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A calendar method of collecting remittance use data in a remittance dependent setting of Nepal¹

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Abstract

This methodological paper describes the design and refinement of a calendar method of collecting data on remittance receipt and remittance use and its piloting in a rural remittance dependent setting of Nepal. Much of the previous national surveys collected remittance receipt and remittance use cross-sectional data that used a time frame ranging from 12 – 24 months. These surveys collected remittance receipt data by asking, ‘How much money has he/she sent in the past 12 months or 2 years?’ We believe that the long time frame of one to two years adds burden to respondents for unnecessary calculations and is prone to re-call bias. Moreover, these surveys used vague words such as ‘capital formation’ or ‘daily consumption’ to measure the uses of remittances. Thus, the instrument *per se* is unreliable posing threats to collecting valid responses. Considering these flaws, in 2013, we designed a calendar with shorter timing cues and simple words for collecting longitudinal data on remittance receipt and remittance use. First, we describe the calendar design process. Next, we provide descriptive results of household responses on the amount of remittance received and the remittance used on various socio-economic and cultural dimensions of household activities. The implications of the insights gained from this study are discussed.

Keywords

Calendar; longitudinal; migration; Nepal; remittance; South Asia

1. Introduction

Migration and development literature has much discussed about the productive vs. consumptive uses of remittances on various socio-economic and cultural dimensions of household activities. One line of research suggests that migration and remittances contribute positively to the migrant-sending communities through initiating development dynamics by lessening production and investment constraints in the economy, creating environment for

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risk diversification, helping migrants to establish businesses, poverty reduction, and through investment in human capital development (Acosta, Calderon, Fajnzylber & Lopez, 2006; Rozelle, Taylor & de Brauw, 1999; Rajan & Zachariah, 2010; Stark, Taylor & Yitzhaki, 1988; Stark & Lucas, 1988; Massey & Parrado, 1998; Lauby & Stark, 1988; Stark, 1991; Lokshin, Bontch-Osmolovski & Glinskaya, 2007; Adams, 2011; De & Ratha 2012; Acharya & Leon-Gonzalez, 2014; Ngoma & Ismail, 2013). Other scholars argue that remittances are primarily used for consumption rather than income- or employment-generating activities such as buying land or establishing businesses (Adams, 2011; Massey & Basem, 1992; Brown & Ahlburg, 1999; Seddon, 2004; Hoermann & Kollmair, 2009).

Previous studies primarily used cross-sectional data that measured remittance receipt and remittance use with long time reference of one or two years. For example, information on remittance receipt and remittance use was collected by asking 'How much money has he/she sent in the past twelve months? (e.g., Standing, 1985; Nepal Living Standard Survey, 2010/11; Nepal Labor Force Survey, 2008; Central Bureau of Statistics, 2011).' Other surveys used the two year time frame (e.g., The National Migration Survey, Thailand). Evidence suggests that about 20 per cent of the critical details of an event are irretrievable after one year and 50 percent of them are irretrievable after 5 years and therefore, are prone to re-call bias, which is one of the important threats to internal validity (Hasan, 2006; Bradburn, Rips, & Shevell, 1987). According to Hassan (2006), the accuracy of re-call is influenced by the degree of required detail, interviewing techniques and the quality of questionnaire, and the personal characteristics. As the households receive or use remittances multiple times in a year and in many different activities, the response about the receipt or the use is not ready made causing measurement error due to re-call bias or memory failure (Dillman, 2000; Dillman et al., 2009; Groves et al. 2004). It also increases burden to respondents forcing them for unnecessary calculations, for example, the amount of remittance received each time or spent in each activity (Dillman, 2000).

Moreover, the data on remittance receipt has been collected using complex or vague question wordings. For example, the Nepal Living Standard Survey (2010/11) collected remittance use data by asking, "What was the use of the remittances received from during the past 12 months." The response categories were 'daily consumption', 'education', 'capital formation' and so on. We believe it is difficult for a respondent or household informant to understand such vague categories such as 'daily consumption' and 'capital formation' posing a threat to validity. Because different respondents may understand and interpret the same vague words such as 'capital formation' or 'daily consumption' differently and will offer varied responses to these questions (Groves et al. 2004; Dillman, 2000; Bauer et al. 2014; Brady, 1985; King et al. 2004). The information collected from such survey items is prone to measurement errors. Moreover, while respondents may re-call if the household received remittances from only one person once or twice a year or if a household spent money in durable consumption items such as a television or a computer, it is easy to forget the expenses if the household spent in regular consumption items such as food, vegetables and clothing. Moreover, it is difficult for respondents to calculate the total amount of remittances (they need to do the math for researchers) received from multiple household members or spent in various household activities over a period of one or two years. More importantly, it is difficult for respondents to get the total expenses made in

‘capital formation’ or ‘household consumption’ over a period of time due to the ambiguity and vagueness of such concepts.

Considering these potential errors in view, in this paper, we describe a new method - a remittance use calendar - designed to collect longitudinal data on remittance receipt and remittance use. This calendar is designed using simple and specific measures of household activities and with short timing cues. This calendar was designed to record (a) number of migrants from a household, (b) receipt of remittances by an individual migrant household, and (c) use of remittances on various dimensions of household activities by a remittance receiving household. Below, with a brief contextual background, we describe the design of a calendar for collecting longitudinal data on remittances. Then, we describe the descriptive results of remittance receipt and the uses of remittances by households in various dimensions of household activities using data from 185 migrant households in the western Chitwan Valley of Nepal.

2. Background and Significance

More people are geographically mobile today than at any point in human history. In 2013, 232 million people were international migrants (UN Press Release 2013), which increased from 214 million in 2010 (IOM 2010). With an estimated 232 million people moving internationally—mostly from poor, subsistence-based agricultural countries to rapidly industrializing, economically advanced countries—and approximately three quarters of a billion migrating from rural to urban areas within their countries, population mobility has gained significant attention in both scholarly and policy arenas. Thus, the consequences of high levels of migration and remittances for both sending and receiving societies have been a major concern. This has prompted a large number of studies on the causes and consequences of migration and remittances around the globe.

While migration studies has much focused on the causes of migration than consequences (Dey, 2015), the existing studies offer conflicting views on the consequences of out-migration and remittances on migrant-sending communities. Proponents of the pessimistic view argue that out-migration negatively influences migrant-sending communities because a large proportion of remittances received by households are used for consumption such as construction of bigger houses and spending on feasts, funerals, weddings, and medical bills rather than on productive investments (Adams, 2011; Massey & Basem, 1992; Brown & Ahlburg, 1999; Seddon, 2004, Hoermann & Kollmair, 2009; Reichert, 1981; de Brauw, 2007; Jokish, 2002; Adhikari, 2001; Rempel & Lobdell, 1978; Koc & Onan, 2004; Oberoi & Singh, 1980; Ecer & Tompkins, 2010). Contrastingly, the proponents of the optimistic view (New Economics of Labor Migration (NELM) theory) argue that there is a positive impact of out-migration on migrant-sending areas, most notably through the remittances migrants send back to their households (Taylor, 1999; Stark and Bloom, 1985; Taylor & Martin, 2001; Stark, 1978; Stark & Levhari, 1982; de Haas, 2007; Dey, 2015). For them, migration is a potential source of investment capital in developing countries (Penninx, 1982; Beijer, 1970; Kindleberger, 1965; Taylor & Yunez-Naude, 1999; Thieme & Wyss, 2005; Ngoma & Ismail, 2013). For example, Adams (1998) demonstrated that in rural Pakistan, international remittances have a significantly positive effect on the accumulation of irrigated and rain-fed

land or productive investment assets and not on the accumulation of non-farm or consumption assets. Oberai and Singh (1980) and Ecer and Tompkins (2010) also find that some amount of remittances is spent on productive investments such as the purchase of land, farm equipment, and raw materials such as seeds and fertilizers for farming. In India, Mohanty, Dubey, and Parida (2014) reported that the remittance-receiving households allocated higher proportion of marginal budget shares on health, education and consumer durables than those of households not receiving remittances. Similarly, in Kerala, India, Rajan and Zachariah (2010) concluded the significance of remittances in household consumption, savings, investment, improvement of the quality of houses, and the possession of modern consumer durables including the enhancement of the quality of life through education, health, reduction of poverty and unemployment. Moreover, in Nepal, recent estimates suggest that almost 20% of the 11% decline in poverty in Nepal between 1995 and 2004 is attributable to the inflow of remittances from labor migrants (World Bank 2005). In Nepal, remittances from out-migration have become an important source of household income (Sharma and Gurung, 2009; Pant, 2008; Seddon, Adhikari, and Gurung, 2002; Adhikari, 2001; Hoermann and Kollmair, 2009).

Obviously, the effect of remittances in migrant sending households depends on whether the income is used for production or consumption (Conway & Cohen, 1998; Durand et al., 1996; McKenzie, 2006; Taylor et al., 1996; Garip, 2010). Therefore, how migrants' families spend and invest remittance earnings is a question of crucial debate (Adams, 2011). Various uses of remittances by receiving households are not clear (Seddon, 2004) and very few studies have generated data necessary to evaluate the impact of remittances on receiving economies (Garrip, 2010). Moreover, the data on the receipt of remittances and their use on various dimensions of household activities have been vague and are prone to measurement error.

The motivation for this study comes from a growing concern on productive vs. consumptive uses of remittances in migrant sending settings of developing countries. Nepal, which is experiencing massive out-migration of young individuals more recently, is not an exception. Both internal and international migration has been a part of life experience of a large number of Nepalis, and has historically been a significant feature of subsistence agriculture-based household livelihood (Pfaff-Czarnecka, 1995; Hitchcock, 1961; Taylor, 1999; Bebbington, 1999). The 2011 population census reported about 2 million individuals as migrants (Central Bureau of Statistics, 2011). Recent estimates suggest that about 1,500 young Nepalis migrate outside of Nepal every day (Pattison, 2014).

With the increased volume of out-migration, the value of remittances is also escalating over time. Widely referred to as a 'remittance economy,' the Nepalese economy stands as the sixth largest recipient of remittances in terms of GDP (World Bank 2011). The World Bank reported that, in 2011, the share of the remittances in the Nepali economy was estimated at 20 per cent of the gross domestic product. This accounts for more of the economy than tourism, exports, and foreign aid combined (Graner & Gurung, 2003; Seddon, Adhikari & Gurung, 2002; KC, 2003; Lokshin, Bontch-Osmolovski & Glinskaya, 2007; Sharma & Gurung, 2009). Remittances from out-migration have become an important source of household income (Sharma & Gurung, 2009; Pant, 2008; Seddon, Adhikari, & Gurung,

2002; Adhikari, 2001; Hoermann & Kollmair, 2009) and a household's economy has become increasingly dependent on remittances as an important source of livelihood. It is estimated that one-quarter of all households in Nepal receive remittances from abroad (Kollmair et al., 2006; Seddon, Adhikari & Gurung, 2002; Hoermann & Kollmair, 2009; Seddon, Adhikari, & Gurung, 2002; Sharma & Gurung, 2009; Pant 2008). However, it is not clear how the remittance is being used by Nepali households in the absence of appropriate data on remittance use. This strongly suggests for the need for a standard instrument to measure remittance use in various dimensions of household activities. Thus, we develop an instrument, the remittance use calendar, to measure the utilization of remittances in various dimensions of household activities. Since a household or a family is a decision making unit for migration as proposed by the New Economics of Labor Migration (NELM) theory, we constructed measures at the household level rather than at the individual level.

3. The Setting

The remittance use calendar was developed, tested and piloted in a remittance dependent setting of western Chitwan Valley of Nepal, which lies in the south central part of the country. Before the 1950s, the valley was primarily covered with dense forests and was infamous for malarial infestation. The government, with the assistance from the USA, initiated a rehabilitation program in the valley during the 1950s that cleared the dense forests. Since then, the valley has witnessed a rapid inflow of migrants. People were attracted by the free distribution of land for agricultural purposes at the beginning of the settlement, and by development of modern amenities and services in recent decades.

Currently, the valley is inhabited mostly by in-migrants, especially from *pahad*, i.e., the Hill and mountains and other adjacent Terai districts including India. Further, Chitwan's central location and relatively well-developed transportation network have been the catalytic forces for turning it into a hub for business and tourism. This has resulted in a rapid proliferation of government services, businesses, and wage labor opportunities in the district (Shivakoti et al. 1999; Bhandari 2004). Once a migrant receiving setting has been turned into a migrant sending area recently.

We piloted the survey to 185 migrant sending households. These migrant sending households were distributed over 30 randomly selected geographic clusters also called the neighborhoods. The neighborhoods were the lowest level sampling units chosen and were identified in 1996 (Barber et al., 1997). Prior to choosing samples of these neighborhoods, the study area of the western Chitwan Valley was first divided into three different strata based on the approximate distance from Narayanghat, the urban center of the Chitwan District, to select a representative sample of neighborhoods. Strata 1 included areas nearest to Narayanghat, strata 3 included areas farthest from it and strata 2 included areas in between. The samples were selected at two stages (Barber et al., 1997 for additional detail). In the first stage, in each stratum 10 settlements were randomly sampled based on probability proportionate to size, thus making a total of 30 settlements. These settlements were then divided into non-overlapping clusters called neighborhood or *tol* that consisted of 5–15 households. For the purpose of this pilot, we selected 10 neighborhoods each from three strata, thus making a total of 30 communities. These neighborhoods are outside of the

151 Chitwan Valley Family Study (CVFS) neighborhoods. For a detailed discussion of the design and selection procedure of the neighborhoods, please refer to Barber et al. (1997).

4. Remittance Use Calendar – Design Process

4.1 Identification of household activities remittances being used

To better understand the various social and economic dimensions of household activities that rely on remittances, first, we reviewed measures used in various surveys. These surveys included: (a) Nepal Labor Force Survey; (b) Nepal Living Standard Survey; (c) National Migration Survey, Thailand; (d) Northeast Migration Follow-up Survey, Thailand; (e) Migration Surveys in Low Income Countries: Guidelines for Survey and Questionnaire Design by Richard E. Billsborrow, A. S. Oberoi and Guy Standing; (f) Mexican Migration Survey and (g) various scientific articles. This review provided important dimensions of remittance use by remittance receiving households.

Next, two focus group interviews were conducted in the Chitwan Valley. The goal of these focus groups was to identify and refine context specific household activities where remittances are being used. A focus group interview guideline was prepared and used to guide the interview. These focus group interviews included individuals representing various caste/ethnic groups and gender from remittance receiving households whose household members (migrants) were scattered in different parts of the world. This focus group was conducted by the researchers themselves with the help of highly experienced field research staff of the Institute for Social and Environmental Research- Nepal (ISER-N). These focus groups helped refine various activities of remittance use in the local context. Various dimensions and activities/items as identified and measured are provided in Table 1. Broadly, the dimensions are grouped as (a) household items, (b) household consumption, (c) education, (d) health, (e) farming, (f) business, saving, debt payment and investment, (g) festivals and other cultural expenses, and (h) utilities and other uses. Under each dimension, activities/ items are identified, specified and measured.

4.2 Construction of context specific measures of remittance use

Based on the setting-specific measures of remittance use identified above, a Remittance Use Survey Instrument that included a remittance use calendar was designed (available upon request). Instrument was first developed in Nepali and then translated into English. Unique features of this instrument are measuring remittance receipt for each migrant and remittance use in each specific item of household activity remittance was used each month for the last one year prior to the household interview. This instrument is designed to collect retrospective data.

At this stage, effort was made to incorporate relevant information/items from already used/ tested instruments. We followed the guideline from Ghimire et al. (2013) where appropriate. The multi-ethnic and multi-lingual research staff who speak local languages and ethnic dialects natively, prepared the first draft to ensure comprehensibility and acceptability of the survey items. This draft translation was further reviewed by researchers to ascertain (a) the *semantic equivalence* of the translated items (i.e., the meaning of the translated item is the

same) and (b) *content equivalence* of the translated item (i.e., the content of each item is relevant in the local context).

This survey was pre-tested multiple times before piloting. The initial draft was pre-tested on a small number of households. This initial pre-test allowed us to (a) ascertain whether the wordings were easily understood by ordinary people (*criterion equivalence*), and (b) evaluate whether the question items in local language were measuring the concepts that the original question items were intended to measure (*conceptual equivalence*). Several criteria were used to assess whether informants understood the concepts and question wordings. We assumed that a lack of understanding of the concepts would result in respondents becoming frustrated; terminate interview, decline to answer questions, or respond that they do not know the answers and provide answers that are not as per the objective of the question. The insights and lessons learned from this initial pre-test were then incorporated in the final version of the questionnaire.

We designed the instrument in an interviewer-respondent friendly format with easily readable font size, logical flow of questions with standard skip patterns, a clear guideline to interviewers to ask questions and record responses, clear space to record information, additional pages to record interviewer observations, a separate cover page to record identifiable information of the household and a standard call record. The interviewers at ISER-N are extensively trained in General Interviewing Techniques (GIT). This experienced research staff was provided with an intensive Study Specific Training (SST) for two days accompanied by a two-day field practice prior to the actual interview. This training was designed to provide the basics of study specific instrument (here the remittance use survey instrument), study area, study protocols, study participants (samples or respondents), objective of each item in the instrument, and necessary instructions for question asking, offering necessary feedbacks to the respondents during the interview process, and recording responses. This SST provided specific knowledge and skills necessary to administer the actual survey.

5. Piloting the Survey

5.1 Household screening

First, in 2013, a household screening was done to identify eligible households for the survey (Figure 1). Each household within the geographical boundaries of 30 neighborhoods were visited and screening questions were administered. All members of the household ‘who ate in the same kitchen and slept in the same house most of the time in the past six months’ were listed and their demographic information such as age, gender, marital status, education, migration status and occupation of each individual was recorded. In addition, information about other family members who were ‘12 years and over and are currently living away from home most of the time in the past six months’ was also recorded. Any household that has at least one member away from home most of the time in the past six months met the eligibility criteria for the remittance use survey. Six month time was considered to allow a migrant to send remittances back home and its use by the household.

5.2 Piloting the survey

Altogether there were 394 households in 30 communities. Of them, 187 (47 percent) households had at least one member (12 years and above) away from home for most of the time in the past six months. This is consistent with the results of the Nepal Living Standard Survey (2010/11), which reported about 53 per cent households in Nepal had at least one absentee living currently within or outside the country. A face-to-face survey was administered to 185 eligible households with a 99 per cent response rate. Any informant 18 years and over and who could provide information about the household, remittances and remittance use was interviewed. We strictly followed the standard practice of ethical codes, interviewing and data collection. Consent was read to the informants and permission was obtained prior to the survey. Multiple informants from a household were allowed to respond. The average length of interview was about 18 minutes for all migrant households. The length of interview for remittance receiving households was nearly 20 minutes as compared to 10 minutes for remittance not receiving households.

5.2.1 Migration and remittance—Next, we collected information on migration and remittances. We collected place (district or country) of migrants destination, occupation, whether the household received any remittances (money, goods or gifts) from the migrant during the survey year, and, if received, the amount of money or the value of goods or gifts received by the household from each person each month in the past 12 months. The information was collected by asking the following questions (Figure 2).

First, (Q 1) name of each migrant from the household roster (along with unique identification number) was recorded.

Second, (Q 2) each migrant's current place of residence (district code if within Nepal and country code if outside Nepal) was recorded for each month in the past 12 months. In the example below, the first person was in Saudi Arab (country code=966) and the second person was in Kathmandu (district code=N01) any time in the past 12 months (January 2013–December 2014). The line indicates that the person was living in Saudi Arab or Kathmandu continuously in the months indicated.

Third (Q 3), the migrant's occupation was recorded for each month while outside of home. In the example, the first migrant was working (code=1) and the second migrant was studying (code=2). The line indicates that the persons were either working or studying in those months.

Fourth (Q 4), we confirmed whether the household received any remittance (money, goods or gifts) from the person in the past 12 months. The response is recorded '1', if the household received remittance in the month and otherwise '0.' In the example, the household received remittances (money/goods/gift) from the first person in April and December only but did not receive any money/goods/gift from the second person.

Further, if the household received any remittance, the amount received from the person in Nepali Rupees (NRs) was recorded in the month the household received it. From the first

person, the household received 100,000 NRs in April and NRs 50,000 in December. In other months, it is recorded as '0.'

Interestingly, even from such a small sample households, migrants were distributed in 20 different countries outside of Nepal (Figure 3). 29 per cent of the individuals were internal migrants. Among international migrants, Saudi Arab was the popular destination (12.4 percent) followed by India (11.7 per cent), Japan (9.5 per cent) and Qatar (8.1 per cent). 69 per cent of migrants were working, 21 per cent were studying and for the remaining ones the informant either reported 'other' or 'don't know' (results not reported).

There were a total of 283 individuals from 185 households (a minimum 1 person to a maximum of 7 persons). Two-third (67 per cent) households had at least one migrant, 20 per cent households had two migrants and remaining 13 per cent households had 3 or more migrants. Of the total migrant households, 75 per cent (n=139) of them reported that the household received remittances in the past 12 months. Of them, a large majority of households (93 per cent) received remittances from one migrant and the remaining households received it from 2–3 migrants. These results are consistent with those of the Chitwan cluster results from the Nepal Living Standard Survey 2010/11. For instance, Table 2 shows that slightly over 63 per cent households (compared to 67 per cent from the current survey) had only one migrant. Although slightly higher proportion of the households (93 per cent) in the study area received remittances from one migrant, this number was 80 per cent in the NLSS (2011).

On average, a migrant household received 150,562² NRs (US\$1,505) remittances in a year (NRs 12,546 or US\$125 per month) (Table 3). One-half of the migrant households received NRs 100,000 (median) per year (or NRs 8,333 per month). Among remittance receiving households, a household on average received 200,388 NRs (US\$2,004) in a year (NRs 16,700 or US\$167 per month). The median for the remittance receiving households was NRs 140,000 per year (or NRs 11,667 per month). Although these numbers in 2013 are not comparable to those of NLSS 2010/11 due to difference in year of data collection, both these numbers (mean and median) are slightly lower for both migrants as well as remittance receiving households of Chitwan. This difference could also be due to the measurement error.

5.2.2 Use of remittances in the household—Below we describe the method of collection of information regarding the use of remittances in the past 12 months. We also provide descriptive results of whether a household used remittances or not on specific household activities as reported in the survey.

5.2.2.1 Uses in household items: To specifically measure the use of remittances, first, we asked whether the item in question is available at home or not (coded yes=1 and otherwise=0) (Figure 4). If a household has the specific item, we asked whether the item was purchased in the past 12 months or not (coded 1=yes and 0 otherwise)³. If the item was

²US\$ 1 = 100 Nepali Rupees (2013); US\$ 1 = 75 Nepali Rupees (2010)

³The past 12 month was considered to make sure whether the item was purchased within the survey period or not.

purchased in the past 12 months, we asked whether remittance was used or not to buy the item (coded yes=1 and otherwise=0). If remittance was used, the amount of remittances used was recorded in the month when the item was purchased. Similar procedure was followed for each item.

Table 4 shows that 7.2 per cent of the remittance receiving households purchased a radio/tape player in the survey year. Of these remittance receiving households, only 1.4 percent of them reported that remittance was used to buy it. Similarly, 17.3 per cent of them reported that they purchased a cell phone/telephone and 11.5 per cent of them reported that remittance was used. Similarly, about 9 per cent households used remittance to buy a bicycle, 6.5 per cent used for gas stove and 4.3 per cent each used to buy a TV/VCR and a computer. None of the households reported buying large items such as a pumpset, car/vehicle and a gober gas (biogas) plant in the past 12 months. Although households may have purchased some of these items using remittances in the previous year, here, we considered only those items that were purchased during the survey period.

5.2.2.2 Uses in household consumption: Similarly, we collected information about whether a remittance receiving household purchased foods such as cereals/pulse, vegetables, meat, milk products, oil/spices, condiments (sugar, tea, coffee, horlicks etc.) and clothing for consumption (Figure 5).

First, (in column C.1.2) information on whether a household purchased a consumption item in question (e.g. food, vegetables and so on) in the past 12 months or not (coded yes=1 and otherwise=0) was recorded.

Second, (in column C.1.3) if a household reported a purchase of a specific consumption item (e.g. food, vegetables and so on) in the past 12 months, we asked whether remittance was used or not (coded yes=1 and otherwise= 0).

Third, if a household reported the use of remittances, then we further asked the amount (in Nepali Rupee) of remittance used to buy a specific item in the month box of the calendar when that was purchased. If the same amount was used every month, a line was drawn to show that the same amount was used instead of writing the same number in each box. For example, the household did not purchase any food item (cereals/pulse) but purchased vegetables in the past 12 months. In January, the household did not use any remittances, but from February to December the household used NRs 500 remittance money every month to buy vegetables.

Descriptive results are provided in Table 5. Thirty five per cent of the remittance receiving households reported that they purchased food (cereals/pulse) in the past 12 months. Of these remittance receiving households, 22 per cent only reported that they used remittance to buy food items such as cereals and pulses. Similarly, 87 percent remittance receiving households reported that they purchased vegetables, meat (91 per cent), milk products (58 per cent), cooking oil/spices (95 per cent), condiments (97 per cent) and clothing (92 per cent) in the past 12 months. However, nearly 22 per cent of the remittance receiving households reported that they used remittance to buy food, 42 per cent reported vegetables, 45 per cent reported

meat and 26 percent reported milk products. Slightly over half of the households used remittances to buy oil and spices, condiments, and clothing.

5.2.2.3 Uses in health and education: A large proportion of the remittance receiving households reported that they spent money in medical expenses (84 per cent) and education (83 per cent). While nearly 60 per cent of the remittance receiving households spent remittances in health care, 69 per cent households reported that they used remittances in education. This shows that a large proportion of households use remittances for human capital development.

5.2.2.4 Uses in farming: As discussed earlier, the use of remittances was collected in farming (process is repeat here). Table 6 provides the descriptive results of the use or purchase of specific items of farming in the past 12 months by remittance receiving households. Sixty two per cent households reported that they purchased seeds in the past 12 months. However, only 22 per cent of the remittance receiving households reported that they used remittance to purchase seeds. 71 per cent households reported that they used pesticides in farming and only 30 per cent of them used remittance to buy pesticides. Similarly, 71 per cent remittance receiving households reported that they rented a tractor and 39 per cent only reported that remittance money was used for renting a tractor. Nearly one-fourth (24 per cent) households reported that they used remittance for hiring a wage laborer. Another important item where remittance was used was buying feed or fodder (16 per cent households) for farm animals and poultry. These households did not report any investment in fish farming, swine/pig farming, and land purchase for farming or animal husbandry.

5.2.2.5 Uses in business, saving, debt and investment: Investment in business, saving, debt payment and investment also varied (Table 7). Only 10 per cent of the remittance receiving households reported that they purchased a new business and only 4 per cent households reported investment in business. However, only a small fraction of the households reported that remittance money was used in buying a business or investing in a business. Similarly, only a small fraction of the households used money in buying a house plot, building a new house or house improvement. But a large proportion of the remittance receiving households (76 percent) reported that they saved money in group saving. Nearly half of these households (45 per cent) reported that they used remittance for group saving. Similarly, about 15 percent households reported that they were saving the remittance money in the bank. At the same time, while 44 percent households reported that they paid debt in the past 12 months, 37 percent households reported that remittance was used for paying debt. Other uses of remittance money were buying ornaments/gold/jewelry (11.5 per cent), provide loan to friends and neighbors (8 per cent), and playing *dhukuti* (8.6 per cent).

5.2.2.6 Uses in festivals and cultural expenses: A large proportion of the remittance receiving households (65.5 per cent) reported that they used remittance money during festivals (Table 7). Similarly, 22.3 percent of the households reported that they used it for wedding/marriage ceremony. Other households used remittance for cultural events such as death rituals (*arghau*/funerals/*shradha*), birth rituals (*bratabandha*/birthdays) and rice feeding ceremony (*nwaran*), pilgrimage and household worshiping (*puja*).

5.2.2.7 Uses in paying utilities and other expenses: Nearly all (92.8 per cent) remittance receiving households reported that they paid electricity bill in the past 12 months (Table 7). Slightly over half (55.4 per cent) of them reported that they used remittance money to pay the bill. The use of remittances followed paying for telephone bill or mobile phone charges or buying mobile phone recharge cards and or internet charges (43.2 per cent). Other households used remittance for paying water bills (7.9 per cent), donation (*dan, chanda*) (7.2 percent), pay house rent (5.8 per cent), buying cigarette or tobacco (4.3 per cent) and alcohol (2.9 per cent).

6. Discussion and conclusion

This methodological paper describes a new method – A Remittance Use Calendar– of collecting data on the receipt and the uses of remittances by migrant households in various socio-economic and cultural dimensions of household activities. We believe the existing cross-sectional measures of remittance receipt and uses are prone to re-call bias, respondent burden, and less reliable due to the uses of vague words. Considering these limitations, a calendar was designed to systematically collect longitudinal data on the receipt and the uses of remittances in various social and economic dimensions of household activities by recipient households in a remittance dependent setting of Nepal. The purpose of this calendar method is to improve data quality (for example, Axinn, Barber and Ghimire, 1997; Axinn, Pearce and Ghimire, 1999) by improving respondent re-call and by minimizing respondent burden through applying short timing cues as well as avoiding unnecessary calculations on the part of respondents. As the instrument is designed as an interviewer-respondent friendly format, we also believe that this method also enhances data quality by minimizing recording errors as well as by improving reliability of the instrument using simple words and concepts rather than using vague ones such as ‘capital formation’ or ‘daily consumption’ as used in previous national surveys (e.g. Nepal Living Standard Survey) (see Table 8 for example). Moreover, this survey has collected more detailed information on remittance use on various items of household activities, and the timing of data collection do not match with other surveys, assessment and comparison of data quality with the existing measures or any other conventional methods is beyond the scope of this paper and is an important agenda for future research. However, wherever relevant we have compared the results with those of the national survey particularly the Nepal Living Standard Survey 2010/11.

Our experience shows that it is much easier to collect the receipt of remittances from each migrant by a migrant household when individual migrants were listed and asked about them separately. As the calendar provides options to ask and record the information on a monthly basis as against the lump sum for the past 12 months (e.g. Adams and Cuecuecha, 2010 in Guatemala; Standing, 1985; Nepal Living Standard Survey, Nepal Labor Force Survey) or the past 2 years (e.g. The National Migration Survey, Institute for Population and Social Research, Mahidol University, Thailand), it was observed that the burden to respondents to memorize or even for unnecessary calculation of the total amount received from migrants and spent in each separate items was not an issue for both respondents as well as interviewers. Recording of responses in the questionnaire was also not a problem for interviewers, as enough space was allocated in the instrument to record the response.

We confidently express that the calendar method helped collect quality data on remittances and their uses as it improved re-call and minimized respondent's burden due to short timing cues and the uses of simple words. Moreover, as this method allows recording the exact timing and sequencing of events, this method of data collection has advantages over other methods. This type of panel data, if collected over time, will allow us to estimate the cause and effect relationships to understand the impact of remittances on consumption or production. This is an advantage over simply relying on associations from cross-sectional data. In addition, such data will also allow pursuing more complex analysis such as event history modeling.

Although our interest in this paper is not to make any claim about productive vs. consumptive uses of remittances, the evidence suggests that households utilize remittances in both production (such as buying inputs, savings, human capital development – health and education, and saving) and consumption (food and clothing, festivals, buying various household items and so on). However, further investigation is needed to examine what per cent of the total remittance income is used in each of these various activities, and whether the use of remittances in each specific activity varies by type of household. Data has been collected for this sample but the results are not presented here due to space limitation. A further investigation is underway to examine the influence of household level factors on the uses of remittance in production or consumption.

Nevertheless, the data collected using a calendar is not error free. Some of the items used in the calendar are still vague such as education, health and so on. Simplification of such broad concepts is further necessary. For example, in education, expenses could be specified and measured separately for items as stationaries and books, fees, tuition, donation to school and so on. We understand that the level of specificity also depends on researcher's interest, the goal of the research and availability of resources. Moreover, there are always challenges of under- or over- reporting of income or expenses related data. Similarly, as the households do not keep any records, often times it may be difficult for a household informant to determine whether the money spent was from remittance income or from other sources. In addition, the quality of data is always associated with the cost. Although collecting longitudinal data in frequent intervals with short timing cues may have a better quality, cost is associated with it and has been a major concern. Frequent visit to respondents may also increase respondent burden and respondent fatigue. We are also not clear whether the data collected at monthly or half-yearly or yearly time intervals have similar or different results. This requires further investigation and comparisons.

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Household Screening/Rostering								
Your household is selected for our study. I would like to collect some information about all the people who eat in the same kitchen and sleep in same house most of the time in the past six months. I would also like to collect information about your family members who are current living away.								
S.N	Name	Sex	Age	Marital status	Highest grade of schooling	Where he/she lived most of the time in the past six months (Place code)	Occupation	Remarks
1	Suman	0	35	1	16	0	3	
2	Bishnu	1	30	1	12	0	9	
3	Abesh	0	21	0	14	001	4	USA
5	Sunita	1	30	0	10	0	5	
Now, let me read to you the information I recorded. Please let me know if I have recorded anything incorrectly or is incomplete. Also, please let me know if anybody who is not listed above.								
Sex: 0=Male, 1=Female, 2= Others Marital Status: 0= Unmarried, 1= Married, 2=Divorce, 3=Widow Occupations: 1. Agriculture, 2=Business, 3=Salary job, 4=Wage labor, 5=Student, 9=Others								
This household is eligible for Remittance Use Survey								1. Yes <input checked="" type="checkbox"/> 0. No

Figure 1.
Household screening.

Information on Migration and Remittances

Q1. Write the name of household member(s) who is (are) currently away from home in the space provided in the remittance calendar below. Please ask when did this person leave? Where does this person live? (If the person returned after vacation, record the month/year when he/she left this house before returning home for vacation)

Q2. Is away because of work, study or for some other reasons?

Q3. In the past 12 months, did your or your household receive money, goods or gifts from?

Q4. Altogether, how much money did you or your household receive in the past 12 months, including the value of any goods or gifts? Please also tell me when did you receive?

Migration and Remittance Calendar																
Measures	ID	Marg 2069	Place (When did... ---go?)	BS 2069				BS 2070 [Nepali Year and Months]								
				Poush	Magh	Fagun	Chaitra	Baisakh	Jestha	Ashad	Srawan	Bhadra	Asoj	Kartik	Marg	Poush
				2013												2014
				Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan
Person 1: Name: ...	3	966	2 years													
Q1. (Name): Where? (Location)				966											966	
Q2. (Name): Occupation				1											1	
Q3. (Name): Remittance				0	0	0	1	0						0	1	
Q4. (Name): Yes, how much?				0	0	0	100000	0						0	50000	
Person 2: Name: ...	5															
Q1. (Name): Where? (Location)		0		0	N01										N01	
Q2. (Name): Occupation				0	2										2	
Q3. (Name): Remittance					0										0	
Q4. (Name): Yes, how much?					0										0	

Figure 2.

Information collection about remittances from migrants.

Note: The line indicates that the event happened in each month.

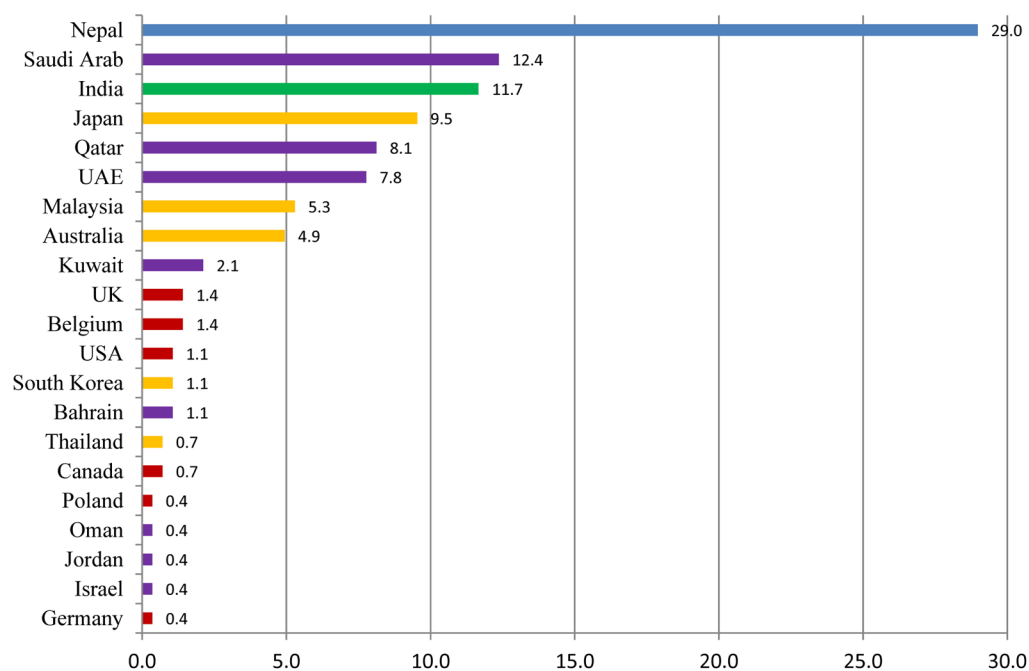


Figure 3.
Migrant destinations (per cent)

C.1.1	Does your household have a.... (name of item)?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 0=No	→	Ask next item
C.1.2	In the past 12 months, did you or your household get a(name of item)?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 0=No	→	Ask next item
C.1.3	Did you or your household use money (remittance) to buy.....(name of item)?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 0=No	→	Ask next item
C.1.4	How much money did you use for....?	Total (currency type)			
For Interviewer: Record the amount in the month and year the household purchased this item in the past 12 months					

Item #	Household Items	C.1.2 HH bought in past 12 months 1=Yes 0=No	C.1.3 Remittance Use 1=Yes 0=No	BS 2069				BS 2070							
				Poush	Magh	Fagun	Chaitra	Baisakh	Jestha	Ashad	Srawan	Bhadra	Asoj	Kartik	Marg
				2013											
				Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
C.1.1.1	Radio/Tape	1	0	0											0
C.1.1.2	TV/DVD/VCR	1	1	0	0	0	0	1000	0						0
C.1.1.3	Bicycle	1	1	0	5000	0									0
C.1.1.4	Motorcycle/scooter	1	1	0								0	150000	0	0
C.1.1.5	Tractor	0	0	0											0
C.1.1.6	Pumpset	0	0	0											0
C.1.1.7	Car/vehicles	0	0	0											0
C.1.1.8	Gobargas plant	0	0	0											0
C.1.1.9	Others.....	0	0	0											0

Figure 4.
Remittances use calendar for household items.

Item #	Consumption Items	C.1.2 HH bought in past 12 months	C.1.3 Remittance Use	BS 2069				BS 2070							
				Poush	Magh	Fagun	Chaitra	Baisakh	Jestha	Ashad	Srawan	Bhadra	Asoj	Kartik	Marg
		1=Yes 0=No	1=Yes 0=No	2013											
				Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
C.2.1	Food (cereals/pulse)	0	0	0											0
C.2.2	Vegetables	1	1	0	500										500
C.2.3	Meat	1	1	1000											1000
C.2.4	Milk/yogurt/ghee	1	1	500											500
C.2.5	Oil/spices	1	1	500											500
C.2.6	Condiments (sugar/tea/coffee/Horlicks)	1	1	500											500
C.2.7	Clothing	1	1	3000	0	0	0	2000	0	0	0	0	5000	0	0
C.2.8	Other.....	0	0	0											0

Figure 5.
Remittance use calendar for household consumption items.

Table 1

Dimensions of household activities where remittances used.

Dimensions	Items
Household items	Radio/tape player, TV/DVD/VCR, bicycle, motorcycle/scooter, tractor, pumpset, car/vehicle, biogas plant, rice cooker, gas stove, refrigerator, cell phone/telephone, computer/laptop, electric fan, furniture, water motor/pump, farm implements
Household consumption	Food (cereals/pulse), vegetables, meat, milk/yogurt/ghee, oil/spices, sugar/tea/coffee/horlicks, clothing
Education	Expenses on schooling
Health	Medical expenses (medicine, doctor visit)
Farming	Seeds, chemical fertilizers, pesticides, farm implements/tools (thresher, chaff cutter, sprayer, corn sheller etc.), pumpset (rental), tractor (rental), hire farm labor, farm animals (cattle, buffalo, sheep, goat etc.), poultry, fishery, swine/hog farm, feed/fodder for animals/poultry, medicine for animals (veterinary), land for farming or animal husbandry, improve farm sheds/house, building a farm house
Business, saving, debt and investment	Business, investment in business, house plot, build a new house, house improvement, pay debt, Dhukuti, group saving, provided loan to friends/neighbors, deposit in bank, purchased ornaments (gold/silver/diamond)
Festivals and other cultural expenses	Festivals, wedding, pilgrimage, Arghau/ Funerals/ Shraddha, Bratabandha/ birthday/ pasani (rice feeding ceremony), donation
Utilities and other uses	House rent, telephone/mobile/internet bill, electricity bill, water bill, cigarettes/khaini/tobacco, alcoholic beverages (beer/whisky)

Table 2

Number of migrants and remittance sending individuals by household.

No. of migrants	Households with migrant		Households received remittances from migrants	
	Number	%	Number	%
Study area				
1	124	67.0	129	92.8
2	36	19.5	9	6.5
3 plus	25	13.4	1	0.7
<i>Total households</i>	<i>185</i>	<i>100.0</i>	<i>139</i>	<i>100.0</i>
Chitwan sample (Nepal Living Standard Survey 2010)				
1	38	63.3	32	80.0
2	14	23.3	7	17.5
3 plus	8	13.4	1	2.5
<i>Total households</i>	<i>60</i>	<i>100.0</i>	<i>40</i>	<i>100.0</i>

Table 3

Remittances (in Nepali Rupees) received by households.

Measures	Migrant households Mean (SD)	Remittance receiving households Mean (SD)
Study area		
Average per HH per year	150,562 (SD 179,590)	200,388 (SD 181,511)
Median per HH per year	100,000	140,000
Average per HH per month	12,547 (SD 14,966)	16,700 (SD 15,126)
Median per HH per month	8,333	11,667
<i>Total households</i>	<i>185</i>	<i>139</i>
Chitwan sample (Nepal Living Standard Survey 2010)		
Average per HH per year	134,889 (SD 177,681)	176,358 (SD 179,055)
Median per HH per year	58,000	86,000
Average per HH per month	11,240 (SD 14,807)	14,697 (SD 14,921)
Median per HH per month	4,833	7,167
<i>Total households</i>	<i>60</i>	<i>40</i>

US\$ 1 = 75 Nepali Rupees (2010); US\$ 1 = 100 Nepali Rupees (2013)

Table 4

Use of remittances in household items by remittance receiving households (n=139).

Household items	Purchased item in the past 12 months		Used remittances to purchase the item	
	Number	Percent	Number	Percent
Communication/entertainment				
Radio/Tape player	10	7.2	2	1.4
TV/DVD/VCR	11	7.9	6	4.3
Refrigerator	7	5.0	4	2.9
Cell phone/ telephone	24	17.3	16	11.5
Computer	6	4.3	6	4.3
Other items				
Bicycle	21	15.1	12	8.6
Motorcycle/scooter	4	2.9	3	2.2
Rice cooker	9	6.5	4	2.9
Gas stove	16	11.5	9	6.5
Water motor/pump	8	5.8	5	3.6
Electric fan	5	3.6	5	3.6
Household furniture	4	2.9	2	1.4
Tractor	0	0	0	0
Pumpset	0	0	0	0
Car/vehicles	0	0	0	0
Gobargas plant	0	0	0	0

Table 5

Use of remittances in consumption, health and education by remittance receiving households (n=139).

Household items	Purchased item in the past 12 months		Used remittances to purchase the item	
	Number	Percent	Number	Percent
Consumption items				
Food (cereals/pulse)	49	35.3	30	21.6
Vegetables	121	87.1	58	41.7
Meat	127	91.4	63	45.3
Milk/yogurt/ghee	81	58.3	36	25.9
Oil/spices	132	95.0	76	54.7
Condiments (sugar/tea/coffee/horlicks)	135	97.1	72	51.8
Clothing	128	92.1	75	54.0
Health and education				
Health care (Medicine, Doctor visit)	116	83.5	83	59.7
Education	115	82.7	96	69.1

Table 6

Use of remittances in farming by remittance receiving households (n=139).

Items	Purchased/used item in the past 12 months		Used remittances to purchase the item	
	Number	Percent	Number	Percent
Seeds	86	61.9	31	22.3
Chemical fertilizers	98	70.5	41	29.5
Pesticides	65	46.8	21	15.1
Buy farm implements/tools (thresher, chaff cutter, sprayer, corn sheller etc.)	20	14.4	4	2.9
Pumpset (rental)	11	7.9	3	2.2
Tractor (rental)	99	71.2	54	38.8
Hire farm labor	75	54.0	33	23.7
Farm animals (cattle, buffalo, sheep, goat etc.)	14	10.1	3	2.2
Poultry	5	3.6	3	2.2
Fishery	0	0	0	0
Swine/hog farm	0	0	0	0
Feed/fodder for animals/poultry	70	50.4	22	15.8
Medicine for animals (veterinary)	40	28.8	6	4.3
Land for farming or animal husbandry	0	0	0	0
Improve farm sheds/house	9	6.5	3	2.2
Build a farm house	2	1.4	0	0

Table 7

Use of remittances in farming by remittance receiving households (n=139).

Household items	Purchased/used item in the past 12 months		Used remittances to purchase/use the item	
	Number	Percent	Number	Percent
<i>Business, investment and paying debt</i>				
Business	14	10.1	2	1.4
Investment in business	6	4.3	2	1.4
House plot	8	5.8	6	4.3
Build a new house	8	5.8	8	5.8
House improvement	10	7.2	6	4.3
Pay debt	61	43.9	51	36.7
<i>Dhukuti</i> ⁴	22	15.8	12	8.6
Group saving	106	76.3	62	44.6
Provided loan to friends/neighbors	12	8.6	11	7.9
Deposit in bank	23	16.5	21	15.1
Purchased ornaments (gold/silver/diamond)	19	13.7	16	11.5
<i>Festivals and cultural expenses</i>				
Festivals	134	96.4	91	65.5
Wedding	79	56.8	31	22.3
Pilgrimage	32	23.0	8	5.8
Funerals/ <i>arghau/shraddha</i>	54	38.8	10	7.2
Birthday/ <i>bratabandha/pasani</i>	48	34.5	9	6.5
<i>Utilities and other expenses</i>				
Pay house rent	13	9.4	8	5.8
Pay telephone/mobile/internet bill	118	84.9	60	43.2
Pay electricity bill	129	92.8	77	55.4
Pay water bill	18	12.9	11	7.9
Cigarettes/ <i>khaini</i> /tobacco	34	24.5	6	4.3
Alcohol/beer/whisky	26	18.7	4	2.9
Donation	39	28.1	10	7.2

⁴ A *dhukuti* is a type of rotating credit among members of the group.

Table 8

Use of remittances received from individual migrants during the past 12 months (Nepal Living Standard Survey, n=54 Chitwan migrants only).

Items	First most important		Second most important	
	Number	Percent	Number	Percent
Daily consumption	34	63.0	6	16.2
Education	2	3.7	12	32.4
Capital formation	5	9.3	1	2.7
Business or investment	1	1.9	1	2.7
Household assets/durables	1	1.9	5	13.5
Savings	0	0.0	2	5.4
Repay loan	9	16.7	6	16.2
Other	2	3.7	4	10.8
Total	54	100.0	37	100.0