



Research Article

The Influence of Agricultural Land Access on Youth's Attitude towards Agricultural Occupation

Nadia Farooq^{1*}, Asad Ullah¹, Mussawar Shah¹ and Muhammad Idrees²

¹Department of Rural Sociology, University of Agriculture, Peshawar, Pakistan; ²Department of Agricultural Extension, Education and Communication, University of Agriculture, Peshawar, Pakistan.

Abstract | In this research, the influence of agricultural land access on youth's attitude towards agricultural occupation was assessed. For this purpose, 486 youth under the age group 15-29 years were randomly selected from 12 villages in district Mardan. The data were collected through a data collection instrument/ questionnaire. This study revealed that majority of the respondents was graduate, unemployed and belongs to farming families. Moreover, the majority of respondents' families were having 8-12 acres of arable agricultural land. However, respondents were lacking very limited access to arable land due to various problems; which decline their interest in the agricultural sector.

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***Correspondence** | Nadia Farooq, Department of Rural Sociology, University of Agriculture, Peshawar, Pakistan; **Email:** nadiaktk4@gmail.com

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Introduction

Like many developing countries, in Pakistan agriculture sector is the backbone of economy. Analysis of economic contribution of agriculture sector in national Gross Domestic Product (GDP) unveils a sharp decline from 40 percent during 2006-2007 to 18.5 percent during financial year 2019. Decline in agricultural sector contribution is due, mainly, to improved industrial production. In addition, the growth of agricultural sector could not commensurate the required pace with respect to other competing sectors, as well. The same line proportion, employment in agriculture sector dipped from 42 percent in 2006-2007 to 37.4 percent during 2017-18. The decline of em-

ployment in agriculture sector was witnessed for both gender (from 35 percent to 29.6 percent for male and from 71.4 percent to 66.1 percent for female) during same period. The labor relieved from agricultural sector was either engaged in industrial sector, subjected to migration (inland and overseas) or were constrained to remain unemployed (PES, 2018-19).

At the provincial level, the Khyber Pakhtunkhwa province reflects a high rate of unemployment (7.3 percent) than other provinces (Punjab 5.7 percent, Sindh 5 percent and Baluchistan 4 percent). At the provincial level too, there is a sharp decline in the employment share of agricultural sector from 33.6 percent during 2014-15 to 31.7 percent during 2017-18 (PES, 2018-19).

In Pakistan, the youth constitute one fourth of the population. Tendencies of youth toward agricultural profession are discouraging. As the national statistic witnesses' substantial decline in total employment share of agriculture for labor from both gender (PES, 2018-19).

Investing in rural youth is a key to boosting agricultural productivity and food security in the country. They have huge potential for adopting modernization and an attitude for risk-taking. As compared to older farmers, young producers have greater entrepreneurship abilities. The emerging requirements of agriculture can be addressed with their capacity (IFAD, 2010). Agriculture, is not only the remedy to international food insecurity but also a major employment sector for youth, especially in developing nations. The food security policies, therefore, demands sustainable growth in agricultural production using diverse and innovative technologies. It is the young blood that brings the most innovation and energy into this sector. Many young farmers engage in high-risk, high-tech and high-returns agri-ventures adapting new ideas, concepts and technologies, which are mostly avoided by the aging farmers (Bhat *et al.*, 2015; Akosa, 2011).

Mounting evidence shows that youth are not interested in agriculture or rural future. Abundant literature on the mismatch between young people's aspirations and agriculture as a career found the reasons for this "falling out of love". Little access to modern techniques, less economic outcomes, low status, lack of services, limited access to agricultural land and socio-cultural structure in rural areas are some common factors of youth disinterest in agricultural employments (Leavy and Smith, 2010; Chinsinga and Chasukwa, 2012; Haggblade *et al.*, 2015).

Access to land, is basic for a farming profession. The right to work on land is streamlined under the prevailing norms and land tenure system *i.e.* people's right on land (FAO, 2011). Access of youth to arable land is the main issue faced by them due to socio-cultural, economic or legal reasons. Youth lack financial resources to purchase the land. In addition, due to lack of capital and experience they face difficulties in borrowing land. In their family lands they are allowed to work as unpaid labor, supervisor or with some very nominal returns in cash (MIJARC/IFAD/FAO, 2012). The elders rarely allow authority to their

youth as land ownership is perceived as adult privileged only. Therefore, the youth are expected to wait till they have marriages and children to own a plot of land. A young person's access to their family land when their parent are alive is rare. They have to wait for their inheritance (UN-HABITAT, 2011). Furthermore, the inherited land, in most cases, is so small, fragmentally dispersed and ridden with a dispute that its cultivation may become literally impossible. The state of access to land is further difficult for women in the patriarchal system (FAO, 2012; UN-HABITAT, 2011; FAO, 2011; World Bank 2009). Lawry *et al.* (2014) analyzed the land tenure policies of different developing and developed nations and reported huge voids in these policies in terms of enabling youth for smooth access to agricultural land. The authors added that these policy flaws are not only irritating for the youth but also disengaging them from agricultural profession. Kidido *et al.* (2017) pointed to another aspect of youth deprivation in terms of access to land. It was reported that youth in developing countries are engaged in agriculture as low prestige labors, both paid and unpaid. Only a fraction of this energetic societal segment is actually performing agriculture from a high ranked, prestigious, administrative or managerial position. Therefore, access to land is studied to assertion its influence on youth's involvement in the agriculture profession.

In Khyber Pakhtunkhwa, based on size of land ownership, the farmers are categorized into big landlords (above 50 acres arable land holding), mid-sized landowners (12.5 to 50 acres arable land holding) and small farmers (below 12.5 acres arable land holding) (Dawn, October 15, 2018). In the study area 8-12 acres is the average arable landholding of small farmers which is adequate for subsistence farming but not suitable for commercial farming. Such small land holding, unsuitable for commercial agriculture, is important reason for insufficient youth access to arable lands as well.

There are several speculations about youth turn away from agricultural occupation. One of the speculation is that they have low access to agricultural land. Moreover, there is much ambiguity whether the land access problem is equally faced by youth from all family types or there are variations in them on the basis of their families. This study is unique in its nature as it is not focusing only on youth's access to agriculture land and its influence on their attitude towards agricultural

Table 1: Allocation of required sample to selected villages.

S. No	Tehsil Name	UC Name	Village Name	Total population of Village	Youth population	Sample size
1	Mardan	Mangah	1-Mangah	16167	9724	66
			2-Sheikh Yousaf	12145	7305	49
		Fatima	1-Gadar	12080	7266	49
			2-Qazi abad	4064	2444	17
2	Takht Bhai	Seri behlol	1-Seri behlol	11480	6905	47
			2-Afzal abad	7746	4659	31
		Saro shah	1-Saro shah	10736	6457	44
			2-Shah baig	6618	3980	27
3	Katlang	Kati Garhi	1- Kati garhi	10451	6286	43
			2-Shero	13504	8122	55
		Mian Khan	1-Mian khan	9177	5519	37
			2-Sangao	5138	3090	21
		Total		119306	71757	486

occupation but also investigating the variation on the basis of family type as well. This is the first attempt to these scenarios especially with reference to central valley of Khyber Pakhtunkhwa.

Materials and Methods

Study design, sampling and sample size

The study was carried out in district Mardan. The district has three tehsil, named Katlang, Mardan and Takhtbhai tehsil, with a total 75 union councils. Mardan's uniqueness in terms of its potentiality for agriculture becomes the basis of its selection as a study universe. A multistage stratified random sampling technique was adopted for the selection of a representative sample. In the first phase, all the three tehsils of the district were selected then six (06) rural union councils were selected (2 from each tehsil) and lastly 12 villages 2 from each union council were selected. A pilot survey was conducted in each selected village to estimate the youth population in these villages which come out to be 7175 youth. For a population of 7175 the sample size was worked out as 486 using equation-1 (Chaudhry, 2009). This sample size was proportionally assigned to each village (Table 1) using Bowley's (1926) procedure equation -2.

$$n = \frac{N\hat{p}\hat{q}z^2}{\hat{p}\hat{q}z^2 + Ne^2 - e^2} \dots (1)$$

If, N=total population=71757, p=population portion=0.5 q= opposite proportion q=(1-p) q=0.5 z= confidence level=1.96, e=margin of error=0.04, n=486

$$nh = (Nh / N) \times n \dots\dots (2)$$

Where;

nh: Sample size for stratum h; Nh: Population size for stratum h; N: Total population size; n: Total sample size.

Conceptual framework

The conceptual framework of the study comprises two independent variable (access to agricultural land and family occupational background) and one dependent variable (youth's attitude towards agricultural occupation) as given in Table 2.

Table 2: Conceptual framework of the study.

Independent variables	Dependent variable
Access to agricultural land Family occupational background	Youth's attitude towards agricultural occupations

Measurement of Variables

For measuring access to agricultural land, a scale was developed by a researcher on literature based questions with the approval of the experts' panel. The questions covered the basic structural obstacles that the youth were expected to face. The devised scale comprised of 6 items and access to land was categorized as more challenging, less challenging and not challenging and coded as 0, 1 and 2 respectively.

For access to land scale the lowest score on five point likert scale was 6 and highest score was 30. All the responses were summed up and then divided into three groups with help of cut points, so for respondents

scoring 14 or below access to land was more challenging, for those falling in range 15-21, access was less challenging and for those scoring 22 and above access was not challenging.

The family occupational background was divided into two categories as farming coded '0' and non-farming coded '1'.

Indexation

For measuring the association between the independent and dependent variables at the bivariate level, the dependent variable was cross tabulated with the independent variable. Moreover, at a multivariate level, the items under observation for each variable were tested for their internal consistency by using Cronbach's alpha test and were indexed to find out that variations in youth's attitude towards agricultural occupation are caused exclusively by access to agricultural land or affected by control variables too. The indexed variables were measured on following scales.

Youth's attitude towards agricultural occupation 0= low favorable

1= moderately favorable

2= high favorable

Access to agricultural land 0= more challenging

1= less challenging

0= not challenging

Family background 0= non farming families

1= farming families

Data analysis

For measuring the association and direction of the association between independent and dependent variables, the Chi-square test and Gamma test were applied at bi-variate and multi-variate analysis. At bi-variate analysis association between access to agricultural land and youth's attitude towards agricultural occupation was analyzed and at multivariate level analysis respondents' family occupational background was kept as control variables to find the association.

Results and Discussion

Access to agricultural land and youth's attitude towards agricultural occupations

Land availability is basic for agriculture. Access to adequate fertile land along with other inputs ensure

sustainable and profitable agriculture. Limited land availability constrains the adoption of the agricultural profession and its profitability. With each passing day per capita land area is shrinking with development of houses, factories and other related buildings that pose a serious threat to agriculture. Youth is more vulnerable to the problem of land access, and often remain deprived of workable land for a substantial time. Limited access to land on unsatisfactory tenure conditions discourage youth involvement in agricultural activities. The results for association between access to agricultural land and youth attitude towards agricultural occupation are given in [Table 3](#).

The results show a highly significant ($P=0.000$) and weak negative ($\gamma = -0.283$) association between 'Youth lack direct access to agricultural land' with Youth attitude towards agricultural occupation. Furthermore, youth having no land to inherit in smallholder farming families has highly significant ($P=0.000$) and negative ($\gamma = -0.320$) with youth attitude towards agricultural occupation. Agriculture is the largest employer of rural youth in developing countries, despite a decline in the agricultural labor. However, the rising issue of land access, particularly for youth, reduce the potential of this sector to absorb unemployed young people. Besides the physical constraints in terms of non-availability of land due to its shortage, youth access mechanism to agricultural land is effect by several social factors as well. Often family elders are not ready to transfer land to their youngsters, as the ownership and control of arable land is considered as maintaining power and a life security for them. In economic terms, due to increase in trend for conversion of arable land for housing purpose, the economic returns, though once, are immediate and high. Consequently, it is difficult for youth to access arable land for agriculture. In case they inherits some land from family farms, the size of land is too small and is not economical for commercial agriculture. All these factors negatively impact youth attitude towards agricultural activities as depicted by negative values of gamma ([Table 3](#)). The results are supported by findings of [FAO \(2014\)](#) that youth involvement in agricultural occupation is greatly affected by their limited access to land. Moreover, due to limited fertile land, one person's access cause another person's exclusion ([Hall et al., 2017](#)). [Kidido et al. \(2017\)](#) further added that youths who want to venture into agriculture are unable to access adequate land because family elders prefer to deal with rich adults and experienced farmers

Table 3: Association between access to agricultural land and youth attitude towards agricultural occupation.

Independent variables (Access to agricultural land)	Dependent variable	Statistics- χ^2 , (P-Value) & Gamma
Young population rarely have direct access to agricultural land.	Youth attitude towards agricultural occupation	$\chi^2=70.022$ (0.000) $\gamma = -0.283$
Youth has no land to inherit in smallholder farming families.	Youth attitude towards agricultural occupation	$\chi^2=106.233$ (0.000) $\gamma = -0.320$
Major reason for youth disinterest in farming is non-availability of land.	Youth attitude towards agricultural occupation	$\chi^2=86.848$ (0.000) $\gamma = -0.198$
Small pieces of land makes youth disinterested in farming.	Youth attitude towards agricultural occupation	$\chi^2=92.049$ (0.000) $\gamma = -0.405$
Lack of passion for farming leads to land selling among youth.	Youth attitude towards agricultural occupation	$\chi^2=48.956$ (0.000) $\gamma = -0.168$
Youth prefers to sell off of their land for capital to incline towards non-agricultural careers	Youth attitude towards agricultural occupation	$\chi^2=36.392$ (0.000) $\gamma = -0.168$

and residential property developers. Consequently, the young population has limited access to arable land that constrain their involvement in agriculture based livelihood activities (Nwaogwugwu and Obele, 2017).

Results further show a highly significant ($P=0.000$) and weak negative ($\gamma = -0.198$) association between 'youth disinterest in farming due to non-availability of land and youth attitude towards the agricultural occupation. Moreover, association of youth disinterest in farming due to small pieces of land with youth attitude towards agricultural occupation was found highly significant ($P=0.000$) and moderately negative ($\gamma = -0.405$). Land and labor are of primary concern for sustainable agriculture. Labor is available in the shape of a growing youth population but land is shrinking continuously. In developing countries where employment opportunities for rural youth are already limited, limited access to agricultural land further adds to the problem of unemployment. In many agriculture based societies, the older generations keep control of land with themselves throughout their life and youth becomes aversive to farming as a result of this long period of waiting. They also lack capital and negotiation skills to secure rental workable land units. The sale of land in areas where elders found a good market price for their land also results land shortage for the youth. The retention of land or transfer of small pieces of land by the elderly pose challenges in land access and becomes a push factor for youth to quit agriculture sector. The narrowing or complete closure of land access bring negativity in youth attitude towards agricultural occupation as shown by negative gamma values (Table 3). The results are consistent with several research studies which reported that land is a key

factor in food production but limited access of young population to workable land act as an obstacle in their agriculture based livelihood. Youth access to agricultural land must be enhanced to retain them in the sector (Canning *et al.*, 2015; FAO, 2014). Youth engagement in agricultural sector is often discouraged by lack of land, as agriculture is a land-based activity and access to adequate and suitable land is very difficult for young generation especially small farmer's communities (Maina and Mathenge, 2012). In many agrarian societies, youth are landless or have small units of land due to continuous subdivisions of land through inheritance which increase their disinterest in the sector (Bennell, 2007). World Bank (2014) records that, land is not limited but the ambiguities of acquisition processes through inheritance, purchase and leasing under the traditional rules make land access a challenge for youth. Brooks *et al.* (2013) further added that the young generation often lacks access to agricultural land or has access to small pieces of land which are not workable for large scale farming and profitable agriculture. Small pieces of land are mostly unprofitable to do farming and youth often try to find a substitute work which is hardly available and hence unemployment rate increases.

The results further showed that the association of lack of passion for farming lead to land selling among youth was highly significant ($P=0.000$) and weak negative ($\gamma = -0.168$) with youth attitude towards agricultural occupation. Moreover, the association of 'youth prefers to sell off their land for capital to invest in non-agricultural profession' was highly significant ($P=0.000$) and negative ($\gamma = -0.168$) with youth attitude towards agricultural occupation. Access to suitable

Table 4: Association between access to agricultural land and youth attitude towards agricultural occupation (controlling family background of the respondents).

Family background	Independent Variable	Dependent Variable	Statistics X2, (P-Value) & gamma	Statistics X2, (P-Value) & gamma for entire table
Farming family	Access to agricultural land	Youth attitude towards agricultural occupation	$\chi^2 = 34.975(0.000)$ $\gamma = -0.560$	$\chi^2 = 61.985(0.000)$ $\gamma = -0.476$
Non-farming family	Access to agricultural land	Youth attitude towards agricultural occupation	$\chi^2 = 31.283(0.000)$ $\gamma = -0.431$	

agricultural land is a key determinant of entry into the agricultural sector. In developing countries, youth are facing problems in land access which confines their livelihood opportunities. Insufficient land availability has negative implications for sustainability and farm income. Lack of land or small land both limits youth involvement in the agricultural sector, resultantly their interest develops in nonagricultural jobs where they want to work in a more conducive environment with stable income. Youth with small pieces of land often tend to sell off these units as these pieces are not economically feasible for agriculture. The cash in return from selling land is often used in small businesses with stable and continuous income. The non-availability of land or small inefficient land step back youth from agriculture as shown by the negative values of gamma. These results are supported by study findings conducted by [Chen et al. \(2019\)](#) who reported that the majority of youth prefer to invest in non-agricultural sectors to earn a stable monthly income, for this purpose they often sell the land piece they inherit from their parents. Findings by [Das \(2015\)](#) also revealed that farmers' income depends on the size of the land. Large size land allows a farmer to implement technological practices of agriculture to increase production and income. [Abdul and Norliza \(2015\)](#) further added that the problem of land access can be resolved through adequate funding to youth by relaxing collateral policies. Otherwise, the youth and their families will continue to sell their small holdings for investment in sectors with persistent returns.

Association between Access to agricultural land and youth attitude towards agricultural occupation (controlling family background of the respondents)

Access to agricultural land and youth attitude towards agricultural occupation in the context of respondents family background showed negative ($\gamma = -0.560$) and highly significant association ($P=0.000$) in above mentioned variables for farming family (Table 4). The association of the above said variables was also negative ($\gamma = -0.431$) and highly significant ($P=0.000$) for

non-farming family. The value of the level of significance and γ for the entire table shows a highly significant and negative ($P=0.000$ & $\gamma = -0.476$) association between access to agricultural land and youth attitude towards agricultural occupation for both family backgrounds. The difference in chi-square and γ values for both family backgrounds suggests that the family background of respondents explain the association between the above mentioned variables.

The problem in youth access to workable land is an important factor of youth unfavorable attitude towards this sector. The land is the primary requirement of farming. Absence of land or small size of land hinders youth entry into the agricultural sector. Most of the rural farmers are small scale farmers with few acres of land or working as tenants on others land. For farming families land is the security for survival as they totally depend on their land. In patriarchal societies parents are not ready to transfer their land to their young generation during their life. After parents, children in small farmer's family find a small piece of land which is economically non-feasible for commercial agriculture. Consequently, youth from farming families develop negative attitude towards agriculture. Those with no other option of livelihood continue with farming on small sizes of land with minimum return. Thus, access to sufficient land for agriculture is more challenging for youth from farming families that is a source of their repulsion from agriculture profession. Lack of access to workable land poses serious barriers for rural young people to make an entry into agriculture ([Leavy and Smith's, 2010](#)). On the other side, improved availability and accessibility to agricultural land improve youth participation in agriculture ([Kimaro and Towo, 2015](#)). There is a general trend of youth turn away from agriculture, however, those youth who establish their social identity as a farmer, due to their farming background continue their farming profession when provide with sufficient arable land. However, a demotivated youth from farming family faced with the problem of lim-

ited access to arable land is more likely to opt for an alternative profession than farming (Sharma, 2007; Sharma and Bhaduri, 2009). The charm of agricultural profession is fading away in general, however, dis-interest of youth in farming profession is specifically alarming for youth from small holding families with limited access to arable land (Sharma, 2007; Sharma and Bhaduri, 2009; Leavy and Hossain, 2014). Findings of Sharma (2009) further unveil that interest in youth decreases with a unit decline in size of land holding. Thus, decline in access to land fades away the youth's interest in agriculture. In democratic societies, personal interest is a significant player in developing youth interest in agriculture, however, in conventional societies access to sufficient arable land constrains youth from adopting agricultural profession, even if they are from farming families (Njeru and Gichimu, 2014).

Conclusions and Recommendations

This study aimed at explaining access to agricultural land in terms of declining youth interest in the agricultural sector. Another important aspect explained in the present study was to determine that whether the family background as control variables, influenced the relationship of land access with youth attitude towards agricultural occupation.

The study findings helped to depict that an important role played by land access, to shape a favorable and unfavorable attitude towards agricultural profession, among youth. Youth's access to agricultural land was unsatisfactory. They had no land occupation and were dependent on the will of their parents or land owners to perform agriculture, and were therefore discouraged from agricultural occupation. Access to workable agricultural land is a major issue faced by today's youth. There are socio-cultural, economic and policy constraints faced by youth to acquire arable land. The ambiguities of acquisition processes through inheritance, purchase and leasing under the traditional rules makes land access a challenge for youth. These challenges are further aggravated by the low economic standings of youth who do not have amount or social collateral to purchase or rent in the land. Land acquired by a few lucky youngsters is of such a small size on which commercial agriculture is economically non-feasible. The discourage youth prefer to sell such small land to invest in alternate livelihood sources. The overall effect of poor access of youth to agricul-

tural land is reflected in their low interest in the agricultural profession.

Facilitating youth in financial terms by improving their access to flexible agricultural loans on easy terms and relaxing the conditions for collateral in loan approval, so as to facilitate their access to arable land for agricultural purpose.

Involvement of youth in formulation, follow-up, review and participatory implementation of land tenure, land inheritance and prices related policies so as to rectify their concerns with respect to land access and favor their involvement in agriculture.

Novelty Statement

This study was conducted to find out influence of access to agriculture land on youth's attitude towards agricultural occupations in district Mardan of Khyber Pakhtunkhwa Province. No such study was conducted before in the study area. Findings and recommendations of the study will be helpful in attracting youth towards agricultural occupations.

Author's Contribution

Nadia Farooq: Conducted the research.

Asadullah: Supervised the whole study.

Mussawar Shah: Analyzed the data.

Muhammad Idrees: Proofread the manuscript.

Conflict of Interest

The authors have declared no conflict of interests.

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