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CHAPTER III THE INFLUENCE OF EMPLOYMENT OPPORTUNITIES ON SUGARCANE-CUTTERS 3.1 INTRODUCTION In the arid landscapes of Marathwada region of Maharashtra, where the work of sugarcane cultivation has long been a way of life for many, the prospect of employment opportunities in Kolhapur district acts as a beacon of hope and change. The migration of sugarcane-cutters from Marathwada to Kolhapur is a distinctive phenomenon with multifaceted impacts on both regions.

As economic forces drive these individuals towards new prospects, the consequences are profound, influencing not only the lives of the migrants but also the socio-economic fabric of both areas. The sugarcane fields of Marathwada have sustained communities for generations, but the scarcity of employment opportunities has prompted a significant exodus to Kolhapur district. The allure of employment in the burgeoning sugar industry of Kolhapur, renowned for its sugar mills and agro-based enterprises, is undeniable. The migration is driven by the promise of steady work, improved wages, and the hope for a better life.

For many sugarcane-cutters, this journey is a leap of faith towards a future unburdened by the economic hardships of their homeland. In Kolhapur, the influx of these migrant workers has far-reaching consequences. On one hand, it bolsters the local labour force, addressing the demand generated by the thriving sugar industry. The sugarcane fields, once worked by a smaller population, now witness an infusion of diverse skills and experiences. This amalgamation not only enriches the cultural tapestry of the region but also brings about a sharing of knowledge and practices in agriculture.

The migrants, with their intimate knowledge of sugarcane cultivation, contribute to the optimization of farming practices in Kolhapur, fostering a collabourative environment.

However, the migration also poses challenges. The sudden increase in population strains local resources and infrastructure, testing the resilience of Kolhapur's social services. Housing, healthcare, and education facilities may face unprecedented pressure, necessitating strategic planning to accommodate the needs of the growing population.

Moreover, cultural differences between the migrants and the host community can sometimes lead to social tensions, highlighting the importance of community integration initiatives. For the sugarcane-cutters themselves, the transition is a transformative journey fraught with both opportunities and hurdles. The improved employment prospects offer financial stability, enabling them to provide better for their families. Yet, the adjustment to a new environment, away from the familiarity of Marathwada, can be emotionally challenging. The migrants often grapple with the dichotomy of economic advancement and the nostalgia for the life they left behind.

As they navigate this delicate balance, the resilience and adaptability of these individuals become evident, portraying a narrative of human strength in the face of change. In conclusion, the migration of sugarcane-cutters from Marathwada to Kolhapur district in Maharashtra is a dynamic process with far-reaching implications. It shapes the economic landscape of both regions, fostering growth and collaboration while presenting challenges that demand strategic solutions.

The stories of these migrants, woven into the fabric of Kolhapur's agricultural tapestry, reflect the intricate interplay between economic forces, cultural dynamics, and the indomitable spirit of those seeking a better life. Seasonal migrants working in sugarcane fields face severe living conditions in the outer limits of sugarcane factories, which are occasionally adjacent to sugarcane farms. Everyone lives in a little hut known as zopadi. 3.2 SUGAR PRODUCTION IN INDIA Table 3.1 Sugar Production in India: 2012 Sr. No.

_Year _Production _ _1 _2004 _14,432,386 _ _2 _2005 _15,215,826 _ _3 _2006 _22,346,546 _ _4 _2007 _29,090,294 _ _5 _2008 _25,936,000 _ _6 _2009 _15,654,974 _ _7 _2010 _21,150,846 _ _8 _2011 _27,960,000 _ _ Source: Sugar Year Book 2012 Table 3.2 Distribution of Sugarcane Area, Production and Yield in Different Class Interval of Sugarcane Spread in India Percentage of sugarcane area to net sown area in a district – Spread Index _No. of districts _Area ('000 ha) _Production ('000 t) _Yield (t/ha) _State _Districts _ _> 40 (Very high) _9 _1130 (28.57) _71360 (25.79) _63.15 _Uttar Pradesh _Bagpat, Bijnor, J.B.

Phule Nagar, Kheri, Meerut, Muzaffarnagar, Saharanpur _ _ _ _ _ _ _Uttarakhand _Haridwar, Udham Singh Nagar _ _20– 40 (High) _12 _823 (20.81) _50513 (18.26) _61.38 _Bihar _West Champaran _ _ _ _ _ _ _Gujarat _Surat _ _ _ _ _ _ _Haryana _Yamuna Nagar _ _

_ _ _ _ _Maharashtra _Kolhapur _ _ _ _ _ _ _Uttar Pradesh _Balrampur, Bareilly, Ghaziabad, Gonda, Kushi Nagar, Moradabad, Pilibhit, Sitapur _ _10 – 20 (Medium) _22 _991 (25.06) _83734 (30.27) _84.47 _Andhra Pradesh _Visakhapatnam _ _ _ _ _ _ _Bihar _Gopalganj _ _ _ _ _ _ _Gujarat _Navsari _ _ _ _ _ _ _Uttarakhand _Dehradun _ _ _ _ _ _ _Karnataka _Bagalkote, Belgaum, Mandya _ _ _ _ _ _ _Maharashtra _Pune, Sangli, Satara, Solapur _ _ _ _ _ _ _Tamil Nadu _Cuddalore, Dharmapuri, Erode, Namakkal, Tiruvannmalai, Villupuram _ _ _ _ _ _ _Uttar Pradesh _Basti, Bullandshahr, Faizabad, Rampur, Shahjahanpur _ _5 – 10 (Low) _29 _525 (13.27) _37460 (13.54) _71.35 _ _ _1 – 5 (Very low) _80 _486 (12.28) _33582 (12.14) _69.13 _ _ _Total _152 _3955 (100) _276649 (100) _69.95 _ _ _ _Source: Annual Report 2012-13 The table 3.2 above depicts the distribution of sugarcane land, output, and yield at different sugarcane class intervals in India.

The Kolhapur district has a large percentage of sugarcane area, as well as a high production and yielding group. 3.3 CAUSES OF SEASONAL MIGRATION OF SUGARCANE-CUTTERS There is no single reason for migration, as the study too illustrates various reasons for migration. The push factors like indebtedness, economic hardship, unemployment and backwardness at origin place forces movement.

At origin these people's income-expenditure constancy reflects a great leaning to indebtedness that unsurprisingly represents a cause to migration. The chief reasons for migration as declared by the migrants are: unemployment, lack of water for agriculture or landlessness, not enough land and incapability to pay back loans, advance while the remaining migrants have given mixture of these causes for seasonal migration. Indian census divides the entire population into two categories i.e., workers and non-workers. Again, these workers are divided into two group viz. main workers and marginal workers. (Census 1981).

The size of working force depends upon a variety of demographic, social and economic factors. Demographically, the birth rate, the age structure, the longevity of the life, the migration behavior and average size of the family are important. Socially, levels of literacy and education, status of women in the society, age of marriage and general health standard are significant (Mehta, 1967), (Kanase, S. 2007) Sugar factory is seasonal industry which works for less than half of the total working days in a year. Therefore, major part of its employee is seasonal in which sugarcane cutters do not get any payment during off season.

As many as 155 Sugar Factories across the state had crushed 331.36 lakh tones of sugarcane and produced 35.30 lakh tones of sugar till 25th January, 2014, with Pune leading division followed by Kolhapur. Kolhapur division is at no. 2 with 35 sugar factories (26 cooperative), (TOI, 25th Jan. 2014) The migration of sugarcane-cutters is

often driven by a combination of economic, social, and environmental factors. Here are some key causes that contribute to the migration of sugarcane-cutters: Limited Employment Opportunities: In regions where sugarcane cultivation is the predominant agricultural activity, employment opportunities may be limited to specific seasons.

Sugarcane-cutters often face unemployment during the off-season, prompting them to seek work in other areas where opportunities are more consistent. Low Wages and Economic Hardships: The wages for sugarcane-cutting can be low, and the income earned during the harvesting season may not be sufficient to sustain families throughout the year. Economic hardships drive sugarcane-cutters to migrate in search of better-paying jobs that offer year-round employment.

Seasonal Nature of Sugarcane Harvesting: Sugarcane harvesting is a seasonal activity, and the demand for labour is concentrated during specific periods. During the non-harvesting season, sugarcane-cutters may find themselves unemployed, motivating them to migrate to regions where alternative employment opportunities are available. Debt and Financial Burden: Many sugarcane-cutters operate in a cycle of debt, often borrowing money for various expenses.

The need to repay loans and the financial burden associated with agricultural practices can drive individuals to migrate in search of better economic prospects and the possibility of breaking free from the cycle of debt. Lack of Social and Educational Opportunities: Some regions with a high concentration of sugarcane cultivation may lack adequate social and educational infrastructure. Migrants may seek opportunities in areas with better access to schools, healthcare, and other social amenities, aspiring to improve the overall well-being of their families.

Environmental Challenges: Environmental factors, such as water scarcity, climate change, and unpredictable weather patterns, can impact sugarcane cultivation. Regions facing challenges like droughts may experience reduced sugarcane yields, leading to decreased employment opportunities for sugarcane-cutters and prompting migration to more stable agricultural regions. Mechanization of Agriculture: The adoption of mechanized harvesting techniques in some areas reduces the demand for manual labour in sugarcane cultivation.

This can lead to unemployment among sugarcane-cutters, compelling them to migrate to areas where traditional manual labour is still in demand or where alternative employment options exist. Social Injustice and Exploitative Labour Practices: In certain cases, sugarcane-cutters may face social injustice and exploitative labour practices, including low wages, poor working conditions, and lack of social protection. Migration

becomes a way for individuals to escape such conditions and seek better opportunities elsewhere.

Understanding these causes is crucial for policymakers, NGOs, and other stakeholders to develop targeted interventions that address the root issues and improve the livelihoods of sugarcane-cutters, both in their home regions and in the areas, they migrate to. 3.4 INCOME FROM SUGARCANE CUTTING AND TRANSPORTING At the place of destination, the mean monthly profits of the migrants from cutting and transporting sugarcane are around Rs. 10,000. After adding earnings from other sources and deductions on expenditure towards maintenance of bullocks, etc. the migrants' average monthly income is around Rs. 7,000.

Though the income gains are high at destination compared to the income they may get at their native place which can be around Rs.1000 per month. But after deductions i.e., advance to be repaid, expenditure on food and other household things it was found that the average savings of the migrants is not more than Rs. 3000 to 8000 for the entire season. Another important finding is that for 13 per cent of the migrants the current season income was above average, for 66 per cent it was average and for 20 per cent it was below average.

It was found that migrants spend advance on household and food expenses the savings from destination is just not enough even for coping with their indebtedness and poverty. Hence, it is clear that for the majority of migrants neither the advance nor the savings at destination contribute for betterment of lives at source. That only 8.8 per cent spend on agriculture and 2 per cent spend on constructing a house shows that very few are able to spend on improving their living conditions at source locations.

Therefore for 12 to 13 per cent migrant's advance/savings are additional income, for 66 per cent it is survival strategy for coping with conditions of poverty and for the rest 22 per cent they are indebted to mukadams for the next sugar season. Thus, seasonal migration for majority of migrants is predominantly a survival strategy i.e., coping mechanism, for few it is a source of additional income and some remain bonded due to debt. (Wadikar, J. 2004) The income from sugarcane cutting involves multiple components, including the payment for the actual cutting of sugarcane and, in some cases, additional compensation for transportation to the sugar factory.

However, it's important to note that the income can vary significantly based on factors such as the region, prevailing labour practices, and agreements between farmers and sugarcane-cutters. Sugarcane Cutting: The income from sugarcane cutting is typically calculated based on the volume of sugarcane cutting. Sugarcane-cutters are often paid

per ton or per unit of sugarcane harvested. The rate can vary from region to region and may be influenced by factors such as the prevailing wage rates, labour laws, and negotiations between farmers and labourers.

In some cases, piece-rate systems are used, where workers are paid based on the quantity of sugarcane they cut. Transportation Compensation: Sugarcane-cutters may also receive compensation for transporting the harvested sugarcane to the sugar factory. This additional payment may be based on the distance travelled or the quantity of sugarcane transported. The mode of transportation (manual carrying, bullock carts, or mechanized transport) can also influence the compensation structure. Wage Rates and Labour Practices: Wage rates for sugarcane-cutting can vary based on local agricultural practices, demand for labour, and prevailing economic conditions.

Some regions may have established minimum wage rates for agricultural labour, while others may rely on negotiations between farmers and sugarcane-cutters. Contractual Agreements: The terms of employment and income for sugarcane-cutters are often outlined in contractual agreements. These agreements may specify the payment structure, working hours, transportation arrangements, and any additional benefits provided to the workers. The nature of these contracts can impact the overall income earned by sugarcane-cutters.

Regional Disparities: Income from sugarcane cutting can vary significantly between regions, depending on factors such as soil fertility, climate conditions, and the prevalence of mechanized harvesting. Regions with higher yields and efficient agricultural practices may offer better income opportunities for sugarcane-cutters. It's essential to consider the socio-economic context and prevailing labour conditions when examining income from sugarcane cutting and transportation.

Additionally, changes in agricultural practices, technology adoption, and government policies can influence the overall income and working conditions of sugarcane-cutters. 3.5 AGE STRUCTURE, DEPENDENCY RATIO AND MALE-FEMALE DISPARITY Age decides the physical strength and mental ability of a particular person. Age structures determine the number of persons made accessible for various categories. At the place of destination, (Kagal) the age structures is calculated by surveying, it is the main factor which differ the working and non-working population. It is analyzed by various ways. The most commonly used method is percentile method.

Once the percentage distribution in different age groups is available, one can compare the age structure of two populations. Examine the temporal changes in age structure of a single population. Another measure to study the age structure of population is

dependency ratio. Dependency ratio of a population provides the number of dependents in the population for every 100 working persons. Children below 15 years and persons above 60 years are considered as dependent age group on the working age group, i.e. between 15 and 59 years (Kanase, S. 2007). The dependency ration is computed in the following way.

Dependency ratio = {(P 0-14 + P 60+) / (P 15 - 59)} × 100 The age group and dependency ratio has been calculated below, the selected cooperative sugar factory for the research work is: Chhatrapati Shahu Cooperative Sugar Factory, Kagal / C. S. Co-op. S. F., Kagal 3.5.1 Age Structure & Dependency Ratio at C. S. Co-op. S. F., Kagal in 2013-14 The sugarcane cutters in Kagal tehsil are vary in nature. In the C. S. Co-op. S. F., Kagal age structure of seasonally migrated sugarcane cutters is analyzed here. At C. S. Co-op. S. F., Kagal 28.16 percent migrated population belongs to the age group 0 to 14. Working population is migrated extremely higher, which is 68.31 per cent of the total migrants. Table 3.3 Age Structure of Sugarcane Cutters of C. S. Co-op.

S. F., Kagal 2013-14 Age Group _Percentage _Total _ _0 to 14 yrs. _28.16 _40 _ _15 to 59 yrs. _68.31 _97 _ _60+ yrs. _3.52 _5 _ _All Ages _100 _142 _ _ The age structure of seasonally migratory sugarcane cutters in the C. S. Co-op. S. F., Kagal is investigated here. At C. S. Co-op. S. F., Kagal 28.16 percent migrated population belongs to the age group 0 to 14. Working population is migrated extremely higher, which is 68.31 per cent of the total migrants. Age Structure of Sugarcane Cutters in C. S. Co-op. S. F., Kagal 2013-14 _ Fig. 3.1 3.52 per cent migrants are from the age group of 60+, it shows clearly that there is very less migration of dependant population found at C. S. Co-op. S. F., Kagal.

It exemplifies that young and mature persons are migrated with higher rate. Following them their children also came. But the population of old people is very less because they are not required for such type of work like sugarcane cutting. So, aged people prefer to live at their source place whereas all remaining people migrate seasonally. 3.5.2 Age Structure & Dependency Ratio at C. S. Co-op. S. F., Kagal in 2018-19 The dependency ratio of sugarcane cutters decreased from 46.39 percent in 2014 to 35.23 percent in 2018. The movement of the working population saw an increase in 2018-19 compared to the migration observed in 2014.

It is detected with the significant changes by the researcher and the dependency ratio for age group 60+ is 6.69 per cent, it shows clearly that there is very less migration of dependent population found at C. S. Co-op. S. F., Kagal. It exemplifies that young and mature persons are migrated with higher rate i.e. 73.94 per cent. Following them their children also came with the rate of 19.37 per cent. But the population of old people is

very less because they are not required for such type of work like sugarcane cutting. So, aged people prefer to live at their source place whereas all remaining people migrate seasonally. Table 3.4

Age Structure of Sugarcane Cutters in C. S. Co-op. S. F., Kagal 2018-19 Age Group _Percentage _total _ _0 to 14 yrs. _19.37 _55 _ _15 to 59 yrs. _73.94 _210 _ _60+ yrs. _6.69 _19 _ _All Ages _100 _284 _ _ Age Structure of Sugarcane Cutters in C. S. Co-op. S. F., Kagal 2018-19 _ Fig 3.2 3.5.3 Male Female disparity in age at C. S. Co-op. S. F., Kagal in 2013-14 Table 3.5 Male-Female Disparity in Age Structure of Sugarcane-cutters at C. S. Co-op. S. F., Kagal 2013-14 Age Group _male _Female _total _ _0 to 9 _9.15 _4.93 _14.08 _ _10 to 14 _6.34 _7.75 _14.08 _ _15 to 59 _37.32 _30.99 _68.31 _ _60+ _2.82 _0.70 _3.52 _ _All Ages _55.63 _44.37 _100.00 _ _ Male Female disparity in age at C. S. Co-op. S. F.,

Kagal in 2013-14 _ Fig. 3.3 The age groups have been categorized into male and female based on age criteria. Table 4.2 indicates that male migrants surpass females across all groups, with some displaying an equal distribution. In the 0 to 9 age group, there are 8.20% male children and 3.28% female children, indicating that female children constitute less than half of the male children. The 10 to 14 age group exhibits an equal ratio of 1.64% for both male and female children. In the 15 to 59 age range, the male population is 42.62%, exceeding the female percentage of 36.07%. The above-60 age group has an equal distribution with 3.28% for both males and females.

The data reveals an equal migration flow of males and females in the 10 to 14 and 60+ age groups. 3.5.4 Male Female disparity in age at C. S. Co-op. S. F., Kagal in 2018-19 Table 3.6 Male-Female Disparity in Age Structure of Sugarcane-cutters at C. S. Co-op. S. F., Kagal 2018-19 Age Group _male _Female _total _ _0 to 9 _4.23 _5.63 _9.86 _ _10 to 14 _4.23 _5.28 _9.51 _ _15 to 59 _43.66 _30.28 _73.94 _ _60+ _4.58 _2.11 _6.69 _ _All Ages _56.69 _43.31 _100.00 _ _The provided data presents a demographic breakdown based on age groups, with a focus on gender distribution. In the age group of 0 to 9, the population consists of 4.23% males and 5.63% females, contributing to a total of 9.86%.

Similarly, in the 10 to 14 age range, the male and female percentages are 4.23% and 5.28%, respectively, making up a total of 9.51%. The most substantial portion of the population falls within the 15 to 59 age brackets, representing the working-age population. In this group, 43.66% are males, 30.28% are females, resulting in a combined total of 73.94%. The data suggests a notable gender disparity in the working-age category. For individuals aged 60 and above, the percentages are 4.58% for males, 2.11% for females, with a total of 6.69%. This indicates a relatively smaller proportion of the elderly population. Male Female disparity in age at C. S. Co-op. S. F., Kagal in 2018-19 _ Fig. 3.4

When considering all age groups collectively, the overall distribution shows that 56.69% are males, and 43.31% are females, constituting the entire population. This demographic breakdown provides valuable insights into the age and gender composition of the population, shedding light on different life stages and emphasizing the importance of addressing gender imbalances, especially within the working-age demographic. Understanding these demographics is crucial for policymakers to tailor social and economic initiatives that cater to the specific needs of diverse age and gender groups within the population. 3.6

APPLICATION OF CHI-SQUARE TEST TO ASSESS THE ASSOCIATION BETWEEN EDUCATION AND AGE STRUCTURE The Chi-Square statistic is most typically used to examine tests of independence when using a crosstabulation (also known as a bivariate table). The variable categories overlap in the table cells in a crosstabulation, displaying the distributions of two category variables concurrently. The Test of Independence compares the observed pattern of cell responses to the pattern that would be expected if the variables were actually independent of one another to discover if two factors are connected.

The researcher can assess if the observed cell counts deviate considerably from the predicted cell counts by computing the Chi-Square statistic and comparing it to a critical value chosen from the Chi-Square distribution. The Chi-square test is used to test the null hypothesis (Ho) and alternative hypothesis (Ha). In the following details Chi-Square method is used to identify whether there is relationship between educational status and age structure of the migrated sugarcane-cutters or not.

Null Hypothesis (Ho): Gender and Literacy are not dependent Alternate Hypothesis (Ha): Gender and Literacy are dependent Table 3.7 Table of Observed Values 2018-19 Qualification / Marital Status _Primary (I to IV class) _Middle Education (V to VII class) _Secondary (VIII to X class) _Higher Secondary (XI to XII class) _Graduate _Post-Graduate/ Other _Total _ _Male _23 _33 _42 _17 _10 _5 _130 _ _Female _18 _30 _11 _13 _01 _4 _77 _ _Total _41 _63 _53 _30 _11 _9 _207 _ _Table 3.8

Table of Expected Values 2018-19 Qualification / Marital Status _Primary (I to IV class) _Middle Education (V to VII class) _Secondary (VIII to X class) _Higher Secondary (XI to XII class) _Graduate _Post-Graduate/ Other _ _Male _25.75 _39.57 _33.29 _18.84 _6.91 _5.65 _ _Female _15.25 _23.43 _19.71 _11.16 _4.09 _3.35 _ _Table 3.7 and 3.8 contains the test results. We reject the null hypothesis at the 5% level of significance since the P-value of the Chai-square test is less than 0.05, implying that invasion season and animal are dependent. Chi-square test formula _ Where _ is observed value, _ is

expected value, X2 = Test Statistics. Table 3.9 Calculation of $X^2$ Sr. No.

| Sr. No. | Observed Values (Oi) | Expected Values (Ei) | (Oi-Ei) | (Oi-Ei)2 | (Oi-Ei)2 / Ei |
|---|---|---|---|---|---|
| 1 | 23 | 25.7 | -2.7 | 7.29 | 0.2837 |
| 2 | 33 | 39.57 | -6.57 | 43.16 | 1.0908 |
| 3 | 41 | 33.29 | 7.71 | 59.44 | 1.7856 |
| 4 | 17 | 18.84 | -1.84 | 3.39 | 0.1797 |
| 5 | 10 | 6.91 | 3.09 | 9.55 | 1.3818 |
| 6 | 5 | 5.65 | -0.65 | 0.42 | 0.0748 |
| 7 | 18 | 15.25 | 2.75 | 7.56 | 0.4959 |
| 8 | 30 | 23.43 | 6.57 | 43.16 | 1.8423 |
| 9 | 11 | 19.71 | -8.71 | 75.86 | 3.8490 |
| 10 | 13 | 11.16 | 1.84 | 3.39 | 0.3034 |
| 11 | 1 | 4.09 | -3.09 | 9.55 | 2.3345 |
| 12 | 4 | 3.35 | 0.65 | 0.42 | 0.1261 |
| 13 | Total | | | | 13.7476 |

Table 3.10 Chi-square distribution table _ Source: https://testbook.com/maths/chi-square-test Results of the analysis are as follow: Significance level: 0.05 Chi-square: 13.74 X2 Tabular Value: 11.07 X2 calculated Value: 13.74 Degrees of Freedom: 5 According to the above calculations: <mark>We reject the null hypothesis and accept the alternative hypothesis</mark> Alternative Hypothesis: There is a significant relationship between Gender and Literacy of the sugarcane cutters because they are dependent on each other. For the present chi-square test, two classes, namely Education and age structure, were selected for which the degree of freedom is (N-5) is 5.

On the basis of the calculated value and expected value obtained from two tail chi-square table, the null hypothesis was tested. This will tell us the probability that the deviation is due to chance alone and our hypothesis can be supportive. The result of the test is summarized in the table no. 3.7 and 3.8. As per computation, the 'P' value of <mark>the chi-square test is</mark> less than 0.05, which denotes the rejection of the null hypothesis. With this, it is concluded that the education of the sugarcane-cutters and age structure are dependent on each other. <mark>The Chi-square test is a statistical</mark> method used to determine whether there is a significant <mark>association between two categorical variables.</mark>

In this case, the variables under examination are the education and age structure of sugarcane cutters. The significance level, often denoted as alpha (a), is set at 0.05, indicating a 5% probability of making a Type I error (rejecting a true null hypothesis). The Chi-square calculated value, which <mark>measures the discrepancy between</mark> observed and expected frequencies, is determined to be 13.74. Comparing this value with the critical Chi-square tabular value of 11.07 for <mark>a significance level of 0.05 and</mark> <mark>degrees of freedom (df)</mark> of 5, it exceeds the critical value. <mark>The degrees of freedom</mark> in this context are calculated as <mark>the product of the</mark> number of categories -1.

Since <mark>the calculated Chi-square value</mark> exceeds the tabular value and falls in the critical region, <mark>we reject the null</mark> hypothesis. The null hypothesis typically assumes independence or no association between the <mark>variables, while the alternative hypothesis</mark> posits a significant association. Therefore, based on the results of the Chi-square test, we accept the alternative hypothesis, indicating a statistically significant relationship

between the education and age structure of sugarcane cutters.

This implies that there is evidence to suggest that the education levels of sugarcane cutters are not independent of their age structure. The findings from this statistical analysis contribute valuable insights for policymakers and researchers, informing targeted interventions or policies that may address specific age-related educational challenges within the sugarcane cutter population. 3.7 CHILDREN ENGAGED IN SUGARCANE FARM ACTIVITIES Sugarcane cutters generally take their children with them and migrate. So, the migrated children at the destination place help their parents in the daily work.

But it creates various problems like educational gap, health problems and so on. These children who work in the farm for cutting sugarcane are known as child labourers and according to the government rule it is illegal to make them work. 3.7.1 Definition of child Every human being below the age of 18 years is supposed as a 'child' by UNCRC. The Indian legal organization has previously adopted 18 years as the greater age limit for childhood (JJ Act, 2001 and Child Marriage Prohibition Act, 2006). On the other hand, according to the Factory Act, 1948, Labour Act, 1966, Apprentices Act, 1961 and Child Labour (Prohibition and Regulation) Act, 1986, working child below 14 years is considered as child labour.

Article 24 of the Indian Constitution states that, 'no child below the age of fourteen years shall be employed in any factory or mine or engaged in any other hazardous employment'. It has made provision for free and compulsory education of all children until they complete the age of fourteen years (Article 45). The number of children in 0-14 age group has also been used by the demographers for estimating different demographic rates (like fertility, sex ratio, etc.) for many developing countries including India.

However, apart from the UNCRC, no laws or legal discourses have provided any age-based definition of children. As the UNCRC has been ratified by India, it is, rational to use the UNCRC definition of child as every human being below the age of 18 years. The present study, therefore, uses 0-18 years to define 'child', for describing the situation of children of migrant labourers of sugarcane farms of Maharashtra. (Child Rights Situation Analysis 2012) 3.7.2 Age Group of Children Engaged in work at C. S. Co-op. S. F., Kagal The provided chart details the involvement of children in sugarcane farm activities at Chh. Shahu Co-op. Sugar Factory, Kagal, during the 2013-14 period.

The data is segmented into different age groups, each associated with the respective percentages of boys, girls, and the overall percentage of children engaged in these

activities. Children engaged in sugarcane farm activity with their parents are given below in the table no. 3.11 & 3.12 Seasonal migrants carry their children with them. And the ratio of child migration is higher than the age group of 60+ as discussed already. So it is important to know that why these migrants are taking their children with them for such long distance. If the reason behind it is help in the work, then the problem of child labour comes into existence. At Chh.

Shahu cooperative sugar factory, Kagal out of total children from the age group of 0 to 9 year there are 26 percent boys and 14 percent girls engaged in sugarcane cutting activity. From the age group of 10 to 14 years total 18 percent and 22 percent Boys and girls respectively counts Near about 40 percent young population which engaged in seasonal sugarcane cutting, and remaining 20 percent of young population is in between the age group of 15 to 18 years out of which 12 percent boys and 8 percent girls are involved in the same activity. This is the time of educational enrichment where these innocent children get engaged in sugarcane farm work because of their parents' willingness.

And could not be able to decide what actually necessary for them. The following table 3.11 percentage of children engaged in the sugarcane cutting is shown with comparative analysis of 2013-14 & 2018-19. Children Engaged in Sugarcane Farm Activities at C. S. Co-op. S. F., Kagal 2013-14 The provided data illustrates the distribution of children across different age groups, categorized by gender percentages. In the age group of 0 to 9, 26.00% are boys, 14.00% are girls, contributing to a total of 40.00%. Similarly, in the 10 to 14 age bracket, 18.00% are boys, 22.00% are girls, forming a combined percentage of 40.00%. Moving to the 15 to 18 age range, 12.00% are boys, 8.00% are girls, with a total of 20.00%. The overall total percentage for boys is 56.00%, while for girls, it is 44.00%, resulting in a combined total of 100.00%. Table 3.11 Children Engaged in Sugarcane Farm Activities at C. S. Co-op. S. F.,

Kagal 2013-14 Age Group _Percentage of Boys _Percentage of Girls _Percentage of Children _ _0 to 9 _26.00 _14.00 _40.00 _ _10 to 14 _18.00 _22.00 _40.00 _ _15 to 18 _12.00 _8.00 _20.00 _ _total _56.00 _44.00 _100.00 _ _ This data implies variations in gender distribution across age groups. In the younger age categories (0 to 9 and 10 to 14), boys have a higher representation compared to girls. However, in the 15 to 18 age group, the gender gap narrows, with a decrease in the percentage of boys.

The comprehensive analysis of these percentages aids in understanding the demographic composition of children in different age brackets, providing valuable insights for sociodemographic research and policy considerations. Children Engaged in Sugarcane Farm Activities at C. S. Co-op. S. F., Kagal 2013-14 _ Fig. 3.5 Children Engaged

in Sugarcane Farm Activities at C. S. Co-op. S. F., Kagal 2018-19 The graphic depicts the participation of children in sugarcane farm activities at Chh. Shahu Co-op. Sugar Factory, Kagal, during the 2018-19 school year, broken down by age group and gender. In the 0 to 9 age group, 16.0% of boys and 21.6% of girls are involved in sugarcane farm activities, for a total of 37.6%. Similarly, boys and girls had comparable percentages of 37.6% in the 10 to 14 age brackets. Table 3.12 Children Engaged in Sugarcane Farm Activities at C. S. Co-op. S. F.,

Kagal 2013-14 Age Group _Percentage of Boys _Percentage of Girls _Percentage of Children _ _0 to 9 _16.0 _21.6 _37.6 _ _10 to 14 _16.0 _21.6 _37.6 _ _15 to 18 _20.3 _5.4 _25.7 _ _total _52.3 _48.6 _100.92 _ _ _ Fig. 3.6 The graphic depicts the participation of children in sugarcane farm activities at Chh. Shahu Co-op. Sugar Factory, Kagal, during the 2018-19 school year, broken down by age group and gender. In the 0 to 9 age group, 16.0% of boys and 21.6% of girls are involved in sugarcane farm activities, for a total of 37.6%. Similarly, boys and girls had comparable percentages of 37.6% in the 10 to 14 age brackets. Notably, the percentage distribution switches in the 15 to 18 age group, with 20.3% of males and 5.4% of girls attending, for a combined proportion of 25.7%. The aggregate total percentage is somewhat higher than 100%, which might be due to rounding issues in the data display.

The research emphasises the prevalence of child labour on sugarcane farms, with males outnumbering girls across all age categories. Concerns have been raised concerning gender-specific trends in child labour as a result of the significant change in the 15 to 18 age group. These findings emphasise the need of establishing a safe and supportive environment for children's growth and development, as well as the need for specific interventions and policies to address and mitigate child labour concerns. 3.

8 WORKING HOURS IN FARM ACTIVITIES Sugarcane cutters migrate seasonally to earn money. When they migrate in the Kolhapur district, they keep themselves engaged all the times. They go to work in the early morning. Most of them eat stale food. They cut sugarcane, bundle it, upload it in the bullock cart or tractor and bring it to the factory. This kind of work gallop their whole day. Then they return to their huts (temporary houses) in the evening. It means their maximum time is spent doing the tough work. So, it is essential to study the working hours of sugarcane cutters which have been explained in the following tables and figures of daily working hours of sugarcane cutters. 3.8.1

Daily Working Hours at C. S. Co-op. S. F., Kagal 2013-14 The following table and figure 3.7 represent daily working of sugarcane cutters at C. S. Co-op. S. F., Kagal. Table 3.13 Working Hours at C. S. Co-op. S. F., Kagal 2013-14 Daily Working Hours of Sugarcane

cutters _Percentage _ _Up to 5 _11.75 _ _5.1 to 8 _43.25 _ _8.1 to 10 _37.85 _ _> 10.1 _7.15 _ _Total _100.00 _ _ Source: Field Survey 2013-14 The data represents the distribution of daily working hours among sugarcane cutters. Approximately 11.75% of the cutters reported working up to 5 hours per day, reflecting a segment with relatively shorter working hours.

The majority, constituting 43.25%, reported working between 5.1 to 8 hours daily, indicating a significant portion engaging in moderate working hours. Furthermore, 37.85% of sugarcane cutters reported working from 8.1 to 10 hours daily, suggesting a substantial workforce with relatively extended working hours. A smaller proportion, 7.15%, reported working more than 10.1 hours daily, highlighting a minority engaged in more prolonged and potentially strenuous working days.

This distribution provides insights into the diverse working hour patterns within the sugarcane cutter community, showcasing variations in labor intensity among different segments of the workforce. _ Fig. 3.7 3.8.2 Daily Working Hours at C. S. Co-op. S. F., Kagal 2018-19 The data reveals the distribution of daily working hours among sugarcane cutters, highlighting a broad spectrum of labour commitments. A noteworthy 54.69% of workers allocate 6 to 8 hours daily to sugarcane cutting, representing the majority. Additionally, 21.88% of sugarcane cutters prolong their daily working hours to the 9 to 10 hours range. A smaller yet significant proportion, accounting for 15.63%, engages in up to 5 hours of work daily. In contrast, 7.81% of sugarcane cutters invest more than 10 hours daily in their labour.

This distribution signifies a diversity in work intensity among sugarcane cutters, with a majority falling within the 6 to 8 hours range, while a substantial portion commits to extended hours, highlighting the varied working patterns within this demographic. Table 3.14 Working Hours at C. S. Co-op. S. F., Kagal 2018-19 Working Hours in Sugarcane farms _Percentage of working hours _ _Up to 5 Hours _15.63 _ _6 to 8 Hours _54.69 _ _9 to 10 Hours _21.88 _ _More than 10 Hours _7.81 _ _Total _100.00 _ _ Source: Field Survey 2013-14 _ Fig. 3.8 3.9

SUGAR HARVEST SYMPHONY: NAVIGATING THE SEASONS - A COMPREHENSIVE GUIDE TO SUGARCANE CUTTERS' SEASONAL MIGRATION PROCESS Individuals migrated from Beed to the Kolhapur region of Maharashtra to engage in sugarcane cutting. During the period from October/November to April/May, they relocate to sugarcane fields, residing in temporary shelters crafted from bamboo mats, grass, or plastic sheets. There are 3 types of labourers–tire gadi labourers, gadi centre labourers and doki centre labourers. According to Dhamnkar Mona, (2005), Tire Gadi Labourers are those who come with their own bullocks and hire carts from the factories at Rs. 10/- per day.

These carts have rubber tires, hence named tire gadi. Each cart can take up to 2 to 4 tons of sugarcane at a time. Gadi centre labourers transport sugarcane directly to the factory in their own bullock-carts; if the fields are far away from factory site in the interior areas, they use factory trucks for further transportation. Doki centre labourers are those who carry head loads to the trucks or tractor, either in the sugarcane fields or at the main road.

(Panjiar Smita, 2007) The magnitude of migration The total sugar production of Maharashtra in the country is about 70 per cent as compared to 186 cooperative sugar factories. The construction of Koyana Dam in 1970's provided water resource to the cultivation of sugarcane. A study commissioned by Janarth, an Aurangabad based NGO, estimates that about 6,50,000 labourers migrate from central to western Maharashtra for sugarcane cutting each year.

Of these around 2,00,000 are children in the elementary school age group of 6 – 14 years. An additional 2,00,000 labourers are received in Surat district of Gujarat for sugarcane cutting every season, of which 75% are from Khandesh region of Maharashtra, and the rest from Dang and other tribal districts in Gujarat. (Panjiar Smita, 2007, 3) Annual Movement Season According to the study, labourers travel to the sugarcane fields seasonally from October or November for a duration of 5 - 6 months, i.e. from October to March or April.

Seasonal labourers often work in sugarcane fields for 5 to 7 months. Transportation They travel by tractor or truck based on the distance of the resident hamlet and the number of families moving to the destination at sugarcane plantations in Kolhapur district. Most of the time, they are responsible for their own transportation. Sometimes mukadam pays for transportation. Those who own bullock carts use them to travel.

Duration of work at the sugarcane fields Sugarcane cutters tend to stay at their destination during both winter and summer seasons, with this period lasting for five to seven months. This preference for a prolonged stay is likely influenced by the consistent demand for labour during these seasons, providing the workers with stable employment opportunities and income over an extended duration. Sugarcane Crushing The duration of the sugarcane crushing process ranges from 170 to 220 days, depending on sugarcane production.

During this peak period, a lot of industries use their crushing capacity, which ranges from 110 to 125 percent depending on how they employ personnel. Private and Government Services Modernization, industrial expansion, and a variety of other factors

have altered the lives of some forward-thinking sugarcane cutters who now work in both the public and commercial sectors. Some financially well-off persons with leadership abilities have entered and succeeded in politics. According to the Janarth research, all of the above-mentioned categories work at least two or three different sorts of jobs during the year.

These are cultivation and daily wage workers, cultivation and sugarcane cutting, agriculture and daily wage labour, cultivation and agricultural labour, cultivation and agriculture labour including gathering of minor forest produce such as firewood, honey, gum, fruits, vegetables, and so on. The Migrant workers Seasonal migration is a popular alternative for disadvantaged rural residents. Migration began as a method for sugarcane cutters to deal with the increasing circumstances of dry-land agriculture caused by drought, crop failure, and unfavourable trading terms.

Sugarcane cutting is a physically demanding exercise that takes a lot of stamina and energy. Unless and until the migrant population is in desperate need, he or she would not consent to work in such harsh weather and deplorable everyday conditions. They can withstand harsh cold from October to January, followed by scorching temperatures of up to 45 degrees in March and April. Terms of Work These labourers are engaged on a contract basis by a mukadam, a person from their own or a neighbouring community. Typically, one mukadam contracts a toli of 8 to 15 koytas (labour units); the quantity depends on the capacity to mobilise funds for subsequent advances. They receive a 15% commission on the total earnings of each unit.

Maharashtra Cooperative Sugar Factories regulate the salaries for todani (cutting) and add transportation expenses based on distance and manner of conveyance. Every three years, wages are reviewed. All sugar plants employ 'advance' to recruit workers. The workers contact the contractor because they want a lump-sum advance for consumption spending, such as getting their children married or paying medical fees. The advance amount is determined by a labour unit's ability to earn and reimburse within four months (120 unit-days) during a crushing season that lasts typically six months. Generally, all labourers endeavour to repay their advances during the same season.

If they are unable to earn enough money, they arrange a later date with their respective mukadams. They seek for jobs locally to do this. If no job is available, the men either relocate again or sell their cattle. As a result, the family is trapped in debt and is compelled to travel year after year. Contractors are thus genuine exploiters of mukadams and workers. As correctly stated by (Breman, 1996), a system in which employers advance money to labour contractors for a certain quantity of work absolves

them of any duty to the labour force that does this work, or "frees the owners of capital from the obligation of employer." Daily Routine A normal labourer's day begins in the early hours of the morning with his group, in the bitter cold. They must be prepared to go at any time of day or night to load bullock carts, vehicles, or tractors.

As they operate at night, bonfires are the only source of light and warmth. To return the advance during the season, each couple must cut one to two tonnes of sugarcane each day, at a cost of Rs. 300 to 400/- per tonne for bullock cart owners and tractor labourers. Workers are frequently paid less since their outstanding debts are offset against the advance. By the afternoon, each couple packs its bullock waggon with the cane cut by their family and departs for the production site.

The guy waits in line for his turn and a bill, while the woman walks back to the settlement to prepare supper and do any remaining household responsibilities. Families in this regimen receive extremely few hours of sleep every day. Nature of work at the sugarcane farms The sugarcane cutters are expected to do following jobs. Sugarcane cutting. Making bundles. Carrying them to the bullock cart/ truck/ tractor. Loading sugarcane in the bullock cart/ truck/ tractor. Motivations for Migration Through personal interviews with sugarcane cutters in Kolhapur district, several factors contributing to their migration from native areas to sugarcane plantations have been identified.

These include irregular rainfall, inadequate irrigation infrastructure, financial debt and poverty, landlessness, low literacy levels, unskilled labour, unemployment in their hometowns, substandard living conditions, absence of property ownership, starvation, bonded labour, the prospect of survival through kharchi and loans, and higher wages in destinations beyond their native villages. Distance of Working Place from Sugar Factory Although sugarcane cutters work for a particular factory, they do not work at the same place whole time. They go to the nearby villages to cut the sugarcane.

So, they migrate regularly to a short distance to collect sugarcanes from fields. The distance of regular travelling depends on the location of the factory and their actual site of the farm where they cut the sugarcane. 3.12 CONCLUSION Push as well as pull factors are responsible for migration. There are many push factors at the place of origin (Beed district) viz. erratic rainfall, lack of irrigation facilities, indebtedness, unemployment, economic hardship and resultant backwardness push the workers from Beed to Kolhapur district to earn money.

Kolhapur district has pleasant and conducive geographical condition which has enriched the district in sugarcane harvesting. Affluent sugar factories create employment

opportunities for 5 to 6 months. So these sugar factories of Kolhapur district pull the workers/sugarcane cutters from Marathwada region especially from Beed district every year. The working population is migrating seasonally with the highest rate than children and aged people. As children and aged people are dependent and their flow of migration is comparatively less. The children who have migrated with their parents help in the field work and the issue of child labour comes into existence.

It is a hard work, so the age of educational enrichment of children transforms into physical stress and mental disturbance. Generally, sugarcane cutters work in the farms 6 to 10 hours daily. If the distance of their workplace from factory becomes longer then their working hours get reduced. Sugarcane cutters are migrating to Kolhapur from last 5 to 30 years; it proves the backwardness of Beed and prosperity of Kolhapur. Most of the migrants have their own agricultural fields at their origin place. But it is not sufficient to get good agricultural production, the other essential things is healthy environment and good economic condition.

Therefore, due to erratic rainfall and lack of irrigation facilities the flow of sugarcane cutters migration is continuously increasing towards the western Maharashtra, especially to Kolhapur. With a calculated Chi-square value of 13.74 exceeding the tabular value of 11.07 at a significance level of 0.05 and 5 degrees of freedom, we reject the null hypothesis. Thus, there is evidence to support the alternative hypothesis suggesting a significant association between the education and age structure of sugarcane cutters. Also, it shows Chh.

Shahu Co-op Sugar Factory, Kagal of Kolhapur district provides tremendous earning opportunities for these sugarcane cutters, allowing them to support themselves. Behind this favorable situation, numerous challenging consequences have emerged, such as health issues, educational gaps, and illiteracy, all of which have a direct influence on their way of living.

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