

An Empirical Study on the Impact of Human Resource Transfer on Punjab Economy

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Abstract

This research explores the effects of labor migration on Punjab's economic development in terms of trends in migration, remittances, employment and skill development. The main purpose is to develop a model that describes the impact of the change in human resources on the Punjab economy. Employing a sample size of 100, data was gathered by structured questionnaires and analyses were done using regression analysis in SPSS. The conclusion shows that labor migration trends play a significant role in the economic development as there is a high positive relationship between migration patterns and economic returns in the area. On the other hand, remittances, employment changes and skill development did not have statistically significant effects. The model accounts for about 29.1% of the variability of economic growth, with labor migration being the most significant predictor. The study finds that migration is strongly associated with economic growth in Punjab, but there is more that needs to be understood about other variables like remittance and skill development. The findings of this research highlight the importance of further research into the topic of migration and indicate directions for further research to specify the connection between labor migration and the development of the region.

Keywords: Labor migration, economic growth, migration trends, remittances and employment changes.

1. Introduction

Interstate and intrastate mobility of human capital has always been a critical determinant of regional and national economies. Punjab is one of the states in northern India, and the said study reveals that the flow of migration has changed over time. It has experienced significant social and economic transformations in its economic growth and human resource. From the above literature review, this research seeks to develop a model that focuses on the effects of change or relocation of human resources on Punjab's economy (Shergill & Mehta 2011). This paper aims at evaluating the phenomenon of labor mobility in relation to economic development by analyzing various aspects such as economic growth, migration, remittances, shift in the employment and unemployment patterns, skill development etc., in order to understand the role played by the movement of labor in the overall development of Punjab (Jain, 2016). The economic development of Punjab has been closely linked with mobility of labour force of the province (Singh, 2016). Internal and international migration has been largely instrumental in the growth rate of the state's Gross Domestic Product, per capita income and the diversification of economic activities in the region as noted by Chopra et al., (2020). Migration of labor in and out of the state has impacted the competitive structure of the economy of the state and a number of aspects like change in the agricultural sector and industrial growth (Ali & Byerlee, 2002). Appreciating the effects of these migration trends becomes useful to assess the state's economic viability and prospects for growth (Goyal, 2020). Another important factor analyzed in this work is the tendencies in labor migration. This has exposed Punjab to a considerable level of labor exportation; more so to the other states and sometimes even to other countries in the quest for better earnings (Singh & Kohli, 1997).

At the same time, it is necessary to notice that the state has received a significant amount of the labor force from other parts of India (Kaur & Chauhan, 2024). Such migrations have not only affected the demography of Punjab but have also impacted the economy of the region in several manners. The study looks at these patterns to determine what facilitated migration and the resulting effects on Punjab's economic growth (Kaur, 2019).

Migration has become important source of income for Punjab with remittance being the most important income earner. The remittance inflows have enhanced the consumption standards of the area and encouraged more domestic investment in companies (Singh et al., 2024). Literature evidence reveals that money which migrant workers send home helps feed families, improves the standard of living and fosters SMEs. The nature of these remittance flows will be identified in the study and through that the usefulness of such remittance for the local economy and its relevance for sustainable development in Punjab will be revealed.

In addition, the paper focuses on the shifts in employment and unemployment levels due to labor migration. Migration has helped causes unemployment in many fields but on the other hand it has left many industries with lack of manpower mainly industries that involve manual work. This change in labor availability has generated new employment opportunities for the local workforce; however, it has also created problems of demand and supply for labor (Sidhu, 2002). The analysis of these dynamics would offer understanding of the changes in the employment scenario in Punjab. Migration of labour has made skill formation and flexibility of workforce in Punjab possible. Many a times, migrants who have developed new skills and knowledge during their stay outside the state have helped in the development of new units of production and have also enhanced the quality of workforce (Tatla, 2020). This has helped Punjab to absorb new skills of production and meet the challenges of new technology and modern industry thus improving its economy. The paper also discusses how labor migration has created a more skilled labour force thus promoting innovation and development.

2. Background of the study

Human resource mobility has always been central to defining the economic formation of regions and countries. Punjab, a state which has been an agrarian economy as well as an emerging industrial state, has also been greatly influenced by labour migration. Over the years, Punjab has been experiencing inter and intra migration regarding employment, living standard, and technology. These migration patterns have brought changes in the economic, social and employment sectors of the state and therefore qualifies it for further analysis (Singh, 2014).

The economic history of Punjab is therefore mainly that of an agricultural province where agriculture has been the main economic activity. But in the last few decades the state has undergone the process of industrialization and urbanization. There are new requirements for labor, and employees move from rural areas to urban Punjab or from other states and countries (Singh, 2014). Migration of the labor force, especially to other countries such as Canada, the United States, and Middle Eastern countries, has been a dominant trend in the Punjab economy which affected the nature of the workforce in Punjab (Singh et al., 1977).

Their economic development is interdependent with the mobility of labour in Punjab. It has not only assisted in the generation of the state's GDP but also in the expansion of the state's economic portfolio. Though migration has helped in the growth of service and industrial segments, it has brought problems in the form of scarcity of workforce in core industries (Devi et al., 2011). These changes in labor dynamics have brought about changes in the economic structure and these changes are; mixed in that some are beneficial while others are detrimental to the sector and/or region in question.

Another important factor which forms labor migration is the money transfer from the Punjab migrant workers to their families. These remittances have also highlighted the importance of the role played by such immigration in upgrading the quality of living of the families of the migrants, in the consumption pattern and in the stimulation of the local businesses. The money has been received as remittances and has positively affected the local economy through embracing investment on SMEs as well as facilitating the development out of infrastructure. These remittances have played a very important role in the economic stability which in turn has helped many families in Punjab to live on.

Thus, the research also highlighted the impact of labor migration on employment and unemployment in Punjab. Although migration has caused job deficits to decline in some fields the reverse is true in industries that rely on manual employees (Hussain & Yousuf, 2015). New forms of employment have emerged from this shift but at the same time have given rise to problems such as work force adjustment, skills demands and sectoral balances of employment.

Migration has thus been found to affect another area known as skill development. Employees who have gone abroad to acquire new skills and knowledge have brought back those skills to Punjab and have injected new technical skills into industries, thereby improving on the level of skills available for industries (Madaan, 2018). New skills and technologies have therefore been introduced through migration and have contributed to the modernization of the work force in Punjab as well as assisted industries to adapt to the modern world.

The background to this study comes from the need to unravel these multiple and intricate migration movements and their effects on the economy (Singh, 2008). Through analysing the influence of the labour migration on the economic growth, employment, remittance and workforce migration in Punjab this study proposes to develop a model that will provide information on the overall implication of human capital mobility on the economy of the state. The result of this study will be useful in the formulation of policies and management of the impacts of migration and exploitation of the benefits of migration towards sustainable economic development.

3. Objective

- To construct a model showing the impact of shifting/transfer of human resources on the economy of Punjab

4. Literature review

Liu et al. (2021) talked about development pattern related economic policies that favored a particular kind of agriculture in Punjab and environment specific policies that aimed at managing different environmental issues emerging from that development pattern. By so doing, they categorised some of the major environmental problems that are linked to economic policies in the state such as water, air, soil and climate change policies. They tried to examine how and why economic policy failures had a negative impact on the quality of environment in Punjab. The purpose of their paper was to bring focus to these problems as the first necessary step in finding policies that would be more effective in preserving the environment. This was important because Punjab was once a trend setter for India in farm practices and policies.

Interpersonal conflict costs and implication on agricultural investment: Bakhsh et al. (2020) examined the potential causes of interpersonal conflicts, the costs incurred, and the impacts on investing in agriculture hence with climate change, temperature, and precipitation being considered as decisive drivers for such conflicts. The study adopted cross-sectional survey data collected from rural farm households in a large district of Pakistani Punjab. Standard economic methods were used to estimate the cost of conflicts, while, to determine the variables influencing interpersonal conflicts, a logit model was used. The study established that interpersonal conflicts used US\$135 per month to monitor the proceedings of the conflicts that are filed in court. In addition, the households that engaged in conflicts used fewer resources in the purchase of farm inputs hence reducing productivity of maize by 28% and sugarcane by 19%. In the study, warm temperatures, precipitation and windstorms were found to be attributed to interpersonal conflicts by the households. Interpersonal conflicts were correlated with farm size, livestock, family size and high monthly income, in the socio-economic context. Finally, the study discusses the policy implications of interpersonal conflicts on agricultural investment and productivity.

Khan et al. (2020) reviewed the involvement of public institutions in enhancing the agricultural climate change resilience with reference to the Pakistan state. The research objectives were therefore to assess the preparedness of public institutions in addressing climate change and to examine the current institutional set up in tackling climate change in the agricultural sector. Data was collected from 53 office bearers of thirteen public institutions of Punjab province through a semi-structured questionnaire on climate knowledge, training, coordination, and available resources. Consequently, the study adopted index-based method to estimate the ICI, based on seven chosen indicators. The index analysis showed that

institutions were the least financially equipped, then by lack of physical and human capital. But it also highlighted that the index value for perception and knowledge was high; this means there was good institutional understanding of climate change. The overall ICI index was pointing to a medium level of capacity to address climate change issue. Moreover, the study established several constraints; management imperatives, financial and physical resource, and training constraints that limited public institutional adaptation support. The conclusions pointed to the fact that it is important to minimize these gaps in order to increase the ability of institutions to strengthen the climate change resilience of the agriculture sector.

Khan et al. (2021) studied the exposure of rice growers in Punjab, Pakistan to climate change other than temperature and rainfall. Rice farming remains a mainstay of agricultural production contributing significantly to the income of millions of farm households in rural Pakistan. Nonetheless, the sector has significant threats such as high temperatures, floods, droughts and yield reductions. The study therefore sought to identify the vulnerability of rice growing communities through determining the Climate Change Vulnerability Index (CCVI) for four rice growing districts in Punjab. The study adopted the IPCC three-dimensional approach which includes sensitivity, exposure and adaptive capacity. The study further showed that indeed farmers in the study area are highly vulnerable to climate change with a computed CCVI of 0.81. The vulnerability components show that farmers are highly exposed (EVI 0.72) and susceptible (SVI 0.59) to climate change and its impacts, and the least capable of adapting (AVI 0.50). A regional analysis also indicated that the farmers in the low yield regions are more exposed (CCVI 0.85) than those in the high yield regions (CCVI 0.78). The study revealed that regional prioritization is key in minimizing production losses and urged that climate smart adaptation needs to happen at farm and regional level through right policies and investment strategies to enhance resilience among rice farmers.

5. Methodology

This research aims at developing a model that would assess the effect of change or relocation of human resources on Punjab's economy. In order to achieve this goal, a more structural approach has been applied, collecting and analyzing primarily quantitative data. The research employed 100 respondents in the study, a random sampling technique in data collection, and a regression analysis through the SPSS software to analyse the effect of labour migration on other economic factors including; GDP growth, employment, remittances and skills development.

5.1 Research Design

This research adopts descriptive and analytical research design in order to establish the pattern of labour migration and its impact on the economic development of Punjab. The research uses both official data and survey data to provide the understanding of the migration patterns and their consequences for the economy. The emphasis is made on the analysis of how the movement of human capital influences such factors as per capita income, employment, and the general competitiveness of the economy of the region. Regression analysis will be used as the main approach of data analysis in order to identify the correlation between migration patterns and several economic indicators.

5.2 Data Collection Methods

1. Secondary Data: Secondary source of data will be collected from government report, economic survey and research papers related to labor migration in Punjab. Some background information on the trends in labor migration and economic performance will be obtained from the Ministry of Statistics and Program Implementation (MOSPI), Punjab Economic Survey, and Reserve Bank of India (RBI) reports. It will provide an historical background of migration and its implications on the economic front.
2. Primary Data: Primary data will be collected from the respondents by adopting a structured questionnaire because this will allow the researcher to obtain both, qualitative and quantitative responses. Some of the questions shall be closed ended in a bid to measure parameters like migration rates, changes in employment, remittance, skill enhancement within Punjab among others. The perception of how migration impacts on the economy will be measured using Likert scale items. The questionnaire will be completed by 100 respondents and the participants

will consist of both the migrant workers and the settled population of Punjab as well as employers from different fields of work.

3. Sampling Method: Simple random sampling will be used in order to guarantee that the sample obtained is truly random. By so doing, this will reduce bias and ensure the presentation of a wealth of response to the questions posed on the Likert scale across the various demographic variables. To allow for comparison to be made between the effects of migration and region, the sample will comprise of both urban and rural participants.

5.3 Data Analysis

Regression Analysis: The analysis of data will be done with the help of regression analysis with SPSS software. This statistical tool will be applied to analyze how labor migration (the independent variable) affects the improvement of the economy or its proxies such as Gross Domestic Product, employment rates and receipts of remittances, skill development as well as the various aspects of dependent variables. The regression model will then identify the level of contribution of migration to these economic indicators since understanding the movement of human resources and its impact to Punjab's economy is of utmost importance.

5.4 Limitations

The study agrees with the fact that even though the study has employed a structured and systematic approach, there are constraints to consider. In the present study the sample size of 100 respondents is quite adequate but may not be completely generalizable for the entire Punjab particularly for rural population. In addition, the use of questionnaires to collect data is susceptible to response bias in that respondents may give social desirable responses or perceived responses. However, while using secondary data, the study is constrained by the quality of data available on migration and mobility.

6. Result and analysis

Model Summary				
Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.539 ^a	.291	.261	1.01148
a. Predictors: (Constant), Skill Development and Workforce Adaptation, Changes in Employment and Unemployment Rates, Remittances and Investment Flows, Labor Migration Trends				

The summary of the regression model shows that the chosen method of analysis accounts for 29.1% of variance in the economic results in Punjab as seen by the R square value. The study shows that the values of the predictors, which include trends in labor migration, remittances and changes in employment and unemployment rates, as well as skill development, have a moderate positive correlation with the economic values, with an R value of 0.539. More specifically, there is exhibited an adjusted R square of 0.261 implicating that even after controlling for the number of predictors, about 26.1% of the variance of economic outcomes is still explained by the model. The SE of estimate 1.01148 means that the observed values deviate on average from the regression line by 1.01148 units, therefore the model is giving good estimations with some error. In general, it can be concluded that the mentioned predictors give quite a useful information on the economic effects of labor migration; however, there can be some other factors that cannot be described within the framework of this model.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.806	4	9.951	9.727	.000 ^b
	Residual	97.194	95	1.023		
	Total	137.000	99			
a. Dependent Variable: Economic Growth of Punjab						
b. Predictors: (Constant), Skill Development and Workforce Adaptation, Changes in Employment and Unemployment Rates, Remittances and Investment Flows, Labor Migration Trends						

The ANOVA table gives the analysis of variance in the regression model used. The regression sum of squares (39.806) represents the amount of variance that was explained by the predictors, the residual sum of squares (97.194) represents the amount of variance that was not explained by the predictors. The F-statistic of 9.727 is less than the F critical value of 2.20 at 4 and 88 level of significance, and the Sig value of 0.000 proves that the overall model is significant which demonstrates that the predictors as a whole have a significant effect on the economic growth of Punjab. Thus, the null hypothesis can be rejected at 0.05 level of significance and it is confirmed that the trends in labor migration, skill development, changes in employment and remittances help explain the economic results in Punjab. Total sum of squares equals 137.000 and reflects the total variability of the dependent variable; the model shares a significant part of this variability.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.836	.360		2.323	.022
	Labor Migration Trends	.495	.117	.483	4.226	.000
	Remittances and Investment Flows	-.011	.113	-.011	-.099	.921
	Changes in Employment and Unemployment Rates	.139	.103	.129	1.349	.181
	Skill Development and Workforce Adaptation	-.001	.080	-.001	-.010	.992
a. Dependent Variable: Economic Growth of Punjab						

The coefficients table gives a clue on the contribution of each predictor variable to the model. The coefficients of the constant equal to 0.836 are statistically significant at 5% level as p-value is 0.022; this means that if all the predictor variables are equal to zero, economic growth of Punjab is positively affected by this constant value. When comparing the standardized coefficients of all the predictors, the Labor Migration Trends have the highest value of 0.483 and is significant at 0.000 level of significance. This implies that direction and volume of labour migration have direct positive effects to the economic development of Punjab. On the other hand, Remittances and Investment Flows has negative and insignificant unstandardized coefficient estimate of -0.011, ($p > 0.05$) that shows that remittance and investment flows do not have any effect on the growth of the economy in this model. Likewise, both Changes in Employment and Unemployment Rates and Skill Development and Workforce Adaptation reveal considerably small coefficients (0.139 and -0.001, respectively) and are not statistically significant with p-values of 0.181 and 0.992 respectively. These findings imply that although employment migration has a major impact, other variables such as remittance, change in employment, and skill development do not exert a strong impact on economic growth of Punjab in this study.

7. Discussion

This research sought to develop a framework that will analyze the effects of labor migration on the economic development of Punjab. The information derived from the regression analysis and subsequent analysis is quite valuable in understanding the impact of labour migration on economic performance of the region. The results stress on the role of labor migration as one of the main sources of economic growth in Punjab and also show that other factors such as remittances, change in employment and unemployment rates and skill development play a limited role.

According to the analysis, the coefficient for Labor Migration Trends ($p < 0.000$) has a positive impact on the economic growth of Punjab. The fact that the coefficient of the labor migration variable stands as high as 0.483 means that migration is an important determinant of economic performance in the state. This concurs with earlier research showing that migration results in improvement of income and investment in the economy when skilled labor migrates and returns home with new experience and knowledge. The migration of workers, particularly to other states and countries, has brought in remittances as well as foreign investments in consumption rate, enhancing the quality of life of families in their homes state.

However, the analysis of the results also reveals that the coefficients of Remittances and Investment Flows are insignificant with p-value 0.921. This finding is quite counter intuitive to the notion that remittances are a major factor in economic growth especially in the developing world where there is large diaspora population. It can be postulated that although the flow of remittance does supplement household income and consumption expenditure it may not necessarily bring about structural modifications of economic transformation such as infrastructure development or generation of employment opportunities that are so essential for long-term economic transformation.

Likewise, the variables Employment and Unemployment Rates and Skill Development and Workforce Adaptation were also insignificant and had no bearing on economic growth with p- values of 0.181 and 0.992 respectively. Despite the fact that migration of employees can bring changes to the labor market, including the replenishment of labor deficiencies in some industries, this is not clearly manifested in changes in employment indicators or the creation of new skills. Perhaps the skill adaptation is a slow process and may take more time to bring positive change within the workforce. Furthermore, other employment patterns may be affected by other external factors not reflected in this model like policies among others in the market.

8. Conclusion

Therefore, this research work has found out that the migration to other countries in search of employment plays a positive role in the growth of the economy of Punjab mainly through increased income and consumption. The regression analysis shows that the labour mobility is the most important determinant of the economic changes, and other factors, including remittances, employment fluctuations and skill development play a lesser or insignificant role. However, remittances, which contribute significantly to household income, seem not to catalyse significant long-term economic development.

The implications of the findings are that more work still needs to be done to understand the overall and long-term impact of migration on development of regions and to look at other factors that can affect growth of Punjab.

REFERENCE

1. Shergill, B. S., & Mehta, S. (n.d.). Challenges to Punjab economy.
2. Jain, V. (2016). Manufacturing sector in Punjab: Evolution, growth dynamism, key concerns, and rejuvenation strategy. *Economic Transformation of a Developing Economy: The Experience of Punjab, India*, 251-272.
3. Singh, L. (2016). Towards an alternative strategy of economic development in Punjab. *JPS*, 22(2), 250.
4. Chopra, S., Singh, S., & Sekhon, M. K. (2020). Dynamics of changing sectoral employment and rural labour markets in India with special reference to Punjab. *Indian Journal of Extension Education*, 56(1), 142-148.
5. Ali, M., & Byerlee, D. (2002). Productivity growth and resource degradation in Pakistan's Punjab: A decomposition analysis. *Economic Development and Cultural Change*, 50(4), 839-863.
6. Goyal, K. (2020). Structural change and growth of manufacturing industries in Punjab: Post-reforms analysis. *Indian Journal of Economics and Development*, 16(3), 389-396.
7. Singh, N., & Kohli, D. S. (1997). The green revolution in Punjab, India: The economics of technological change. *J Punjab Stud*, 12(2), 285-306.
8. Kaur, S., & Chauhan, S. (2024). Dynamics of agricultural transformation in Punjab: Crop trends, instability, and decomposition analysis. *Environmental Monitoring and Assessment*, 196(9), 855.
9. Kaur, J. (n.d.). Trend and pattern of structural changes in Punjab and the Indian economy: A comparative analysis. *Surender Mor*, 213.
10. Singh, L., Singh, N., & Singh, P. (2024). Economic development of Punjab: Prospects and policies. *Perspectives*.
11. Sidhu, H. S. (2002). Crisis in agrarian economy in Punjab: Some urgent steps. *Economic and Political Weekly*, 3132-3138.
12. Tatla, D. S. (2020). The Punjabi diaspora's impact on Punjab's economy and society: An assessment. In *Rural Development in Punjab* (pp. 460-481). Routledge India.
13. Singh, S. (2014). Economic development and emerging health scenario in Punjab: In the shadow of global forces and state neglect.
14. Singh, S. (2014). Economic development and emerging health scenario in Punjab: In the shadow of global forces and state neglect.
15. Singh, A. J., Sidhu, D. S., & Joshi, A. S. (1977). Economics of nutrition with special reference to the Punjab state. *Indian Journal of Agricultural Economics*, 32(3), 88-98.
16. Devi, Y. L., Singh, J., & Kumar, S. (2011). Decomposition analysis of temporal changes in human labour use in Punjab agriculture. *Journal of Agricultural Development and Policy*, 21(1), 63-72.
17. Hussain, G., & Yousuf, A. (n.d.). Head teachers' perspectives on Human Resource Management Information System (HRMIS) in Punjab.
18. Madaan, M. (n.d.). Implementation of governance reforms in Punjab: Delivering services with citizen-centric approach. *Contemporary Social Sciences*, 111.
19. Singh, P. (2008). *Federalism, nationalism, and development: India and the Punjab economy*. Routledge.
20. Liu, R., Sanyal, A., & Singh, N. (2021). Environmental issues, economic policies, and agricultural development: The case of Punjab, India. *Economic Policies and Agricultural Development: The Case of Punjab, India*, January 4, 2021.
21. Bakhsh, K., Abbas, K., Hassan, S., Yasin, M. A., Ali, R., Ahmad, N., & Chattha, M. W. A. (2020). Climate change-induced human conflicts and economic costs in Pakistani Punjab. *Environmental Science and Pollution Research*, 27, 24299-24311.

22. Khan, N. A., Gao, Q., & Abid, M. (2020). Public institutions' capacities regarding climate change adaptation and risk management support in agriculture: The case of Punjab Province, Pakistan. *Scientific Reports*, 10(1), 14111.
23. Khan, N. A., Gao, Q., Abid, M., & Shah, A. A. (2021). Mapping farmers' vulnerability to climate change and its induced hazards: Evidence from the rice-growing zones of Punjab, Pakistan. *Environmental Science and Pollution Research*, 28, 4229-4244.