Effects of seasonal migration on school drop-out in district Tharparkar, Sindh, Pakistan: A logistic regression analysis

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Abstract: The purpose of this study is to assess the effects of seasonal migration on child schooling especially in the context of drop out in district Tharparkar, which has the highest drop-out rate among other districts of Sindh. The sample of the study was taken from villages of district Tharparkar. A logit regression model was applied to analyze the collected data. Study results illustrated that seasonal migration, besides other characteristics such as; family size, family having land, girl child, boy gild, child work, children never go to school, hospital distance, city distance, metaled road distance, children in primary school, children in middle school, children in high school have high impact on school dropout ratio. Therefore, to address the school dropout issue, government and policymakers must work on the issues of seasonal migration(s) in district Tharparkar and create economic resources and opportunities for these migratory families. Once families have enough resources in their villages, they will have no reason to migrate or relocate unnecessarily. When families are at their own villages for the whole year, it will ensure children's presence at schools which will ultimately reduce the dropout ratio in schools.

Key words: *Seasonal migration; School dropout ratio; Logit regression model*

1. Introduction

Seasonal migration is a phenomenon in which people leave their households for a short period of time such as; for few months or once or twice in a year (Boniface, Cooper and Cooper, 2016). According to Konseiga (2009), Seasonal migration is a significant methodology to manage with poverty for those who are not capable or ready to shift permanently or to great distances. Different surroundings and motives (political, social and economic, climate changes, and other push and pull factors) are behind this migration and these reasons coerce families to leave their birth places for a particular period of time. Migration has both negative and positive impacts on the lives of people depending on the areas they migrate to. it is dependent on patterns, types and circumstances around migrates.

If we analyse the impacts of seasonal migration on families of migratory workers, it differs region to region and area to area. In case of Mexico and Vietnam, it changed the lives of migrants positively but on other hand in India and Pakistan, it effects adversely to seasonal migrants. Thousands of people leave their homes in Pakistan due to many reasons, such as; security or military operations, because of

development of projects and for economic reasons. Seasonal migration usually occurs in south east district of Sindh which is known as Tharparkar. Hundreds of families leave their homes towards neighbouring districts twice in a year, in search of work. Despite frequent migrations since centuries, misery seems everywhere in above mentioned district. Instead of bringing a tangible positive change, seasonal migration kept away a large number of children from schools. Illiteracy shut the doors of jobs and economic opportunities for localities. Seasonal migration compels hundreds of children to leave schools every year.

Table 1 shows that Tharparkar is among those six districts where drop-out ratio is in two digits.

Despite a history of migration since centuries, hardly any research has been conducted on the issues of seasonal migrants & specifically on the schooling of their children. Due to lack of reliable data on seasonal migration, government is unable to deal with problems like poverty, education, health and scarcity of water in Tharparkar. This study is an attempt to analyse the effects of seasonal migration on child schooling especially in regard of drop-out ratio and suggest valuable, doable actions to the government and policy makers to overcome these issues.

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Table 1: Highest drop-out districts of Sindh (%)

S.No	District Name	Drop-out
1	Sujawal	29
2	Korangi Karachi	29
3	South Karachi	27
4	Thatta	23
5	Tharparkar	19

Source: Sindh Education and Literacy Department (2016-17)

2. Literature review

According to Konseiga (2007), Seasonal migration is a strategic way of dealing with poverty for those individuals who are either unable or willing to move permanently or for large distances. Dennis.G & Christoph.T, (2008) briefed, seasonal migration is migration in which migrants leave their homes for a few months. Sedentarism & W.V.D.Post (1987-79) said that " mobility of people, regardless organized or disorganised, are viewed as a risky and a challengeable to make a steady and sustainable everyday life, however, since centuries , the migration is a way of living, regardless from individuality, caste and creed.

World Bank, (2005) reported that generally workers had migrated seasonally to adjoin areas in same country, fascinated by large export crops that might, offer wages at time of off-season or in destitute/disastrous days. Smith (1991) concluded that land quality declination is the main push motive behind seasonal migration. C.Ardington.et.al (2009) provided evidences that seasonal migrants are poorest segments of life and even in many times they cannot travel because of poverty. Samita (2008), survey report revealed that three to four million migrate seasonally in only India. They leave homes for many reasons; for survival of families, better work opportunities compared to home districts/states, cling of improving status in families, support to siblings for education. According to Food & Agriculture Organization of the United Nations (FAO, 2009) revealed that the main factors behind the seasonal migration are; poverty, level of education, gender ,age dependency, occupation, family income, family size, assets (House ,residence, machinery, land, animals), government infrastructure facilities (school, markets, hospitals, roads, clean water), basic amenities (Food, cloth, shelter) and migration status. Murtaza.A. (2013) concluded that, elevating poverty is not possible without quality of education and for achieving the literacy ratio government should make polices in which development of poor households should be focused.

3. Study area

Tharparkar is among those six districts of Sindh where, school enrolment is low and school dropout ratio is high. Sindh education and literacy report (2016-17) reveals that every year 19 percent of enrolled children in Tharparkar leave their schooling before completion of their basic primary education despite having enough schools and teachers. Illiteracy closes the doors of jobs and economic opportunities of these seasonal migrants. Tharparkar is a deserted district of Pakistan with limited living resources. Main livelihood sources are agriculture and livestock, and both are reliant on rain because Tharparkar does not have any river. For survival, 15 to 20 percent of total population is forced to leave their villages in dry seasons in order to find work for earning as to fulfil basic family needs. Seasonal migration is common strategy to cope-up with poverty and survival. Families migrate to adjoining agri-belt districts along their children for three to sixth months resulting children are unable to attend classes and continue their schooling. They are also unable to appear in exams because, exams are scheduled in those months when they are out of villages (Feb to May).

Research survey shows that poverty, seasonal migration and drop-out are inter-linked to each other. People leave their villages, because of limited resources and it is poverty and limited resources which force families to migrate. Generally, families migrate for couple of months along their children so, seasonal migration effects child schooling and it is one of the main contributing factor of drop-out in Tharparkar district. For resolving the issue of drop-out, government has to ensure sustainable livelihood resources for families. Once families are self-reliant with sufficient resources, they don't need to migrate, resulting children remain in schools for whole year and drop-out ration will decreased.

4. Econometric modeling framework

The purpose of the Study was to investigate the effects of seasonal migration on child schooling of migratory workers in regard of drop-out. For this purpose, twenty one villages of five talukas of district Tharparkar were selected where seasonal migration was common. On the basis of secondary data and field notes, numerous elements of seasonal migration and drop-out were identified which ultimately affect primary schooling and boosting dropout in district Tharparkar. Based on these elements, a questioner was developed in order to collect primary data. Once total 440 households were interviewed, it was analysed with the help of STATA 14 version. In this research, descriptive aspects of the findings are presented in table 2 with; mean, Std.Dev, minimum and maximum numbers. In order to test our hypothesis, independent samples *t* test and Logit regression were applied as to

investigate the impact of seasonal migration on school dropout.

Z: probability of drop-out in public school:

$Z=\{0, = $ *if children is drop − out* and 1=if children is not drop-out}

The function of this study contains the household characteristics

$$Z=F\{a_0 + a_1\ Seasonal\ Migration, + a_2\ HH_{size,} + a_3\ HH_{Land} +$$
$$a_4\ Girl\ Child + a_5\ Distance\ of\ metled\ road + a_6\ Water\ Distanc\ + a_7\ Hospital\ Distance +$$
$$a_8\ City\ Distance, + a_9\ Children\ in\ primary\ School + \ a_{10}\ Children\ in\ middle\ school\ and\ +$$
$$a_{11}\ Children\ in\ high\ school\}$$

Where seasonal migration is a dummy variable which is equal to 0 if household is migrated and it is equal to 1 if the household is not migrated. hh_land is number of land in acres which household have, girl child and boy child shows number of children in sampled household. Water distance shows the kilometres; how far is water from household. Hospital, Mettled road and city distance indicates the distance of hospital, city and mettled road from household village in km. Children in Primary, middle and high school shows the number of children who are currently studying and are enrolled in Primary, middle and in high school.

Above given characteristics were selected as to see the effects of seasonal migration on child schooling of migratory families in regard of drop-out in Tharparkar district (see Table 1, Appendix).

Using Logistic regressions model, our intention is to test the below hypotheses;

Hypothesis "H": *Seasonal migration is a major obstacle in children's schooling significantly in drop out of children from schools in Tharparkar.*

Parameters: Socio-economic conditions such as; family size, family having land, girl child, boy gild, child work, children never go to school, hospital distance, city distance, metaled road ddistance,

cchildren in primary school, cchildren in middle school, children in high school.

Analytical Tools: Tabulation, mean value of variables, standard deviation, minimum and maximum values, and logistic regression model.

5. Result and discussions

Tharparkar is a desert region of Pakistan. Rainfall is only option to irrigate land for cash crops as well as for getting food for their livestock, which is their main source of survival. Statical data shows (Table: 2), the mean value of seasonal migration is 0.22 while average household size is 6.6 persons per household. Average land per family is 5acrs. Average city distance is respectively high with distance of 28.8Kms, following hospital distance which is 14.8Kms.Average metal road distance is 5.2Kms and drinking water source distance is 0.61. Average number of girl child is bit low than boys (girls=1.6, boys=2.09). Average slope of grade level is going down as grade is high (Primary=1.2, Middle=0.45 and high school is 0.07).Children never been school average is 2. Data analyses reveal that, child work trend is high in sampled villages and averagely 1.6 children from per household are involved in child labour.

Table 2: Parameters of seasonal migration and descriptive statics

Explanatory Variables	Mean	Std. Dev.	Min	Max
Family Size	6.645455	2.523101	3	15
Family having land	5.147727	3.329785	0	15
City distance	28.86136	16.10745	3	45
Water distance	0.618182	0.842161	0	3
Metaled road distance	5.259091	8.136431	0	32
Hospital distance	14.80682	11.46656	1	45
Boy Child	2.093182	1.325395	0	1
Girl child	1.634091	1.373429	0	8
Children in primary school	1.229545	0.917826	0	4
Children in middle school	0.456818	0.567092	0	1
Children in high school	0.070455	0.256203	0	1
Children never go school	2.002273	1.658139	0	7
Child work	1.6	0.842493	0	6

Survey data, 2016-17

Logistic Regression model is used in order to see relation , magnitude and significance among dependant variable (drop-out) and independent variables such as; seasonal migration, family size, family having land, girl child, boy gild, child work, children never go to school, hospital distance, city distance, metaled road distance, children in primary

school, cchildren in middle school, children in high school.

All the coefficients are significant at 1% and 5% levels (Table: 3). Below table shows, all the coefficients have their proper signs, nevertheless, seasonal migration, children never been in school, children in primary, middle and high school level,

girl child and boys child siblings have overall larger coefficients, signifying a comparatively high impact on child schooling of seasonally migrants in regard of dropout.

Model shows independent variables such as; seasonal Migration, family having land, child work, children never been in school, distance of city, distance of metaled road, children in primary school, children in middle school and children in high school have positive significant relation with dependent variable (drop-out) while family size, girl child, child boy, distance of water, distance of hospital are significant with negative relation to dependent variable.

Seasonal migration is highly significant at probability level of 0.01. Model is confirming that seasonal migration has positive relation with dropout. Due to seasonal migration, children are forced to leave their schooling. Every year, for harvesting of wheat crop, families leave their home district along their children in month of February and remain at migratory places till the end of April or mid of May. Annual Primary and middle school exams are held between (Feb to May) resulting children are unable to appear in exams which ultimately boosting high drop-out in Tharparkar district.

Table.3 shows that family having land has direct positive relation with children drop-out. Families who have land they are likely to involve their children in agri-labour instead of sending them in school. Child work also has significant positive relation with drop-out. Children who are involve in child work are most likely to leave schooling because it is hard for feeble hands to not only work to support parents but also continue their schooling. Out of school children is also found highly significant at probability level of 0.000. Children are highly influenced by their circumstances so; out- school children also have impact on their drop-out. When they see their friends and neighboring children out of school they influenced by them and leave their schooling. Survey data reveals that, distance of city has positive relation with drop-out. Families who are living on far-flung areas or long distances of cities, they are unaware about importance of education. It is also noted that either schools in far-flung areas are not functional or teachers are not ready to go far-flung areas and teach there. Due to this, parents have only one option to involve them in child labour in order to support families. Distance of metaled road also has positive relation with drop-out. Many of villages do not have metaled road facility so it is hard for children to find transport for nearby schools. Travelling long distances on bar foots is either not easy for children or not safe, resulting there is high drop-out in schools.

Data shows (table.3), class grades have high significant positive relation with drop-out in public schools. Drop-out is also high with grades of classes. As grade is high, there is high drop-out. Out of total primary school children only one percent children reach at matriculation. From primary to matriculation completion ratio is only one percent in survey area. Analysing of survey data shows, family size has negative relation with school drop-out. Children of large family size are less likely to leave schooling due to high travel expenses and residence issue of migrate areas. Girl child has negative relation with school drop-out. As, gild children are not involved in child work so, they are less likely to leave schooling. Child boy also has negative relation with school drop-out because, when elder siblings are involved in child work and supporting family they prefer their younger siblings should remain in school and purse for further study. Distance of hospital also has negative relation with drop-out. Mostly when children miss their few lessons it is hard for them to cover that loss and face teacher. This loss and fear of punishment leads them to leave school. Data shows that hospitals are located on long distances in surveyed villages. In case of parent's illness, it is not easy for families to take children along themselves resulting children remain in schools and hardly have they missed their classes. It means only distance of hospital is not reason of drop-out. Distance of water has negative relation with drop-out. In Tharparkar fetching water is responsibility of women and children but when water is on long distance responsibility shifts to elder one. Due to long distance it is neither easy for child to travel long and nor travelling alone is safe for a child so, head of house take this responsibility on his own shoulders. As this responsibility diminishes chances of drop-out go lower.

6. Conclusions and recommendations

Research shows that entirely explanatory variables such as seasonal migration, family size, family having land, children both girls and boys, child work, out of school children, hospital distance, city distance, metaled road distance, children in primary school, children in middle school and children in high school are statistically significant at probability level of 0.01 with 95% confidence level. The overall R^2 is 0.8042, which shows that, eighty percent variation in dependent variable (DV) is accounted for the above-mentioned variables. Based on the findings, the study concluded that seasonal migration has negative impact on the education of seasonally migrant. Seasonal migration is not only making them absent from education during migratory months but ultimately made them to drop out. Seasonally Migrant children hardly attend school at work places. Instead of going school they are usually involved in labour work along their parents so when they come back home they almost forget whatever lessons they learnt before migration. Research confirmed that, seasonal migration has significant impact on child drop-out in Tharparkar. Mostly, at time of exams they are out of village schools so they couldn't appear in exams and remain in same classes for many years eventually they leave schooling and fall in child labour as support their families. To overcome this issue

following serious steps are required by government side on emergency basis as to uplift the conditions of seasonal migrants. Once their economic conditions are better, they will have no need to migrate towards agri-belt districts of Sindh.

Table 3: Logistic binary regression model results

Explanatory Variables	Coefficient	(St. Error)	Z	P>|z|
Seasonal Migration	6.65039	1.79542	3.7	0
Family Size	-0.58314	0.262611	-2.22	0.026
Family having Land	0.271263	0.113321	2.39	0.017
Girl child	-4.90066	0.761685	-6.43	0
Child Boy	-4.7048	0.79898	-5.89	0
Child work	2.614404	0.760012	3.44	0.001
Children never go school	6.038541	0.930451	6.49	0
Distance of water	-0.65215	0.369947	-1.76	0.078
Distance of hospital	-0.11021	0.034695	-3.18	0.001
Distance of city	0.073452	0.025265	2.91	0.004
Distance of metaled road	0.021098	0.006672	3.16	0.002
Children in primary school	4.783488	0.762479	6.27	0
Children in middle school	4.120024	0.685321	6.01	0
Children in high school	5.685675	1.258817	4.52	0
Model Fit Test				
Log likelihood	-47.793853			
Prob > chi 2	0.000			
Pseudo R2	0.8042			

Survey data, 2016-17

7. Recommendations

▪ High-powered organization/Authority must be formed to carry out essential works in in Thar. This body should make food and fodder reserves. They also remove infrastructural shortage, to increase veterinary services and widen the size of people's economic activity.

▪ Government should plan new economic activities in small and far-flung villages of Tharparkar so that the people could find employment opportunities within their native or near to their native villages

▪ Government should work closely with village leaders and ensure attendance regularity of boys and girls. This can be only possible through awareness; benefits of education, sustained school feeding and cash with condition programs.

▪ Model campus schools with boarding and loading should be started. This will retain students when their parents are likely to migrate (There are shelter schools in India for seasonal migrants).

▪ Teachers of Tharparkar should be trained in new teaching methods and advance planning of covering syllables especially for seasonal migratory children in case they are out of schools for months due to seasonal migration.

▪ Provision of water, toilet and electricity should be ensured in each school. Many children left their schooling because of non-availability of water and toilets.

▪ Timetable of primary exams should be reviewed for Tharparkar district and made commensurate to the seasonal behavior of migrants (Seasonally migrants are out of homes from Feb-April every year).

▪ School-feeding program should be started by Government. The program will not only retain children in schools but also minimize malnutrition among children which is high in Tharparkar district.

▪ A university should be opened in Tharparkar district to promote higher education.

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