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**Structural Transformation of an Agrarian Society:
Case Studies from Punjab, India**

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I . Introduction

Agriculture in Punjab has recorded distinguished rates of growth since the advent of the green revolution, earning Punjab the title of “India’s breadbasket.” In the 1980s, Punjab’s per capita income increased and was highest among the major states of India.

In the second half of the 1970s, the green revolution in Punjab and Haryana bailed the country out of a food crisis. However, the ironic truth is that food self-sufficiency drove the central government to reduce subsidies to the agricultural sector. Politically awakened farmers, who once played a prominent role in Indian subsistence activities, provoked Punjab’s turmoil in the 1980s. Since then, the food problem turned into an agricultural adjustment problem.¹

The growth of capital formation in the agricultural sector in India has almost stagnated since the 1980s, whereas that of the industrial sector has accelerated drastically. The economic liberalization reforms initiated in 1991 widened the disparity, and the anti-agricultural regime deteriorated Punjab’s prosperity, causing depeasantization (Singh, Singh and Kaur 2009). Punjab’s per capita income fell from first place to seventh in 2011–2012 and further to the ninth place in 2016–2017 among the major Indian states. In contrast, Haryana, a leading agricultural state second only to Punjab, has retained its position as the top state after Delhi in terms of per capita income because it successfully caught the industrialization wave. The industrial sector of Punjab, by contrast, has remained weak, mainly because the state does not enjoy locational advantages in terms of material supply and markets for industrial products. These changes exposed Punjabi farmers to stressful situations (Singh, Bhangoo and Sharma 2016).

Although the anti-agricultural regime is often considered a major factor that precipitated distress among Punjabi farmers, population pressure posed a graver challenge to farmers. The average area owned by each rural household in Punjab, excluding landless households, was 1.17 hectares (all of India: 1.13) in 1992, 0.88 (0.81)

¹ Low-income economies often suffer from food shortages given rapid population growth. The resulting high food prices raise the costs of living and wage rates in non-farm sectors, thereby suppressing industrialization, as the Ricardian growth-trap thesis predicts. Thus, the food problem is a prime policy concern in low-income economies. Once the food problem has been resolved, the agricultural (adjustment) problem tends to emerge from either a reduction in all forms of agricultural subsidies or a lag in the agricultural sector’s productivity growth compared with the manufacturing sector’s growth as a result of successful industrialization (Hayami 1988).

in 2003, and 0.68 (0.64) in 2013.² In only two decades, the average landholding size in Punjab declined by 42.8 percent.

Distressed farmers have struggled with adverse situations to maintain the consumption level that they once enjoyed. The ratchet effect causes farmers to either lease in farmland to expand operational areas or diversify their sources of income through non-agricultural income. The latter includes working in neighboring towns or seeking employment in foreign countries. Domestic migration to larger towns, such as Ludhiana and Delhi, is rarely observed. In addition, rural non-farm household activities cannot bring alternative opportunities sufficiently in India.

Indian agrarian society is composed of different social strata other than a cultivator class. Although our focus is on the cultivator class, all strata of society are examined to highlight the impact of the distressed milieu on this class. The discussion is based on our unique household data collected through a structured questionnaire over 2017 and 2018 in two villages of Punjab. All tables and figures are constructed using the household survey data collected.

II. Village Profile and Sample Households

Two villages in Punjab were selected for our research purpose: village NK in Ludhiana district and village KM in Jalandhar district. They are approximately 30 and 10 kilometers, respectively, from their respective district capitals.

The two villages are in the paddy–wheat belt. Paddy–wheat are the major crops in the crop rotation cycle that characterized the green revolution in Punjab. However, in KM, potato cultivation superseded wheat since around 1985, primarily because KM is endowed with sandy loam soil, which is less suitable for paddy and wheat cultivation.

By using a structured questionnaire, a household quasi-census survey was conducted in 2017 in NK and in 2018 in KM (in total, N=444). Non-resident Indian (NRI) households could not be covered. Because paddy–potato cultivation requires more labor for relatively long periods when compared with a paddy–wheat cropping pattern, KM has three pockets of migrants mostly from Bihar, another Indian state. Of them, 90 households were covered for reference (Table 1).

² Gov. of India (2013) National Sample Survey 70th Round, *Household Ownership and Operational Holdings in India*. Landholdings equal to or smaller than 0.0002 hectares are classified under the landless category.

Table 1 Sample Households

Village	Landowner	Landless	Sub- Total	Migrant	Total
NK	59	180	239	0	239
KM	74	131	205	90	295
Total	133	311	444	90	534

Table 2 Landholding and Operational Landholding

Village	Landholding (acres)	N ₁ (HHs)	Operational landholding (acres)	N ₂ (HHs)	N ₂ /N ₁
NK	3.42	59	8.04	34	0.58
KM	3.41	74	11.85	55	0.74
Total	3.41	124	10.40	89	0.72

Table 2 provides the average size of owned land and operational landholdings. The average size of owned land is the same between the two villages. Notably, the average size of operational landholdings is far larger than that of owned land, especially in KM. This finding implies that a significant proportion of farmland owners do not engage in farming and lease out their land. In fact, the number of cultivators (operational landholdings > 0) is smaller than the number of landowners, indicating a high incidence of depeasantization.

The average size of operational landholdings is larger in KM despite the fact that the proportion of landowners who abandoned agriculture is larger in NK. This is partly because 14.8 percent of land parcels were leased in from outside villages in NK, while it amounted to 37.8 percent in KM. Another reason is that the number of NRIs, who lease out their entire farmland, are more in KM.

III. Classification of Sample Households

3.1 Households Typology

Excluding Bihari migrants, the household samples are grouped into four categories based on the criteria of land ownership and operational landholdings (Table 3): farmer, landless farmer, give-up households, and non-farmer households. Landless farmers, albeit fewer, occupy a unique position in the agrarian society of India. Exploring why the landless turned out tenants would shed light on the changes underway in Punjabi

agriculture.

Table 3 Classification of Households

	Land ownership	Operational landholdings	Sample
Farmers	Positive	Positive	81
Landless Farmers	0	Positive	8
Give-up HHs	Positive	0	52
Non-Farmers	0	0	303

During the industrialization process, it is common for a large proportion of young men to migrate from rural areas to seek employment in urban areas. However, there has been no such significant migration in India because Indian manufacturing industries have failed to provide decent employment opportunities for the rural workforce. In particular, Punjab's manufacturing sector has performed poorly. In addition, the manufacturing industries in Punjab prefer Bihari migrants to local workers because employers assume that Biharis are obedient. Accordingly, households that abandoned farming are obliged to stay in the villages; they are referred to as give-up households in this study.

Table 4 Landholdings (acres)

	Area operated	Owned land	Land leased-in	Land leased-out
Farmers	10.42	3.49	7.18	0.25
Landless farmers	10.06	0	10.06	0
Give-up HHs	0	3.28	0	3.28
Non-Farmers	0	0	0	0

In Punjab, farmers and give-up households mostly belong to the Jat-Sikh community, whereas non-farmers mostly belong to the scheduled castes. Landholding characteristics are summarized in Table 4. The give-up households lease out the entire farmland by definition, whereas farmers lease in an average of 7.18 acres of farmland. Note that the average landholding owned is almost the same between farmers and give-up households.

Give-up households have adopted the following three major strategies to earn a livelihood: they obtain jobs in the semi-formal sector in neighboring towns; or gain overseas employment, a common strategy among Punjabi villagers. Although not

confined to give-up households, they are assumed to be more likely to resort to this option. Being a rentier is the third option. Give-up households rarely sell their farmland but lease it out to receive land rent.

3.2 Household Response as Frame of Reference

To facilitate a discussion, we set the frame of reference as farmers' responses to agriculturally distressed situations. The EVLN model, derived from Hirschman's Exit, Voice, and Loyalty model (Hirschman 1970), is used to categorize responses to adverse situations. The EVLN typology coined by Rusbult, Zembrodt and Gunn (1982) has four sub-constructs: "voice," "exit," "loyalty," and "neglect." We redefine them in the context of Indian agrarian societies.

"Voice" is the expression of dissatisfaction with an intention to change situations. In the early 1980s, Punjabi farmers adopted this option as a collective action, resulting in a series of political problems. However, this article is concerned with individual responses to adverse situations, and not the collective action of farmers.

The "exit" and "neglect" options are destructive in that they involve the abandonment of cultivation. In this paper, they are collectively dubbed "give-up." Give-up households lose their interest in farming but stay in villages ("neglect"), or seek employment opportunities outside villages ("exit"). In other words, "neglect" passively allows for conditions to worsen, whereas "exit" entails an expectation of enhanced well-being.

An "exit" option for Jat-Sikhs is more likely to result in international migration because the Indian manufacturing sector does not provide sufficient jobs for them. Reportedly, approximately 11 percent of households in Punjab have at least one current international out-migrant (Nanda and Veron 2015). The region of Bist Doaba, which includes Jalandhar, shows the highest proportion of households with at least one out-migrant, 24 percent.

Depeasantization in Punjab has gathered momentum, particularly after the turn of the century. Note that "exit" has several phases. The most modest "exit" pattern is the "neglect" option, followed by temporary overseas migration. Then follows the permanent overseas migration phase, including leaving behind family in villages. The rural exodus of the entire family is the final phase. The final phase refers to the case of the NRI. In this manner, the "exit" level intensifies.

"Loyalty" according to Hirschman (1970) is the option of passively waiting for conditions to improve. Cultivators who take this option engage in agriculture in the hope that farming would assure subsistence at least more than other options would.

Our research question addresses the factors that cause landholding households in Punjab to adopt these different responses to cope with distressed situations. The remainder of this paper is organized as follows. Section IV explores the land-lease market to identify households that take the “loyalty” option or the “neglect” option. Section V argues that tractor ownership affects landowners’ decision making. Section VI claims that landowners’ demographic characteristics represent another factor that influences their choice. In Section VII, we examine overseas migration as a distress-coping strategy with special reference to the choice between temporary and permanent migration. In Section VIII, the structure of household income and expenditure is examined to show an overall strategy for the different classes. Concluding remarks are provided in Section IX.

IV. Land-lease Market

Classic landlord–tenant relationships have largely transformed since the introduction of tractors following the green revolution. Draft animals disappeared rapidly from the village scenery of Punjab as custom tractor-hiring services became prevalent. Even small-scale farmers started to utilize the service. During this process, reverse and capitalist tenancies came into being (Singh 1989). In a withering agrarian economy, the question of who leases in and who leases out land should be clearly addressed.

Fig. 1 shows the relationship between the size of owned land and that of leased-out land among landowners (N=133). Farmers on the horizontal axis are those who cultivate their land without leasing it out, whereas give-up households are on a 45-degree guiding line. The give-up households cover landholdings of all sizes.

NRIs, who are not covered in our research, are in the northeastern part of the guiding line as absentee landlords. Because most farmers stay on the horizontal axis or on the guiding line, all-or-nothing behavior characterizes land leasing out. Only some farmers keep part of their farmland for growing fodder crop for dairy cattle.

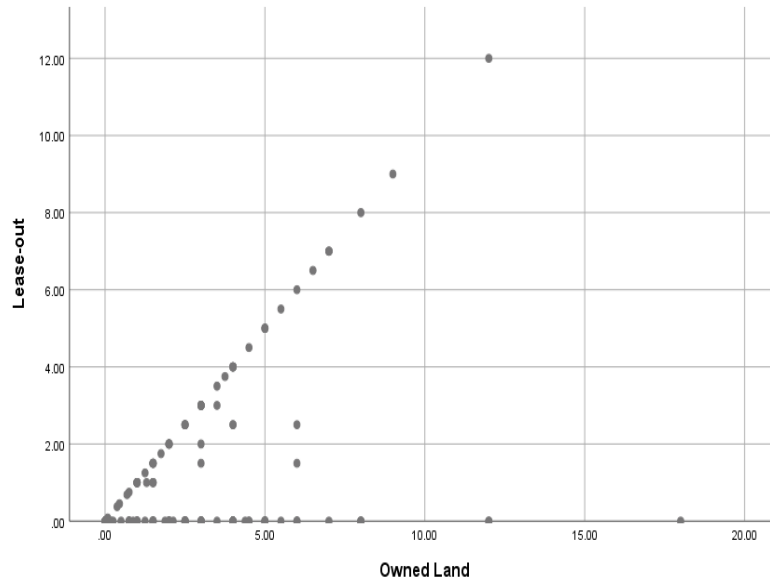


Figure 1 Relationship between Owned and Leased-out Land (acres)

Note: Average size of owned land is 3.41 acres.

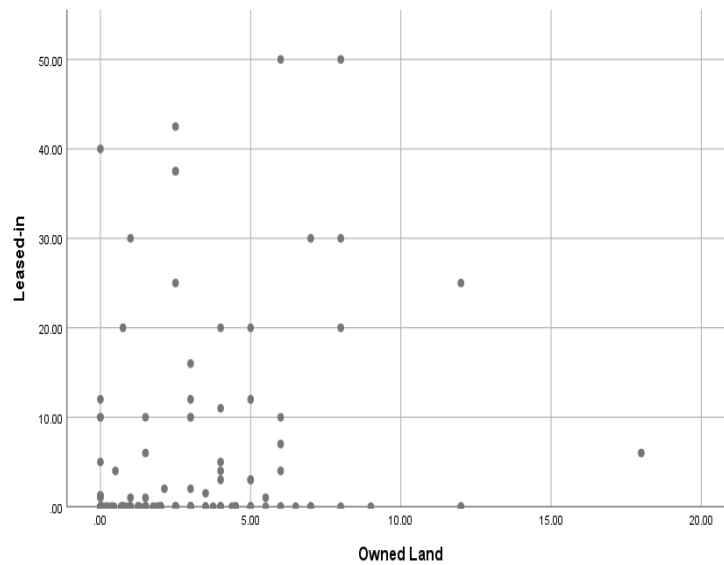


Figure 2 Relationship between Owned and Leased-in Land (acres)

Turning now to the question of who becomes a tenant, no significant correlation is found between the size of owned land and that of leased-in land (Fig. 2), nor can reverse tenancy be observed. It should be emphasized that those who lease in farmland could own land of any size. A striking finding is that eight landless farmers lease in farmland. Of these eight farmers, three are retired veterans, one is Jat-Sikh, and four belong to the scheduled castes. Accordingly, the size of the operational holdings has no significant

relationship with that of owned land. Note that capitalist farmers, defined as farmers who operate more than 20 acres of operational landholding, can also have landholdings of any size. Both the haves and the have-nots have become capitalist farmers (Fig. 3).

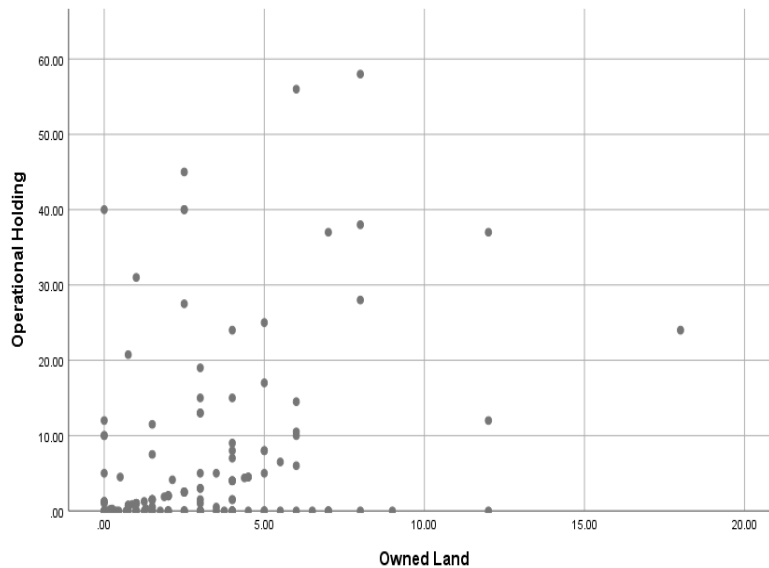


Figure 3 Relationship between Owned Land and Operational Land (acres)

The proportion of households that leased in land from relatives—most of whom are NRIs—is 15.8 percent in NK and 21.9 percent in KM. Farmers who leased in land disclosed that the land-lease market is severely competitive. Average land rent per acre per year is Rs. 41,519 (Rs. 38,826 in the previous year) in NK and Rs. 28,890 (Rs. 28,127) in KM. Land rent is extremely high and amounts to 40 to 50 percent of gross income per acre. Because working at semi-formal jobs in towns offers a monthly income of Rs. 8,000 to Rs. 10,000, leasing out three or four acres of farmland assures almost the same amount of income as that from semi-formal jobs in towns. The lucrative land rent encourages landholding households to adopt the “neglect” option by leasing out their land and become rentiers. The question arises as to the factors that explain land leasing-in behavior.

V. Tractor Ownership

As Table 5 shows, 53.7 percent of farmer households are tractor owners, whereas none are give-up households. The give-up households have never owned tractors before. The average landholding size is 4.05 acres for tractor owners and 2.22 acres for non-tractor owners (Table 6). However, the difference in farmland size is not significant when

we consider that the average landholding size is 3.41 acres). The notable difference is that tractor owners lease in 11.99 acres of farmland on average, whereas non-tractor owners lease in only 2.23 acres. Thus, the operational landholding size is much larger for tractor owners.

Table 5 Tractor Ownership and Household Types

	Farmer	Give-up HHs	Landless- Farmer
Tractor owner	44	0	4
Non-owner	38	52	4

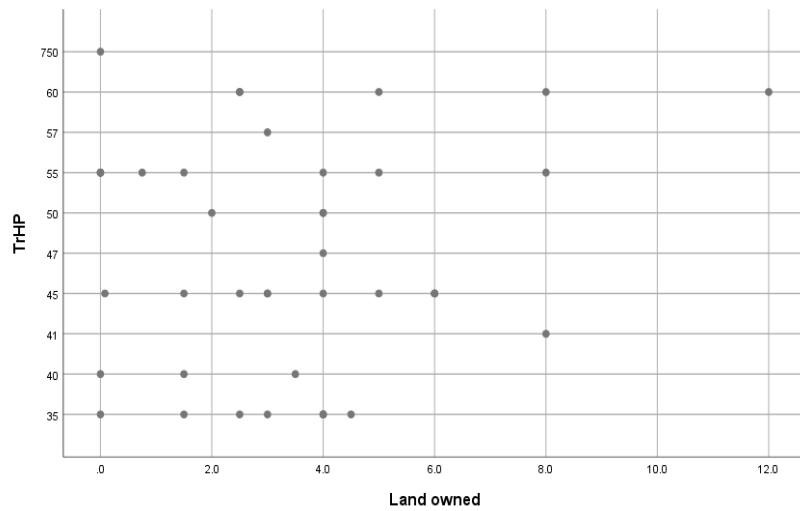


Figure 4 Tractor Horsepower and Landholding Size

Table 6 Tractor Owners and Non-tractor Owners (acres)

	Tractor Owner	Non-tractor Owner
Landholding	4.05	2.22
Land leased-in	11.99	2.36
Land leased-out	0.22	0.24
Operational area	15.81	4.34

Fig. 4 indicates that landholding size is not associated with tractor horsepower, although the land leased-in function (Table 7) shows that only the coefficient of the tractor ownership dummy (owner=1, otherwise=0) affects land leasing behavior. The results of

the probit analysis (leased-in=1, otherwise=0) are similar to those of the ordinary least squares (OLS) model.

Tractor owners are said to be most likely to take the “loyalty” option by leasing in land to cope with adverse situations. Although custom hiring of tractors is prevalent, the optimum land size for tractor operations implies that tractor owners lease in more land than non-tractor owners do. Accordingly, tractor owners’ net average agricultural income (Rs. 447,271) is nearly ten times more than that of non-tractor owners (Rs. 46,617).

Table 7 Land Lease-in Function

	OLS		Probit Analysis	
	Coefficient	t-value	Coefficient	Wald
Constant	8.443	.362		
Owned-Land	.529	1.139	.056	.317
Tractor Dummy	8.098	2.928***	1.900	11.313***
Family size ¹⁾	.688	.679	.000	.000
Age of HHH	-.008	-.011	-.090	.367
(Age of HHH) ²⁾	-.002	-.361	.001	.223
Village Dummy	-1.295	-0.466	.554	.910

Note: *** p<0.1%, R²=0.23, F=4.06. 1) Family size is calculated as Adult Male Unit. 2) HHH denotes household head.

Another factor that prevents tractor owners from quitting farming is that they are heavily in debt, given capital investments in tractors and their accessories (Singh, Kaur and Kingra 2008). As is subsequently shown, the farmer class repays a loan (Rs. 15,715 per annum), which is the highest among the four household categories (Rs. 3,674 per annum on average). Among farmers, tractor owners repay Rs. 23,315, whereas non-tractor owners do Rs. 7,115. The indebtedness associated with tractor ownership is likely to make tractor owners choose the “loyalty” option.

VI. Demographic Characteristics

Landowners’ demographic characteristics are assumed to affect their decision making in adverse agrarian milieus. India’s total fertility rate (TFR) is on a declining trend, from 3.2 in 2000 to 2.1 in 2016, whereas that of Punjab declined from 2.3 to 1.7—far lower than the replacement level—over the same periods. Although this trend constricts

the population pyramid of Punjab, the numbers are different among rural households, possibly because of idiosyncratic reasons. A lower TFR can be seen in the population pyramid of the study villages (Fig. 5). In contrast, Bihari migrant households still maintain an expansive pyramid (Fig. 6).

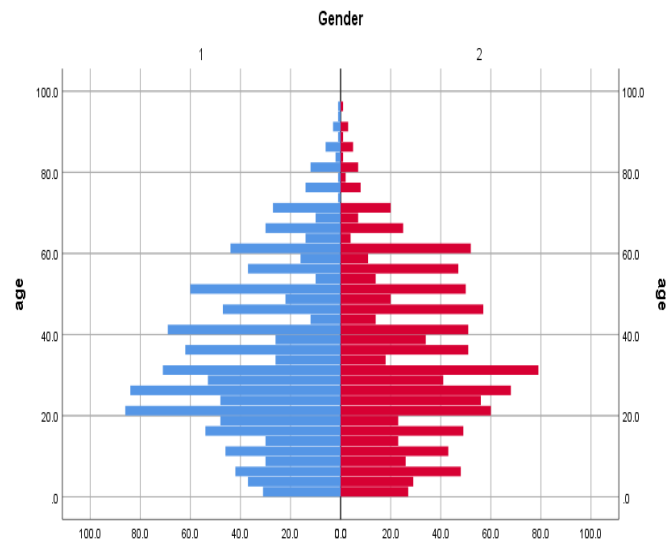


Figure 5 Population Pyramid of Study Villages

Note: Bihari migrants are not included.

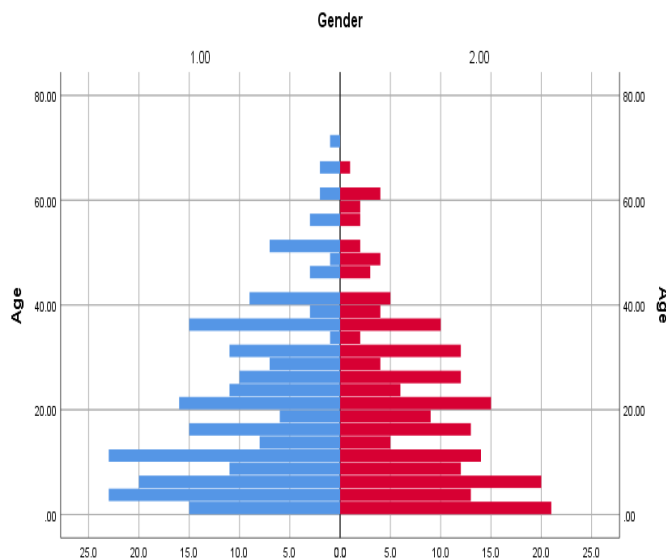


Figure 6 Population Pyramid of Bihari Households

Table 8 Proportion of Male Cohorts (%)

	Age Cohort			Total
	0-30	31-50	51 -	
Farmers	43.3	32.2	24.5	100.0
Give-up HHs	52.8	19.7	27.6	100.0
Landless Farmers	45.8	25.0	29.2	100.0
Non-Farmers	53.7	27.3	18.9	100.0
Average	51.5	27.4	21.1	100.0

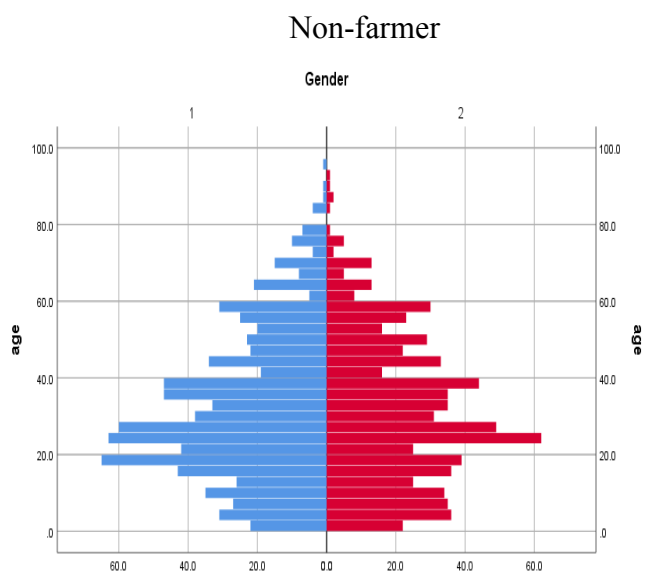
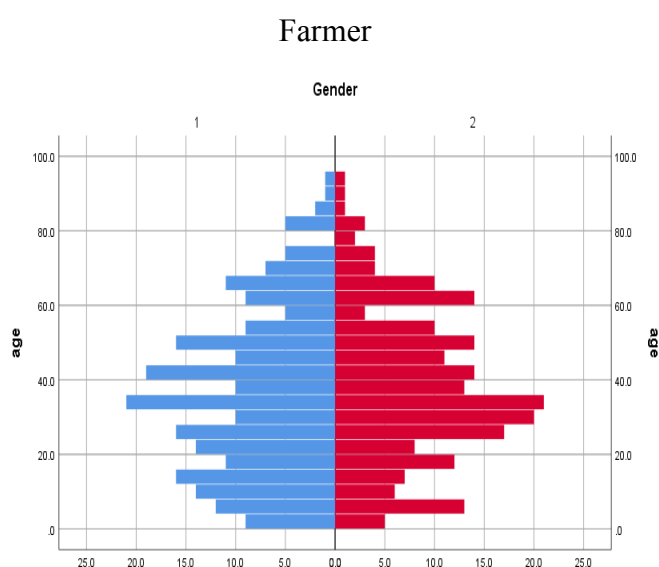


Figure 7 Population Pyramids of Farmers and Non-farmers

Although both farmers and non-farmers show constrictive pyramids (Fig. 7), the pyramid of give-up households is rather crooked (Fig. 8). Note that these pyramids include family members living abroad. The proportion of male members in their 30s and 40s, who are supposed to play a pivotal role in economic activities and decision making on family affairs, is only 19.7 percent for give-up households and 32.2 percent for farmers (Table 8). The paucity of the male workforce is, thus, another potential factor causing cultivators to quit farming.

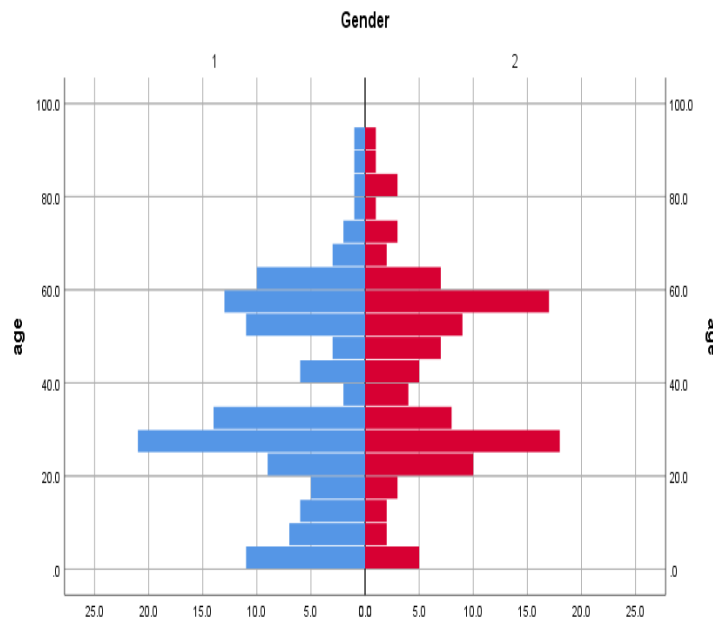


Figure 8 Population Pyramid of Give-up Households

VII. Overseas Migration

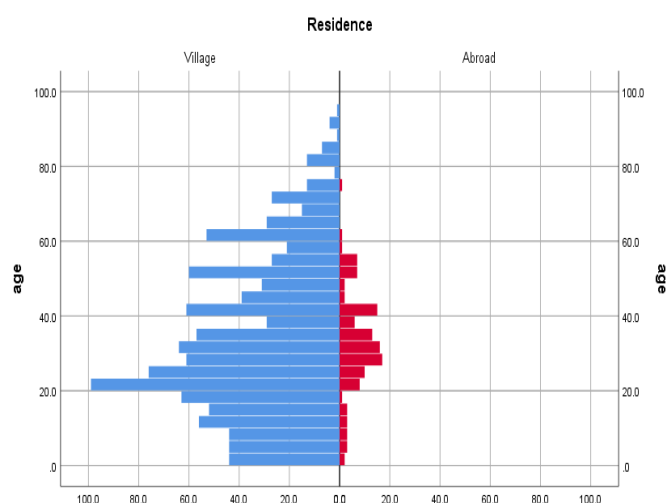
Table 9 indicates the class-wise characteristics of overseas migration. Although female account for 20.5 percent of migrants, they are mostly housewives or children who accompany bread-earning male migrants. As expected, the proportion of households with overseas migrants is highest for the give-up households (44.2 percent). In contrast, nearly one-quarter of non-farmer households—constituting the most deprived strata of Indian agrarian society—has at least one international migrant. No such migrant was observed among Bihari households. Thus, poverty by itself cannot explain the migration behavior of villagers.

Table 9 Overseas Migration

	At least one overseas migrant (%)	No. of HH having migrants	Developed countries (%)	Educational attainments (years)
Farmers	33.3	54	55.6	11.4
Give-up HHs	44.2	23	73.9	11.6
Non-Farmers	23.1	70	22.8	10.0
Average	16.8	121	40.4	10.7

Note: Data on landless farmers are excluded because only one household has a migrant.

Although the educational attainments (years of schooling) of the overseas migrants of the three classes are not significantly different, there is a notable difference in their destinations. Most migrants (73.9 percent) from give-up households headed to developed countries such as the United Kingdom, Canada, the United States, and Australia, whereas those from non-farmer households headed to developing countries (77.2 percent), primarily Middle Eastern countries such as Dubai, Qatar, and Saudi Arabia.

**Figure 9 Age Structure of Overseas Migrants (male only)**

Middle Eastern countries typically offer only a temporary work visa of three to four years. Forty-two sample households (9.5 percent) reported family members who migrated internationally, of which 90.4 percent went to the Middle East. The proportion of male migrants who are accompanied by a spouse is 8.2 percent for those migrating to developing countries and 42.9 percent for those migrating to developed countries. The

overseas migrants included 11 persons under the age of 15 years, and they went to developed countries. Additionally, a larger proportion of young migrants to developed countries comprised students, who are expected to settle down in the destination after graduation. Thus, overseas migrants from farmer and give-up households opt for permanent migration to developed countries, whereas those from non-farmer households opt for temporary migration to developing countries (mainly the Middle East). Fig. 9 represents the age structure of those who stay in villages (left) and overseas migrants (right). Most overseas migrants are in their 20s and 30s—the prime of life.

Table 10 shows destination-wise annual remittance and travel costs. Migrants to developing countries remit twice as much as those who go to developed countries, despite the former having lower incomes. The proportion of migrants who made remittances during the year before the survey was 47.1 percent in developing countries and 22.0 percent in developed countries because the former are target migrants who work only until visa expiration, whereas the latter mostly intend to domicile at the destination.

Table 10 Travel Cost and Remittance associated with Migration

Destination	Remittance	Travel cost
Developed Countries	24,924	387,248
Developing Countries	57,339	83,570

Table 11 Income Sources between Tractor and Non-tractor Owners (Rs.)

	Tractor owner	Non-Tractor owner
Monthly income	60,000	107,151
Remittance	12,708	32,049
Agriculture	447,271	46,617
Milk Income	8,488	1,916
Rent Paid	404,679	42,324
Total Income	319,337	170,886

Note: Income from Agriculture is calculated by amount of agriculture product sold × unit market price – production cost, as is shown in the tables in the Annexure.

An interesting finding is that tractor ownership affects the migration behavior of cultivators. Although the proportion of households with overseas migrants is almost the same—65.9 percent for tractor owners and 67.6 percent for non-tractor owners—the proportion of migrants to developed countries is 66.6 percent and 41.7 percent,

respectively. Non-tractor owner migrants remit 2.5 times more money than tractor-owner migrants do (Table 11). Accordingly, tractor owners have a stronger intention to migrate permanently to developed countries, and non-tractor owners attempt to compensate for the loss of agricultural income by migrating temporarily to Middle Eastern countries.

Because tractor owners lease in land more than non-tractor owners do, the former is assumed to take the “loyalty” option. Actually, tractor owners enjoy higher incomes from agriculture but adopt an ambivalent attitude to agriculturally distressed situations in that the household heads take the “loyalty” option, but their sons seek the complete “exit” option—permanent migration to developed countries.

A question arises as to why the most deprived class of non-farmers migrates to Middle Eastern countries, whereas the relatively well-off classes of farmers and the give-up households show higher migration propensity and head to developed countries with the intent of establishing permanent residence. The initial migration cost is higher when going to developed countries (Rs. 387,248) than developing countries (Rs. 83,570). Non-farmers, mostly scheduled castes, may not be able to afford these high migration costs. However, the most important determinant seems to be the difference in educational attainment, which is discussed in the next section.

Table 12 Migration Destination Function (probit)

	Coefficient	S.E.	Wald	P<
Age of HH head	.027	.011	5.681	.017
Family size	-.073	.059	1.559	.212
Village Dummy	-.555	.291	3.636	.057
Landholding	.247	.075	10.792	.001
Leased-in land	.087	.045	3.760	.052
Pseudo R ² =0.269 (Cox and Snell)				

Note: Coefficients are standardized. Village Dummy (KM=0, NK=1), Non-Farmer Dummy (Non-farmer=1, otherwise=0).

To summarize, a binary probit model for households with overseas migrants (N=121) was estimated (Table 12). A dependent variable is the destination of migration (developed countries=1, otherwise=0). A tractor dummy is not included because having a tractor is highly related to the size of leased-in land.

The coefficients of landholding and leased-in land are significantly positive. The more affluent the households are, the greater their intention to seek permanent migration. The coefficient of leased-in land has a significant positive sign, indicating that the

cultivators who take the loyalty option tend to seek permanent migration. Pursuing large operational holdings and seeking permanent migration concurrently implies distress-coping options that vary from one generation to the next.

It should be noted that migration to developed countries does not necessarily assure decent employment, because migrants from Punjabi villages are not well-qualified workforce by the standards of the destinations. They can only find poorly paying jobs, such as that of drivers, salespeople, restaurant staff, mechanics, positions in the dairy industry, and engaging in small businesses, and so on.

VIII. Household Income and Expenditure

The structural transformation of Punjabi agrarian societies so far discussed up to this point can be confirmed from the annual source-wise income (Table 13). Income from farming does not consider land rent. When land rent is subtracted from agricultural income, the net income is Rs. 105,619 per year for the farmers and Rs. 67,045 per year for landless farmers.

Table 13 Source-wise Annual Income (Rs.)

	Monthly wages	Daily wages	Remittance	Agriculture	Milk	Land Rent received	Land rent Paid	Total Income
Farmers	78,681	0	23,753	328,900	5,555	5,423	223,281	219,031
Landless Farmers	112,500	0	0	451,316	4,513	0	384,271	184,058
Give-up HHs	57,808	0	33,538	0	69	96,273	0	187,688
Non-Farmers	70,120	28,736	19,914	0	124	0	0	118,896
Average	71,004	19,817	21,851	81,333	1,188	11,264	47,657	153,675
Bihari Migrant	0	113,348	0	0	0	0	0	113,348

Note: 1) High monthly income of the landless farmer is mainly owing to pensions received by retired veterans (Rs. 30,000 per month). 2) Daily wages include those from the NREGA. Agricultural income is net income, Income from agriculture minus production costs calculated (please refer to the tables in the Annexure).

Note that give-up households receive land rent of Rs. 96.273. Because semi-formal occupations in neighboring towns offer incomes ranging from Rs. 8,000–10,000 per month, land rent assures similar income levels from working in the semi-formal sector.

High land rent makes it possible for cultivators to leave agriculture without experiencing a drastic deterioration in their income.

Non-farmers do not work as agricultural laborers. According to KM cooperative officers, local scheduled castes withdrew from the agricultural labor market sometime around 1990. They took up jobs similar to that of Jat–Sikh workers in neighboring towns. Bihari migrants work as agricultural wage laborers in place of the local scheduled castes. A striking finding is that the annual income levels of Bihari households are similar to those of non-farmers, primarily because local women are not employed outside the home, whereas Bihari women actively work as agricultural laborers with their spouses.

Table 14 shows the source-wise per capita annual expenditure. Note that the education expenditure of non-farmers is significantly lower than that of farmers and give-up households, which results in a diverse picture on overseas migration.

Table 14 Household Annual Expenditure (Rs.)

	Food	Clothes	Educational	Medicine	Transportation	Ceremony	Electricity	Fuel	Debt Repay
Farmers	59,239	11,592	35,239	25,375	22,609	20,724	15,766	3,790	15,715
Landless Farmers	68,750	14,312	30,050	11,750	23,175	10,875	6,000	1,200	1,237
Give-up HHs	53,201	12,178	23,134	19,615	14,061	12,528	3,717	3,732	0
Non-Farmers	40,607	8,408	14,521	15,462	15,899	10,845	3,344	1,914	1,149
Average	45,988	9,537	19,589	17,690	17,039	12,845	5,702	2,456	3,673
Bihari Migrants	42,751	3,496	1,481	7,028	3,430	4,533	1,437	0	1,133

Note: The Bihari settlement is not electrified. Electricity is free for SC households up to 200 units since 1997. Some Biharis living on the outskirts of NRI premises as caretakers pay the unsubsidized electricity fee.

Migrants' educational attainment in terms of years of schooling does not differ much among migrants of the four household classes (Table 9). However, a clear difference seems to exist in the quality of the schools that their children attend. As Table 14 indicates, educational expenditures are higher for farmers and give-up households and low for non-farmers. Applying for visas to developed countries requires a high score on the IELTS (International English Language Testing System), generally higher than grade 6 (IELTS has levels from 1 to 9). To obtain a higher grade, youngsters need to attend a language school, which typically charges high school fees. Migration to Middle Eastern countries does not require an IELTS certificate. Accordingly, high-quality education facilitates permanent migration, whereas villagers who cannot afford high quality

schooling cannot help but resort to an incomplete “exit” in the form of temporary migration.

IX. Conclusion

This article examined the overall situation of cultivators’ responses to the adverse agrarian milieus in India. Depeasantization has been a relevant phenomenon in Punjabi agriculture. In the process of industrialization, depeasantization expresses itself as a transfer of the workforce to the manufacturing sector. However, in Punjab, a considerable proportion of cultivators who left farming either chose to continue residing in villages or sought employment in foreign countries. The structural transformation of Punjabi agrarian society, thus, takes a distinct route. To examine this route, we classified rural households into four groups. The major findings are summarized in Fig. 10.

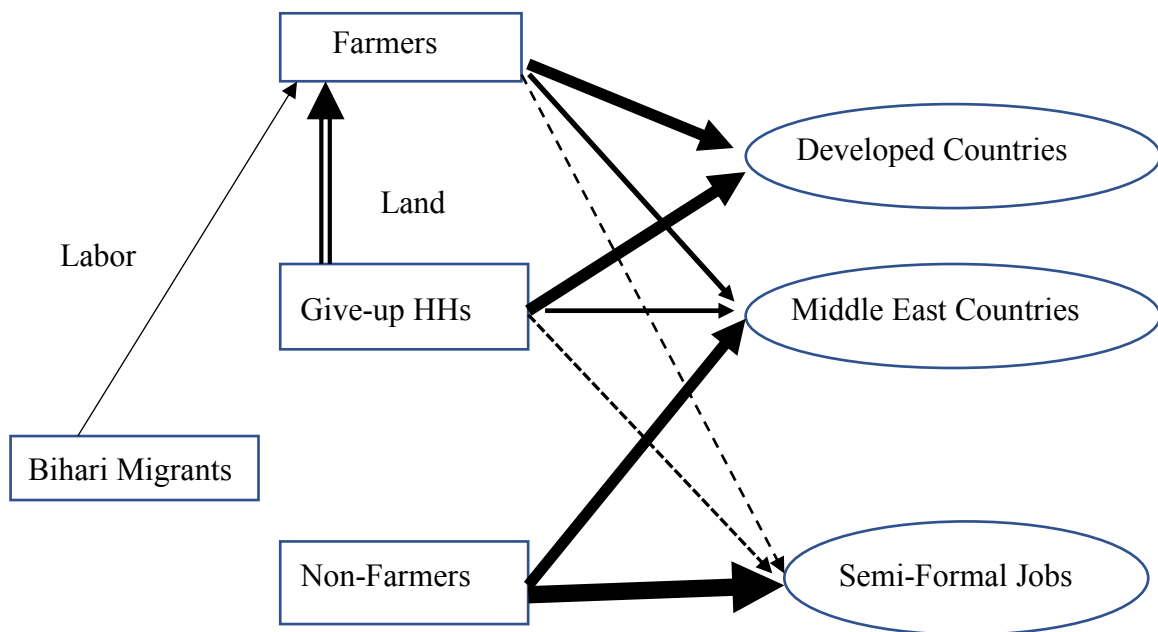


Figure 10 Responses of Different Rural Groups

Seeking employment in foreign countries is a major exit option that is dichotomized into permanent and temporary migration. Middle Eastern countries do not accept permanent migration, whereas developed countries may permit it if migrants have high IELTS scores. Thus, the choice of permanent and temporary “exit” depends strongly on educational attainments. Households’ income levels are strongly associated with educational expenditure. Youngsters with higher educational attainment have opted for

permanent migration, whereas their fathers tend to remain in their villages. Thus, the complete exit option takes an intergenerational turn.

The farmer and the give-up households that can afford high education expenses can seek permanent employment in developed countries. In contrast, non-farm households are obliged to migrate to Middle Eastern countries even though they do not possess farmland as immobile property.

A “neglect” option can be a feasible solution because leasing out land assures high land rent, which compensates considerably for the loss of agricultural income. However, this option is not sustainable in the long term. The number of landowners who take an “exit” option is expected to increase because Punjabi agriculture shows few signs of recovering. Then, the supply of land will increase, and future land rent will decrease.

An important question is whether a “loyalty” option guarantees a bright future. A further increase in subsidies to the agricultural sector is not realistic as long as India is self-sufficient in terms of food. The most plausible way to enhance cultivators’ welfare will be to reduce land rent. Ironically, facilitating an exit from farming that results in an expansion of operational landholdings through the land-lease market will help maintain Punjabi cultivators’ existence.

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Annex Table: Crop production cost and profit per acre

Village KM

Crops		Rice		Potato		Wheat
Tractor		Owned	Unowned	Owned		
				Seed potato	Table potato	
Land preparation		1,200	1,800	2,510	2,510	1,900
Seed/Seedlings		640	640			1,313
Making mound		-	-	3,805	3,805	-
Transplanting		2,800	2,800	-	-	-
Herbicides		400	400	500	500	500
Chemical fertilizers	Urea	562	562	713	713	670
	DAP	1,000	1,000	3,150	3,150	1,375
	Potash	275	275	550	550	-
	Zinc	275	275	-	-	-
	Ammonia	-	-	650	650	-
Pesticides		438	438	950	950	200
Spray of growth-promotion agent		350	350	-	-	-
Irrigation						
Harvesting		2,500	2,500	5,405	5,225	1,200
Straw preparation		-	-	-	-	2,800
Transportation		150	150	-	-	-
Depreciation cost of motor		5,000	5,000	-	-	-
Total cost		15,590	16,190	18,233	18,053	9,958
Yield (Q/acre)		27	27	95	85	16.5
Price per Quintal		1,510	1,510	225	300	1,575
Straw		-	-	-	-	6,500
Gross income		40,770	40,770	21,375	25,500	32,488
Net income		25,180	24,580	3,142	7,447	22,530

Village NK

Crops		Rice		Wheat	
Tractor		Owned	Unowned	Owned	Unowned
Land preparation		2,200	3,000	800	1,000
Seed/ seedlings		550	440	2,250	2,300
Transplanting		2,500	2500		
Herbicides		400	250	850	500
Chemical fertilizers	Urea	870	667	870	580
	DAP	600	480	1,800	1,700
	Potash				
	Zinc		200		
	Ammonia				
Pesticides		3,000	2,800	600	1,000
Growth promoting agent		1,000	500		
Irrigation					
Harvesting		1,200	1,200	1,200	1,200
Straw preparation					
Transportation		160	320	160	160
Depreciation of motor					
Total cost		12,480	12,357	8,530	8,440
Yield (Q/acre)		33	32	19	19
Price per Quintal		1,510	1,510	1,575	1,575
Straw				3,000	3,000
Gross income		49,830	48,320	32,925	32,925
Net income		37,350	35,963	24,395	24,485