the objective of looking for similarities and differences across the five survey countries. This meant that consistency was a key consideration throughout the survey process. The same principle also guided our approach to the second wave, where we tried to stay as true to Wave 1 as possible. Nonetheless, we still faced a number of methodological challenges the second time around. These are described in detail in this section.

3.1.1 Deciding who to track

The SLRC survey incorporates elements of both a livelihood and a perception survey, which raises an important methodological issue: while the ideal unit of analysis for the livelihoods survey is the household (e.g. how much land does *your household* own?), for the perception survey it is the individual (e.g. do *you* agree that the local government cares about your opinion?). Both types of questions were asked to one individual within each household.

Roughly half of the baseline analysis focused on household-level indicators and half on individual-level data. In planning for the second wave, a key question was whether to re-interview the same respondent as in Wave 1 or whether it would be sufficient to interview anyone else from the original household. It is much harder to find the same individuals than it is to find *anyone* from their household, three years on. We expected high attrition rates, partly as a result of labour migration and displacement (due to natural disasters and insecurity). However, to interview someone other than the original respondent would mean we would not have a panel dataset for the important individual-level characteristics (e.g. satisfaction with services, perceptions of government). Even the reliability of household-level indicators could be jeopardised by interviewing a different respondent, since responses to household-level questions – for example about food security or asset ownership – are rarely objective (Bardasi et al., 2010; Coates et al., 2010; Demombynes, 2013). After extensive deliberation and consultation, we concluded that our research questions would be best answered by tracking the same respondent within households. We could then be more certain that any changes over time are 'true' changes rather than the result of changing to a respondent with a different perspective.

3.1.2 Changes to the survey instrument

The SLRC panel survey instrument was designed to generate data on a wide range of topics including livelihoods, access to and experience of basic services, civic engagement and perceptions of government. Details on the construction of the survey instrument and the choice of questions can be found in the baseline synthesis paper (Mallett et al., 2015), while justification for questions specific to the Pakistan survey instrument can be found in the Pakistan baseline report (Shahbaz et al., 2014).

Conducting a panel survey implies asking the same questions so that changes can be measured over time. In each of the SLRC panel survey countries, some adaptations were made to the survey instrument between waves. These were of two types: (1) the addition of questions to capture changes in context or circumstances; and (2) the removal of redundant questions.

Table 2 shows an example of a type 1 question added to the Pakistan survey instrument. The purpose of this particular addition was to help us identify which changes in access to health services are due to a switch in health centre as opposed to a road improvement or some other explanation. However, such changes and additions were quite exceptional: more than 90% of the original survey instrument remained unchanged.

Table 2: Example of question added to survey instrument

I.2	Is this the same health centre or clinic that you were using three years ago? *No =0* *Yes =1 (go to I.4)*
I.3	Why did you switch to this health centre? *Previous one no longer exists =1* *This one is closer =2* *This one is cheaper =3* *This one has better service quality =4* *Other (specify) =5*

Finally, we should note that in the second wave instrument, modules and questions were sequenced in the same order. We felt this was important because ordering can affect the way in which people report against particular questions (van de Walle and van Ryzin, 2011). Maintaining the original sequencing was another way of ensuring that the research design itself – or rather changes to the design – did not influence people's responses to the survey.

3.1.3 Timing of survey

The baseline survey was conducted in September and October 2012. Fieldwork for the second wave took place earlier in 2015, beginning on 8 August, and was mostly completed by mid-September. The tracking of missing respondents continued at irregular intervals until December 2012. The two surveys were conducted at different times of the year to work around religious holidays. An earthquake in north-western Pakistan also delayed the tracking process. Box 4 describes the differences and the implications of moving the timing of fieldwork.

Box 4: Religious holidays and the timing of the survey

In 2012, Eid al-Fitr, which marks the end of Ramadan, fell on 18 August and Eid al-Adha on 26 October. Fieldwork on the survey commenced on 10 September and finished on 22 October, fitting between the two festivals.

In 2015, Eid al-Fitr fell on 17 July and Eid al-Adha on 24 September. Fieldwork commenced on 8 August and although most of it had been completed by 10 September, the last interview was conducted on 11 December.

One cause for concern in the second wave is that the indicators for food insecurity – the CSI and the FCS – have a 30-day recall period. This means that in Wave 2, those interviewed in the first 10 days of fieldwork would have been asked to recall food consumption during a period that included Ramadan and Eid al-Fitr (this applied to 56% of the Wave 2 sample). Since these religious observances involve patterns of eating that differ from normal, our consumption-related indicators are likely to be affected. For this reason, the regressions on the CSI and FCS control for whether the respondent was interviewed during the weeks when Eid al-Fitr was within the recall period.

3.2 Data collection

In 2012, a team of 20 enumerators (12 male and 8 female) were employed to carry out the interviews. In 2015, the same number of enumerators were used but 5 trackers were added, to trace the respondents interviewed earlier in 2012. Preparation for the data collection consisted of a 5-day training to familiarise enumerators with the objectives of the survey and the content of the survey instrument, and to give them interview practice.

One of the main challenges we faced with second wave data collection was the likelihood of attrition – the loss of at least some of our original sample population. Attrition poses a threat to the internal validity of a panel survey, so there is a need to keep it as low as possible. To this end, we used information collected in the baseline survey to track down respondents. This included their address, phone number and the household roster (to describe the household to others living in the same community). Furthermore, to get a sense of how much attrition to expect, a pre-fieldwork test was conducted in Lal Qila (Lower Dir) and Charbagh (Swat) in March 2015. A small team of enumerators attempted to establish the whereabouts of all respondents in those sub-samples within a period of a few days. The pre-test found a high attrition rate (19%) and although there was little difference in overall attrition by survey site, female respondents proved much harder to find (female attrition was 27%). This was in part a result of the decision to send female trackers to locate female respondents; the presence of these female trackers without a male accompaniment provoked suspicion in some areas. Females trackers were found to be less effective for two main reasons: 1) cultural constraints made it difficult for them to move around freely, and 2) it was considered culturally inappropriate for female trackers to ask men about women in the community; they would only question women, who tend to have less knowledge of their communities.

The sample size in 2012 was inflated (by 20%) to allow for attrition so that, even with some respondents dropping out in the second wave of the survey, the sample in 2015 would retain statistical significance at the Union Council level. This meant that it would be necessary to find approximately 83% of the original respondents (this equates to an attrition rate of 17%). Given the expectation of high attrition established by the pre-test, local consultants were hired to locate respondents and to establish trust among locals prior to the enumerators arriving in the field. During the first 'phase' of fieldwork, enumerators tried to locate each respondent at least once. The reasons for not being able to find respondents included: incorrect data on the respondent recorded at baseline (for example, in 11 cases the respondent's gender was marked down incorrectly), suspicion and security threats (both general and directed at the field team), and the difficulty of locating male respondents during business hours.

Not all missing respondents could be intensively tracked due to resource constraints. Ideally, a random selection would have been tracked, to minimise the risk of bias from convenience sampling, but in practice there was no alternative but to track those located in the most accessible locations.

3.3 Sampling and weighting for non-response

The first round of the survey was conducted in Swat and Lower Dir districts between September and October 2012. These districts were selected because they were both engulfed by violent conflict[7] between 2007 and 2009 and immediately after the war, in 2010, they were severely affected by flooding. They were also subject to extensive rehabilitation efforts by international and national aid agencies. From each of the two districts, five union councils (UCs) were selected: three from Swat (Char Bagh, Baidara and Bar Abakhel) and two from Lower Dir (Haya Serai and Lal Qila), based on similar criteria. The baseline survey was representative at the UC level and the sample size was calculated using a 95% confidence level and a confidence interval of 5. The baseline sample was increased by 20% to account for possible attrition between 2012 and 2015, so that the sample size in 2015 remained statistically significant. Households were selected randomly and about 34% of the respondents were females.

At baseline there were 2,114 completed surveys (or responses). In the second wave, we were able to complete 1,762 surveys (4 additional respondents were found but did not consent to be interviewed). Overall attrition was 17% and non-random, partly because it had not been possible to randomise the tracking of respondents who had moved house between waves. As Table 3 illustrates, attrition levels differed between UCs (Charbagh exceeded the 18% attrition limit).

Table 3: Attrition by Union Council

District	Union Council	Wave 1	Wave 2	Attrition (%)
Lower Dir	Haya Serai	421	348	17
	Lal Qila	423	357	16
Swat	Charbagh	414	334	19
	Baidara	433	374	14
	Bar Abakhel	423	349	17
Total		2,114	1,762	17

Tests were run to determine whether any observed characteristics from Wave 1 could predict attrition in Wave 2. Males were more likely to drop out of the sample, with an attrition rate of 19% compared to 14% for females. The oldest and youngest were more likely to drop out, as were respondents who were unmarried at baseline, who had received remittances, or who had been engaged in casual labour or ran their own business. There was also a subgroup of women listing no paid activity at baseline who were more likely to drop out, although the reasons for this are not clear. Respondents primarily engaged in farming and those from larger households were the most likely to be found.

To minimise attrition bias, non-response weighting adjustments are used in the Wave 2 analysis. In any given dataset there is a design weight given to all units (in this case respondents) at baseline. In our case, the design weight is equal to 1 for all respondents at baseline. This is because at the village level all respondents had, in theory, an equal selection probability. Although our data can be aggregated at higher levels (e.g. the regional level) we do not claim that conclusions made above the village level are representative. In finding that attrition from our sample at follow-up is non-random, it is necessary to adjust the design weight to restore the proportions of the original sample (Kish 1990, Brick and Kalton 1996).

[7] The occupation of Swat by the Taliban and then war between the Pakistani army and Taliban militants.

Using Wave 1 data, a probit regression was run with the outcome variable 'response in Wave 2' (respondent in Wave 2=1, non-respondent in Wave 2=0). This included a list of covariates that proved at least partly to explain non-response in Wave 2 (see list above). This technique, known as response propensity weight adjustment, replaces the unknown probability of response with an estimate, which is a function of observed or known characteristics about the respondent (Kalton and Flores-Cervantes, 2003; Särndal and Lundström, 2006; Brick, 2013). The results of this regression are shown in Table 1 in Annex. Following the probit regression, the probability of response is calculated for each individual. Then the inverse of the probability is taken, which becomes non-response adjustment. The final weight for each wave is calculated by multiplying the design weight and the non-response adjustment. Non-respondents in Wave 2 end up with a weight of 0 and all those remaining in the sample have a weight greater than 1. Put differently, this means that those remaining in the sample take on greater emphasis, the more similar they are to those who have dropped out.

3.4 Analytical methods

When it comes to analysing the data, the complexity of the dataset poses serious challenges. There are now up to two observations for each respondent, and it is likely that their responses to some questions will be correlated over time. Even if we control for everything that we can observe about that individual there are still likely to be unmeasured factors which have an influence on an individual's outcomes over time. To put it in different terms, whether or not a respondent believes that the government cares about their opinion, is based on their personal beliefs, opinions, preferences, expectations, lived experience, personality and mood. Some of these we can attempt to capture – for example, we can control for the fact that people displaced by conflict are likely to have had a different experience to those who remained – but most of these factors remain unobserved. In the context of panel data, there is a danger that these will be correlated over time. Some people will always be more negative than others, for example, and the models used in cross-sectional analysis may not account for this.

When it comes to modelling such a relationship, there are ways of addressing this bias. One approach is to assume that these individual differences are 'randomly' distributed across individuals and uncorrelated with everything else in the model. This is known as the Random Effects (RE) model. An alternative model, the Fixed Effects (FE) model rejects this assumption and assumes that there is a correlation between the individual-level effects and the regressors.

Ultimately, the FE model was chosen since it is highly doubtful that in our case the assumptions implied in the RE model could be met. The FE model still leaves us with the problem of how to estimate the effect of time-invariant factors such as gender or displacement in a conflict prior to baseline (these are some of our most important variables of interest). In the end, it was decided that the RE model would be run alongside the FE model but used only to estimate the effect of time-invariant variables. A full description of the analytical method and models used is found in the Appendix.

Sensitivity checks were run after the main analysis which consisted of two steps: (1) testing the robustness of the results using a different model (this applied only for binary outcome variables), and (2) re-running the regressions with standard errors clustered at the village level.

3.4.1 Outline of the analysis

In addition to the regressions, extensive descriptive statistics were produced and drawn on in the analysis, which show, for all variables of interest, the cross-sectional mean or distribution in both waves and the number of 'switchers and stayers' between waves. This terminology (ours) refers to the differentiation between respondents who gave the same answer to a given question between waves and those who 'switched' their answer. Switching is often further disaggregated into an 'upward' or 'downward' switch, or a similar switch. The outcome variables of interest are broadly the same as in the baseline analysis (Shahbaz et al., 2014) and are shown below.

Table 4: Summary of outcome variables

Topic	Outcome variable	Explanation/ exact indicator
Livelihoods and wellbeing	Coping Strategies Index (CSI) (and Food Consumption Score (FCS))	Indexes capturing 1) the level of household food insecurity and 2) the quantity and quality of food (see Maxwell and Caldwell 2008 and Vaitla et al., 2015).
	Morris Index (MSI)	An index measuring household asset wealth (see Morris et al. 1999).
Access to basic services	Access to health centre	Journey time (in minutes) to reach the health centre that the respondent typically uses.
	Access to school (boys/ girls)	Journey time to reach the primary school that children attend.
	Access to principal water source	Time (in minutes) taken for a return journey to the household's main source of drinking water.
	Access to social protection	Has anyone in the household received a social protection transfer in the past year?
	Access to livelihood assistance	Has anyone in the household received a livelihood assistance transfer in the past year?
Experience of basic services	Satisfaction with health centre	Overall satisfaction with the health centre.
	Satisfaction with school (boys/ girls)	Overall satisfaction with the school. (Only possible to run regression for boys' schooling)
	Perception of water quality	Is your drinking water clean and safe? (yes/ no)
	Impact of livelihood assistance	Did the assistance increase your agricultural/ other livelihood productivity?
Perceptions of government	Perception of local government actors	1. Do you agree with the statement: The local government is concerned about my opinion? (yes/ no) 2. To what extent do you feel that the decisions of those in power at the local government reflect your own priorities? ('Never' to 'Completely')
	Perception of central government actors	1. Do you agree with the statement: The central government is concerned about my opinion? (yes/ no) 2. To what extent do you feel that the decisions of those in power at the central government reflect your own priorities? ('Never' to 'Completely')

4 The changing context in Pakistan

In the period covered by our survey, Swat and Lower Dir districts in Khyber Pakhtunkhwa (KP) Province were severely affected by militancy and natural disasters. Tehrik-e-Taliban Pakistan gradually started to infiltrate the region during the early 2000s and by 2007 they controlled most parts of Swat district, enforcing their version of Sharia law. They also started to advance towards adjoining districts (particularly Lower Dir). In 2008, the Government of Pakistan started a large-scale military operation after evacuating most of the civil population from the district. More than 2 million people were internally displaced during the operation (Nyborg et al., 2013). After a fierce war, the Pakistani army was able to recapture the occupied areas and most of the militants were either killed or escaped to Afghanistan. Immediately after the operation, the internally displaced people (IDPs) began to return to their homes, but while they were returning devastating floods (July 2010) inundated the province, added to their miseries. Swat was particularly badly affected. War and floods destroyed most of the infrastructure in Swat and Lower Dir districts and created one of the worst humanitarian crises in Pakistan's history. Most of the livelihood sources – such as causal labour, small businesses, farming, and fruit and vegetable markets – were severely affected (Suleri et al., 2016).

The response of international and national aid agencies was immediate and there was huge influx of aid interventions in the form of short-term relief efforts and long-term rehabilitation interventions after the war (Shah and Shahbaz, 2015). The Government of KP carried out a disaster needs assessment in the conflict/disaster affected areas through the Provincial Disaster Management Authority (PDMA) and the Provincial Reconstruction, Rehabilitation and Settlement Authority (PaRRSA), in collaboration with the World Bank and the Asian Development Bank. A large number of bilateral, multilateral and humanitarian agencies provided assistance to relief and rehabilitation efforts.[8] Most of these agencies implemented their interventions through NGOs and government departments such as PaRRSA and PDMA (for details see Shah and Shahbaz, 2015; Shahbaz et al., 2012)

Cash and food/non-food items were distributed during the relief operation, while the focus of long-term rehabilitation efforts was on the reconstruction of public infrastructure, and the distribution of farming tools, seeds/fertilisers and livestock/poultry, along with capacity-building training (ibid). Though there were many challenges and shortcomings in relief and rehabilitation efforts, life gradually began to return to normalcy. Markets have recovered (Suleri et al., 2016), institutions (in particular, local governments) have started to function (Shahbaz et al, forthcoming) and people have gradually re-started their livelihood activities.

In this context, this section looks at the data we have on measures of local safety and security, to see how these larger contextual changes have affected life at the local level. We look firstly at people's actual experiences of conflict and shocks, and secondly at people's more subjective perceptions of safety in their local area.

[8] Some of the notable organizations were, UNICEF, UNHCR, WFP, Save the Children, the Norwegian Agency for Development Cooperation (Norad), the Australian Agency for International Development (AusAID), USAID, the UK Department for International Development (DFID), CARE International, the Canadian International Development Agency (CIDA), Swiss Agency for Development and Cooperation (SDC), Qatar Charity, CARE International, Plan Pakistan, WHO, Oxfam, Mercy Corps and Islamic Relief.

4.1 Conflict

The respondents were asked whether there had been any fighting between law enforcement agencies (army/police) and Taliban militants in the area in the last three years (Table 5). Significant differences are evident between the two waves; in Wave 1 almost every one reported fighting in the area (the Pakistani army waged a full-scale war against the Taliban during 2009, which was followed by sporadic fighting). However, after 2012, there were very few incidents involving fighting and the army controlled most of the area.

Table 5: Experience of conflict in the past three years

Has there been fighting in this area in the last 3 years?	Wave 1		Wave 2	
	Freq	%	Freq	%
No	16	0.8	1985	95.9
Yes	2098	99.2	84	4.1
Total	2114	100	2103	100

Note: The difference in the reporting of fighting between waves is statistically significant at 1%.

A comparison between the two districts is given in Table 6 below, which indicates that almost all of the households in both districts reported conflict in Wave 1, but in Wave 2 the number of respondents who reported fighting in Swat was almost negligible (1.2%); the number in Lower Dir was slightly higher (8.8%).

Table 6: Experience of conflict in the past three years (comparison between districts)

District	Wave 1		Wave 2		Size of change
	Freq	%	Freq	%	
Lower Dir	834	98.8	70	8.80	-90.0
Swat	1264	99.5	15	1.20	-98.3

4.2 Shocks

Table 7 (below) presents the shocks experienced by households (during the last 3 years). Notably, there is a significant increase in households in Wave 2 who experienced a sudden health problem or accident, or long-term health problem. One of the possible reasons for this was the outbreak of dengue fever in KP, and in Swat and Lower Dir in particular, during 2013 and 2014 (Khan and Khan, 2015).

Table 7: Households who experienced different types of shocks (during the past three years)

Shock	District	Wave 1		Wave 2		Size of change
		Freq	%	Freq	%	
Sudden health problem or accident	Lower Dir	150	17.8	463	56.2	38.4
	Swat	151	11.9	381	30.0	18.1
Long term health problem	Lower Dir	142	16.8	364	44.2	27.4
	Swat	175	13.8	356	28.0	14.2
Inflation and price hikes	Lower Dir	718	85.1	286	34.7	-50.4
	Swat	616	48.5	47	3.7	-44.8
Loss of work of a household member	Lower Dir	7	0.8	28	3.4	2.6
	Swat	76	6.0	25	2.0	-4.0
Loss of land/ assets	Lower Dir	23	2.7	22	2.7	0.0
	Swat	142	11.2	12	0.9	-10.3
Failure or loss of family business	Lower Dir	15	1.8	52	6.3	4.5
	Swat	50	3.9	28	2.2	-1.7
Low market prices for livestock/ crops	Lower Dir	2	0.2	12	1.5	1.3
	Swat	39	3.1	23	1.8	-1.3
Poor market access	Lower Dir	1	0.1	6	0.8	0.7
	Swat	75	5.9	11	0.8	-5.1
Loss of crop(s) / livestock	Lower Dir	309	36.6	227	27.6	-9.0
	Swat	392	30.9	90	7.1	-23.8
Loss of Housing	Lower Dir	118	14.0	33	4.0	-10.0
	Swat	510	40.2	35	2.8	-37.4
Soil problem/ losing fertility	Lower Dir	275	32.6	29	3.5	-29.1
	Swat	40	3.1	8	0.6	-2.5
Other (specify)	Lower Dir	6	0.7	2	0.3	-0.4
	Swat	48	3.8	7	0.6	-3.2

It is evident that price hikes and inflation decreased considerably in Wave 2, mostly likely as a result of the drop in the price of petrol during 2014 and 2015. There is also a significant reduction in the number of respondents who reported poor market access (in Swat). This finding complements a qualitative study conducted by Suleri et al. (2016) of post-conflict changes in fruit and vegetable markets in Swat: "…the recovery has been fairly rapid, with farmers able to re-establish production and traders, commission agents and transporters able to re-establish marketing networks. The role of external assistance (aid agencies or government) seems to have been helpful, in the sense that livelihood interventions in the form of the provision of seeds, fertilisers and trainings have brought direct and indirect impacts." (ibid: 25)

There has also been a considerable reduction in the number of households reporting a loss of crops and livestock between Wave 1 and Wave 2. Likewise, fewer households reported a loss of land in Wave 2. These results indicate an overall reduction in agriculture related shocks. During 2009 and 2010, the majority of respondents had to leave their villages and were internally displaced due to fierce fighting between the army and the Taliban. Their houses were destroyed and they had to abandon their standing crops and sell livestock at nominal prices (Shahbaz et al., 2012). For this reason, more than one third of respondents in Wave 1 reported agriculture and housing related shocks; this figure reduced significantly in Wave 2, following the end of the conflict.

Relatively fewer households in Wave 2 reported soil problems/loss of soil fertility. Post-conflict interventions by international donor agencies in Swat and Lower Dir involved the distribution of farming inputs (fertilisers and seeds) and the provision farm-related training (Shah and Shahbaz, 2015), and such interventions have helped in the recovery of farming enterprises (Suleri et al. 2016).

Table 8 shows significant reductions in the average number of shocks observed by sampled households between both waves. The floods of 2010, fighting between the Taliban and the army and the

consequent loss of housing, crops and livestock are some of the factors contributing to the shocks reported in Wave 1. While some of these shocks are environmental and the risk remains the same over time (e.g. flooding, drought), those which are man-made (e.g. economic shocks) have declined over time as the region has stabilised.

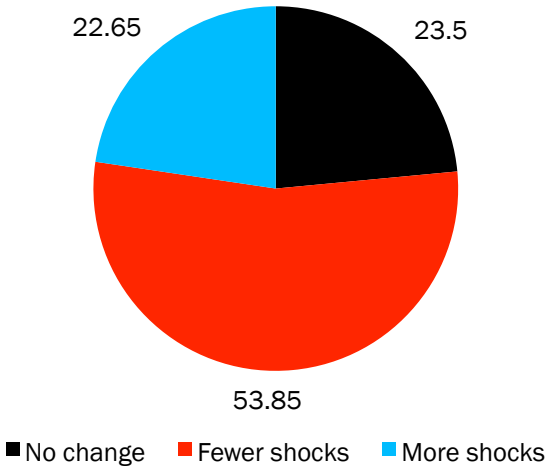
Table 8: Change in number of shocks

Survey wave	Average number of shocks
Wave 1	2.05
Wave 2	1.36

Note: The difference in number of shocks over time is statistically significant.

Changes in the number of shocks were different across households: some households experienced fewer shocks in Wave 2, some households experienced more, while for others there was no change. The detail is given in Figure 1 below.

Figure 1: Change in the number of shocks between each wave



4.3 Crime levels

Crimes levels have also changed in the post-conflict context. Table 9 below presents the data on households that experienced crime in Wave 1 and Wave 2.

Table 9: Frequency and percentage of households that experienced crime

Any crimes experienced	Wave 1		Wave 2	
	Freq	%	Freq	%
No	1733	82	1959	93
Yes	381	18	147	7
Total	2114	100	2106	100

A large proportion of respondents (93% in Wave 2 and 82% in Wave 1) reported that they did not experience any crime. Moreover, the number of households that experienced crime decreased from 18% to 7%, indicating a reduction in crime levels in our study areas.

Households that experienced crime were asked to indicate the nature of the crime; the data are presented in Table 10 (below). We can clearly see the changes in the experience of different types of crime.

Table 10: Changes in types of crime in each wave

Experience of crimes by wave	Wave 1		Wave 2	
Crime	Freq	%	Freq	%
Theft	198	9.4	65	3.1
Verbal threats	179	8.5	42	2.0
House breaking (burglary)	97	4.6	7	0.3
Torture	21	1.0	8	0.4
Cattle rustling	18	0.9	12	0.6
Murder	14	0.7	2	0.1
Robbery	8	0.4	3	0.1
Abduction	6	0.3	1	0.0
Child abuse	2	0.1	0	0.0
Land grabbing / dispossession	2	0.1	38	1.8
Physical attack/ assault	2	0.1	4	0.2
Revenge killing	0	0.0	2	0.1
Sexual assault	1	0.0	4	0.2

Note: The difference between waves is statistically significant for theft, verbal threats, burglary, torture, murder and land grabbing/ dispossession.

There was a significant reduction in theft – a relatively small proportion of households (3.1%) experienced theft in Wave 2 compared to Wave 1 (9.4%). Similarly, the percentage of sampled households who experienced verbal threats decreased from 8.5% to 2%. There was also a substantial reduction in the percentage of households who reported burglary (down from 4.6% in Wave 1 to 0.3% in Wave 2). However, there was a considerable increase in land grabbing.

Table 11: Percentage of respondents reporting any crime, by UC

UC (District)	Crime rate		
	Wave 1	Wave 2	Difference
Bar Abakhel (Swat)	36.6	2.8	-33.8
Charbagh (Swat)	26.3	3.0	-23.3
Baidara (Swat)	21.5	8.0	-13.5
Haya Serai (Lower Dir)	3.6	9.2	5.6
Lal Qila (Lower Dir)	2.1	10.9	8.8

Note: The crime rate is calculated as the number of crimes reported by respondents in our sample, out of every 100 households

Table 11 presents the percentage of households reporting crimes in different UCs. It shows that UCs in Swat had a considerably higher crime rate in Wave 1 but that the number of reported crimes decreased substantially in Wave 2, while the crime rate in UCs in Lower Dir increased.

Table 12: Change in crime rate, by district[9]

District	Crime rate	
	Wave 1	Wave 2
Lower Dir	2.8	10.1
Swat	28.1	4.7

At the district level, the crime rate in Wave 1 was substantially higher in Swat than in Lower Dir, but in Wave 2 the crime rate in Lower Dir increased, surpassing the crime rate in Swat. The high crime rate in Swat district in Wave 1 might be explained by incidents of looting and theft during the war between the army and the Taliban and then the floods in 2010. Following the end of the war the army set up

[9] The crime rate is the number of crimes reported for every 100 households. This does *not* mean that in wave 1 approximately three out of 100 households experienced crime in Lower Dir because the crimes could all have been reported by one household.

checkpoints along most of the roads, which could account for the reduction in reported crime. Most of the crimes in Swat related to verbal threats and theft (Table 13 below), and might be as a result of the transition between war and peace. The crime rate differs for each wave and between districts. Severe crimes such as revenge killing, sexual assault and robbery were less common than petty crimes. The detail of each crime is given in the table below.

Table 13: Types of crime experienced by sample households (by district and panel wave)

Reporting of crime	Lower Dir		Swat	
Crime	**Wave 1 %**	**Wave 2 %**	**Wave 1 %**	**Wave 2 %**
Theft	1.3	3.4	14.7	2.9
Verbal threats	0.9	3.8	13.5	0.8
Cattle rustling	0.5	0.8	1.1	0.4
Murder	0.2	0.3	0.9	0.0
Torture	0.2	1.0	1.5	0.0
Burglary	0.1	0.7	7.6	0.1
Abduction	0.1	0.0	0.4	0.1
Child abuse	0.1	0.0	0.1	0.0
Land grabbing / dispossession	0.1	3.3	0.1	0.8
Sexual assault	0.0	0.3	0.1	0.1
Physical attack/ assault	0.0	0.5	0.2	0.0
Torture	0.2	1.0	1.5	0.0

Generally, low levels of crime were reported in both waves. Only 1.3% of households in Lower Dir reported thefts in Wave 1, increasing slightly to 2.1% in Wave 2. In Swat, a large percentage of households reported thefts (14.7%) in Wave 1 but this decreased dramatically (to 2.9%) in Wave 2. The incidence of verbal threats reported in Lower Dir increased from 0.9% to 3.8%; however, the reverse trend was observed in Swat, where there was a decrease from 13.5% to 0.8%.

4.4 Perceptions of safety

Respondents were also asked how safe they felt in their village or neighbourhood. Table 14 shows a significant reduction in perceptions of safety, accounted for, primarily, by a movement from the 'very safe' category to 'quite safe'. This is an interesting result which at first might appear counter-intuitive. One of the reasons might be that in 2012 the war had just finished and there was a strong army presence and security check points throughout the region. Residents therefore felt safer in their village.[10] However, in 2015, most of the check points were removed (except on the major roads) and the army returned to the cantonment; thus, people perceived themselves to be less safe. Table 14 also shows that 8.3% of respondents felt rather unsafe in Wave 2 as compared to 1.3% in Wave 1. After the military operation, the police gradually took control of law and order. Our results therefore imply that people have comparatively more trust in the army than in the police.

Table 14: Perceptions of safety within the village (by wave)

	Wave 1		Wave 2	
How safe do you feel in your neighbourhood?	**Freq**	**%**	**Freq**	**%**
Very safe	1794	84.9	1143	54.3
Quite safe	283	13.4	776	36.9
Rather unsafe	28	1.3	174	8.3
Not at all safe	9	0.4	10	0.5
Total	2114	100	2104	100

Note: The difference in safety by panel wave is statistically significant at 1%.

[10] http://blogs.tribune.com.pk/story/17653/horrors-of-2007-in-swat-we-need-the-army/

District-level data on village safety, shown in Table 15 below, show significantly more 'negative switchers' in Lower Dir than in Swat, which means that more respondents felt that they or their household members did not feel safe while moving within the village.

Table 15: Change in perceptions of safety in the village (by district)

		District	
	All (%)	Lower Dir (%)	Swat (%)
No change	51.9	46.9	53.8
More safe	9.1	10.7	8.1
Less safe	39.8	**42.4**	**38.2**
Total	100	100	100

Note: The difference between districts is statistically significant at 5%.

The data on 'feeling safe while moving to other places (outside the village)', shown in Table 16, reveals a significant reduction in households who perceive this to be 'very safe' (from 71.6% in Wave 1 to 35.9% in Wave 2).

Table 16: Perceptions of safety outside the village (by wave)

	Wave 1		Wave 2	
How safe do you feel moving to other places?	**Freq**	**%**	**Freq**	**%**
Very safe	1495	71.6	747	35.9
Quite safe	230	11	1070	51.5
Quite dangerous	226	10.8	241	11.6
Not safe	137	6.6	22	1.1
Total	2088	100	2079	100

Note: The difference between waves is statistically significant at 1%.

The data on changes in perception of safety outside the village (Table 17) indicate that the largest share (47.2%) feel less safe in Wave 2, while there is no change in perception for 31.7% of households and 21.1% of households feel safer outside the village. The reason might be that the army had a strong presence during Wave 1 in most of the areas and after 2012 it started to either reduce the number of check points[11] or hand over to local police.[12] Though there were no major outbreaks of fighting reported after 2012, Taliban militants killed a number of influential people including members of peace committees.[13,14] Such incidents are likely to have contributed towards the change in perception from 'very safe' to 'less safe' by most of the respondents (see also Rehman, 2014).

Again, there were more switchers to 'less safe' in Lower Dir (Table 17). More than 62% of respondents in Lower Dir perceived it to be less safe outside the village in Wave 2. Similarly, 31.2% of respondents in Swat perceived it to be safer outside the village (as compared to only 6.3% in Lower Dir) between Wave 1 and Wave 2. This might be because of government peace-building efforts in Swat and the considerable role of the army.[15]

Table 17: Change in the perception of safety outside the village (by district)

[11] Change of guard: Security forces hand over 30 check posts to police. THE Express Tribune; December 20, 2014. http://tribune.com.pk/story/158036/improved-security-situation-in-swat-army-begins-reducing-checkposts/

[12] http://tribune.com.pk/story/809427/change-of-guard-security-forces-hand-over-30-check-posts-to-police/

[13] "In the last three years, a number of members of Village Defence Committees (VDCs) or peace committees — which are being organised at village-level in entire districts with the army's support — have been targeted by unknown militants." http://www.dawn.com/news/1133198

[14] Peace committee member gunned down in Swat; The Express Tribune October 2, 2015. http://tribune.com.pk/story/965898/peace-committee-member-gunned-down-in-swat-3/

[15] Dawn News (2015). Terrorists thrown out of Swat for good: army chief. Dawn Sep. 8, 2015. http://www.dawn.com/news/1205554

	District		
	All (%)	Lower Dir (%)	Swat (%)
No change	31.7	31.2	32.0
More safe	21.1	6.3	31.2
Less safe	47.2	62.5	36.9
Total	100	100	100

Note: The difference between waves is statistically significant at 1%.

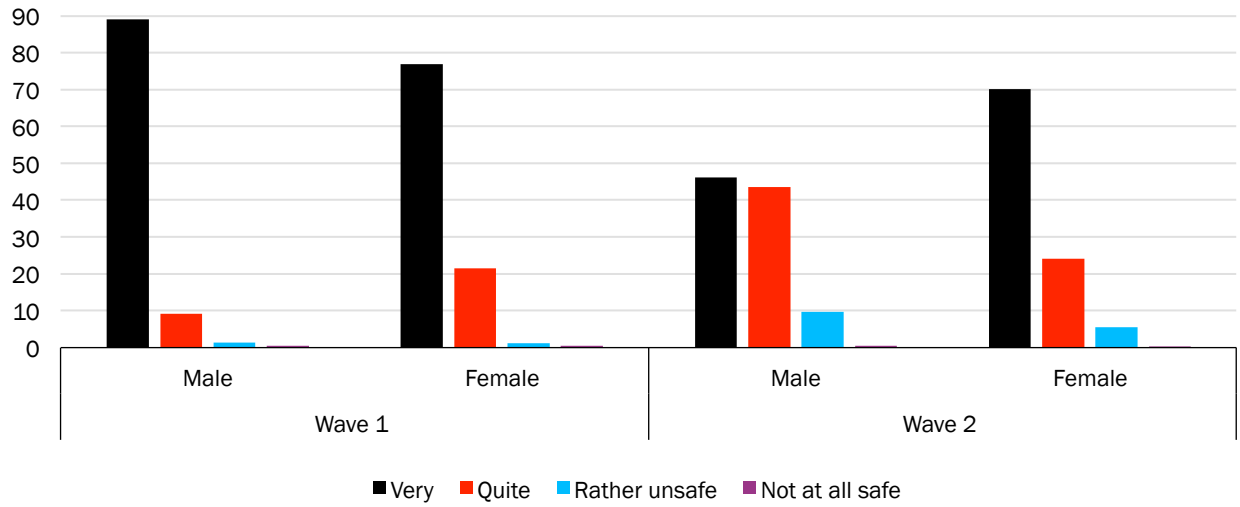
The geographical element may be important here. Clearly there is a difference in perceptions of safety between Swat and Lower Dir. This might be due to the permanent deployment of the army in Swat. Although many checkpoints have been handed over to local police, the army has built a cantonment and intends to stay.[16] Data from selected UCs (Table 18) also indicate that more households in Lower Dir perceive themselves as less safe (in Wave 2) compared to sampled households in Swat.

Table 18: Change in perceptions of safety outside the village (%), by UC

UC (District)	No change	More safe	Less safe	Total
Haya Serai (L. Dir)	30.7	9.3	60.0	100
Lal Qila (L. Dir)	31.7	3.4	64.9	100
Charbagh (Swat)	30.5	41.2	28.4	100
Baidara (Swat)	29.4	36.3	34.3	100
Bar Abakhel (Swat)	35.9	16.5	47.5	100
Total	31.7	21.1	47.2	100

There is also a difference in the perceptions of male and female respondents. Figure 2 and Figure 3 show gender disaggregated[17] data on perceptions of safety within and outside villages. It is interesting to note that significantly more female respondents in Wave 2 feel 'very safe' moving within their village. This is rather an odd finding, but in rural areas of KP, extended family members live in the same village and most of the residents in the villages are related to each other. This might be one of the reasons why female respondents feel safer while moving within the village.

Figure 2: How safe do you feel in neighbourhood/village? (male/female perceptions)

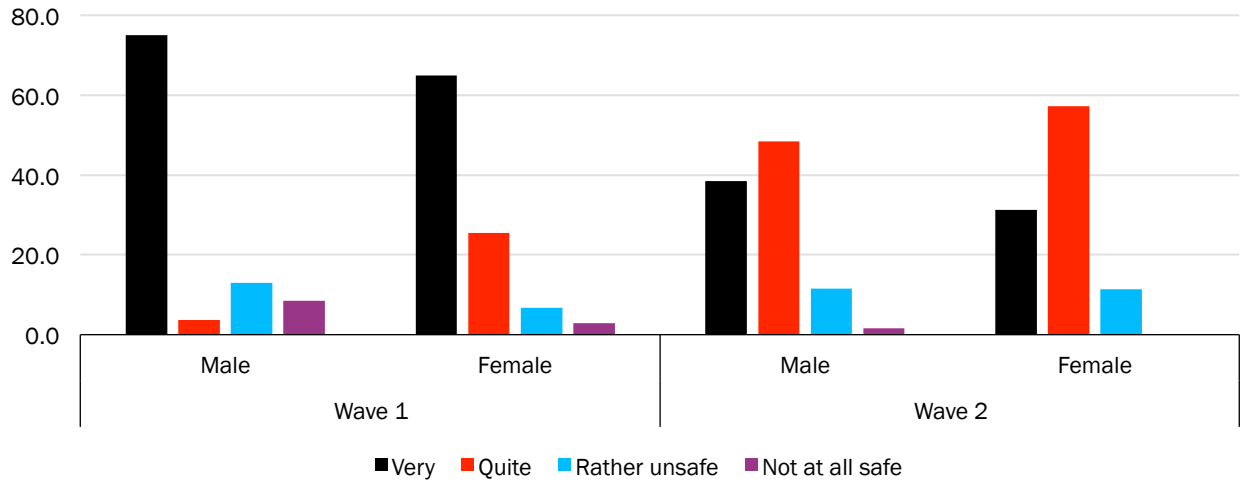


[16] http://www.dawn.com/news/1205832

[17] 34% of the respondents were female in both waves

The results for ‘feeling safe while moving outside of village’ (Figure 3) again show significant differences in the perceptions of male and female respondents. In this case, female respondents were less likely than men to feel ‘very’ safe outside the village and their perceptions also became more negative over time.

Figure 3: Perceptions of safety outside the village, by sex of respondent.



5 Changing livelihoods and wellbeing

This section presents the main findings for changes (between the two waves of data collection, 2012 and 2015) in the status of livelihoods and wellbeing for our sampled households. As discussed in section 2.3, we used different indicators to understand these changes: the Morris Score Index (MSI) for household wealth and the Coping Strategies Index (CS) and Food Consumption Score (FCS) for food insecurity, as well as information on livelihood activities, the role of migration and access to credit.

5.1 Livelihood activities

We define livelihood activities as the activities/strategies adopted by household members that contribute towards family income (cash and/or subsistence). Figure 4 shows that income from 'overseas labour' was the main source of household income for 26% and 22% of sampled households in Wave 1 and Wave 2, respectively. This change may be due to an increase in income opportunities in Wave 2 with the restoration of peace (see also Suleri et al., 2016). 'Farming on own land/livestock'[18] was the main income source for 14.4% of the sampled households in Wave 1, but only 10% of households in Wave 2. However, more households receive their main income from their 'own business' in Wave 2 (13%) than in Wave 1 (10%). Similarly, non-agricultural casual labour was the main income source for 13% of the households in Wave 1, but dropped to 9% in Wave 2. On the other hand, the number of households whose main income was from agricultural labour[19] increased slightly from 8% to 10%. About 8% of the sampled households in Wave 1 had no single main income source (i.e. they had more than one source of equal importance) but in Wave 2 this increased to 13%.

[18] 'Farming on own land' indicates that the landowner is cultivating the land himself.

[19] 'Agricultural labour' refers to people engaged as labourers on farms owned by someone else (landowner).

Figure 4: Main livelihood activities (in terms of contribution to income) in each wave

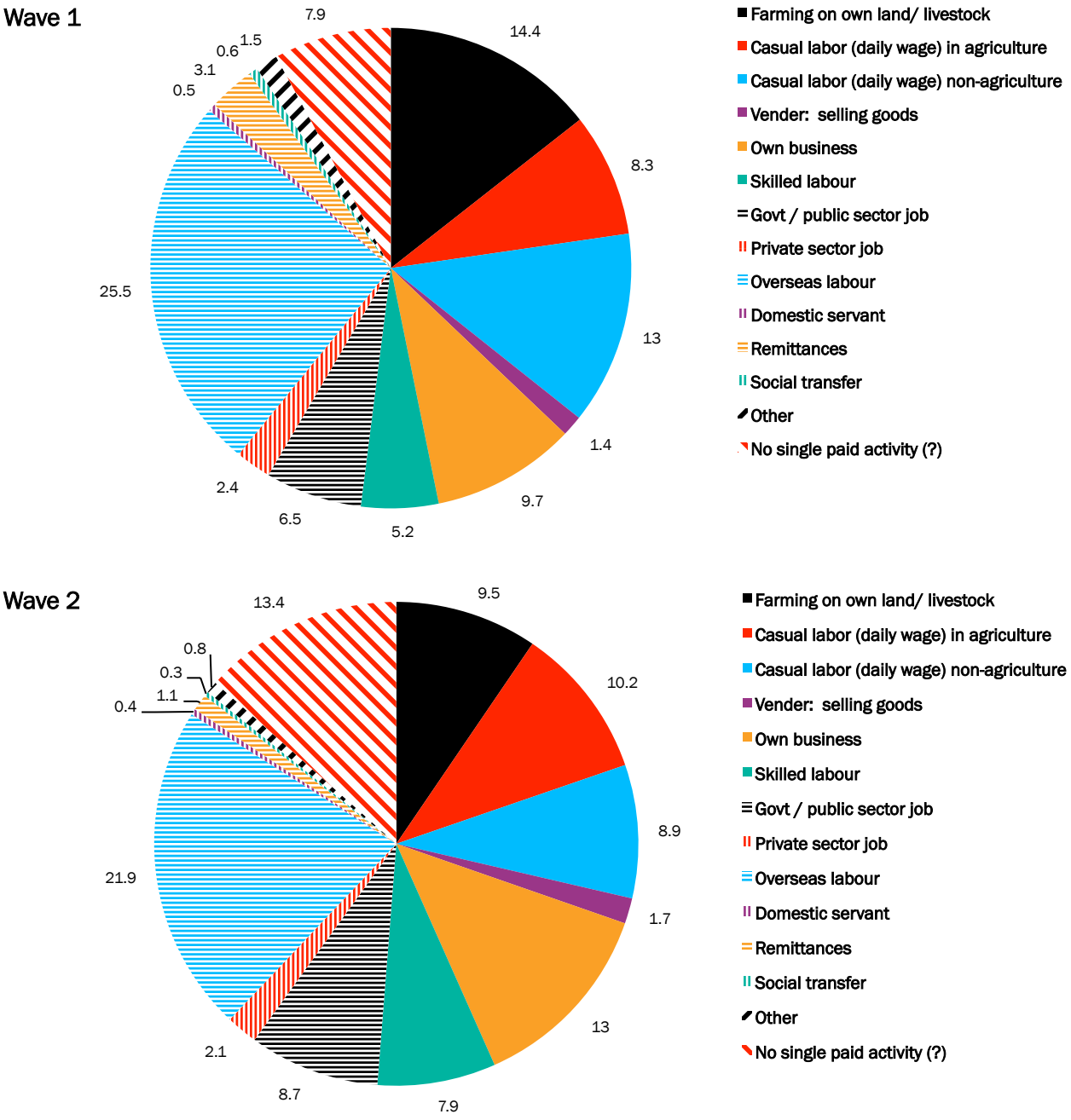


Table 19 shows the percentage of households that received 'any' income from different sources (as opposed to the 'main' source of income in Figure 4). If we compare Table 19 and Figure 4, it is interesting to note that comparatively fewer households reported 'farming on own land' and 'overseas labour' as their main livelihood activity. We can also see that the percentage of households engaged in farming their own land decreased from 47.2% to 45.8%, while the proportion of households earning income from agriculture based causal labour increased from 14.7% to 23.6%. Non-farm based labour decreased from 23.3% to 15%. The share of households receiving income from overseas labour went up slightly. The table also indicates that comparatively more households were earning income form skilled labour and government jobs, and there was an overall increase in non-farm based livelihoods in Wave 2.

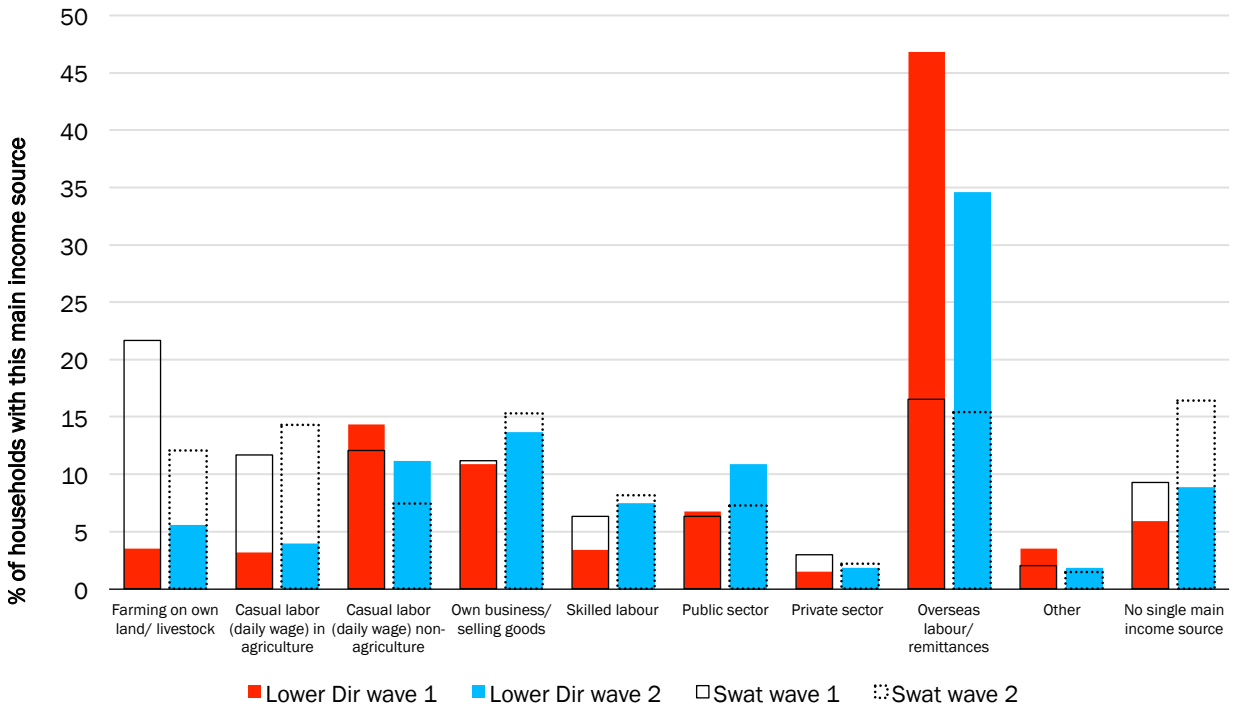
Table 19: Share of households receiving income from different sources

Household received any income from this source	Wave 1	Wave 1 %	Wave 2	Wave 2 %
Farming on own land / livestock	997	47.2	967	45.8
Casual labour (daily wage) in agriculture / farming / fruits picking & packing/forestry	311	14.7	500	23.6
Casual labour (daily wage) non-agriculture including construction, transport	492	23.3	318	15.1
Vender: selling goods	47	2.2	88	4.2
Own business / transport /shop/food outlet	394	18.6	484	22.9
Skilled labour	205	9.7	309	14.6
Government / public sector job	235	11.1	341	16.1
Private sector job (non-agriculture)	127	6.0	103	4.9
Overseas labour	690	32.6	708	33.5
Domestic servant (work in somebody else's house as paid servant, in cash or kind)	21	1.0	23	1.1
Remittances	116	5.5	94	4.4
Social protection transfer	433	20.5	116	5.5

Note: The difference between waves is statistically significant at 1% for all income sources.

A comparison of the sampled households in both districts (Swat and Lower Dir), shown in Figure 5, reveals that significantly more sampled households were dependent on overseas labour (foreign remittances) as the largest income source in Lower Dir (39% in Wave 1 and 32.5% in Wave 2) than in Swat (16% and 15%, respectively). Dependence on farming as the main source of income was comparatively high in Swat but reduced substantially in Wave 2. Similarly, dependence on casual labour (agriculture) in Swat is higher than in Lower Dir; it remained almost the same in both waves for Lower Dir but increased slightly in Swat. This reflects the greater opportunity for commercial agricultural activities in Swat than in Lower Dir. However, the percentage of sample households depending on non-agricultural causal labour decreased in both Lower Dir (from 14.3% to 11.2%) and Swat (from 12% to 7.5%). The trend indicates a decreasing reliance on non-farm based labour (similar to Figure 4). Dependence on 'own business' increased in both districts.

Figure 5: District-level livelihood activities (main source of household income)



Remittances from migration continued to be the main source of household income in both waves – more than one third of the sampled households received remittances (Table 20), though there was a slight reduction from 36% in Wave 1 to 35% in Wave 2.

Remittances have traditionally been a major contributor to the Khyber Pakhtunkhwa (KP) economy and more than a quarter (26%) of total Pakistani overseas migrants are from KP (Amjad and Arif, 2014). The main destinations for the majority of overseas migrants from KP are the Gulf States and the Middle East, where they work mainly in unskilled labour.[20] A report by the International Growth Centre and Planning and Development Department of KP revealed that Swat and Lower Dir districts have some of the country's highest levels of emigration – Lower Dir has the highest share of emigrants (as a proportion of the district population) and Swat is ranked the third highest (Government of KP, 2015).

Table 20: Households that received remittances in last 3 years

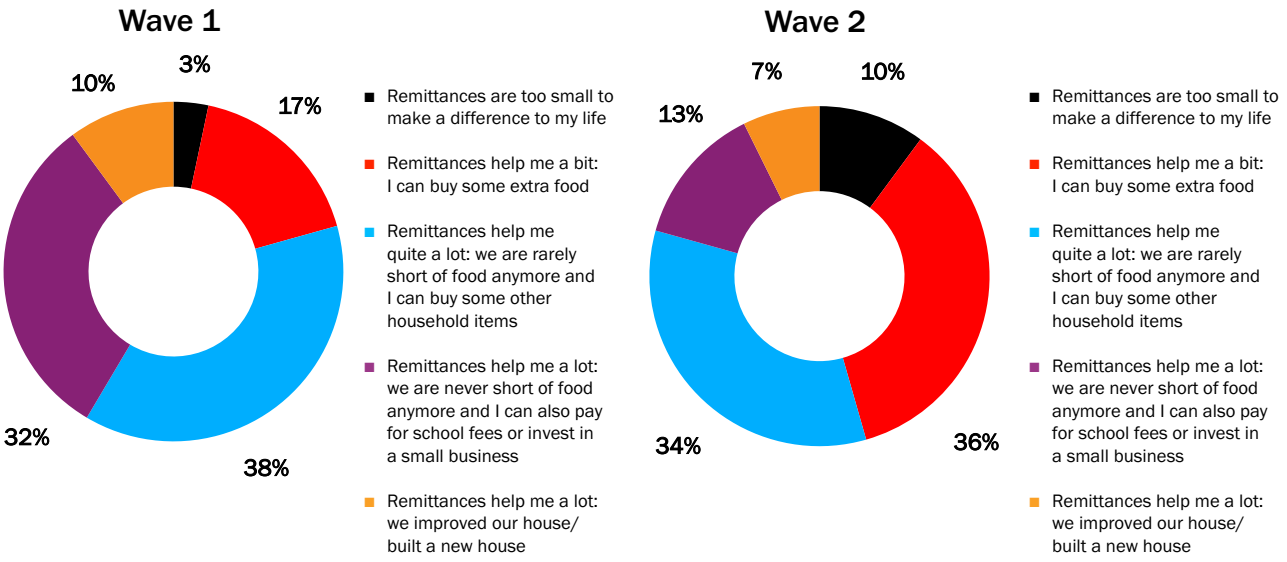
	Wave 1		Wave 2	
	Freq	%	Freq	%
No	1131	64.0	1379	65.4
Yes	635	36.0	728	34.6
Total	1766	100	2107	100

There is a growing recognition of the role of remittances in sustaining livelihoods in conflict and disaster affected areas. Amjad and Arif (2014) in their review paper, argued that foreign remittances have played a crucial role in helping households to cope in conflict situations by ensuring a regular supply of income and then in rebuilding assets destroyed during the war. Likewise, the Government of KP (2015) also recognises the importance of remittances in conflict-affected areas in ensuring food and income security for recipient households, and for rebuilding houses that were destroyed the war. Awan et al. (2013) evaluated the use of remittances by households in Peshawar district in KP through a survey of 400 households with an overseas worker. Their results show that migrant households are most likely to use remittances on food, followed by health, education and transport. They also studied the impact of remittances on different indicators of wellbeing such as productive investments, income, education of children, improvement in housing, sanitation and child nutrition. They found positive impacts on the wellbeing of recipient households in their sample.

To understand the changing role of remittances in our study area, recipient households were asked to describe how helpful remittances were for different aspects of household wellbeing. Figure 6 shows a reduction in the 'helpfulness' of remittances as far as livelihoods and wellbeing are concerned.

[20] http://khyberpakhtunkhwa.gov.pk/khyberpk/admin421/upload/downloads/Reclaming%20Prosperity%20in%20KP-EGS.pdf

Figure 6: Changes in the usefulness of remittances for household wellbeing



In Wave 1, 32% of remittance recipients reported that '*remittances helped me quite a lot in terms of food, school fees and small business*' but this decreased substantially to 13% in Wave 2. Simultaneously, the percentage of households reporting that '*remittances are too small to make a difference*' rose from 3% to 10%. These results clearly indicate a reduction in the helpfulness of remittances between Wave 1 and Wave 2.

It seems likely that during the early phase of post-conflict rehabilitation remittances contributed substantially to ensuring food security and paying household, education and health related expenses. However, as the situation began to normalise, we can clearly see the decreasing role of remittances, possibly as a result of increases in other sources of income. Our results are in line with those of Gioli et al. (2013), who conducted a qualitative and quantitative study of households with migrant members in conflict-affected areas of Dir and Swat in October 2012. They found that remittances played a key role in ensuring the survival of affected households during the conflict and that more than 70% of households (from a sample of 600) reported having avoided starvation due to remittances. In other words, remittances acted as safety net while almost all routine economic activity ceased during war between the Taliban and the Pakistani army. Evidence from other conflict-affected regions of Pakistan also shows that remittances foster post-conflict recovery and rehabilitation efforts (ibid.)

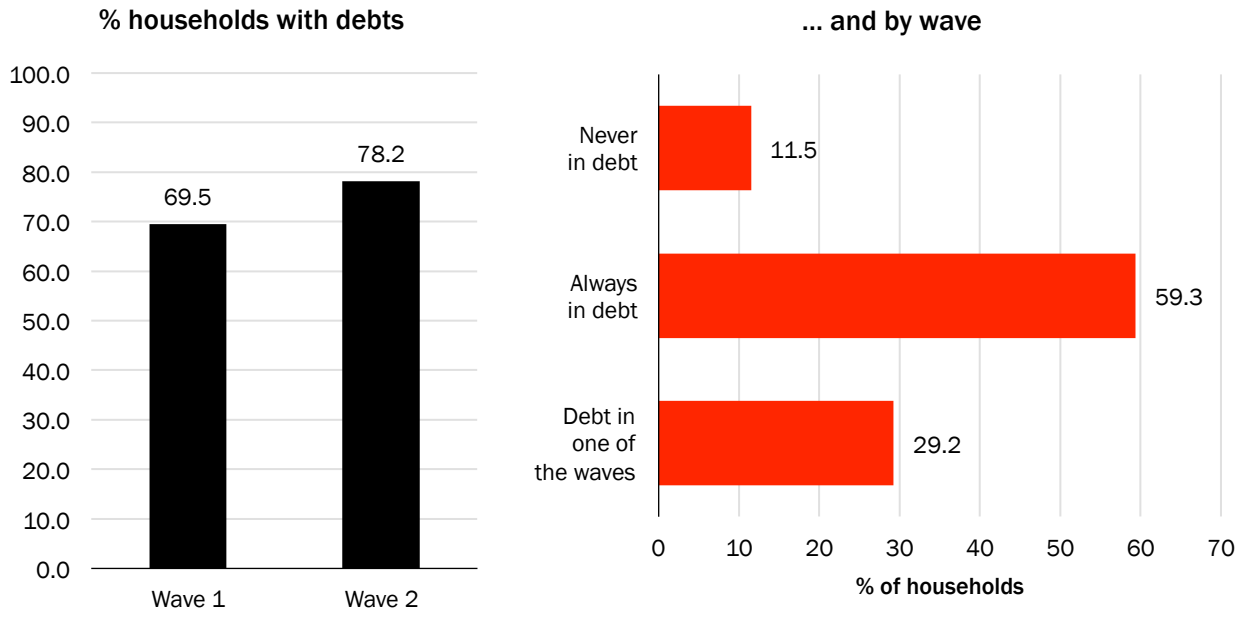
5.2 Access to credit

There is evidence to suggest that micro-credit loans play a crucial role in post-conflict recovery. For instance, Marino (2005)[21] reviewed the literature and synthesised lessons from nine conflict-affected countries in Asia and the Pacific, with an emphasis on microfinance experiments. His paper reveals that microfinance contributes substantially to conflict resolution, for example, by empowering members to establish their own (microfinance) organisation. It also brings people together, focusing on cooperation rather than differences. Informal credit (from relatives, friends, shopkeepers, etc.) is particularly important in Pakistan's rural livelihood system (Irfan et al., 1999; Wahid and Rehman, 2014). Our survey revealed that the proportion of households that owe money increased from 70% in Wave 1 to 78% in Wave 2 (Figure 7). It shows that the overwhelming majority of respondents' households have

[21] http://www.gdrc.org/icm/country/fdc-afgan.pdf

taken a loan at some point (mostly in the form of a cash loan or household items bought from shopkeepers on credit). Figure 7 also indicates that the majority of households were continuously in debt (in both waves of the survey).

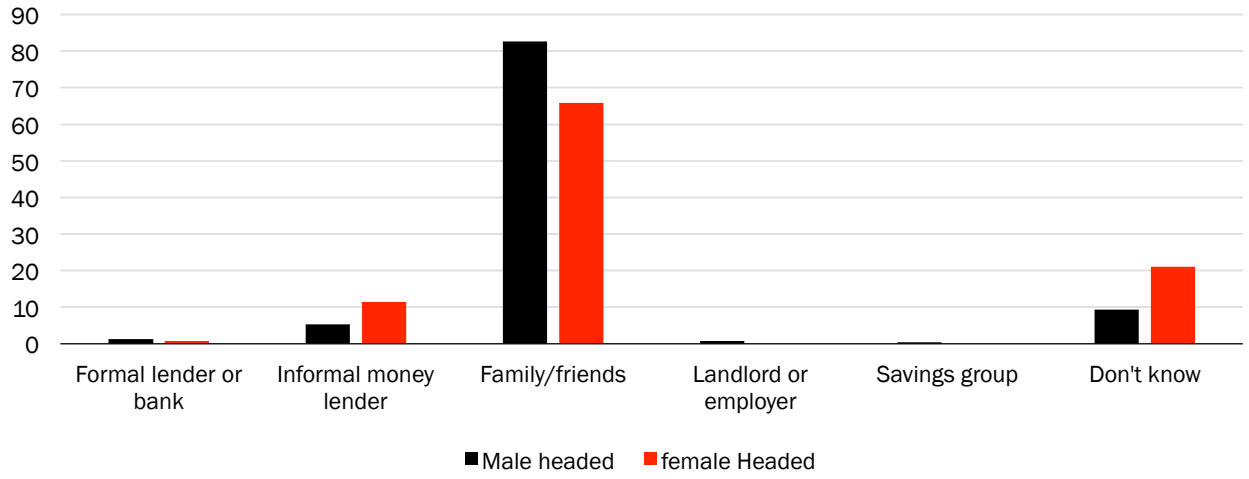
Figure 7: Changes in the percentage of households with debts



Our data show that the majority of indebted households have taken loans from family/friends (77% in Wave 1 and 75% in Wave 2) and informal lenders (23% in Wave 1 and 27% in Wave 2); the percentage of households who took loans from formal sources of credit was negligible.

The respondents were asked if they would be able to borrow money if they suddenly needed to pay PKR 10,000 for health treatment. Gender disaggregated data (from female and male headed households[22]) on access to emergency credit is presented in Figure 8, below.

Figure 8: Source of loans for emergency health related needs, by sex of household head



[22] 6% of the total households in wave 2 were headed by women

The results show significant differences in the response of male and female headed households. Comparatively more respondents from female headed households (11.5%) would get a loan from informal money lenders. Worryingly, 21% of female headed households did not know where to get a loan in case of a medical emergency.

We also analysed the changes in male and female responses[23] across the two waves. Table 21 shows that family/friends were the main source of loans; however, the share of female respondents giving this response is lower than for males and declined over time. When the war between the militants and the army started in Swat, most of the residents were internally displaced and the majority of them stayed with relatives in safer areas (Khan, 2009).[24] Hospitality towards relatives and friends is deeply rooted in Pashtun culture[25] and there is strong pride in helping friends in need (Shams-ur-Rehman, 2015). However, it is interesting to note that in Wave 2 significantly fewer respondents reported that they would borrow money from their friends/family in case of emergency. Perhaps immediately after the conflict (Wave 1) the expectations on family/friends were higher. It is also interesting to note that a significant percentage of female respondents were not sure where they would borrow money from. This might be due to male dominance in household decision-making in Pakistan and among Pashtun families in particular (Alam, 2012)

Table 21: Sources of loans in case of medical treatment, by sex of respondents

	Wave 1		Wave 2	
If you suddenly needed to pay Rs. 10,000/for a health treatment, would you be able to borrow this money from anyone?	**Male**	**Female**	**Male**	**Female**
Formal lender or bank	0.4	1.4	1.1	1.7
Informal money lender	0.7	4.1	3.4	9.7
Family/friends	93.7	91.1	88.2	69.5
Landlord or employer	1.5	1.3	0.9	0.6
Savings group	0.0	0.1	0.6	0.0
Don't know/ No	3.8	1.9	5.8	18.5
Total	100	100	100	100

Note: The difference between male and female respondents' answers is statistically significant at 1% in both waves.

5.3 Food insecurity/Coping Strategy Index

The CSI gives an indirect estimate of food insecurity by estimating the severity of different coping strategies employed by a household when they don't have enough food.

The data on CSI in Table 22 indicate an overall increase in food insecurity in Wave 2 with mean values of 4.4 (as compared to 2.5 in Wave 1). A UC-level comparison indicates that food insecurity increased in all UCs; however, the increase was most pronounced in Lower Dir. There is little increase in CSI in the UCs in Swat, except in Bar Abakhel, where it increased considerably from 2.3 to 4.3. The results for Wave 2 seem to be in line with previous reports on food security (Suleri and Haq, 2009) which describe Swat as a less food insecure district than Lower Dir (which is classified as extremely food insecure). This might be explained by the larger supply of aid (in the form of food and cash) to Swat, compared to Lower Dir, after the conflict (see Shah and Shahbaz, 2015).

[23] 34% of the respondents were female in both waves

[24] Khan (2009). IDPs prefer to stay with relatives. Dawn, May 30 2009. http://www.dawn.com/news/467927/idps-prefer-to-stay-with-relatives

[25] The largest ethnic group in KP

Table 22: CSI (measuring food insecurity), by wave and UC[26]

Districts	Union Councils	Mean wave 1	Mean wave 2
Lower Dir	Haya Serai	1.9	4.3
	Lal Qila	1.2	5.5
	Mean	1.55	4.9
Swat	Charbagh	3.8	3.9
	Baidara	3.3	3.9
	Bar Abakhel	2.3	4.3
	Mean	3.13	4.03
	Overall mean	2.5	4.37

We also calculated the comparative status of food insecurity in both waves. The results for switchers and stayers in Wave 2 indicate that the CSI of 44% of sampled households deteriorated, that there was no change for 35%, and only 21% of households improved. District-level data shown in Table 23 shows that food insecurity got worse for about 49% and 42% of sampled households in Lower Dir and Swat, respectively. These results clearly indicate food insecurity has increased for most households within the three-year period (2012 to 2015).

Table 23: Changes in CSI between waves, by UC.

Districts	Union Councils	No change	Lower	Higher
Lower Dir	Haya Serai	40.0	14.3	45.6
	Lal Qila	42.2	6.8	51
Swat	Charbagh	30.3	30.0	39.6
	Baidara	29.1	31.8	39.0
	Bar Abakhel	31.5	22.4	46.1
	Total	34.6	21.1	44.3

5.3.1 Regression analysis

Changes in the level of food insecurity of sampled households between waves due to household variables determined by the CSI, were estimated through an econometric analysis, using a Fixed Effect Regression model (see Table 2, in Annex). The following inferences are drawn from the regression.

Households which did not owe money during the first round of surveys in 2012 but owed money during the second survey in 2015 have comparatively higher CSI scores (i.e. higher food insecurity). As discussed earlier, loans are either in the form of cash or in the form of household items. Wahid and Rehman (2014) analysed the share of informal loans in total borrowing by collecting data from 200 households from Peshawar in KP, and observed that 83% used informal lenders and only 17% used formal lenders.

The data on access to credit (Figure 7) indicate a considerable increase in the percentage of households who borrowed money (70% in Wave 1 and 78% in Wave 2). Nevertheless, we cannot determine from the regression whether food insecurity compels households to borrow money or being in debt leads to food insecurity. WFP (2010) reported that most of the conflict-affected households in KP were compelled to borrow money to manage food and cash shortages. The main reason for borrowing money was a shortage of food (ibid). Though an updated version of the food security status for KP is not available, WFP (2015) conducted an Integrated Food Security Phase Classification, which indicates that Swat and Lower Dir districts are moderately food secure and that their status is likely to improve. Nevertheless, food shortages may not be the only reason for borrowing money. There may be a number of other reasons such as health care, sending family members to other cities or abroad, or to meet educational expenses. More recently, Bhatti (2015) in his doctoral dissertation conducted a study

[26] A higher CSI value indicates higher food insecurity and lower values indicate improved food security

in post-conflict Swat using 275 randomly sampled households from conflict-affected regions in the district. His study revealed that among the sampled households about 75% took on loans in the post-conflict year, mostly from relatives and friends. The majority (53%) took on loans to meet household expenditures (ibid).

Table 24 (below) confirms that the majority of households borrowed money to meet immediate needs (mainly food and clothing), followed by health (to buy medicine, treatment, etc); fewer households borrowed money for productive uses (setting up a business, buying fertiliser, facilitating migration). There was a considerable increase in the proportion of households borrowing money to meet health-related expenses.

Table 24: Reasons for borrowing money

Household borrowed money for	Wave 1		Wave 2	
	Freq	%	Freq	%
Productive use	269	18.3	255	15.5
Immediate basic needs (food, cloth)	801	54.6	851	51.5
Health	264	18	548	33.2
Education	38	2.6	91	5.5
Construction	155	10.6	0	0

There seems to be negative relationship between perceptions of safety within neighbourhoods and outside the village, and CSI scores. The regressions used the percentage of respondents in each UC who reported that it was 'safe' or 'very safe' to go outside their village as a variable to capture this relationship[27]. The result implies that when safety levels (meaning the percentage reporting it to be safe) in UC increase by 10%, CSI scores are expected to drop by -0.57 points. Similarly, when safety levels at the UC level decrease by 10%, there is expected to be a 0.63 point increase in CSI scores. A decrease in CSI means that they become more food secure. The perception of safety within neighbourhoods is also negatively correlated but is statistically non-significant. Though there is evidence available on the linkage between conflict and food insecurity (for example Messer and Cohen, 2006; Rice, 2007), limited studies are found on the circular link. Hendrix and Brinkman (2013) in his review paper, tried to establish a circular link between food insecurity and conflict. He argued that food insecurity can be a source of grievance and may consequently lead to conflict; and that conflict is a significant source of food insecurity, as it disrupts production and distribution networks – in fact, the strategic withholding of food is often a tool used in counter insurgency. He concludes that there is an important role for the donor community to play in enhancing peacebuilding and the resolution of prolonged crises. A recent FAO report (2016) acknowledged that while violent conflict has substantial and unambiguous adverse effects on food security, little is known about how, and to what extent, better food security could avert conflict, and build and sustain peace.

That said, data on perceptions of safety (Table 14 and Table 16 in Section 4) indicate that more sampled households considered themselves less safe (within and outside villages) in Wave 2 than in Wave 1. See section 4.4 (Perceptions of safety) for a more in depth discussion of the relationship between safety and conflict.

Our results also show that changes in livelihood assistance is significantly ($p<0.05$) related to CSI scores. A negative coefficient sign indicates that those households which did not receive livelihood assistance in 2012 but received livelihood assistance afterwards (between 2012 and 2015) were less food insecure (they had a lower CSI score).[28] It may also indicate that food secure households received livelihood assistance in Wave 2 or the other way round i.e. those who received livelihood assistance

[27] Sensitivity analysis found that the significance level of this coefficient is sensitive to model specification.

[28] Sensitivity analysis found that the significance level of this coefficient is sensitive to model specification.

tend to be food secure. In our study areas, livelihood assistance was in the form of seeds, fertilisers and farming implements and appears to have had a positive impact on household food security. An SLRC paper on the revival of food and vegetable markets in post-conflict Swat argued that livelihood assistance from donor agencies has had a positive impact on the livelihood strategies of farmers (Suleri et al., 2016).

Many of the explanatory variables have a statistically non-significant relationship with the CSI which indicates that, within our sample, the CSI is not dependent on most of the household variables. These include changes in household size and dependency ratio, the gender of the household head, and changes in livelihood activities.

Average education levels within the household seem to have a significant effect on household food security (CSI).[29] The Random Effects model indicates that the higher the average educational level of the household, the higher the household CSI score (i.e. improved food security). However primary or madrassa education does not have a significant impact on CSI, relative to 'no education', the base category. This suggests that there is no benefit in terms of improved food security to having more household members educated to a primary level or in madrassa. The benefits become apparent when the majority of adult household members have a secondary education or above. Education is probably linked to wealth and access to patronage networks. However, the causal relationship could also go the other way – in other words, improved food security in the past means fewer children had to drop out of school early, leading to more highly educated adults.

5.4 Food consumption

Food consumption, a measure of dietary quality and diversity, is an important indicator of food security. Our survey asked the respondents about different types of food consumed by their families during the past 30 days, to construct a Food Consumption Score (FCS). Table 25 indicates that more than half of households (52% of the total sample) switched to better food consumption patterns (a higher FCS). However, 41% of households have also switched to a lower level of food consumption and only 7% of households have not changed their food consumption pattern between the two waves of surveys.

An analysis of 'switchers and stayers' indicates that FCS decreased for more food insecure households and increased for the most food secure households.

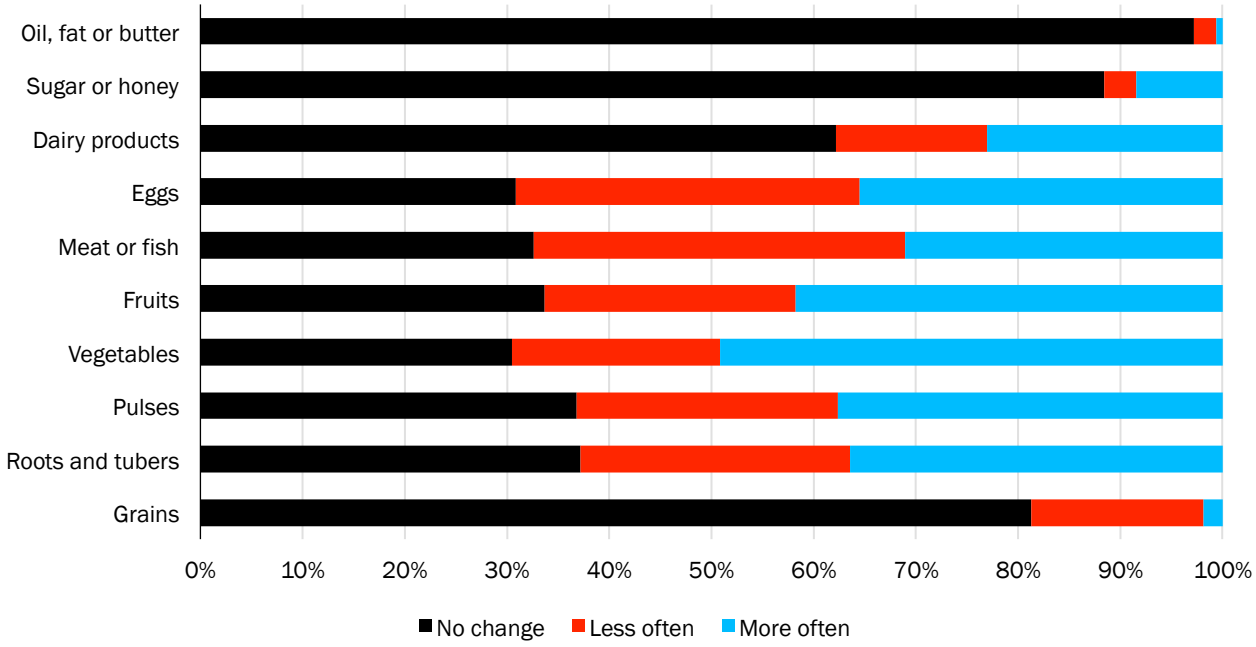
Table 25: Change in Food Consumption Score (FCS) over time

	Frequency	Percent
No change	115	7
Got lower	728	41
Got higher	913	52
Total	1756	100

The results for changes in consumption of individual food groups are given in the following graph (Figure 9).

[29] Sensitivity analysis found that the significance level of these coefficients are sensitive to model specification.

Figure 9: Changes in consumption of specific foods between waves



Changes in food consumption patterns reveal that while consumption of grains, sugar, oil and dairy product remained roughly the same, there was a marked increase in the consumption of vegetables, fruit, pulses and root/tubers. Increases in the consumption of vegetables and fruit might be due to the revival of local markets after the conflict (see also Suleri et al., 2016).

5.4.1 Regression Analysis

The Fixed Effects regression (Table 3 in Annex) examines the relationship between changes in FCS and different household variables. It shows that households which did not owe money in Wave 1 but owed money in Wave 2 tend to have a lower FCS and that they rely on less diverse foods (most probably cheaper ones).[30] The households that started to receive income from selling goods in Wave 2 tend to have a better FCS. Similarly, crime rate at the UC level is significantly but negatively associated with FCS –in other words, households in UCs where the crime rate rose between Waves 1 and 2 tend to have a lower FCS. It may be argued that a higher crime rate might lead to a restricted economy and, consequently, households consume a less diverse range of foods. A stable environment, on the other hand, is conducive to economic activity. As our paper on markets (Suleri et al., 2016) indicates, there was a considerable boom in economic activities after the restoration of peace following army operations in Swat.

Another interesting result is for 'Received livelihood assistance in past three years', which is significantly associated with FCS. It implies that the households which did not receive livelihood assistance in Wave 1, but received livelihood assistance in Wave 2, tend to have a comparatively higher FCS. Livelihood assistance was in the form of seeds, tools and other agricultural inputs. As a result of this assistance households were likely to have higher levels of agricultural productivity and eat more diverse food. However, it could also be argued that better-off households might have received livelihood assistance in Wave 2.

Access to the health centre is also significantly associated with FCS and indicates that the households which increased their journey time to the health centre consume more diverse food in Wave 2.

[30] The sensitivity analysis found that the significance level of the coefficients for owing money, selling goods, livelihood assistance, access to the health centre and gender of household head are sensitive to model specification.

The Random Effects model indicates the significant effect of household average education levels on dietary diversity. Higher average household levels of education have a highly significant positive impact on FCS, compared to those where most household members have no education. Interestingly, when the majority of adult household members were madrassa-educated, FCS is lower than among households whose members are mostly uneducated. It is important to note that primary education appears to have no effect on FCS and that it is not until most members are secondary-educated that there is any difference.

The sampled households in Swat district consume significantly less diverse food than those in Lower Dir.

5.5 Morris Score Index

The Morris Score Index (MSI) is used as a proxy for household assets (Morris et al., 1999). The MSI is a weighted asset indicator that weights each durable asset owned by the household by the share of households owning that particular asset. What this essentially means is that households are considered better off when they own assets not owned by most households in the sample.

Table 26: Change in Morris Score Index (MSI) over time, by district

Morris Score Index by District			
Morris Score Index	**Mean wave 1**	**Mean wave 2**	**Percentage point difference**
Lower Dir	28.6	47.2	18.6
Swat	37.5	36.5	-1.0

The data on MSI (Table 26) show that the average Morris Score Index for Swat was higher (37.5) than for Lower Dir (28.6) in Wave 1, but in Wave 2 the opposite was true. This is interesting because Lower Dir households generally became more food insecure than households in Swat. The MSI in Lower Dir increased by 18.6 points but remained roughly the same (decreased by just 1 point) in Swat. About 71% of the sampled households increased their assets; 28.6% of households in Lower Dir and 55% in Swat decreased their assets (Table 27). One of the possible reasons for a higher MSI in Lower Dir is that more households depend on overseas labour as the main source of household income. During the rehabilitation phase (after the conflict during Wave 1) these households used remittances to buy food and pay other household expenditures (see Figure 6) but after the end of the conflict these households used remittances to purchase assets. Gioli et al. (2013) conducted research to study the impact of remittances in the conflict-affected regions in KP and found that money sent back by overseas migrants was key in coping with the aftermath of conflict. Remittances were essential for the survival of households during the war, as well as the recovery of household assets afterwards.

Table 27: Change in MSI between waves, by district

Morris Score Index	No change	Got worse	Got better
Lower Dir	0.1	28.6	21.2
Swat	0	55.1	44.9
Total	0.1	44.6	55.3

The data on the possession of different types of assets reveals that there was an increase in the ownership of washing machines, furniture and refrigerators/freezers (Table 4 in Annex). There was an 18% increase in the possession of furniture and a 9% increase in motorcycle ownership recorded in Wave 2. However, there was a 6% decrease in the ownership of farming tools.

5.5.1 Regression Analysis

The regression (Table 5 in Annex) examines the relationship between the MSI and household variables. Households which did not own cultivable land in Wave 1 but now own land, are likely to have more assets (and higher MSI scores). Our calculations also found that if a household went from no cultivable land in Wave 1 to possessing land in Wave 2 it would be expected to increase its assets by 28.4%. Another significant result is for 'receive livelihood assistance' – in other words, households that did not receive livelihood assistance (seeds and fertilisers) in Wave 1 but received assistance in Wave 2, increased their assets by around 22%.[31]

Generating income from different sources (cultivating own land, causal labour, small businesses, skilled labour, etc.) did not seem to have a significant impact on MSI. Surprisingly, overseas migration did not have any impact on MSI; a non-significant change in MSI is recorded for households who did not have any migrant family members in Wave 1 but had at least one in Wave 2.

The Random Effects model indicates a significant impact for education on MSI. Primary education has no bearing on MSI, which indicates that those households with members who are only primary-educated tend to have fewer assets, relative to those with 'no education'. On the other hand, the households with secondary-educated members are likely to have more assets. A similar trend is observed for higher/vocational education. Our calculations also reveal that those households with mostly secondary-educated members have a 12% higher asset score than those with mostly non-educated members; and the asset scores for higher/tertiary-educated households are 34% higher. The overall trend indicates the positive impact of education on assets.

5.6 Summing up

Overseas migration continued to be the main livelihood activity (income source) in both waves – more than one-third of the sampled households received remittances. However, there was a considerable reduction in the percentage of households whose largest source of income was overseas labour. The share of income from farming has decreased but the share of income from casual labour in agriculture/farming, fruit picking and packing, etc. increased. This demonstrates the revival in agricultural markets (mainly fruit and vegetable markets) after the conflict. The role of remittances in household wellbeing has also changed. Remittances were particularly important during Wave 1 for ensuring food security. Evidence shows that during the conflict, recipient households used remittances mainly for food, but that during the post-conflict phase they also used remittances for other purposes such as re-establishing their businesses or reconstructing houses (Gioli et al., 2013).

There is significant reduction in the households which depend on social transfers. Nevertheless, taking on loans remained an important strategy for most households in both waves and, in fact, significantly more households were in debt in Wave 2.

The CSI scores indicate a substantial increase in food insecurity in Wave 2, most noticeably in Lower Dir. Food security deteriorated for a large share of households (44%). Linking food security with debt, our results indicate that the sampled households which do not owe money during the first round of surveys in 2012 (Wave 1) but owe money during the second survey in 2015 (Wave 2) are likely to have a higher CSI (in other words, higher food insecurity), compared to households which were not in any debt. Safety is significantly associated with food insecurity and households who felt safe outside of their villages tended to be more food secure in Wave 2. Livelihood assistance also had a positive impact on food security. Likewise, education is significantly associated with household food security – the higher the average education level of household members, the better off the household tends to be in terms food security.

[31] The significance level of livelihood assistance, owning land, and having primary education were sensitive to model specification.

The food consumption data indicate that while more than half of households in our sample switched to a more diverse diet, 41% of households switched to a lower level of food diversity. The consumption of vegetables has increased significantly. FCS decreased for more food insecure households and increased for the most food secure households. Being in debt implies that households rely on less diverse food. Higher crime rates are also associated with a lower FCS. Livelihood assistance seems to have had a positive impact on food consumption and households whose debt situation changed from "not being in debt" to "in debt", tended to eat less diverse food. Better education is also likely to lead towards a higher FCS.

The results for the MSI indicate a substantial increase in household assets in Lower Dir district. The households which did not own cultivable land in Wave 1 but now own land, are likely to have more assets. The households with secondary-educated members are also likely to have more assets than those with no education or only a primary education.

Receipt of livelihood assistance (seed, tools, inputs) is significantly associated with food insecurity and those households which did not receive livelihood assistance in 2012 but received it between 2012 and 2015, are likely to be less food insecure (a lower CSI).

6 Changing access to and satisfaction with services

Health, education, drinking water, social protection and livelihood assistance are the five basic services that have been included in our analysis. The data on changes in levels of satisfaction and the problems experienced with these services are discussed in this section.

The war between the army and the Taliban severely damaged education and health infrastructure. After the end of the war, the international donor community and the state carried out intensive rebuilding efforts (Shahbaz et al., 2012). Rehabilitation started immediately after the conflict with support from bilateral/multilateral organisations and state institutions. The Pakistani army remained one of the major institutions for security and development in the region (Tanoli, 2013).[32] The Khyber Pakhtunkhwa Reconstruction Programme (KPRP) was established in 2010 with USAID funding; the Provincial Reconstruction, Rehabilitation and Settlement Authority (PaRRSA) and the Government of Khyber Pakhtunkhwa (GOKP) were the implementing partners. The main emphasis was on the reconstruction of damaged schools and health facilities (Husain et al., 2014). Similarly, the German aid agency, BMZ,[33] supported the refurbishment of the water supply system and irrigation channels, and contributed to the reconstruction of damaged houses. UNDP initiated a mega project in 2011 to improve water supply and road construction, also through PaRRSA (UNDP, 2016). Likewise, the Asian Development Bank (ADB), EU, DFID and other international agencies supported interventions to rebuild basic infrastructure in the conflict-affected areas. Following the huge influx of aid, we are interested in examining how access to and satisfaction with services have changed over time – from the rehabilitation phase in 2012 to stabilisation in 2015. Access to and experience of basic services, including health, education, water, social protection and livelihoods assistance are all analysed in this section. During the first round of the survey, in 2012, we asked respondents about the status of a range of basic services and their access to and satisfaction with these services. We again asked these questions in the second round in 2015, to identify any changes.

Travel time (in minutes) to the nearest health centre, to primary schools (for both girls and boys) and to sources of drinking water were used as indicators for access to services. For access to social protection and livelihoods assistance, we used households with members in receipt of these benefits (or who had received them at least once) as an indicator. Satisfaction with services was measured by asking respondents to rank their overall level of satisfaction with a service (based on the most recent visit) using a five-point scale (very satisfied to very dissatisfied). For social protection and livelihood assistance, we asked our respondents about the reliability of particular services in terms of timeliness and perceived impact (positive or negative).

6.1 Health

Health is an important contributing factor to human capital. Better health improves the efficiency and productivity of the labour force and indirectly contributes to economic growth and improvements to human welfare. Conversely, poor health reduces the ability to work and undermines human capital, and can even lead to poverty. The health status of a region may be evaluated in terms of either input indicators such as doctors, institutions and health services or output indicators such as infant mortality, maternal mortality and life expectancy (Government of KP, 2014).

[32] http://www.criterion-quarterly.com/malakand-division-conflict-floods-and-response/ (accessed August 2016)

[33] https://www.giz.de/en/worldwide/17998.html (Accessed August 2016)

It is often argued that equitable and effective health services may be a key contributor to state legitimacy (Haar and Rubenstein, 2012). Nevertheless, the role of service delivery in conflict-affected situations has not been thoroughly analysed and little empirical evidence is available on the impact of service delivery on state legitimacy (Wild et al., 2013). More recently, Godamunne (2015) conducted a qualitative study in conflict-affected areas in Sri Lanka and argued that, 'state officials play an important role in building state–society relations. In this sense, it is not so much what the state delivers but how it delivers programmes and services that is important when using the concept of performance legitimacy as an indicator of state legitimacy' (Godamunne, 2015: 28). In KP, health indicators are poor compared to national statistics, and in conflict-affected areas are below the provincial average (PCNA, 2010).

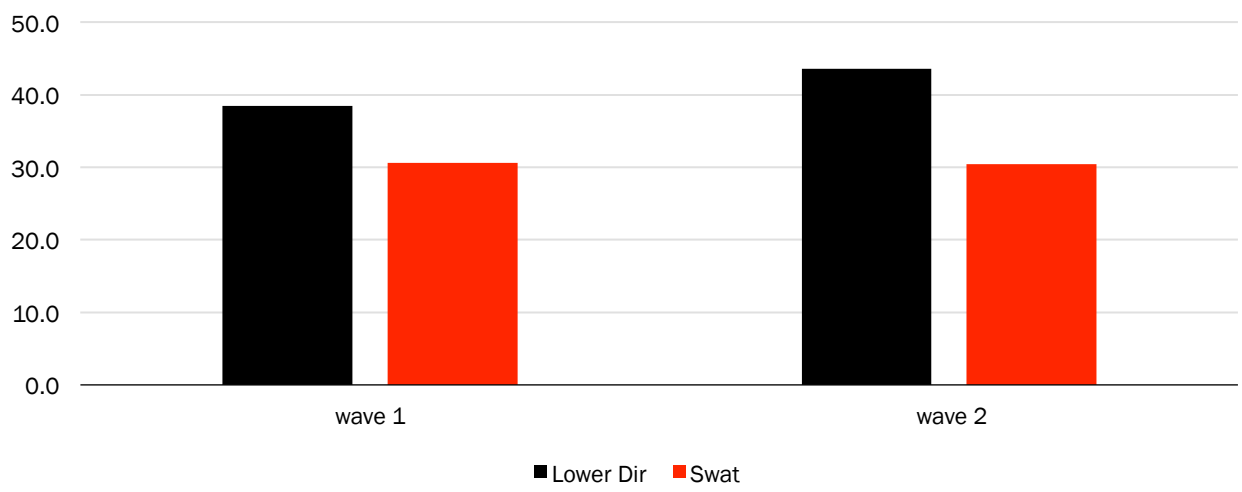
In this panel survey we focus on input indicators. We look specifically at respondents' experiences of health-related services and any changes between the two waves of survey.

6.1.1 Access to health service (travel time)

Our panel data indicate that the average travel time to the nearest health centre/clinic used by the sampled households in Wave 1 was 33.7 minutes, increasing to 35.6 minute in Wave 2. Journey times differ between districts (Figure 10). The data show that, on average, travel times to health centres in Lower Dir were longer than in Swat. On average, journeys in Lower Dir took 38.5 minutes in Wave 1 and 43.6 minutes in Wave 2, but in Swat took almost the same time – 30.6 minutes in Wave 1 and 30.4 minutes in Wave 2. At the UC-level (Table 18 in Annex), we find that sampled households in Haya Sarai (Lower Dir) had to travel 10 more minutes in Wave 2; similarly, travel times for households in Char Bagh (Swat) increased by 6.7 additional minutes between waves. Journeys in Baidara (Swat) were shortened by 6.2 minutes but remained almost the same in Lal Qila and Bar Abakhel. Overall, travel times for sampled households in UCs in Lower Dir increased considerably.

Increases in travel time to health centres, particularly in Lower Dir, may be due to a number of different reasons: for example, households may have switched to a better health centre which is a little further away or perhaps the nearest health facility is no longer operating. However, our data show that only 88 respondents (5%) said they had switched health centre between waves. Some might have switched and not remembered or reported it, but even so, this number seems fairly low and would probably not be enough to account for changes in travel times across the whole sample. According to Government of KP statistics, Lower Dir had three hospitals in 2011 and only two in 2015, compared to Swat which had 8 in 2011 and 10 in 2015 (Government of KP, 2014). These statistics also reveal that the population per hospital bed in Swat was 2451 and in Lower Dir was 3320, while the average for KP was 1581 (ibid).

Figure 10: Length of journey (in minutes) to health centre



This change in access to health centres was not the same for all households. Journey times for some households increased, while for others they went down. For some households there was no change. We can see this in detail in Table 28 (below) which shows that, for 46% and 44% of respondents in Lower Dir and Swat respectively, journey times became longer. Journey times to the nearest health centre for 37.5% (Lower Dir) and 38.1% (Swat) of households were reduced and 16.6% of respondents in Lower Dir and 18% in Swat reported no change between Wave 1 and Wave 2.

Table 28: Change in the length of journey to the health centre between waves, by district

Length of journey to health centre (%)	No change	Shorter	Longer	Total
Lower Dir	16.6	37.5	46.0	100
Swat	18.0	38.1	43.9	100
Total	17.4	37.9	44.7	100

Despite these changes, Table 29 (below) shows that the majority of respondents (95%) used the same health centre in both waves. Changes in travel times might therefore be due to changes in transport or the condition of the road. The 5% of respondents who switched to a different health care centre were asked to identify why and the majority (87%) of them cited better facilities in the new centre. Only 8% of these respondents reported that they switched because the new health centre is nearer to their residence. A small proportion (4%) of households said that they switched because the previous one no longer existed. Only 1% cited cheaper costs as a reason for switching (Table 19 in Annex).

Table 29: Change of health centre

Same health centre as 3 years ago (unweighted)	Freq	%
No	88	5
Yes	1672	95
Total	1760	100

We asked respondents when anyone in their household had last used a health centre – the results are provided in Table 30 (below). The majority of households (57% in Wave 1 and 52% in Wave 2) had used health centre services in the last 7 days; and 36%, in wave 1, and 39%, in wave 2, had used it longer ago than one week but in the last 30 days.

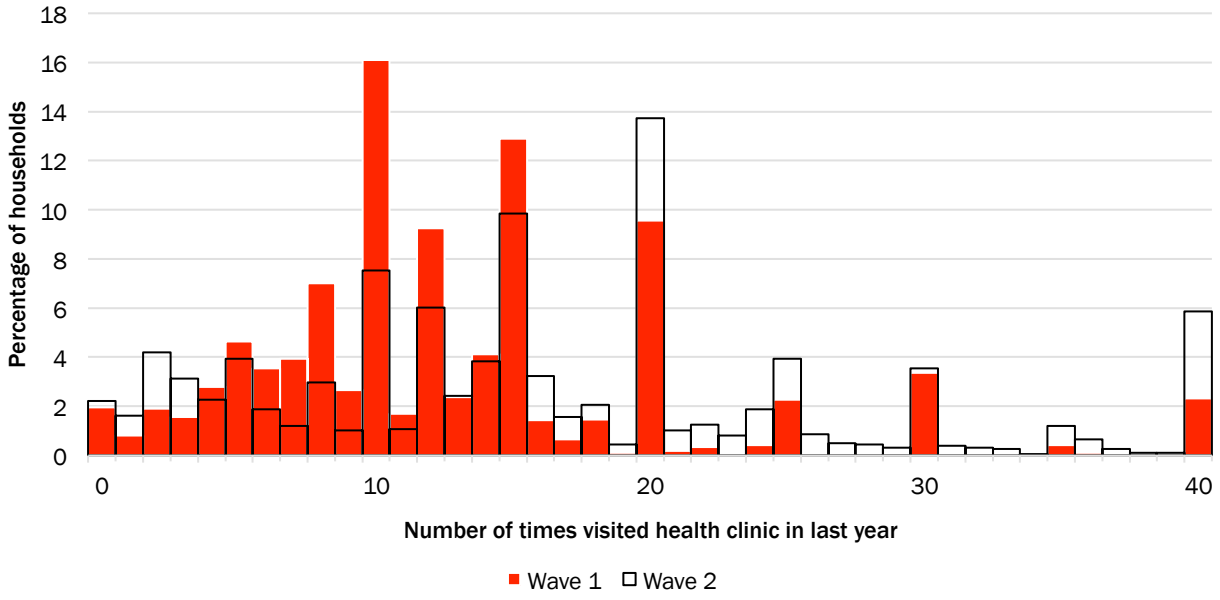
Table 30: When did anyone in household use the health centre?

	Wave 1		Wave 2		
Frequency of use of health centre	Freq	%	Freq	%	Difference
In the last 7 days	1201	56.9	1096	52.0	-4.9
In the last 30 days	756	35.8	818	38.8	3.0
In the last 6 months	133	6.3	155	7.4	1.1
In the last year	13	0.6	24	1.1	0.5
Over a year ago/ Never	8	0.4	15	0.7	0.3
Total	2111	100	2107	100	0.0

Note: the categories are not cumulative, so 'In the last 30 days' means between 8 to 30 days ago. The difference in frequency of use is statistically significant at 1% between waves.

The number of visits to health centre by each household also differs between the two waves (Figure 11). There were on average 13 visits to a health centre per household in Wave 1; this increased to 16 in Wave 2. The increase may be due to the outbreak of dengue fever in Swat during 2013 and 2014. Khan and Khan (2015) reported that the incidence of dengue was highest during August and September, 2015.

Figure 11: Number of times visited health centre in last year



6.1.2 Regression: access to health

A Fixed Effect regression model is applied to examine the relationship between changes in access to health (travel time) and different explanatory variables. The regression (Table 6 in Annex) indicates that the migration of a household member outside the country is significantly associated with travel time to the health centre.[34] It indicates that households with no overseas migrants in Wave 1 but with at least one in Wave 2 tended to travel for longer for medical facilities. However, the remittance variable is non-significant which implies that receiving remittances does not mean that household journey times would increase.

Perceptions of safety are significantly associated with access to health services, with a large coefficient. Neighbourhood safety (within the village) is negatively associated with travel times to the nearest health centre/clinic. When there is a 10% rise in respondents reporting feeling safer in their neighbourhood and outside their village, journey times to health centres tend to decrease by 2.7 and 1.1 minutes respectively. Thus, it can be deduced that by increasing neighbourhood safety, the households in our study area are more likely to visit a closer health centre, or the households in our sample might still use the same clinic, but use a different form of transport or use a more direct route.

Payment of informal fees is also significantly related to access to health clinics: households who reported that they did not pay informal fees in the Wave 1 but paid informal fees in Wave 2 tend to have longer journey times to health clinics. They might have switched to a better health facility or they might use the money they would have used on transport to pay the informal fees, thereby increasing journey times. Similarly, those respondents who reported they were not aware of meetings related to health services in Wave 1 but were aware of these in Wave 2 tend to take longer to reach the health centre they use.

The Fixed Effect model indicates that the sampled households in Swat tend to have shorter journey times than those in Lower Dir.

[34] The significance level of migrant household members, safety levels outside the village, informal fees for the health centre and gender of the household head were sensitive to model specification.

6.1.3 Changes in levels of satisfaction with health centre

The results for levels of satisfaction with health services (Table 31 below) indicate that the majority of respondents (57% in Wave 1 and 59.7% in Wave 2) are satisfied with the quality of health services; the remaining respondents showed varying degrees of satisfaction or dissatisfaction.

Table 31: Satisfaction with health centre in each wave

Satisfaction with hospital	Wave 1 (weighted)	%	Wave 2 (weighted)	%	Change
Very satisfied	272	12.9	240	11.4	-1.5
Satisfied	1203	57	1256	59.7	2.7
Quite satisfied	145	6.9	181	8.6	1.7
Dissatisfied	399	18.9	319	15.2	-3.7
Very dissatisfied	92	4.4	108	5.1	0.8
Total	2111	100	2104	100	

Note: The difference in satisfaction level by wave was statistically significant at 1%.

The results for 'switchers and stayers' show changes in levels of satisfaction (Table 32). The proportion of households varied considerably between categories. More than half of the respondents (51.2%) were 'always satisfied' (in other words, satisfied in both waves) with health services while 10.4% of respondents were 'always dissatisfied'. However, 18.1% of the respondents switched from satisfied to dissatisfied and 20.3% switched from dissatisfied to satisfied.

Table 32: Changes in levels of satisfaction with the health centre

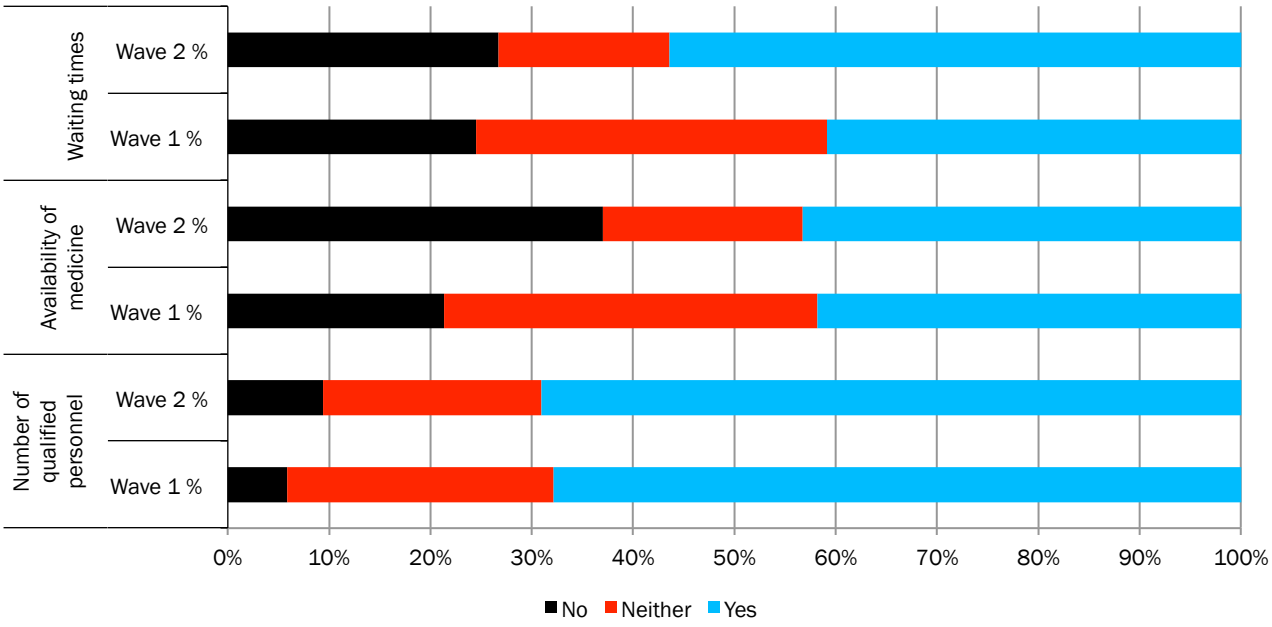
Level of satisfaction	No.	%
Always satisfied	898	51.2
Satisfied to dissatisfied	317	18.1
Dissatisfied to satisfied	357	20.3
Always dissatisfied	183	10.4
Total	1755	100

We also asked respondents about their levels of satisfaction with different aspects of the health centre they use. The graph (Figure 12) shows changes in levels of satisfaction with respect to the number of qualified personnel in health centres for Wave 1 and Wave 2. The majority of respondents (68%) in Wave 1 and 69% in Wave 2 were satisfied with the number of qualified personnel in health centre.

The levels of satisfaction with the availability of medicines also changed. As shown in Figure 12, about 42% of respondents in Wave 1 and 43% in Wave 2 were satisfied with the availability of medicine at their health centre, while 22% of respondents in Wave 1 and 37% in Wave 2 said that they were not satisfied.

The data for waiting times show that about 41% or respondents in Wave 1 and 56% in Wave 2 were satisfied. To sum up, some aspects of health service delivery appear to have improved, according to reported satisfaction levels (waiting times), while others have fared less well (availability of medicine). For the number of qualified personnel, there has been relatively little change.

Figure 12: Satisfaction with different aspects of the health centre



The data also reveal that, in both waves, the majority of health centres are reported to be run by government (78% across both waves), however we see an increase over time in perceived private running of health centres. Looking at the two waves separately, and at the UC level, in Wave 1 there was a big difference with 25% being private in Swat compared to 14% in Lower Dir. By Wave 2 this figure was almost 23% in both districts. This indicates an increase in the use of private clinics by the sampled households in Lower Dir.

The results for the payment of fees show that fewer households (69%) reported paying official fees for health services in Wave 2 than in Wave 1 (83%). In addition, 2% of respondents in Wave 1 and 16% in Wave 2 reported paying informal fees. Thus, while the share of people paying formal fees has fallen, the opposite is true for informal fees.

There was a substantial increase in the percentage of respondents who experienced problems with health services, as shown in Table 33 and Table 34 (below).

Table 33: Relationship between problems experienced and levels of satisfaction (availability of medicine)

	Problem with health service	
Availability of medicine: satisfaction	**Never a problem**	**From no problem to a problem**
Always satisfied	47.1	26.3
Always dissatisfied	7.8	15.3
Satisfied to dissatisfied	34.3	44.7
Dissatisfied to satisfied	10.8	13.7
Total	100	100

Note: The difference between waves is statistically significant at 1%.

According to the Table 33 above, among those respondents who never experienced a problem with health centres, the largest share (47.1%) were 'always satisfied' (i.e. in both waves) with the availability of medicine. Of the respondents who did not experience a problem in Wave 1 but did in Wave 2, 44.7% changed from satisfied to dissatisfied. Interestingly, a relatively large proportion of respondents (34.3%)

who never had a problem were found to have become less satisfied between waves. A similar relationship is recorded in levels of satisfaction with waiting times (Table 34).

Table 34: Relationship between problems experienced and levels of satisfaction (waiting times)

	Problem with health service	
Waiting times: satisfaction	**Never a problem**	**From no problem to a problem**
Always satisfied	56.1	29.7
Always dissatisfied	5.9	10.8
Dissatisfied to satisfied	22.7	17.9
Satisfied to dissatisfied	15.2	41.5
Total	100	100

Overall, it can be inferred that most respondents who experienced no problems are found to be satisfied, unlike respondents who experienced problems in Wave 2. We also tested whether satisfaction with the number of personnel was affected by problems experienced with health services and found that respondents were consistently highly satisfied in this regard.

Table 35 (below) shows the proportion of respondents who reported being consulted on health services. The vast majority (97.5% in Wave 1 and 93.9% in Wave 2) reported that they (or any of their household members) had not been consulted.

Table 35: Consultations on the health service

	Wave 1		Wave 2	
	Freq	**%**	**Freq**	**%**
No	574	97.5	1979	93.9
Yes	15	2.5	128	6.1
Total	589	100.0	2107	100.0

6.1.4 Regression: Satisfaction with health services

The regression analysis for levels of satisfaction with health services (Table 11 in Annex) shows mixed results. Households with more diverse sources of income tend to be positively correlated with satisfaction with health services. For instance, households which started to receive income from farming between waves are more likely to be satisfied with health centres.

Changes in livelihood and well-being indicators were also linked to changes in satisfaction. Households which became more food insecure (in Wave 2) are likely to be less satisfied with health services, compared to those who did not. Households that experienced an increase in their MSI (a measure of asset wealth) in Wave 2 are likely to be more satisfied with the overall quality of health centres, compared to households whose Morris Index decreased. Therefore, respondents from wealthier households (those households whose assets increased in Wave 2) are more likely to be satisfied with the health centre they use.

Perceptions of neighbourhood safety and safety outside the village are inversely associated with satisfaction with health services, and the association is highly significant. In other words, if an area is judged by most respondents to be safer, respondents there are likely to be less satisfied with the quality of health services. This finding could be associated with higher expectations on government services in a post-conflict context. Following peace-building and rehabilitation efforts, affected populations often expect a rapid improvement in services. Some authors have elaborated on this mismatch between expectations and recovery (Call and Cousens, 2008). Shah and Shahbaz (2015) argued that local communities often had ‘unrealistic expectations’ of aid agencies (including government agencies) and when their expectations were not fulfilled, they began to feel that they were not being given enough attention. SDPI conducted a perception survey on reconciliation in six districts in Malakand (including Swat and Lower Dir)

in collaboration with UNDP in 2012. It found that the respondents had a lot of expectations in terms of government compensation for conflict-related losses (UNDP, 2012). Post-conflict rehabilitation efforts may also explain these findings: before 2012, rehabilitation efforts by aid agencies were in full swing (Shahbaz et al. 2012; Shah and Shahbaz, 2015) but in 2015 (when safety had improved) most of the aid agencies had left and the health centres were being managed by local administrators.

Changes in the levels of satisfaction with the number of qualified health personnel, the availability of medicines and waiting times are significantly associated with satisfaction with the overall quality of health centres. Households which were not satisfied with the above-mentioned variables in Wave 1 but were satisfied in Wave 2 are more likely to be satisfied with the overall quality of health centres.

Households who reported longer journey times to the health centre in Wave 2 are less likely to be satisfied with the health centre. Similarly, households who visited health centres more frequently in Wave 2 are likely to be less satisfied with the overall quality of health centres in Wave 2. A range of aid agencies were providing health-related assistance in the early post-conflict phase, so the locals might have had easy access to qualified medical staff. In the later stages, aid organisations pulled out and the locals reverted to government (public) clinics and hospitals. Many switched to private hospitals as they were not satisfied with the government facilities.

Similarly, the payment of official, as well as informal fees, has a negative association with the perception of the overall quality of health centres. Thus, respondents who reported not paying fees in Wave 1 but paying them in Wave 2 are likely to be less satisfied with the overall performance of health centres.

Respondents who had used the health centre less recently in Wave 2 than they had in Wave 1 were less likely to be satisfied with its overall quality. Similarly, respondents who had household members with health-related problems in Wave 2 (but did not report this in Wave 1) are more likely to be dissatisfied with the overall quality of health services. Thus, it can be inferred that more frequent use of health clinics may lead to greater levels of dissatisfaction. This might be because of an increase in expectations once a household visits a health centre more frequently, or it may be because of more serious diseases, for example the outbreak of dengue fever.

Similarly, respondents who were not aware of any health service-related meetings in the past 12 months in Wave 1 but were more aware in Wave 2 are less likely to be satisfied with health centres.

The results also indicate that people in Swat are more likely to be satisfied with health centres than those in Lower Dir. Similarly, female respondents are more positive than male respondents.[35]

6.2 Education

The data on access to schools indicate a slight overall increase in travel time between the two waves. Average travel time to the nearest girls' and boys' schools in Wave 1 was 17.3 and 17.8 minutes respectively, increasing to 18.6 minutes and 19.6 minutes in Wave 2. Of those who experienced a change, 47% and 41% of households had shorter journey times (almost 13 minutes shorter, on average) for boys' and girls' school respectively, while 31% and 36% had longer journey times (by an average of 14.5 minutes).

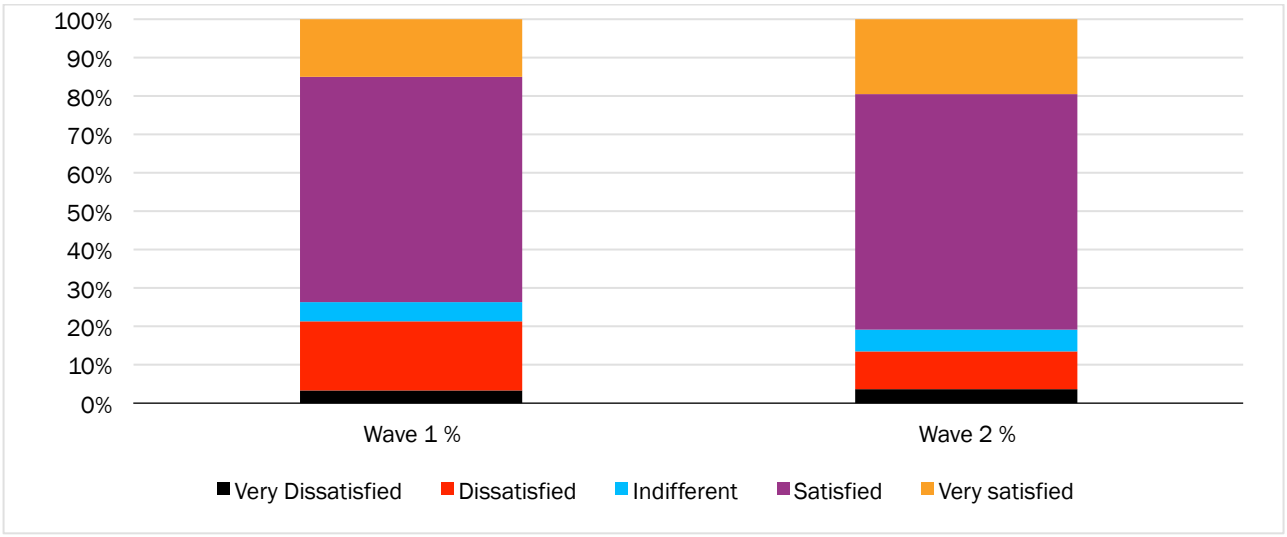
We asked respondents about their reasons for switching schools and 34.8% (girls' schools) and 31.2% (boys' schools) cited proximity of the new school to their residence. In addition, 34.8% and 42.5% switched (girls' and boy's schools respectively) because of better quality services. Only 6.3% and 5.7% switched because the previous school no longer exists.

[35] The significance levels of most of the coefficients in the fixed effects model were sensitive to model specification. The specific variables were: CSI, agricultural shocks, neighbourhood safety level, crime rate, access to the health centres, frequency of health centre use, payment of informal fees for the health centre, satisfaction with the number of qualified personnel, most recent use of the health centre and knowledge of health-related meeting. In the RE model, gender of the respondent was also sensitive to model specification.

The results for primary school attendance show that the overwhelming majority of respondents (95.7% in Wave 1 and 96.7% in Wave 2) reported that girls attend school every day – indicating a slight overall increase in attendance. The figures are similar for boys' schools: 96.9% in Wave 1 and 96.5% in Wave 2. Primary school attendance is high because, in most cases, primary schools are located within the village or in the neighbouring village.

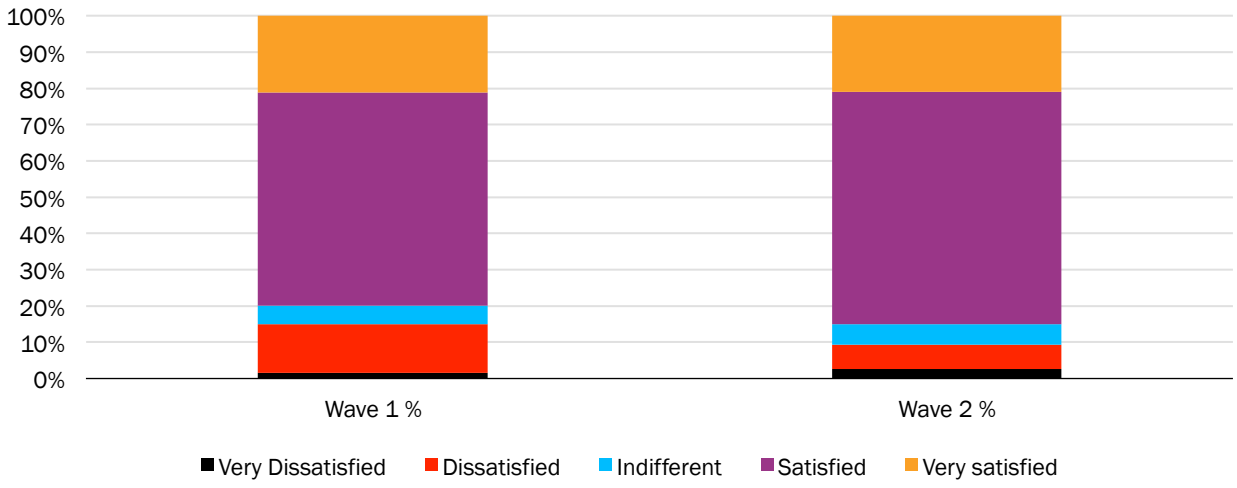
Levels of satisfaction with girls' schools in Wave 1 and Wave 2 are shown in Figure 13 (below). The majority (58.9%) of respondents in Wave 1 and in Wave 2 (61.5%) reported that they were 'satisfied' with girls' schooling. In addition, 14.9% of respondents in Wave 1 and 19.4% in Wave 2 said that they were 'very satisfied'. The proportion of respondents who were 'dissatisfied' also decreased from 18% in Wave 1 to 10% in Wave 2. These improvements in levels of satisfaction are probably due to the reconstruction of schools in the post-conflict phase.

Figure 13: Satisfaction with girls' school



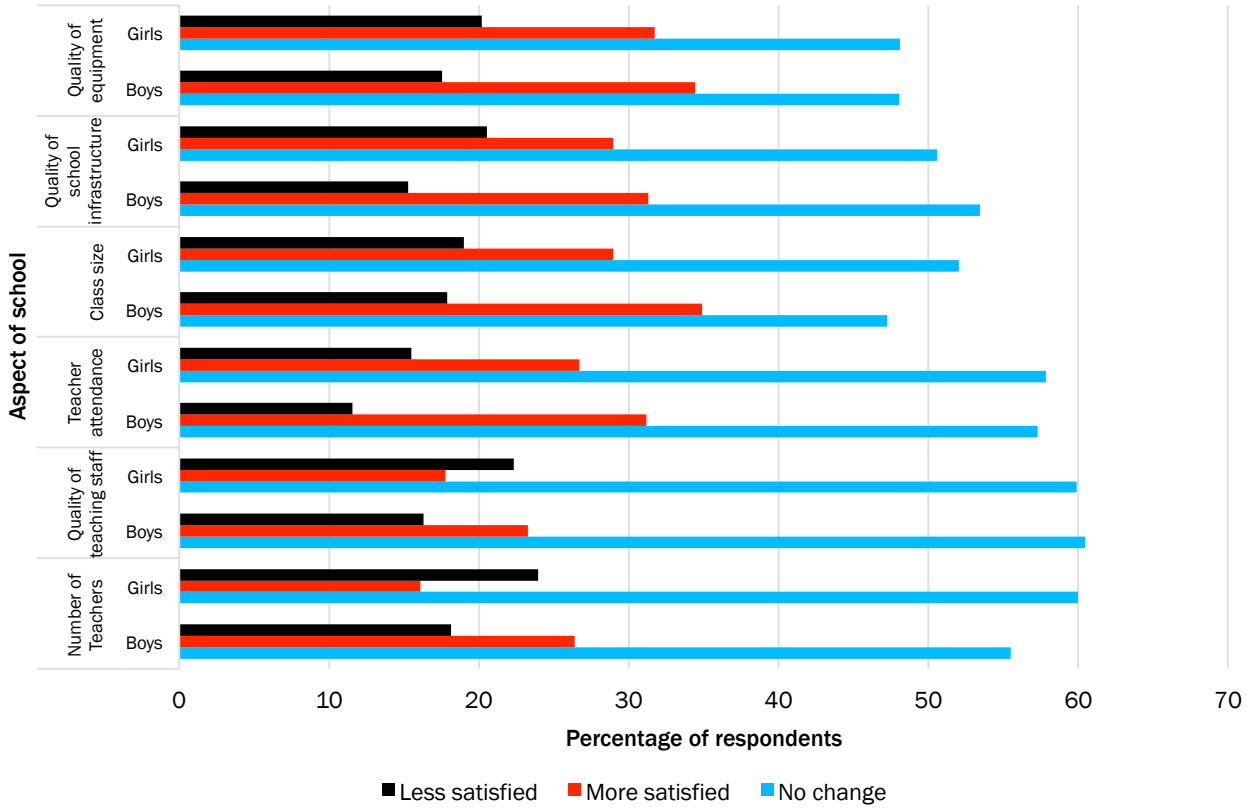
The results for levels of satisfaction with boys' schools show that 21% of respondents in Wave 1 and a similar percentage (20.9%) in Wave 2 were 'very satisfied' (Figure 14); and that the majority (58.9% in Wave 1 and 64.2% in Wave 2) were satisfied. In addition, substantially fewer households were 'dissatisfied' in Wave 2. Once again, these results indicate improved perceptions of primary schools.

Figure 14: Satisfaction with boys' schools



We can also look at how reported levels of satisfaction with specific indicators of school quality has changed over time (Figure 15). For the boys' schools, the biggest perceived improvements were in class size, while for girls' schools it was in the quality of equipment.

Figure 15: Change in satisfaction with different aspects of schools over time, by school type



In our configuration, 'more satisfied' includes movement from 'not satisfied' to 'neutral' and less satisfied includes movement from 'satisfied' to 'neutral'. So strictly speaking, movement from one category to another does not always reflect a positive or negative change in the perception of the respondent.

The respondents were asked 'who runs the girls' school?'. The results show that the majority of respondents in Wave 1 reported sending their girls to a government-run school. This figure decreased in Wave 2, along with an increase in the use of private schools (from 17.2% to 20.7%). The differences are significant between waves. The results for boys' schools also indicate a slight decline in the use of government-run schools and an increase in private and community schools.

Our results show that the majority of respondents did not have to pay formal fees in either wave (Table 20 in Annex). There was an increase in the proportion of respondents paying formal fees for private schools (from 19.1% to 24.8%); probably a reflection of the increase in the use of these schools. Overall, the proportion of respondents who paid school fees for boys was higher than for girls.

The data show a considerable increase in households who paid informal fees for both boys' and girls' schools (from less than 1% in Wave 1 to about 18.5% in Wave 2). Those who did not experience any problems in either wave are most likely to be 'always satisfied'; and those who experienced problems in Wave 2 (but no problems in Wave 1) tended to change their perception from 'satisfied to dissatisfied' (Table 21 in Annex).

6.2.1 Regression: access to education

The associations between access to girls' school (distance in minutes) and possible explanatory variables are given in the regression (Table 7 in Annex). Most of the household variables are not significantly associated with access to school (travel time). However, those households who took on loans in Wave 2 (but were not in debt in Wave 1) were more likely to experience longer journey times.

The regression for access to boys' primary schools shows that the length of journey to school increased for households which started to receive income from cultivating their own land. Similarly, households that started to receive income from selling goods in Wave 2 also saw an increase in journey times to boys' schools. The association is highly significant in both cases. However, households who had more diverse sources of income in Wave 2 tended to see a reduction in their children's journey to school. The same is true for households that owned agricultural land in Wave 2 (but not in Wave 1).

Experience of health-related shocks is significantly associated with access to primary school, which implies that households which did not experience health-related shocks in Wave 1 but did in Wave 2 saw a reduction in journey times.

Those households who reported that they started paying fees between Wave 1 and Wave 2 experienced (on average) an increase in journey times.

6.2.2 Regression: satisfaction with school

The regression for 'satisfaction with boys' school' (Table 8 in annexure) shows that most of the independent variables have a non-significant association with this outcome. However, there are some interesting results. For instance, crime rates at the UC-level are significantly linked with perceptions of the overall quality of boys' schools. Respondents in UCs where the crime rate was higher in Wave 2 are more likely to be satisfied with the overall quality of boys' schools.[36] This is rather an odd result. The combination of higher crime rates (particularly in Lower Dir) and the increase in private school enrolment might provide an explanation.

Changes in levels of satisfaction with the number of teachers, quality of teaching staff, teacher attendance, class size and quality of school equipment are positively associated with overall satisfaction with boys' schools. The number of teachers and class size, in particular, have a significant effect on perceptions of boys' schools.

Neighbourhood safety is negatively correlated with satisfaction with schools. Thus, there is likelihood that respondents in neighbourhoods that are perceived to be safer in Wave 2 are less satisfied with the performance of schools.

The results for satisfaction with girls' schools show a slightly different picture: firstly, female respondents and respondents with a high school or tertiary education are less likely to be satisfied with the overall quality of girls' schooling. This is not the case for boys' school. As in the regression for boys' schooling, satisfaction with specific aspects of the school is positively correlated with an increase in overall satisfaction. However, the significant results for girls' schooling are 'number of teachers', 'teacher attendance' and 'quality of infrastructure'. If the respondents were aware of education-related meeting in Wave 2 but not in Wave 1, their level of satisfaction with girls' schools declined, which was not the case for boys' schooling.

6.3 Water

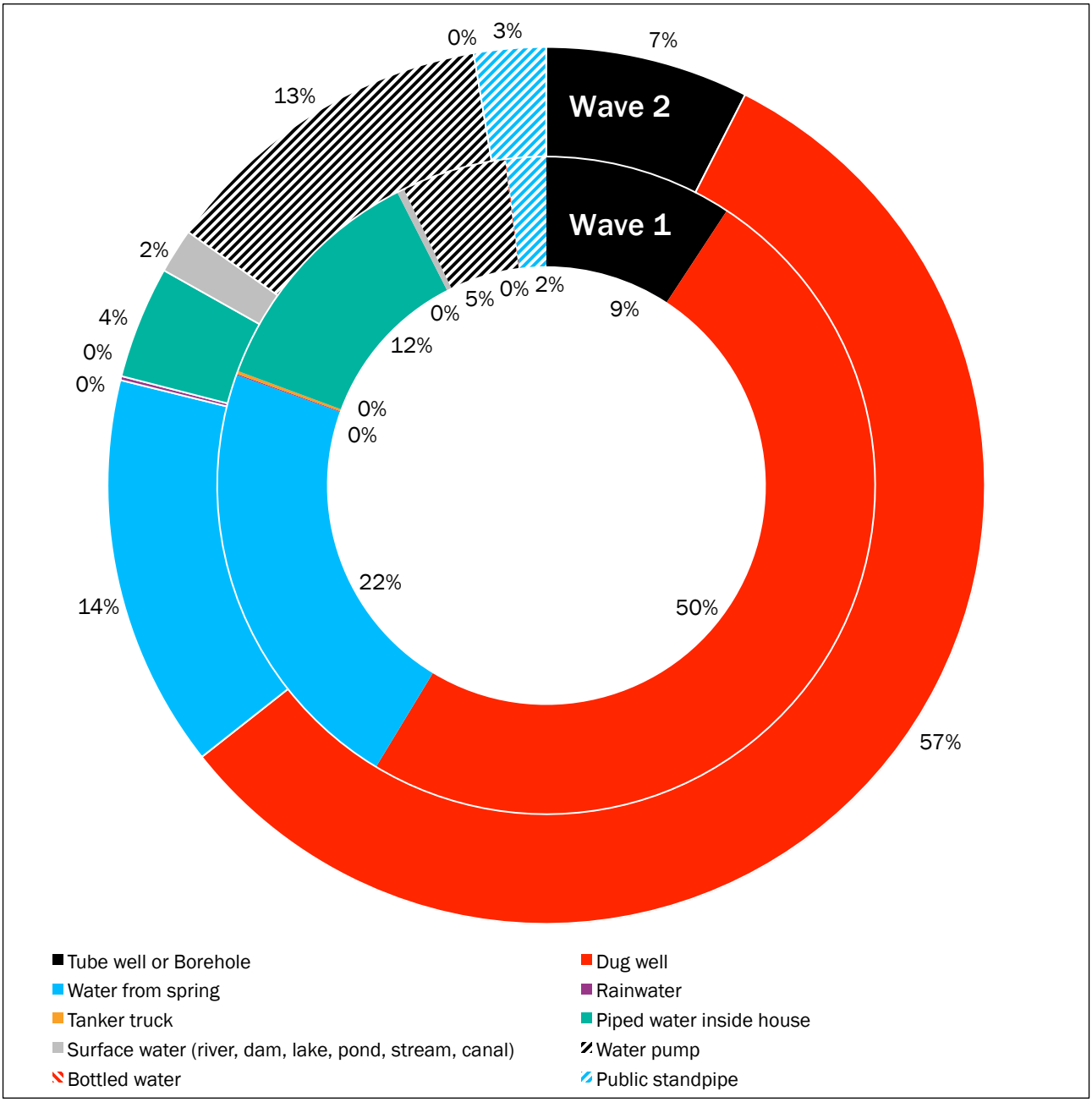
Travel times (in minutes) to the nearest source of drinking water is used as an indicator for access to water. In Wave 1, the average travel time to the nearest water source was 13.6 minutes, which

[36] The statistical significance of this result was sensitive to model specification.

increased to 15.9 minutes in Wave 2. Our results show that 94% of respondents were using the same source of water as they used 3 years previously. Of those who switched (5% of the sample) 38.5% did so because the new source was closer, 22.2% switched to a newly built source and 19.3% said the previous one no longer existed. It can be inferred that those who switched source are much more likely to have a reduced journey time, compared to those who stayed with the same source.

The main source of drinking water in both waves is dug wells – 50% households were using water from dug wells in Wave 1 and 57% in Wave 2. A considerable number of households were using water from springs; although this decreased from 22% to 14%. It is important to note that in Wave 1, 12% of households had access to piped water but in Wave 2 a negligible share (4%) had access to piped water inside their house. On the other hand, access to water pumps increased from 5% to 13%. This indicates an increase in the installation of water pumps (mainly through community initiatives) and a decrease in access to piped drinking water, which is the responsibility of the state.

Figure 16: Sources of drinking water in each wave



The quality of drinking water in both waves was similar: 93% in Wave 1 said that drinking water was safe and 92.5% in Wave 2.

About 85% of the households in Wave 1 and 93.5% in Wave 2 did not have to pay for drinking water; the remaining households paid for water either on a weekly or monthly basis. Thus, we can see an improvement in Wave 2 in access to free drinking water.

In terms of responsibility for maintaining sources of drinking water, the majority of respondents (67% in Wave 1 and 52% in Wave 2) said that they maintained their own supply. There was a significant increase in households whose source of drinking water was maintained by the community (from 13.77% to 20.69%). The role of NGOs and the government also increased in Wave 2. A marked increase in community-based water supplies is observed in Lower Dir, where 35% of households report using water sources maintained by the community (compared to 11% in Swat); on the other hand, government-maintained water supplies increased in Swat.

Table 36: Problems experienced with water services

	Wave 1		Wave 2	
Problem with water service	**Freq**	**%**	**Freq**	**%**
No	1256	59.4	1212	57.5
Yes	858	40.6	895	42.5
Total	2114	100.00	2107	100.00

Note: The difference between waves is statistically significant at 1%.

Table 36 (above) shows the number and share of houses who experienced problems with water services: there was a slight increase from 40.6% to 42.5%. The data on switchers and stayers show that there was quite a bit of switching between waves (Table 37).

Table 37: Problems with water services in each wave - switchers and stayers

Problem with the water source	**Freq**	**%**
Always no	695	39.5
Always yes	396	22.5
From no to yes	354	20.1
From yes to no	315	17.9
Total	1760	100.0

6.3.1 Regression: Access to water

The regression for access to water (determined by travel time) indicates that most of the explanatory variables are not significantly associated with the outcome variable (Table 8 in Annex). Crime rates at the UC level are an exception, and are significantly ($p<0.05$) but negatively associated with travel times. It implies that respondents from areas with a higher crime rate in Wave 2 (based on crimes reported in our sample) tend to cover less distance to their source of drinking water[37] – perhaps higher levels of crime restrict movement and households have to rely on the nearest water source, which may provide lower quality water.

To some extent Table 38 supports this theory: households in the UCs which saw an increase in crimes also had comparatively more respondents who shortened their journey time (although, this only applies in Lal Qila) and, crucially, they saw a negative change in people reporting clean and safe water.

[37] This result is, however, sensitive to model specification.

Table 38: Change in crime rate vis-à-vis access to and satisfaction with water

UC	Change in crime rate (crimes per 100 households)	% with a shorter journey time to water source in wave 2	% with a shorter journey time to water source in wave 2	Change in % reporting water as clean and safe
Haya Serai	**5.6**	**37.3**	**45.1**	**-8.1**
Lal Qila	**8.8**	**54.1**	**29.6**	**-8.7**
Charbagh	-23.3	35.6	48.5	8.5
Baidara	-13.5	39	44.9	2.2
Bar Abakhel	-33.8	12.7	62	0.7

Having to queue for water is significantly associated with access to water. A change from not having to queue to having to queue increases the travel time to water sources.

6.3.2 Regression: satisfaction with water quality/cleanliness

The response to the question "Is your drinking water safe and clean?" was used as an outcome variable and its association was determined with a number of household variables by using a Fixed Effect model. The results reveal that households which started to receive income from selling goods in Wave 2 are more likely to be satisfied with the quality of water.

Respondents in areas where the overall perception of safety (outside the village) improved in Wave 2 were more likely to report a clean and safe water supply. One possible explanation is that improved safety in moving outside of the village encouraged households to travel longer to procure clean water.

Results for 'affected by drought in the last three years' and 'have to queue for water' are interesting as these variables are significantly but negatively correlated with perceptions of water quality. It implies that the households which were not affected by drought in Wave 1 but were in Wave 2 are likely to have a more negative perception of water quality. The same is true for those who did not need to queue for water in Wave 1 but had to queue in Wave 2.

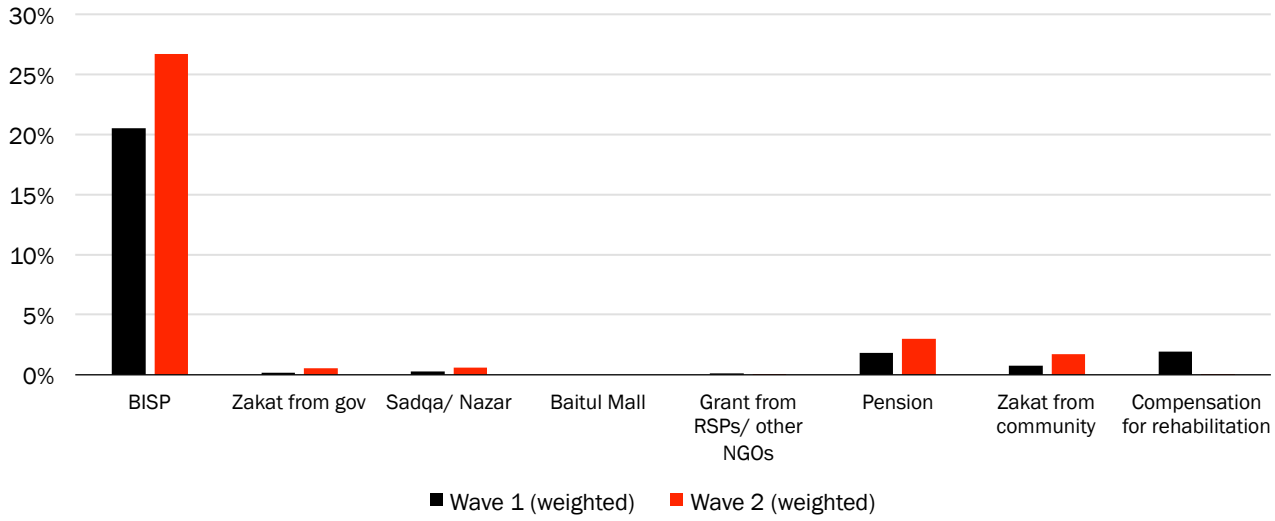
The respondents who were aware of meetings related to water services (in the last 12 months) in Wave 2 but were not aware in Wave 1, are likely to be dissatisfied with water quality.[38]

6.4 Social protection

Households in the study areas received different types of social protection, including the Benazir Income Support Programme (BISP) transfer, *Zakat* (a religious tax paid by wealthy people to support the poor), *sadqa/nazar* (charity from wealthy individuals), assistance from government-funded rural support programmes, pensions, community *zakat* and compensation for rehabilitation (housing) (Figure 17). Overall, 25% of households received a social protection transfer in Wave 1 and the figure significantly increased to 34% in Wave 2. The majority of households with at least one member in receipt of a social protection transfer reported support from BISP (21% in Wave 1 and 27% in Wave 2); 12% started to receive BISP support in Wave 2, while only 5.5% of households stopped receiving BISP in Wave 2. A district-level comparison indicates that more households in Swat (26% in Wave 1 and 31% in Wave 2) received BISP transfers than in Lower Dir (11% in Wave 1 and 19% in Wave 2).

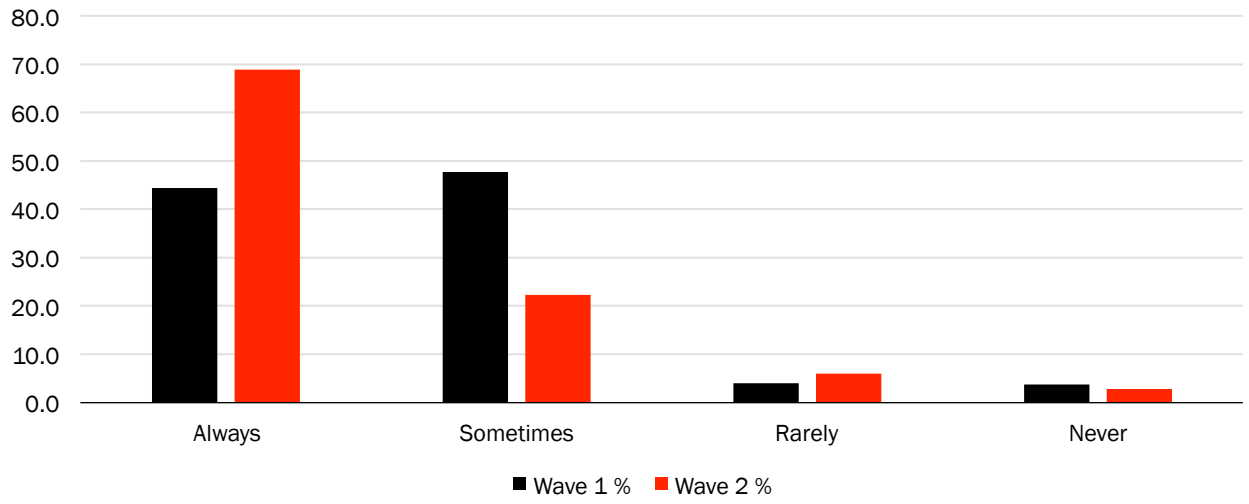
[38] This model was highly sensitive to specification adjustments and in the sensitivity check in which clustered standard errors were introduced, all of these results became non-significant. In another sensitivity check using an alternative model, the number of income sources, experiences of drought and the water provider became non-significant.

Figure 17: Access to Social Safety Nets (SSN)



BISP is the government's flagship social protection programme, launched as a response to high food prices. Reliability, in terms of the timely transfer of BISP, increased significantly – 44.4% of respondents in Wave 1 and 69% in Wave 2 said that the cash always arrived on time. Similarly, 47.7% of the respondents in Wave 1 and 22.3% in Wave 2 reported that BISP transfer 'sometimes' arrived on time (Figure 18).

Figure 18: Timely transfer of BSIP



The perceived impact is also high: in both waves almost 66% of households who receive BISP reported a positive impact.

6.4.1 Regression: receipt of social protection

The regression for social protection transfers (Table 11 in annexure) indicates that a number of the independent variables have a significant effect on access to these benefits. Households which did not receive income from farming (own cultivation) in Wave 1 but earned money from this source in Wave 2 were less likely to receive a social protection transfer. Similarly, income from selling goods, causal labour and skilled labour has a negative association with access to social protection. It implies that households that earned money from any of these sources in Wave 2 were unlikely to receive social protection. The number of income sources, on the other hand, has a positive association with receipt of

social protection – in other words, if a household adds an additional income source between waves then they are more likely to receive social protection in Wave 2.

Overseas migration and remittances have a significant negative association with social protection transfers. Households without a migrant family member in Wave 1 but with at least on in Wave 2 are less likely to receive any type of social protection. The same applies for household remittances.

Experience of economic shocks during the last three years is highly significantly related to access to social protection transfers.[39] A negative sign for the coefficient indicates that households which did not report experience of economic shocks during Wave 1 but reported them during Wave 2 are less likely to receive social transfers. BISP conducted a Nationwide Poverty Scorecard Survey[40] in 2010-11 to identify eligible households and then distributed the cash among the poorest. The households in our sample may have suffered an economic shock after the survey and therefore may not have been eligible for a BISP transfer, or there may have been problems with targeting (see also Shah and Shahbaz, 2015).

The CSI is also highly significantly associated with access to social protection. Households whose CSI has increased (are more food insecure) in Wave 2 are more likely to receive social protection transfers. Conversely, moving from food insecurity to food security implies that households are less likely to receive SSN. However, there is insignificant association between MSI and access to social protection. The SLRC paper on targeting, access and relevance of post-conflict livelihood interventions (Suleri et al., 2016) reveals that local people feel that BISP is influenced by political pressures, and it was alleged that support was often distributed based on political affiliation.

Perceptions of safety outside the village is significantly correlated with access to social protection. A positive association implies that households who perceive an improvement in safety between waves are more likely to receive social transfers.

The Random Effects regression model for average levels of household education indicates that secondary-educated (or higher-educated) households are less likely to receive social protection. It also indicates that sampled households in Swat district have more access to social protection than those in Lower Dir district.

6.5 Livelihood assistance (seeds and tools)

There is significant reduction in the percentage of households who received livelihood assistance in the form of seeds, tools and agricultural inputs. In Wave 1, 22.5% of households received livelihoods assistance but in Wave 2 this dropped to 4.7%. Moreover, 11% of households who received livelihood assistance in Wave 1 stopped receiving assistance in Wave 2 and only 1.5% of households who did not receive livelihood assistance in Wave 1 received assistance in Wave 2.

Significant differences in access to livelihood services in Wave 1 and Wave 2 might be due to the fact that more local and international NGOs provided livelihood assistance after the conflict in Wave 1 (see for example Shahbaz et. al., 2012). However, with the improvements in security and stability, the extent of the social sector reduced significantly.

Those households who received seeds and tools were asked whether they received them on time: 94% in Wave 1 and 78% in Wave 2 responded positively. The majority of households (86% in Wave 1 and 84% in Wave 2) who received livelihood assistance reported that the assistance had a positive impact on their well-being.

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[39] This result is sensitive to model specification, as are the results for safety level outside the village and the CSI.

[40] http://www.bisp.gov.pk/

6.5.1 Regression: receipt of livelihood assistance

The regression for access to livelihood assistance (seeds, fertilisers and farming tools) given in Table 10, in Annex, shows mixed results. The change in the average age of a household is significantly associated with livelihood assistance – a negative sign indicates that households whose average age increased in Wave 2 are less likely to be the recipients of livelihood assistance.[41] A higher average age means more productive (earning) household members who may not require assistance.

'Income from different sources' is negatively associated with access to livelihood assistance. Households that did not earn any income from either farming, selling goods, causal or skilled labour in Wave 1 but earned income from any of these sources in Wave 2, are less likely to receive livelihood assistance. However, the relationship is rather weak (non-significant), except for 'selling goods'.

Remittances are negatively associated with access to livelihood assistance. Households from our sample who reported that they did not receive remittances during the past 3 years in Wave 1 but received remittances in Wave 2, are less likely to receive livelihood assistance. Thus, it could be argued that migration offsets the need for social transfers. Remittances play an important role in the livelihoods of rural people in KP and are the most important income source for households in conflict-affected areas (Mallett et al., 2015). Previous research also highlights the growing importance of migration as a livelihood strategy in KP (Steimann, 2005).

MSI, an indicator of household wealth, is highly significantly related to access to livelihood assistance. The relationship could go both ways – in other words, households whose wealth increased in Wave 2 are more likely to receive livelihood assistance or livelihood assistance is likely to result in an increase in assets (farming tools, for example).

CSI is significantly associated with access to livelihood assistance. A negative coefficient sign indicates that household whose CSI increased (i.e. food insecurity increased) are less likely to receive livelihood assistance.

'Experienced health shock in past three years' is significantly but negatively associated with access to livelihood assistance. Households which did not experience health-related shocks in Wave 1 but did in Wave 2 are less likely to receive livelihood assistance. However, the number of shocks during past 3 years is significantly associated with access to livelihood assistance – in other words, households who experienced more shocks in Wave 2 (compared to Wave 1) are more likely to receive livelihood assistance.

Households who live in areas where the overall perceptions of safety improved between waves are more likely to be the recipients of livelihood assistance.

6.5.2 Regression: impact of livelihood assistance

The respondents were asked about the contribution of livelihood assistance (whether it improved their agricultural productivity) and the regression is given in Table 22, in the Annex.

Migration by any household member (in the past 3 years) is significantly but negatively correlated with satisfaction with livelihood assistance. Thus, respondents in sampled households which did not have a migrant family member in Wave 1 but had one in Wave 2 are less likely to report a positive impact from livelihood assistance. This could be because of the effect of remittances – in other words, when remittances start coming in, they may diminish the relative contribution of other (smaller) forms of assistance.

[41] Sensitivity analysis found that the significance levels of the coefficients for average age, remittances, health shocks, CSI, MSI and perceptions of safety outside the village are sensitive to model specification.

Neighbourhood safety is negatively associated with perceptions of livelihood assistance. Respondents in areas where the overall perception of safety improved between waves are less likely to report a positive impact from livelihood assistance.

The timely arrival of livelihood assistance has a significant positive impact on perceptions of livelihood assistance. The positive sign for the coefficient indicates that households which reported that livelihood assistance did not arrive in time in Wave 1 but did in Wave 2 are more likely to be positive about the impact of livelihood assistance on agricultural productivity. This is logical because the timely delivery of seeds and fertilisers is crucial for agricultural operations and consequent productivity, and the results of the regression indicate that this is the strongest variable (significant at 1%).

Experiencing an agricultural shock in the past three years is significantly associated with perceiving an impact from livelihood assistance. It implies that households which experienced agricultural shocks in Wave 2 tend to have a positive response to the statement 'livelihood assistance improved agricultural productivity and other economic activities'. Experiencing problems with services in the previous year is also positively associated with the outcome variable. Thus, it can be inferred that respondents who had a problem with services in Wave 1 but did not in Wave 2 are more likely to have a positive opinion of the effectiveness of livelihood assistance. Similarly, 'livelihood assistance arrived on time' is significantly associated with the outcome variable. A positive change in the timeliness of livelihood assistance is likely to lead towards a positive perception of the impact of livelihood assistance.

The Random Effects model indicates that the sampled households in Swat district have a more positive perception of livelihood assistance than those in Lower Dir. Similarly, female respondents are more likely to have a positive opinion.

6.6 Summing up

There is a cluster of key household variables that are significantly related to satisfaction with health services. For instance, household income from different sources tends to be positively correlated with satisfaction with health services. In other words, households which become more food insecure (in Wave 2) are likely to be less satisfied with health services as compared to those who are not. Similarly, respondents from households whose assets have increased in Wave 2 are more likely to be satisfied with the health centre they use.

Safety is emerging as an important variable here. Neighbourhood safety is negatively correlated with satisfaction with schools and health services. Thus, respondents in neighbourhoods that are perceived to be safer in Wave 2 are less satisfied with the performance of schools and health services. Perceptions of safety outside the village are inversely associated with satisfaction with health services and water provision. Perceptions of safety are also significantly associated with access to health services. By increasing neighbourhood safety, households in our study area are more likely to visit health centres that are nearer.

The results also indicate that, although there have been improvements in overall levels of satisfaction with health care centres, satisfaction with specific aspects of health facilities varies. For instance, significantly more respondents in Wave 2 were not satisfied with the availability of medicine in health centres. On the other hand, satisfaction with waiting times increased. There was a substantial increase in the number of respondents who experienced problems with health services. Respondents who did not experience any problems (in either wave) are more likely to be satisfied with the availability of medicine than respondents who experienced problems in Wave 2.

Overall, for education services, there was a slight increase in the percentage of respondents who are either satisfied or very satisfied, but a substantial decrease in households who were dissatisfied in

Wave 2. There was, however, an increase in the percentage of respondents who were not satisfied with the number of teachers and the quality of teaching staff.

The migration of a household member outside the country is significantly associated with access to health centres. Remittances tend to have a positive impact as far as access to social assistance is concerned. Households without a migrant family member in Wave 1 but with at least one in Wave 2 tend not to be recipients of any type of social protection. Likewise, those households which did not receive remittances during Wave 1 of our survey but received them during Wave 2, are less likely to receive social protection transfers and livelihood assistance.

Payment of informal fees is also significantly related to access to health clinics –in other words, households that started paying informal fees between waves tend to have longer journey times to the health clinic (although, this might be to a better health facility). Similarly, those respondents who reported that they were not aware of meetings related to health services in Wave 1 but were aware of them in Wave 2 tend to have worse access to the health centre they use.

The results for schools indicate an increase in travel times between the two waves. We also see an increasing number of households sending their children to private schools and a decline in the use of government schools. Most of the households who switched to a new school (in Wave 2) cited a better quality of services and a (shorter) journey time as the main reason.

There was a considerable increase in the number of households who received a social transfer. For instance, 25% of households received a social protection transfer in Wave 1, significantly increasing to 34% in Wave 2. Furthermore, 12% more households received BISP transfers in Wave 2. Conversely, there was significant reduction in the percentage of households who received livelihood assistance in the form of seeds, tools and agricultural inputs.

Farming (cultivating own land), income from selling goods, causal labour and skilled labour have negative associations with access to social protection. It implies that households which earned money from any of these sources in Wave 2 are less likely to receive social protection.

7 Changing perceptions of governance

This section examines how perceptions of governance (local and central) have changed from Wave 1 to Wave 2. Respondents were asked **1) whether they feel that local and central governments care about their opinion**, and **2) to what extent government decisions reflect the priorities of respondents**. This gives us an idea of the sense of participation and ownership in the governance process. However, it is important to note here that in both waves the political and institutional set-ups were different. In Wave 1, elected local governments were largely defunct and the gap was filled by non-elected local administrators and civil servants; however, in Wave 2 (recently elected) local governments were in power in the study area. Local elections were held in 2015 and in Swat the Pakistan Tekrik-e-Insaf (PTI) won the largest number of seats (24), followed by the Pakistan Muslim League (PML-N) with 21 seats and the Awami National Party (ANP) with 8 seats; Jamaat-e-Islami (JI) only secured 1 seat. In Lower Dir, JI won the largest number of seats (23), followed by the ANP with 5 seats and PTI with 4 seats. Different political parties were in power at the provincial and federal level in both waves. In Wave 1, the Pakistan People's Party (PPP) was the ruling party at the central (federal) level, and the ANP at the provincial level. However, three political parties emerged as the main parties in the 2013 general election – namely, the PML- N, the PTI and the PPP. The PML-N won the most seats in the national assembly and thus formed the government at the national (federal) level, and Nawaz Sharif became the Prime Minister of Pakistan. In KP, the PTI formed the government in coalition with the JI.

In this section, we first elaborate on the conceptual framing of legitimacy, then trace the changes in perceptions of government over time, before drawing on regression analyses to identify what factors, if any, are associated with these changes.

7.1 Connecting our indicators to legitimacy

The importance of legitimacy to both the creation and preservation of order has long been recognised by political scientists. It has been described as 'the core of political organization' (Alagappa, 1995: 3), the 'central issue in social and political theory' (Beetham, 1991: 41) and 'central to virtually all of political science' (Gilley, 2006: 499). The state-building policy agenda, with its original interest in insitutions and capacity, has taken rather longer to open up to this 'slippery' concept (Teskey et al., 2012). But circumstances today are quite different from those of, say, ten years ago: legitimacy, as well as capacity, has become a fundamental aspect of donor and aid agency agendas, in their attempts to help build more peaceful, responsive and embedded states. Investing in better service delivery is one of the main ways they seek to enhance legitimacy. Therefore, one of the objectives of this panel survey is to examine whether (and under what conditions) this is a credible strategy.

Although there are differences in approaches, it is generally agreed that, in its broadest sense, legitimacy refers to the 'social rightfulness' of a given actor – in this case, the state. 'Social rightfulness' is a way of framing the extent to which a particular group of people in a particular territory i) *believes* the state has the right to rule, and ii) *acts* accordingly, through different modes of behavioural compliance. These are what Levi et al. (2009) refer to as the 'value-based' and 'behavioural components' of legitimacy (Figure 19: Pathways to legitimacy). In their model, these are not just dimensions of legitimacy – although it might, nonetheless, be useful to think of them as constituting the first 'sub-layer' of legitimacy – but parts of a causal chain. In their view, it is the 'sense of obligation or willingness to obey authorities [...] that then *translates* into actual compliance' (ibid: 354, emphasis added). In other words, before someone starts willingly paying taxes or deferring to a police order, they must first, as a necessary condition, believe in the rightfulness of the enforcing / regulatory institution. It is this logic that supports the idea that legitimacy makes it cheaper and easier for states to govern, reducing

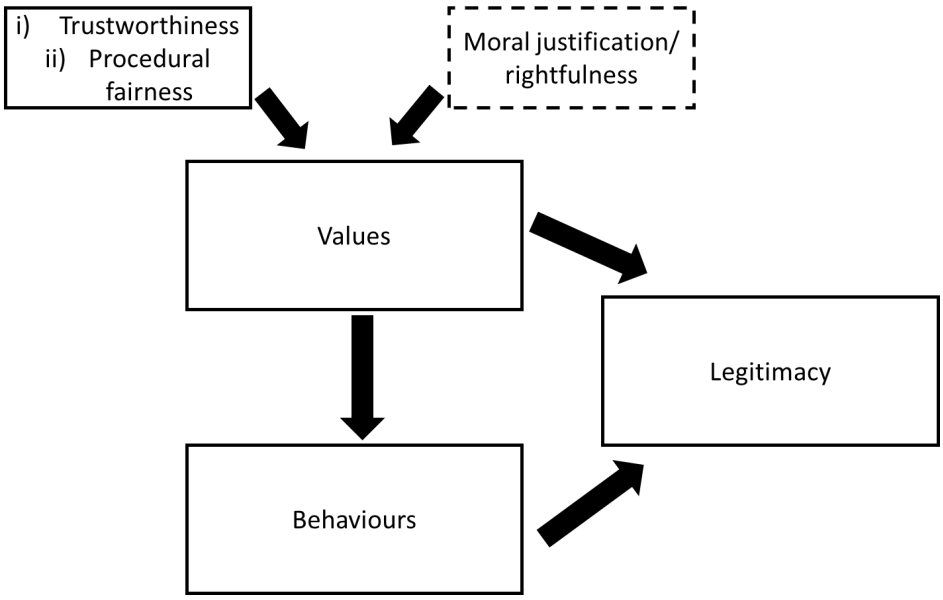
as it does the need to secure compliance through the resource-intensive application of force (ibid: 355). It also relates to the idea that legitimacy creates 'a kind of elasticity in state–society relations' (Mcloughlin, 2015: 2), whereby beliefs in the rightfulness of the state help maintain social compliance even when things go bad (e.g. in times of financial crisis).

Given the comparative advantage of surveys in generating perception data, the SLRC survey focuses on the value-based component of legitimacy rather than the behavioural component.[42] This too can be collapsed further. In their model, Levi et al. (2009) argue that value-based legitimacy has two 'antecedent conditions'. On the one hand, there is **trustworthiness**, which reflects the judgement that 'authorities are motivated to deliver on their promises and do what is right for the people they serve, seeking policies that truly benefit their societies' (ibid: 356). The authors suggest that trustworthiness is in turn comprised of three more specific elements, against each of which personal judgements or assessments can be made. These include:

- *leadership motivations*, which are tied to the nature of commitments made by leaders as well as their individual charisma (to an extent this means a 'thin' form of legitimacy might be generated by the ability of a President, for example, to convince the public of their vision);
- *performance*, which refers to the capacity of the state to produce core functions (this is how service delivery tends to get framed as a mechanism of trust-building, and therefore legitimation); and
- *administrative competence*, which is about both the honesty of state agents (e.g. perceptions of corruption) and the state's capacity to enforce the kinds of policies / regulations it has committed to (e.g. *de jure* law).

On the other hand, there is **procedural justice**, which emerges when 'governments exercise their authority through procedures that people perceive as fair' (ibid: 359). Evidence that beliefs in procedural justice contain a *legitimating quality* has been found in multiple settings (Tyler, 2006), most recently (and of particular relevance to us) in post-conflict Nepal (Fisk and Cherney, 2016).

Figure 19: Pathways to legitimacy



Adapted from Levi et al. (2009).

[42] Although the survey generates information on certain measures that could be taken as indicators of behavioural legitimacy, such as civic participation, these are never included in the regression models as dependent variables.

At this deconstructed level, it then becomes possible to formulate questions that can be inserted into a survey instrument, the responses to which plausibly tell us something about state legitimacy. The SLRC survey uses two questions in particular to capture aspects of value-based legitimacy:

- To what extent do you feel the decisions of those in power in (local and central) government reflect your priorities?
- Do you agree that the (local and central) government cares about your opinion?

Of course, these questions cannot be taken as direct indicators of state legitimacy, underpinned as they are by a series of assumptions. To start with, the government is taken as the primary political unit, although it has long been acknowledged that the state is about more than just formal government. This is particularly the case in conflict-affected contexts, where government tends to be contested, hybrid, layered and networked (Boege et al., 2008; Leonard, 2013). We recognise this as a limitation, but at the same time point out that governments are rarely an irrelevance; while they may not be the only form of authority, they remain one of the most important. Indeed, scholars continue to argue that the best hopes of improved security and development, hinge on the construction of capable states (Pritchett et al. 2012). As such, one assumption underpinning our model is that beliefs about the government translate into beliefs about the state in a broader sense.

It is also apparent from the nature of the questions asked that we are exploring a particular line of legitimation. That is, we are looking at value-based legitimacy (a precondition of behavioural legitimacy). And again, within that are focusing on certain strands. While the interpretation of our survey questions is open to debate, we see them as constituting indicators of trustworthiness: that is, the belief that the government's actions are serving individual interests. This potentially captures two aspects of Levi et al.'s (2009) three indicators of trustworthiness – leadership motivation and performance– which might make it difficult to disentangle the specific mechanisms at play. Our approach stops short of assessing the underlying rightfulness of government actions, which Mcloughlin (2015) sees as the most direct way of examining legitimacy. For example, just because an individual feels the government's decisions reflect their own priorities, it does not automatically follow that the same individual believes its actions are morally justifiable in a wider sense (partly for the simple reason that not everyone can be characterised as a self-interested rational actor). To investigate those issues would be to carry out a more detailed inquiry of the norms and expectations held by an individual, and the extent to which government action squares (or not) with these.

Thus, as with all studies of this 'slippery' concept, we are making a number of assumptions in our choice of approach. We are not claiming that the responses to our questions (and the perceptions that they reveal) are perfect measures of state legitimacy but rather that they may capture steps in a longer pathway to legitimacy, according to established theories.

7.2 Perceptions of local and central governments

To assess the respondents' perceptions of formal state governance, we asked them: 'To what extent do you feel the decisions of those in power in (local and central) government reflect your priorities?' [43]

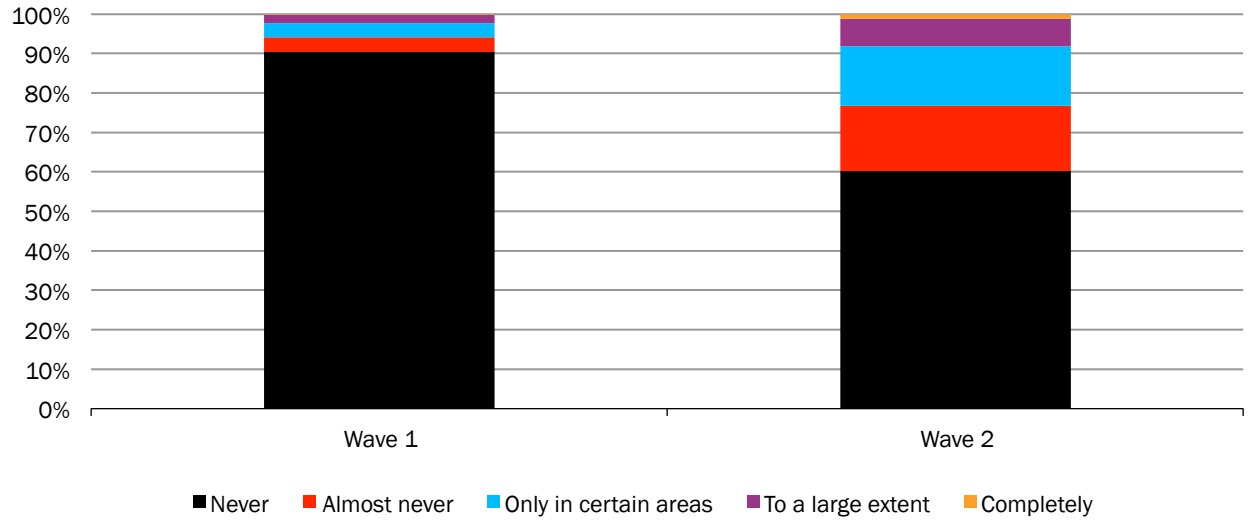
There is substantial change in the respondents' perceptions of local and central governments, as shown in Figure 19 and Figure 20. In Wave 1, the overwhelming majority of respondents (90% for local government and 94% for central government) said that the decisions of those in power 'never' reflected their priorities. But in Wave 2, these figures decreased to about 60% and 62%. The remaining respondents have a fairly positive opinion of local and central governments.

[43] They were asked to select one of the following five options in response to the above questions: Never = 1; Almost never = 2; Only in some areas = 3; To a large extent = 4; Completely = 5.

There are a number of possible explanations for this change in opinion. Local government institutions in Pakistan are commonly called 'local bodies' or 'local governments', and a 'new' system of local governance was introduced in 2001 by General Musharraf, the then military president of Pakistan (Saleem and Ahmad, 2012). Local government elections were held in 2001 on a non-party basis and local governments were empowered to administer water, education, health and sanitation as well as other basic services at the local level.[44] The system of local governments remained fully functional till 2008, but after the general election the powers of locally-elected leaders were gradually shifted to the bureaucracy; new elections were not held until 2015. At the national level, the Pakistan People's Party was in power in 2012 but in 2015 the Pakistan Muslim League (N) was the ruling party. When the first round of surveys was conducted in 2012, there were no functioning local governments and the district and sub-district level bureaucracy filled the gap. The local civil administration (and to some extent the army) was responsible for local level issues like water and sanitation, education and health. Respondents' perceptions may therefore relate more to the performance of the local administration rather than the defunct local government. But in 2015, newly elected local governments came to power and the perceptions of governance in the second wave probably relate more to their performance. Fair et. al. (2015) argued that the perceptions of disaster-affected populations in Pakistan were influenced by the effectiveness of government performance; however, in our case the political parties in power during the first round of surveys did not win the election in 2013.

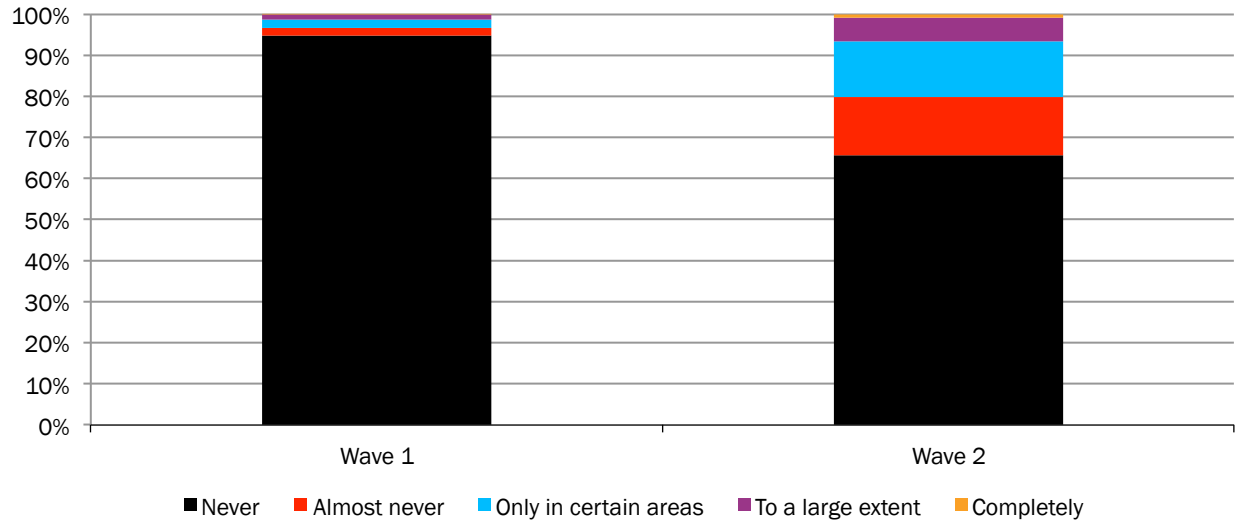
It is interesting to note that the majority of respondents were not happy with local and central governments; they felt that they did not care about their opinion. This is despite the fact that the vast majority of them were satisfied with the provision of basic services (particularly health and education). Even when levels of satisfaction with services increased in Wave 2, the perception of local and central governments remained poor.

Figure 19: To what extent do the decisions of local government reflect respondents' priorities?



[44] http://spearheadresearch.org/index.php/researchopinions/pakistan-with-and-without-local-government

Figure 20: To what extent do the decisions of central government reflect respondent's priorities?



Gender disaggregated data, given in Table 39(below), shows significant difference in the perception of male and female respondents. The data indicates that female respondents are less positive than male respondents. Although positive perceptions of local and central government have increased, significantly more female respondents consider that local and central governments do not reflect their priorities.

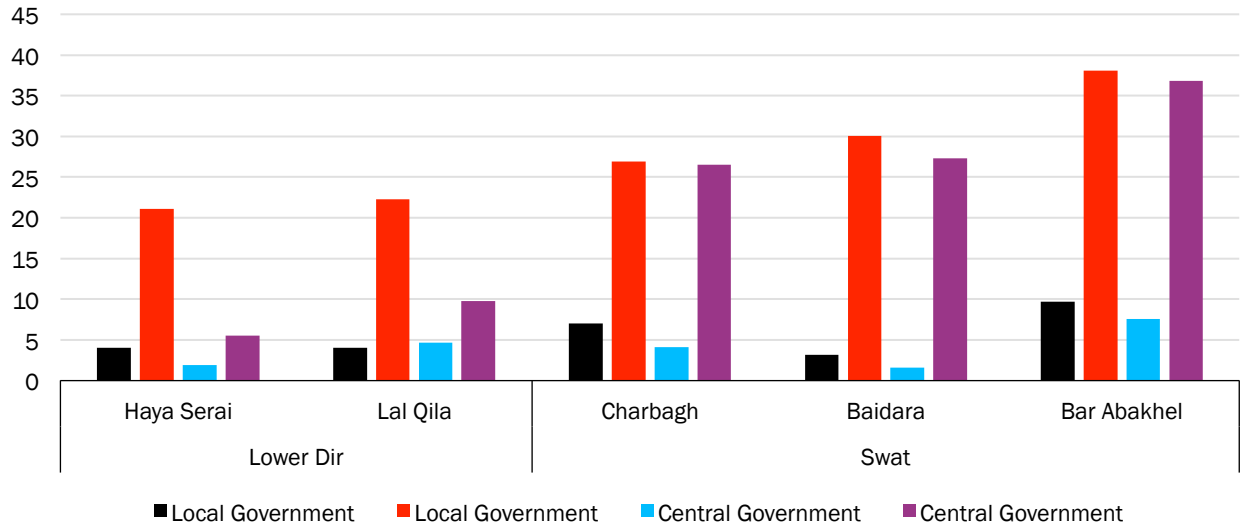
Table 39: To what extent do the decisions of local/central governments reflect respondent's priorities? (gender disaggregated)

	Local government				Central government			
	Wave 1		Wave 2		Wave 1		Wave 2	
To what extent do the decisions of local government reflect the respondent's priorities?	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Never	86.0	98.8	51.6	78.5	92.6	99.2	65.0	67.4
Almost never	5.7	0.0	21.4	6.1	2.8	0.0	14.4	13.0
Only in some areas	5.0	0.8	16.6	11.8	2.8	0.4	12.2	16.7
To a large extent	3.0	0.3	8.7	3.6	1.7	0.3	7.1	2.8
Completely	0.4	0.1	1.7	0.0	0.1	0.1	1.2	0.2
Total	100	100	100	100	100.0	100.0	100.0	100.0

Note: The difference in perceptions between men and women is statistically significant at 1% for both waves and levels of government.

Union Council-level comparisons of perceptions of whether 'local and central governments care about my opinion' are shown in Figure 21. This shows that a substantially higher percentage of respondents have a more positive opinion of local government in all UCs in Wave 2 – although this change of opinion is more noticeable in the UCs in Swat. The data for perceptions of central government shows a similar pattern, but a more significant improvement in public opinion in Swat. In Lower Dir, the Islamic party (JI) is the dominant party in local government and in Swat, PTI is the ruling party. PTI is also the ruling party at the provincial level. The general perception is that governance is more effective if the same party is in power at the provincial and local level. The army presence in Swat is another important factor; it is seen as a representative of central government and responsible for much of the development in Swat.

Figure 21: Perceptions of whether local and central government care about respondents' opinion



Disaggregation by gender, shown in Table 40, shows significant differences. In Wave 1, only 8% of males and 1% of female respondents thought that local governments cared about their opinion; this figure increased to 34% and 16% respectively. A similar increase was reported for central government. This clearly indicate that, though positive perceptions increased in Wave 2, female respondents were still less positive than male respondents.

Table 40: Local and central government care my opinion

	Local government				Central government			
	Wave 1		Wave 2		Wave 1		Wave 2	
Whether local government cares about respondents' opinion	Male	Female	Male	Female	Male	Female	Male	Female
No	91.9	99.2	66.3	84.2	94.5	99.0	74.1	88.7
Yes	8.1	0.8	33.7	15.9	5.5	1.0	25.9	11.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: The difference in perceptions between men and women is statistically significant at 1% for both waves and levels of government.

7.3 Regression results for local government

Looking at sample averages and 'switches' in perceptions of government, we can see a great deal of change over the three-year period, particularly with regard to local government. However, there were noticeable differences in patterns of change, indicating that different circumstances may have given rise to changes of opinion. To get a better understanding of the changes in circumstances, we ran regression analyses on the outcome variables 'the local government cares about my opinions' and 'the local government reflects my priorities' (the results of which are presented in Tables 14 and 15 in Annex).

The first regression indicates that the experience of shocks is linked to worse perceptions of government. More specifically, respondents who experienced agricultural shocks or economic shocks in Wave 2 (but did not experience them in Wave 1) are less likely to believe that the local government cares about their opinion. Local governments are responsible for providing basic needs such as water, sanitation and education (Saleem and Ahmad, 2012) and, because they are elected, the public believe that they have a duty to respond to shocks which affect their constituents. Jackson and Scot (2007) highlight the importance of local government institutions in post-conflict environments and argue that

donor agencies should recognize the importance of local governments in their rehabilitation efforts because local institutions are better positioned to negotiate with local communities.

In the second regression on the outcome variable 'local government reflects my priorities', shocks are non-significant, but an increase in wealth (measured by the Morris Score Index) is linked to a more positive perception of local government.[45] So too is receiving social protection, to the extent that respondents whose household members received social protection transfer in Wave 2 (but not in Wave 1) have a more positive opinion about the local government's commitment to their priorities.

The other significant explanatory factors in the regressions are largely related to service delivery. Time taken to collect drinking water is positively associated with the perception that local government cares about the respondents' opinions. More specifically, those who increased their journey time to their water source were more likely to believe that the government cares about them. Changes in sources of drinking water (detailed in Section 6.3), indicates that more households have access to a dug-well in Wave 2, which might have been installed by the local government (however we do not have any evidence to confirm this). From this, we can infer that, where the government improves water facilities, citizens have a more positive perception.

The payment of official fees for health centres is negatively linked to perceptions about local government, in both the regression on whether the government cares and whether its decisions reflect the respondent's priorities. Respondents who started having to pay official fees for health centres between waves, have worse perceptions of the government's responsiveness to their needs. In most of the villages, the local health centre (known as the Basic Health Unit) is managed by the local government and any negative associations with the centres tend to generate negative perceptions about local governments.

The number of problems experienced with services in the past year is inversely and significantly related to the perception of local government, again, in regressions for both outcome variables for local government. This means that respondents who experienced more problems with basic services in Wave 2 (than in Wave 1) have more negative perceptions of local government.

The Random Effects model indicates that female respondents are less likely to believe that the government cares about their opinion. Those in Lower Dir also have a more negative perception, relative to those in Swat. However, these indicators were both non-significant in the other local government regression.

7.4 Regression results for central government

Similar regressions were run to test for explanatory factors for changes in perception of central government. As before, the outcome variables were 'the central government cares about my opinions and 'the central government reflect my priorities' (and the results are found in Table s 16 and 17, in Annex). On the whole, the results were very similar to those for local government, suggesting that, broadly speaking, both tiers of government are judged according to the same criteria.

Again, the experience of economic shocks (in the past three years) has a significant but negative association with *both* outcome variables.[46] From this, we can infer that experience of shocks by households may lead to a negative perception of central government, perhaps due to expectations on the government to compensate for losses. One way in which the government could compensate for

[45] Sensitivity analysis found that the significance levels of the coefficients for MSI, receiving social protection and paying official fees for health service are sensitive to model specification.

[46] All of the significant results in the Fixed Effects regression on 'central government cares about my opinion' were sensitive to model specification. For the FE regression on 'central government reflects my priorities', the results for economic shocks and paying official fees for health service were sensitive to model specification.

economic shocks is through the provision of social safety nets. The major social protection programme (BISP) is managed by the federal government, which acts as social safety net for the poorest households. It does not appear, however, that the receipt of social protection is linked to an improvement in the perception of central government (the evidence suggests that most recipients attribute the effectiveness of social protection to local government). Another reason why social protection provision may not be significant here is that eligibility for BISP is based on a poverty survey conducted back in 2010.[47] Thus, households which, due to economic shock, fell below the poverty line after 2010 might not have been compensated.

One difference with the local government regressions, was that respondents in areas where the crime rate went up between waves had a more negative perception of whether central government cares about their opinion. We also see from the Random Effects regression for this outcome that respondents in Lower Dir, which saw a spike in certain crimes between waves, had more negative perceptions. We conclude that security provision, not only against the outbreak of violence but also for tackling petty crime, is important for how the government is judged. In Swat, the army was seen as the main institution responsible for maintaining law and order and in Lower Dir it was the police, both of which are managed at the federal level.

Several factors relating to service delivery were, again, significant. Those who started to pay official fees for the health service were more likely to have a worse perception of central government for *both* outcome variables. Similarly, respondents who identified the government as the provider of their water source (but had identified someone else in Wave 1) were less likely to believe that the government cared about their opinion. This is the opposite to what we found for local government and could reflect negative perceptions of the central government's management of donor-provided water schemes – compared to locally-managed ones which were introduced after 2015 (Shahbaz et al. 2012).

Participation and accountability are, again, seen to matter. Respondents who experienced more problems in Wave 2 are less likely to believe that the central government cares. On the other hand, those who were aware of meetings in the second survey had a more positive perception of central government. As in the case of local government, female respondents are less likely to agree that the central government cares about their opinion and this may also be connected to a lack of opportunities for women to represent themselves in the public sphere.

7.5 Summing up

There was a substantial change in respondents' perceptions of local and central governments; most notably a considerable reduction in the share of respondents who reported that governments 'never' reflect their priorities, from 90% in Wave 1 to 60% in Wave 2.

Despite this positive trend, it is important to note that the majority of respondents were still not happy with either local or central governments, particularly when it comes to listening to their opinion. Experiencing problems with basic services is consistently linked to worse perceptions of government, while awareness of meetings improves perceptions, suggesting that accountability and participation are highly valued. Likewise, female respondents consistently have more a negative opinion of local and central governments, which we link to their comparative exclusion from decision-making processes.

A UC-level comparison indicated that more respondents in Swat improved their opinion of government than those in Lower Dir. This might be due to the fact that the same political party is now in power at the local and provincial level in Swat, but in Lower Dir different political parties govern the different levels. The presence of the army in Swat is another factor that might have influenced perceptions

[47] http://www.bisp.gov.pk/

because it is seen as a representative of central government and is highly regarded because of its considerable development work in Swat.

There is also a suggestion that perceptions of local and central government are swayed by economic fluctuations at the local and household level. Experiencing economic and agricultural shocks is linked to more negative perceptions of government, while a rise in household wealth is linked to more positive ones (although in the latter case we only see the local government being judged more positively). The crime rate at the UC level also has a negative association with the perception of central government but it is non-significant in the case of local government. This could be because of the rise in crime rate in Lower Dir, and the fact that the police, who are responsible for tackling crime, are associated with the federal (national) rather than local government.

Under some circumstances, changes in service delivery seem to a have significant effect on perceptions of governance. The introduction of official fees for health, for example, is linked to more negative perceptions of both levels of government. The provider of drinking water also seems to matter and there is a suggestion from the regressions that the central government is judged for the performance of donor-provided water, while the local government is not held accountable for this.

8 Conclusion

8.1 Context

The study was conducted in areas affected by conflict, which subsequently had some form of assistance for rehabilitation/recovery. Two rounds of our survey were conducted during 2012 and 2015 in selected Union Councils (UC) in Swat and Lower Dir districts in Khyber Pakhtunkhwa (KP) Province. The surveys are representative at the UC level, and of the 2,114 respondents surveyed in Wave 1, 1,762 were tracked and questioned again in Wave 2; 34 % of the respondents were female. The surveys were designed to generate information about changes over time in people's livelihoods, their access to basic services (education, health, and water), social protection and livelihoods assistance, and the relationship of these outcomes with governance processes and practices.

A comparison of the data shows considerable changes between the two waves (2012 to 2015). In Wave 1 almost every respondent reported fighting in their area. At the time (2009-2010) there was a full-scale war between the Pakistani army and the Taliban, followed by sporadic fighting in some areas (ADB and World Bank 2009 and 2010; Shahbaz et al., 2012). However, after 2012, when the army had taken control of most of the region, there were fewer reported incidences of fighting (Bhatti 2015). In Wave 2 a negligible percentage 4.1%) of respondents reported fighting in the study area. In this context, we see a restoration of market activities, with a **significant reduction in respondents who reported poor market access as one of the barriers to livelihoods**. The production and marketing of fruit and vegetables is one of the main entrepreneurial activities in Swat, but market infrastructure was severely destroyed and activities came to a virtual standstill during the conflict (Nyborg et al. 2012). Following the restoration of peace, markets quickly recovered (Ali 2015; Suleri et. al. 2016). Similarly, there was a significant **reduction in crop and livestock-related shocks and loss of soil fertility**. This is partly attributable to the success of post-conflict livelihood interventions (the distribution of seeds and fertilisers) in improving soil fertility (Shahbaz et al. 2012, Suleri et al. 2016). Another important development was the reduction in **inflation and price hikes,** indicating improved economic stability.

Despite these developments, it was surprising to note that **perceptions of safety worsened**. More specifically, there was a significant reduction in households who feel 'very safe' while moving within their village or moving to other places (outside their village). While this does not mean that people began to feel 'unsafe' on a large scale (in fact these figures are rather small in both waves) we, nonetheless, see a *reduction* in people's confidence in the safety of their area. The presence of the army in towns and along roads during Wave 1 might be one of the reasons. After 2012, the situation began to normalise and the army began reducing the number of check points[48] – most of the check posts on smaller roads were either removed or handed over to local police. Though there were no longer any reports of large-scale fighting, there were numerous cases of influential people[49,50] killed by the Taliban (Rehman 2014). This continuing climate of violence, coupled with the withdrawal of the army, is likely to be one of the reasons that concerns about safety grew during this period. Interestingly, female respondents' perceptions of safety within their village is more positive than males, but worse for 'moving outside the village'.

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[48] http://tribune.com.pk/story/158036/improved-security-situation-in-swat-army-begins-reducing-checkposts/

[49] 'In the last three years, a number of members of Village Defence Committees (VDCs) or peace committees — which are being organised at village-level in entire districts with the army's support — have been targeted by unknown militants.' http://www.dawn.com/news/1133198

[50] Peace committee member gunned down in Swat; The Express Tribune October 2, 2015. http://tribune.com.pk/story/965898/peace-committee-member-gunned-down-in-swat-3/

8.2 Livelihoods and wellbeing

Changes in livelihood activities, income sources, assets, food security and food diversity, and access to credit are some of the key variables selected to understand the changes in livelihood and wellbeing of sampled households.

Remittances from migrant family members was the main income source in Wave 1, and this continued in Wave 2. This is not an unusual finding because migration is one of the most prevalent livelihood strategies in rural areas of KP, particularly in Swat and Lower Dir (Amjad and Arif 2014; Government of KP 2015). Nevertheless, there was a slight decrease in households who reported overseas remittances as the major contributor to household income. We also see a decrease in the perceived impact of remittances, in terms of how much households depend on them. Thus, we infer that, immediately after the conflict, remittances were an invaluable contribution to food and other immediate household expenditures. This is supported by the findings of Gioli et al. (2013) who found that the majority of households they surveyed reported having avoided starvation due to remittances, since most of their livelihood activities had ceased as a result of violent conflicts between the Taliban and the army, and prolonged curfews.

Like remittances, small loans also continued to be an important strategy for households for meeting their immediate needs, and **the percentage of households in debt substantially increased in Wave 2**. The majority of these household borrowed from their family/friends or from informal money lenders; only a small number of respondents took out a loan from a formal money lender. Most of the households borrowed money to meet their immediate needs (food, clothing and health) and the majority stated that they would be able to borrow money from their family/friends in case of sudden health-related problems. However, significantly fewer female respondents in Wave 2 believed that they could borrow money from family/friends in case of an emergency.

Food insecurity was assessed using the Coping Strategies Index (CSI) and our results reveal a **significant increase in food insecurity (higher CSIs) in Wave 2** across the sample as a whole. However, it should be noted that food insecurity was very low to begin with: 67% of the sample had a score of zero or 'no food insecurity' in Wave 1. The increase in food insecurity was more prominent in UCs in Lower Dir than those in Swat. This finding is in line with the report by Suleri and Haq (2009) which indicates more food insecurity in Lower Dir district.

Food diversity, measured using the Food Consumption Score (FCS), has improved slightly – while more than half (52%) of the total sample switched to better food consumption patterns (a higher FCS), 41% of households had a lower FCS. A marked increase in the consumption of vegetables, fruit, pulses and root/tubers was recorded.

Ownership of household assets determined by **the Morris Score Index (MSI) indicates an overall increase in household wealth**. However, beneath the overall improvement, we see that while MSI improved on the whole in Lower Dir, it actually decreased on average in Swat. A possible explanation is that more households in Lower Dir depend on remittances (overseas labour) as their main source of household income and that these were more commonly used in the purchase of assets in Wave 2, while in Wave 1 they would have mainly been used for subsistence. This complements a previous study in which Gioli et al. (2013) found that remittances to these conflict-affected areas were commonly used in coping with the aftermath of conflict.

Using regression models we tested for other changes in circumstances between waves that help to explain these outcomes. The regressions indicated that **taking a loan/ credit is linked to worsening food insecurity and food diversity but was not associated with changes in household wealth**. In other words, taking a loan is one of many coping strategies that households employ in this context, without perhaps offering the level of input that would be needed for households to invest substantially in their

livelihoods. This finding follows on from research by WFP (2010) which indicated that most of the conflict-affected households of KP had to borrow money to manage food and cash shortages.

On the other hand, **households which started receiving livelihood assistance between the waves tend to be less food insecure, with better food diversity (FCS) and increased assets**. While we cannot tell necessarily whether these are causal relationships, it is important to acknowledge the impact of seeds, fertilisers and farming tools distributed by donor agencies during the relief and rehabilitation phase.

Interestingly, **overseas migration and remittances were not linked to any changes in food security, food diversity or household assets**. However, given the fact that the importance of remittances for subsistence has diminished as these districts have undergone post-conflict rehabilitation, it is not that surprising that we do not see a significant relationship here anymore.

Perceptions of safety emerged as an important explanatory variable for food insecurity and there is a negative relationship between perceptions of safety (within the neighbourhood and outside the village) and CSI. In other words, **perceiving the local area to be less safe is associated with worsening food insecurity.** While we cannot make a causal interpretation here, we can link this to other research, which suggests that being in a (perceived) safer location goes hand-in-hand with better access to income generation activities. Some previous researchers have established links between food insecurity and conflict (see for example Messer and Cohen, 2006; Rice, 2007). In terms of a direction of causality, more recently FAO (2016) established that, while violent conflict has adverse effects on food security, the effect of food security on conflict is not fully understood.

We also identified variables in our Random Effects regression analysis which shows the effect of household characteristics that change much more slowly over time. Education emerged as an important explanatory variable for food security, food consumption and household assets. **The better the average education of the household, the better off they tend to be in terms of food security (CSI), food diversity (FCS) and asset ownership (MSI)**. However, primary or madrassa education does not have a significant impact on these variables; thus, the improvement is likely to come when the average education is secondary or higher.

8.3 Services, livelihood assistance and social protection

Changes in respondents' access to and experience of basic services (health, education and water), livelihood assistance and social protection were recorded. The following main findings emerge:

The majority of the sampled households are using the same health centre, school and source of drinking water in both waves. However average travel time to the health clinic, school and source of drinking water have increased slightly and we saw a huge amount of change in journey times in general. Access to services has also changed in other ways – for example, the number of visits to the health centre has increased slightly from 13 to 15 visits per household. There is also decrease in the number of households which are using piped water (maintained by the government) and a significant increase in households whose source of drinking water is maintained by the community, particularly in Lower Dir.

There is an increasing trend for sending children to private schools and we also see high levels of reported school attendance in both waves, including for girls. Levels of satisfaction with the girls' school also increased, although satisfaction with the boys' school remained higher across both waves.

Recipients of social protection have increased significantly (from 25% to 34% of the sample between waves) but **recipients of livelihood assistance have substantially decreased** (from 22.5% to 4.7%). This is an important finding which reveals the extent of the withdrawal of donor-supported livelihood projects now that the recovery and rehabilitation phase in KP is coming to an end. Most of the post-conflict livelihood interventions involved the distribution of seeds, fertilisers and nurseries, and the provision of trainings, which had a positive impact on the revival of agricultural activities (Suleri et. al., 2016). Nonetheless, we

do see that livelihood assistance has a positive relationship with food security (see previous section of the conclusion) so the scaling down of such programmes is worrying in a context in which food insecurity also appears to have risen overall. It is worth mentioning, however, that the government-supported cash transfer, the Benazir Income Support Programme (BISP), remained the most important SSN and most of those households who received cash from BISP reported a positive impact.

The results for satisfaction with health, education (boys and girls school) and water services indicate that the majority of respondents are satisfied with the quality of service for health facilities and **satisfaction from basic services (health, education, water) has increased in Wave 2.** Satisfaction with different aspects of services (for example, the number and quality of teachers, class size, school infrastructure/equipment, availability of medicines, waiting time in health centres, qualified personnel, etc.) has improved quite uniformly across waves. This improvement might be attributed to post-conflict rehabilitation efforts by the aid agencies. During the initial phase of post-conflict interventions, the emphasis was on recovering subsistence mechanisms through improving the food supply and delivering livelihood assistance (seeds, fertilisers). The restoration of infrastructure was a long-term strategy whose benefits were realised in Wave 2 (see Shah and Shahbaz, 2015, for details).

Using regression models to test for explanatory factors, we find that perception of safety has emerged as an important parameter. The results, however, are extremely inconsistent in terms of direction. **We find that when the level of perceived safety in a neighbourhood increases, households have better access to the health centre**, in the sense that the journey takes less time. On the other hand, **if an area is judged by most respondents to be safer, respondents there are likely to be less satisfied with the quality of health and educational services**. Thus, our hypothesis for a positive association between safety and satisfaction with services (health and education) is not accepted. However, **respondents in areas where the overall perception of safety (while moving outside village) improved in Wave 2, are more likely to report that their water is safe and clean.**

There are some other counter-intuitive relationships – for example, households who perceive that moving outside the village became less safe between waves are more likely to receive social protection. Neighbourhood safety is also negatively associated with perceptions of livelihood assistance, meaning that respondents in areas where the overall perception of safety improved between waves are less likely to report a positive impact from livelihood assistance. We also find that respondents from areas with a higher crime rate in Wave 2 (based on crimes reported in our sample) have better access to their water source, in terms of journey time. It is clear that perceptions of safety, and rates of petty crime, differ by location and are partly influenced by the presence of different security providers, notably the police or the Pakistan army. It is not clear, however, that there is any consistent link between security and service delivery and more needs to be done to understand how the providers of services (donors or government) fit into this picture.

We do find that households who had a migrant leave the household between waves or started to receive remittances, are less likely to be the recipient of any type of social protection or livelihood assistance. We infer that migration/remittances might have offset the need for social protection and livelihood assistance. Similarly, respondents in sampled households which had a migrant in Wave 2 (but not in Wave 1) were less likely to report a positive impact from livelihood assistance, implying that it became of less importance to their overall household income.

Somewhat surprisingly, we **did not find any association between knowledge about a community meeting and satisfaction with health and educational services, livelihood assistance or social protection. However, awareness of meetings about water is linked to greater dissatisfaction with water quality**.

Payment of fees is also linked with access to and satisfaction with services. For instance, payment of informal fees is associated with worse access to the health clinic and the boys' school, meaning longer journey times. The payment of formal or informal fees is also significantly associated with lower satisfaction with the health centre. We cannot be sure whether this is related to households becoming more stretched for cash as a result of newly-imposed fees, since our measure of wealth (MSI) is not an explanatory factor of any changes in access to basic services.

Food security is also an important explanatory variable for some outcome variables. The households which become more food insecure are likely to be less satisfied with health services than those which did not. Households whose food insecurity increased are also more likely to be the recipients of social protection but less likely to receive livelihood assistance.

8.4 Changes in the perception of governance

The respondents' perceptions of local and central governments have also changed between waves. Our primary indicators of perception were the questions: 'To what extent do the decisions of government reflect your priorities?' and 'Do you agree with the statement that the government cares about your opinion?'. These were asked for local and central government. It is worth noting that local government underwent a significant change between waves, in the sense that it was non-functioning in Wave 1 and run by unelected administrators, while in Wave 2 elections had been held so local governments had become more formally accountable.

Though the majority of respondents are still not positive about either local or central governments, there was a significant change (improvement) between the two waves. In Wave 1 more than 90% of the respondents felt that local and central governments 'never' or 'almost never' reflected their priorities but in Wave 2 this percentage dropped to around 75 %. Likewise, there was a similar response to the question of whether 'local and central governments care about my opinion', where a considerable percentage of respondents changed their opinion in a more positive direction – though, again, the majority perceive that the local and central governments never care about their opinions.

This change might be due to the different political set-up in the two waves. In Wave 1 there were no elected local governments in the study area and the local bureaucracy filled the gap, but during the second round of surveys elected local governments were functioning. Similarly, different political parties were in central government. This change between waves might have altered respondents' perceptions. Fair et. al. (2015) have argued that the effective government response after the conflict and floods led to a change in attitude towards government in conflict-affected regions of KP – although, the political parties in power during the conflict and subsequent rehabilitation phase ended up losing power in the elections of 2013.

Regression analysis allowed us to look into the circumstances associated with negative and positive change. On the whole, there were few statistically significant explanatory factors. **Change in household assets, food insecurity and perception of safety did not have a significant relationship with change in the perception of governance**, with one exception: households whose assets have increased are more likely to say 'yes' to the statement, 'decisions taken by local government reflect my priorities'.

Experiencing more shocks was strongly linked to worsening perceptions of government. For instance, respondents who have experienced economic and/or agricultural shocks in Wave 2, are more likely to say 'no' to the statement that local and/or central government cares about their opinions.

One of our core research questions is whether a link can be established between service delivery and state legitimacy, and here we test one aspect of legitimacy: people's perceptions of the government's responsiveness and reflectiveness. During this period, satisfaction with all basic services in our study improved. We do not, however, find a direct link between improvements in services and perceptions of

government, even taking into account all the other factors that might have swayed perceptions. We do, however, find that **respondents who experienced more problems with basic services in Wave 2 (than in Wave 1) have more negative perceptions of local and central government**, and that these results are stronger for local government.

Some other aspects of service delivery also have isolated links with government perceptions. Starting to pay official fees for the health service is significantly associated with the negative perceptions of local as well as central governments**. Respondents in households which started receiving social protection transfers in Wave 2 also tended to have a more positive opinion about the statement that the decisions of local governments reflect their priorities.** However, receipt of a social transfer did not have any significant impact on changes in perception of central government. Respondents who reported that the government was responsible for the source of their drinking water in Wave 2 (though they reported sources other than the government in Wave 1) also tend to have more negative opinions about central government.

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Appendix: Complete analytical methods

When it comes to analysing the data, the complexity of the dataset can pose a serious challenge. There are now up to two observations for each respondent, and it is likely that their responses to some questions will be correlated over time. As such, the way we approach this from an analytical perspective has implications for the validity of our estimates. In this section we describe the workings of two commonly used estimation models and explain our choice of model for this analysis.

Fixed and Random Effects models

Consider a simple model with one time period where y is the dependent variable, α is the intercept, β is the coefficient of variable x, for k independent variables and for i individuals (respondents in our case)[51]. For the function that relates x to y there is the unobserved error term ε for each individual[52]:

$$y_i = \alpha + x_{ki}\beta_k + \varepsilon_i$$

In a case such as ours, where we have observations for more than one time period, the problem is that for the same individual across time, the error terms are likely to be correlated because there are some key characteristics about that individual that do not change.

Even if we control for everything that we can *observe* about that individual (by inserting a vector of k covariates into the model), there are still likely to be unmeasured individual factors which have an influence on an individual's outcomes over time. To put it in different terms, when a respondent answers whether or not they believe that the government cares about their opinion, their answer will be based on their personal beliefs, opinions, preferences, expectations, lived experience, personality and mood. Some of these we can attempt to capture (for example, we can control for the fact that people displaced by conflict are likely to have had a different experience to those who remained, and this may also affect our variables of interest), but most of these factors remain unobserved.

When it comes to modelling such a relationship, there are ways of addressing this bias. Consider now a model where: there are different time periods, denoted by t; where some of the covariates are time-variant (meaning they can and do change over time), denoted by x; and where others are time invariant (meaning they do not change over time for anyone), denoted by z:

$$y_{it} = x_{kit}\beta_k + z_{ji}\delta_j + u_i + \varepsilon_{it}$$

For each of the k variables which do vary over time (x) there is coefficient β, and for each of the j time invariant variables (z) there is coefficient δ. The error term is now also split into two parts: individual-level effect u and disturbance term ε. This model requires four basic assumptions:

1. Observations are independent and identically distributed (i.i.d), where
2. $E(\varepsilon_{it} \mid X_i, u_i) = 0$ (errors are independent of the individual-level effects)
3. $Var(\varepsilon_{it} \mid X_i, u_i) = \sigma^2$ (the variance of the errors is homoscedastic)
4. $Cov(\varepsilon_{it}, \varepsilon_{is} \mid X_i, u_i) = 0 \; \forall \; t \neq s$ (and there is no serial correlation of the errors.)

---

[51] The dependent variable is also known as the variable of interest or outcome variable and is the variable that you are modelling the 'effect' of something on. Independent variables are the variables that you estimate the effect *of*. The intercept is the value that the dependent variable takes when all independent variables are set to zero (this is not universally true but it applies in our analysis).

[52] This section acknowledges its debt to Baum 2006, Chapter 9, for the models presented.

The remaining question is how to treat the individual-level effect, u_i. One approach is to assume that the individual-level effects are 'randomly' distributed across individuals and uncorrelated with everything else in the model:

$E(u_i \mid X_i, \delta_i) = b$, a constant (the individual-level effects are uncorrelated with the regressors).

This is known as the Random Effects model (RE). Yet the assumption that individual effects are randomly distributed is rather strong. It requires us to believe that when we have controlled for all observable characteristics of a respondent, any differences between them are more or less the result of random chance. In other words, we would have to accept that there is nothing else about the respondents themselves, besides what we have measured, that explain outcomes in any of the variables. A strength of this model, however, is that it can estimate effects for variables that do not change over time (time invariant variables denoted by z in the model above).

An alternative model, the Fixed Effects model (FE) rejects this assumption and assumes that there *is* a correlation between the individual level effects and the regressors.[53] When the u_i are correlated with some of the regressors, the bias can be reduced by treating them as parameters in the model or, in other words, by controlling for every individual in the sample.

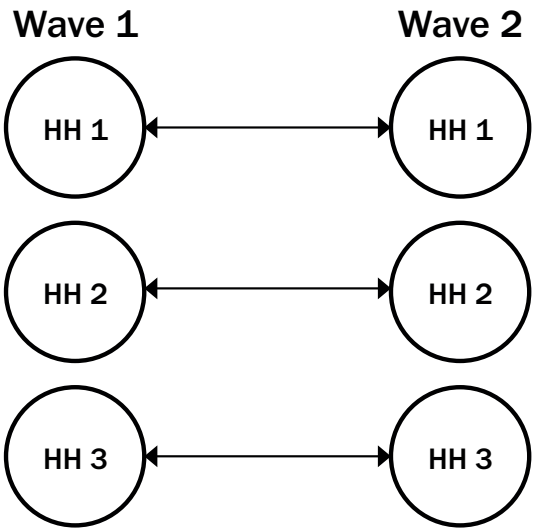
A drawback of the FE model is that it cannot estimate the effect of time invariant variables. This is because when 'controlling for' the unobserved differences between individuals, the model can only estimate within-individual effects. These rely on there being a change between waves 1 and 2 for a given outcome variable. When there is no change in the outcome, there is no comparison observation against which to estimate the effect that a change *would* have. In the RE model this is not a problem since it estimates the effect of a change, based on a comparison group that includes any individual in any wave.

What follows from this is that the interpretation of the estimated effects differs depending on which model you use. The following figure illustrates simply what each model is able to tell us.

[53] It should be noted that FE and RE are not the only models that can be used to analyse longitudinal data. For a discussion of more options for longitudinal modelling see Rabe-Hesketh & Skrondal (2008) and Dougherty (2011), Chapter 14.

Figure 22: An illustrated example of the difference between FE and RE models.

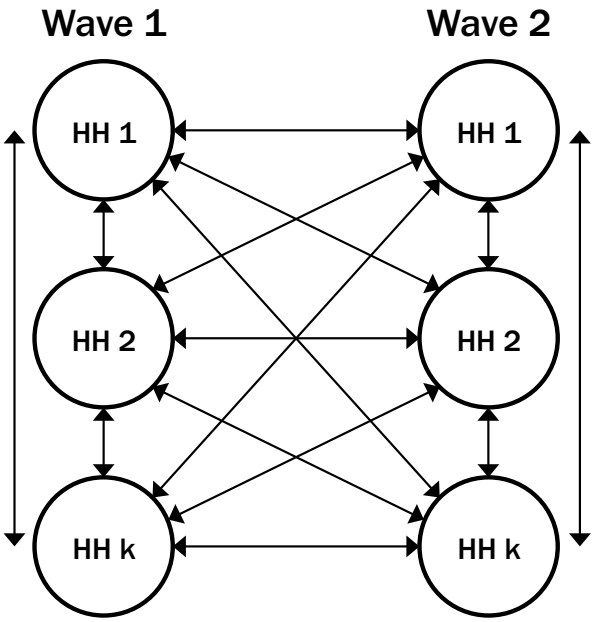
In this example there are three households, each represented by a circle. There are two panel waves and each household has an observation in both. Assume each household has a value for Coping Strategies Index (CSI) wherever that household appears. We are testing the effect of CSI on an outcome variable, say, perception of central government.



Fixed effects model:

This model estimates the effect of a change within a household (or individual respondent) on the change in the outcome variable.

To calculate the expected change in the perception of government, it calculates a function of the black lines, which are differences in the value of CSI from one time period to the next.



Random effects model:

This model estimates the combined effect of a change within a household (or individual respondent) and differences across households, potentially within the same wave, on the outcome variable. The model calculates differences across all instances of a particular value, regardless of whether they came from the same individual over time or not.

To calculate the expected change in the perception of government, it calculates a function of the black lines, which are differences in the value of CSI.

Deciding which model to use

Deciding whether to use the RE or FE is both a conceptual and statistical decision. It is possible to test whether the assumptions of the RE model *do not* hold using the Hausman test (Hausman 1978). Theoretically, it would make sense to run the Hausman test on each pair of models for each outcome variable to determine whether the assumptions appear to hold water in each case. However, an objective of the SLRC survey is to look for similarities and differences across the various sample populations. Therefore, the models used in each country analysis must be exactly the same (or as similar as possible given the differences in available data across countries). With this in mind, the decision of whether to use FE or RE was made based on conceptual justifications.

Ultimately, the FE model was chosen since it is designed "[s]ubstantively… to study the causes of changes *within* a person [or entity]" (Kohler and Kreuter 2009: 245, emphasis ours), and this is the

focus of our research rather than the study of macro-level processes. It is also highly doubtful that we can make the assumption inherent in the RE model that all personal differences between individuals can be accounted for by the control variables. For this to be true we would need to capture such elusive traits as 'expectations' of services and 'personality' or risk omitted variable bias resulting from the failure to control for these (Torres-Reyna 2007). Clarke et al. (2010) describe in detail the selection process between RE and FE in the context of education studies, noting that the RE assumption will not hold in practice when the mechanism driving the outcome "is only partially understood and perfect measures of all the factors driving [the outcome] are rarely available." This certainly applies to the SLRC survey. While we have included a broad range of explanatory variables in our surveys and regressions, we know that we are only capturing aspects of the processes that drive complex outcomes such as perceptions of government.

Deciding on the FE model still leaves us with the problem of how to estimate the effect of time-invariant factors, such as gender of respondent or displacement in a conflict prior to baseline (and these are some of our most important variables of interest). The only way to estimate the effect of variables that do not change over time and to correct for correlated residuals over time is by using RE. To get around the problem of unrealistic assumptions, we tried using the Mundlak correction (Mundlak 1978), which allows for all possible correlations between u_i and the regressors x_i. However, the estimates of time invariant effects did not prove more efficient than those in the RE model.[54] In the end, it was decided that the RE model would be run alongside the FE model but used only to estimate the effect of time invariant variables.

Those who look at FE and RE models with the same set of regressors, side-by-side, will note that although the coefficients usually remain almost identical in terms of size and direction of effect, there are always more statistically significant results in the RE model. This is because the standard errors of the coefficients are larger in the FE regression, and these are used in the test for significance. Though it may be tempting to choose a model which provides the most significant results, in our case we cannot ignore the possibility of omitted variable bias in the RE models. Because of this, it is only used when there is no FE option to estimate an effect of a variable of interest.

[54] 'Efficient' in this context means that the variance is small, which improves the chance of detecting statistically significant effects. As Allison (2009: 21-23) points out, a strength of the RE model is that it is efficient in terms of reducing the size of the variance.

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