Global Journal for Management and Administrative Sciences
ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

AN ASSESSMENT OF LABOUR FORCE DISTRIBUTION ACROSS MAJOR CITIES IN PAKISTAN

Lubna Naz
Lecturer/ Staff Economist
Applied Economics Research Centre
University of Karachi

Abdul Aleem Qureshi
Assistant Professor
Hamdard Institute of Management Sciences
Hamdard University

Dr. Ambreen Fatima
Associate Professor/Senior Research Economist
Applied Economics Research Centre
University of Karachi

Abstract

In Pakistan, studies mainly explored the determinants of migration, ignoring its effect on the local labor market, which may vary depending on the characteristics of the native vs. migrant workforce. The paper is, therefore, an attempt to examine the composition of the labor force (migrant vs. native) in fourteen major cities of Pakistan by time and education attainment, specifically, the demographic and educational structure of the native and migrant workforce. The paper also estimates the growth in the workforce - native vs. migrant. The current study has examined the changes that occurred in educational attainment by using a demographic framework. The study has analyzed the net changes that occurred over the period based on specific characteristics and decomposed it into the contribution of different age groups, for instance, young laborers, workers who recently immigrated, prime-age workers, and workers with old age. Here, the components based on age have been estimated and compared to the so-called "pseudo age cohorts" for 2007-08 and 2012-13, respectively. The study's finding reveals that migration of unskilled labor was higher in Bahawalpur, Faisalabad, Hyderabad, Multan, Peshawar, and Quetta. However, the number of skilled migrants is higher in cities like Karachi, Islamabad, and Lahore. Further, the growth in young workers (new entrants) is highest in Quetta (24%) and is lowest in Rawalpindi (4%). It is concluded that the natives who live in the host city can benefit as long as there is a difference in their educational attainment. However, the residents (natives) gain if their educational level matches with the immigrants, while the residents or natives lose if they attain a similar educational level to the immigrants.

Keywords: Labor force demographics, employment, Education, cohorts, migration

JEL Classification: J11, J21, I24.

This work is licensed under a Creative Commons Attribution 4.0 International License.

Introduction

An economy's inclusive and sustainable development depends on its level of skilled labor force and educational development. From the labor market point of view, many studies have examined the links between education and labor market conditions. As education leads to positive returns to the economy (Fasih, 2008), highly qualified migrant workers distort the local labor market. The effect of migration on the local labor market depends on the migrants' skills (here explained in terms of education attainment) and the skills of the native workforce (OECD/European Union 2014, ILO – International Labor Office 2011, United Nations 2011). Its immediate effect depends on how much migrant skills are substituted or complemented by the skills of native workers. If the skills are substitutable, it will create competition in the labor market. This will lower the local wages and increase unemployment. However, if the skills are complementary, it will positively affect productivity and increase wages. The overall effect of immigrants on the local economy thus can be realized by examining the characteristics of natives and immigrants - their education, ages, and demand; the issue hence needs an in-depth assessment.

So far, several economists have assessed Pakistan's labor force patterns. However, the comparison between natives and migrants in major cities of Pakistan, to the best of our knowledge, has not been comprehensively studied. The main purpose of this study is to examine the distribution of migrant and non-migrant labor force for the years 2007-08 and 2012-13 across fourteen major cities of Pakistan.

On the other hand, this paper provides a comprehensive comparison and the distribution of native-born and migrants by magnitude, share, and educational attainment level. Further, this study aims to capture the distribution of an active labor force comprising young entrants, immigrants, prime workers, and retirees for 2008 and 2013. Finally, the overall growth of the labor force is analyzed across major cities in Pakistan throughout 2007-8 and 2012-13. The study hence evaluates an important labor economic theory based on the labor market: how the immigrants in a country affect the natives in terms of complement or substitute.

Rationale of the study

The effect of migration on the local labor market depends on the migrants' skills (here explained in terms of education attainment) and the skills of the native workforce. Its immediate effect depends on how much migrant skills are substituted or complemented by the skills of native workers. If the skills are substitutable, it will create competition in the labor market. This will lower the local wages and increase unemployment. However, if the skills are complementary, it will positively affect productivity and increase wages.

Problem Statement

Like international trade, economists think immigration is also mutually beneficial for immigrants and employers. In addition, immigration leads to increased labor resources, increasing the economy's productivity. However, it depends on the skills of the migrants and native-born. Immigrant workers can either be complement or substitute. If

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

the skills are substitutable, it will create competition in the labor market. This will lower the local wages and increase unemployment. However, if the skills are complementary, it will positively affect productivity and increase wages. This study hence evaluates an important labor economic theory based on the labor market: how the immigrants in a country affect the natives in terms of complement or substitute.

Research Question

The study aims to answer whether the influx of migrants complements the skills of the existing workforce or deteriorates the current labor market conditions by substituting the current labor force.

Research Objective

This study aims to evaluate the distribution of migrant and non-migrant (native) labor force across fourteen major cities of Pakistan for two periods, 2007-08 and 2012-13. Further, based on skills (educational attainment), the study aims to determine whether the migrant workforce complements or substitutes the native workforce.

Literature Review

The literature on migration in Pakistan is extensive. However, these mainly explored the determinants of migration. Very little evidence is found on the effect on labor market conditions because of the characteristics of migrants and natives over time, especially across major cities of Pakistan. Recently, on the literature side, Khan et al. (2010) have analyzed the impact of international migration on the social protection of migrants; Farooq et al. (2005) have examined the determinants of migration in Faisalabad, Punjab; Hasan, A. (2010) has discussed the issue of Migration in the context of small towns and social transformations in Pakistan; Menon, R. (2005) has examined the relationship between internal migration and poverty reduction; Hamid, S. (2010) has extended the concept of rural to urban migration based on gender while Oda, H. (2005) have discussed the issue of migration from villages in the Rain-fed Areas of Punjab.

A study by the National Bureau of Economic Research found that the arrival of low-skilled migrant workers in the U.S. had a small negative impact on the wages of low-skilled native workers while having little effect on the wages of higher-skilled native workers (Ottaviano & Peri, 2012). Another study by the National Bureau of Economic Research found that the influx of low-skilled migrant workers in Europe had no significant impact on the employment of low-skilled native workers. However, it did lead to a small decrease in their wages (Dustmann et al., 2013).

A study by the London School of Economics found that migrant and native workers often complement each other in the labor market rather than compete. The study found that migrant workers were more likely to fill labor shortages in certain industries or regions, allowing native workers to take on higher-skilled and higher-paying jobs (Manacorda et al., 2012). Moreover, (Hansen Pratt, 2003) explored the pattern of differences in migration among men and women who migrate between different cities. The study shows that men generally travel more distance to get work than women who do the same work as men.

The pattern of migration distance also depends on the employment of the household or partner of male or female, especially in the suburban areas.

(Borjas, G. J. 2015) showed that the impact of migration on the native labor force can vary depending on the skills and education level of both the migrants and the native workers. In general, the negative effects of migration are more pronounced for low-skilled native workers. In contrast, high-skilled native workers are less likely to be affected and may benefit from increased labor market competition.

Regarding the impact on the migrant labor force, studies have shown that migration can provide a path to better economic opportunities and improved living standards for many workers. However, migrants often face significant challenges, including discrimination, wage stagnation, and limited access to healthcare and other benefits (Dustmann et al., 2014).

(Peri, G. 2012) suggests in his finding that migration can positively and negatively affect the native labor force. On the one hand, migration can boost the economy by increasing labor supply and reducing labor costs, which can benefit native workers by creating more job opportunities. On the other hand, migration can also lead to increased competition for jobs, particularly for low-skilled workers, and can drive down wages for native workers.

Moreover, a study by the International Monetary Fund found that more restrictive immigration policies in OECD countries were associated with lower levels of migrant labor and competition between migrant and native workers (OECD, 2016).

Methodology and Data Sources

The current study has examined the changes that occurred in educational attainment by using a demographic framework. The study has analyzed the net changes in some specific characteristics and decomposed them into the contribution of different age groups, such as young labor, recently immigrated, prime-age workers, and workers with old age. Here, the age-related components based on “pseudo age cohorts” are estimated and compared for 2007-08 and 2012-13, respectively. The pseudo-cohort approach (OECD/European Union 2014) generally analyses the effects of demography, such as emigration and mortality, that cannot be observed directly.

The components of demographic change identified in this study are derived using some basic demographic accounting methods applied to changes in educational attainment. Roughly speaking, the method rests on the following general equality concerning the measure of changes in a particular characteristic between time t1 and time t2:

$$\Delta(T) = E + I + \Delta (PA) – R$$

Where,

$\Delta(T)$=the Total change observed in the characteristic over the period

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

E = new non-immigrant entrants over the period

I = new immigrants who arrived over the period

Δ(PA) = change in the prime-age group over the period

R= retirees over the period

This approximate change equals inflows–outflows, except that one allows for internal stock change and distinguishes between internal inflows (new entrants) and external ones (immigration). External outflows (deaths and emigration) are included implicitly in each component and are essentially netted out. For almost all major cities, the decomposition applied in this study changes from 2007-8 to 2012-13. The basic components are as follows

- New entrants = the labor force 15-24 in 2012-13, less persons 15-19 who were already in the labor force in 2007-08. This approximates young persons who entered the labor force over the period. It assumes that all persons 15-24 who were part of the labor force in 2008 are still in the labor force five years later when they are 20-24.

- Retirees = the labor force 56 and in 2007-08 less the labor force 61 and 2012-13. Temporary withdrawals and re-entries prior to definitive retirement are implicitly netted out.

- Prime-age workers = the labor force 25-60 in 2012-13, less the labor force 20-55 in 2007-08.

- New immigrants for 2012-13, immigrants in 2012-13 with five years or less of residence. Note that this implies that this group has to be excluded from all the other components above involving 2012-13 data to avoid double-counting.

The total four components are the net change in the labor force for the population 15 years of age and above. The decomposition of the change discussed earlier can also be applied to each educational attainment level within the labor force. Nevertheless, the new entrants now have a more precise meaning, namely persons who completed their education over the period and entered the labor force, provided one excludes persons still in education from the calculation. The change for prime-age workers represents educational upgrading for this group and, implicitly, loss due to emigration or death.

New entrants are now estimated as follows: for 2012-13, persons 15-19 not in education in 2012-13 + (persons 20-24 in 2012-13 – persons 15-19 not in education in 2007-08), for each educational attainment level.

Those persons who have completed their education by the year 2012-13 in principal were part of the first term. For the second term, all person aged 20-24 have not completed their education.

However, the interest in tertiary education is given, so it is assumed that the persons aged 20-24 still enrolled would already have at least the first tertiary degree. The tertiary attainment levels of those who do not (and there are some) will show up as educational upgrading among persons 20-55 in 2007-08 and 25-60 in 2012-13. This is not ideal, but it is difficult to consider sensibly situations in which a first tertiary degree is completed without interruption at a late age.

From the population of persons 20-24 in 2012-13, one subtracts persons from the same cohort who had already completed their education in 2007-08, namely persons 15-19 not in education. This kind of decomposition is carried out for each educational level to indicate the change in demographics.

Data Sources

This study completely emphasizes the Pakistan Labor Force Survey (LFS) published by the Pakistan Bureau of Statistics (PBS). The current study examines the trends in the labor force for the years 2007-08 and 2012-13 across fourteen major cities (Lahore, Faisalabad, Rawalpindi, Multan, Gujranwala, Sargodha, Sialkot, Bahawalpur, Islamabad, Karachi, Sukkur, Hyderabad, Peshawar, and Quetta) of Pakistan.

Findings of the Study

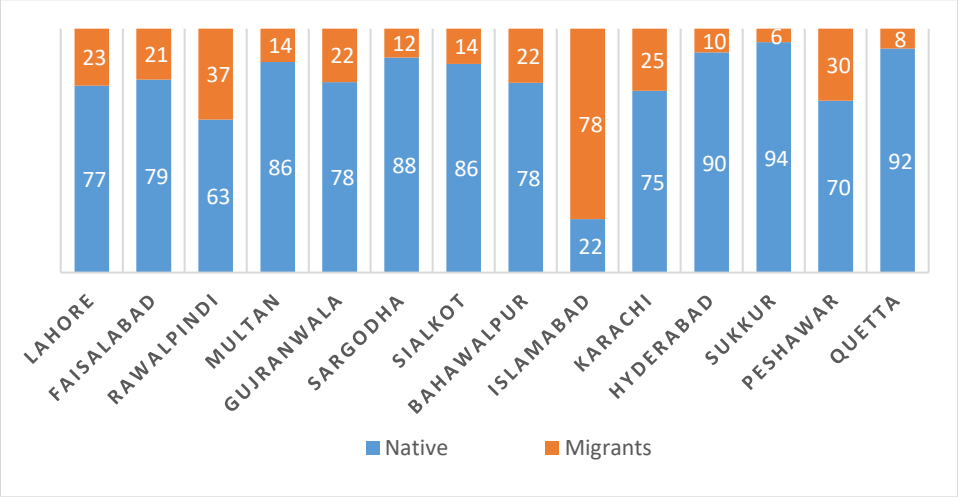
This section discusses the findings of the study based on descriptive analysis of migrants vs. non-migrants across major cities of Pakistan for the two periods 2007-08 and 2012-13.

Distribution of Labor Force - Native Born vs. Immigrants

The following figures present the distribution of the labor force by natives and immigrants and the magnitude of immigrants across major cities of Pakistan for 2007-08 and 2012-13.

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

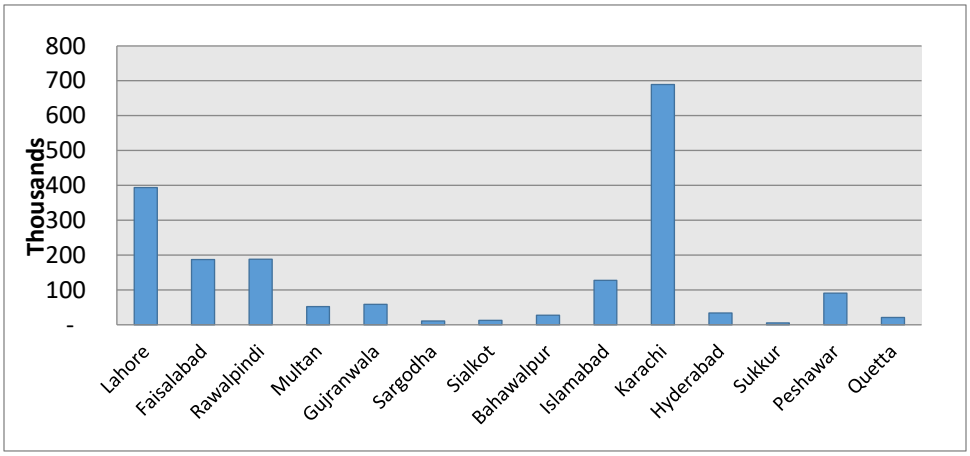
Figure 1: Labor Force Distribution of Native Born & Immigrants by City (2007-08)



Source: Authors' illustration based on Labor Force survey, 2007-08

Figure 1 illustrates the labor force distribution by native-born (non-migrants) and immigrants across major cities of Pakistan. The figure shows that among fourteen major cities, the highest proportion of the migrant labor force lies in Islamabad, followed by Peshawar and Karachi. On the other hand, in Sukkur, most of the labor force is native-born, followed by Quetta and then Hyderabad.

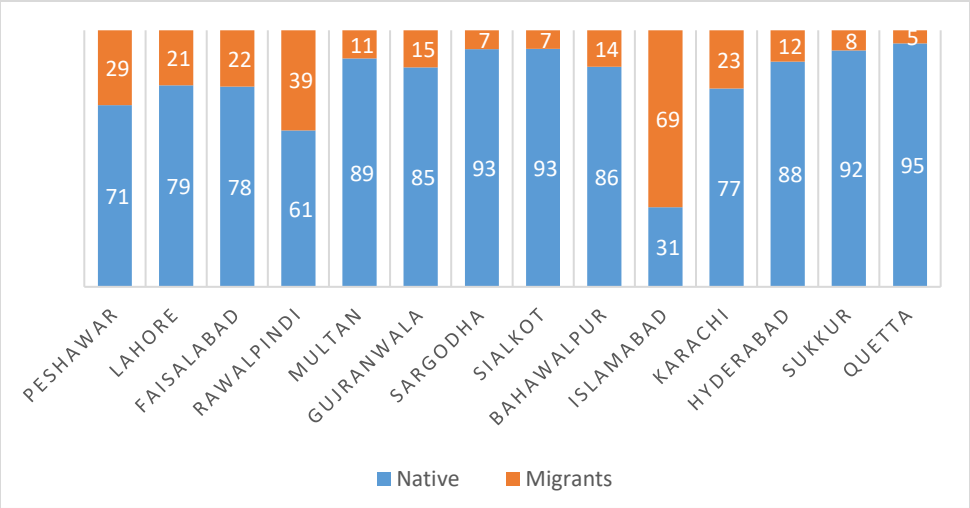
Figure 2: Magnitude of Immigrants by Major Cities (2007-08)



Source: Authors' illustration based on Labor Force survey, 2007-08

Figure 2 depicts the magnitude of internal migration across 14 major cities of Pakistan for 2007-08. Figure 1 shows the proportion of migrant and non-migrant labor force within a specific city. However, Figure 2 presents the magnitude (absolute) of the migrant labor force, which reveals that the magnitude of the migrant labor force is higher in Karachi, i.e., 700 thousand, followed by Lahore, with almost 400 thousand migrants in the labor force.

Figure 3: Distribution of Labor Force of Native Born & Immigrants by City (2012-13)

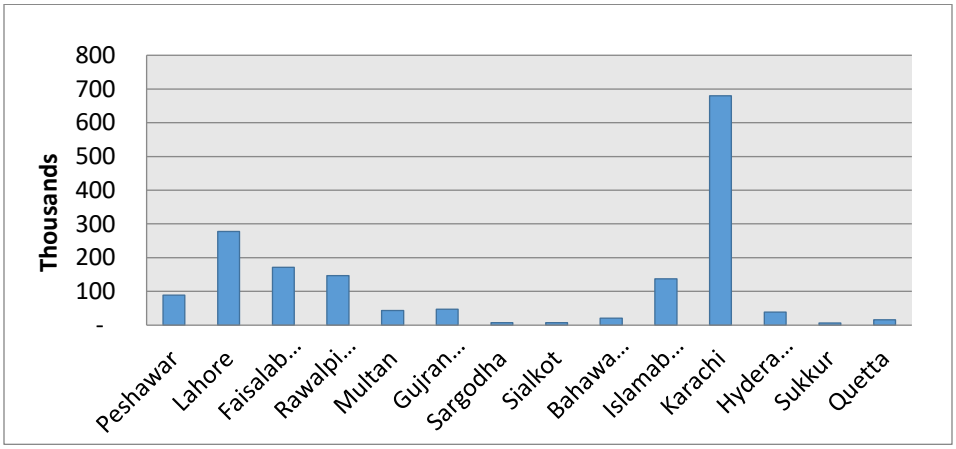


Source: Authors' illustration based on LFS, 2012-13

Figure 3 shows the demographic change of migrant and non-migrant labor force across cities for 2012-13. Like 2007-07. Figure 3 shows different scenarios for distribution changes in 2012-13 except for Islamabad, which shows the same pattern as in 2007-08. In Islamabad, most of the labor force (i.e., 69 percent of immigrants) comes from the rest of the cities, followed by Rawalpindi with 39 percent and Peshawar with 23 percent.

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

Figure 4: Magnitude of Immigrants by Major Cities (2012-13)



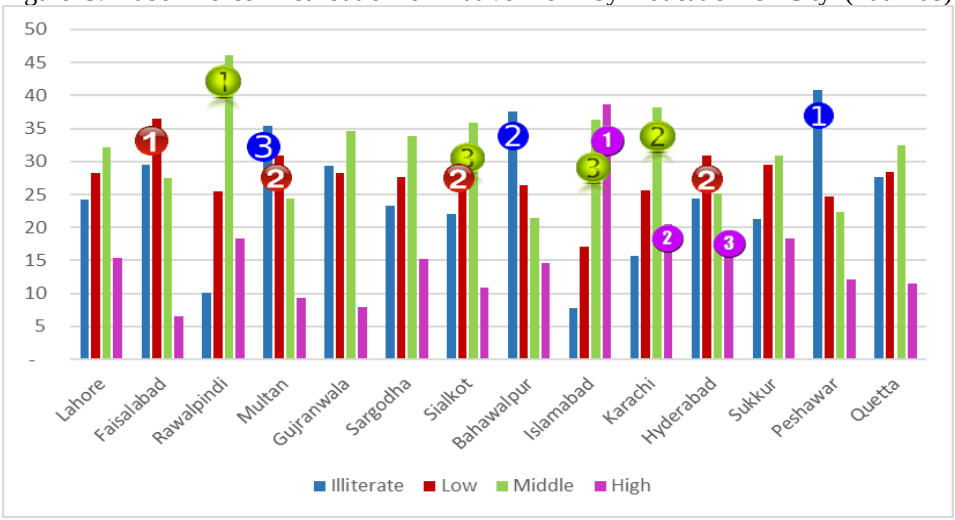
Source: Authors' illustration based on LFS, 2012-13

There is not much difference in the migrant labor force after five years. Figure 4 shows the same pattern of immigrant labor force in terms of magnitude for 2012-13.

Distributional Analysis by Education

This section analyzes the distribution of native-born and immigrant labor force by educational level for two time periods, 2007-08 and 2012-13.

Figure 5: Labor Force Distribution of Native Born by Education & City (2007-08)



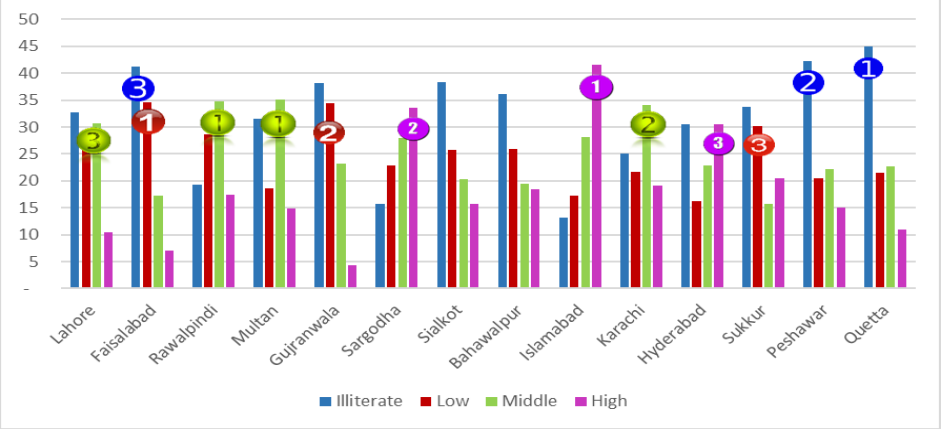
Source: Authors' illustration based on LFS, 2007-08

Note: circles in Figure 3 indicate the ranking of education levels across cities

Figure 5 portrays the city-wise distribution of native-born (non-migrant) labor force by education attainment levels such as low (less than upper secondary), medium (represents secondary), and high (post-secondary) for the years 2007-08. From the figure, one can infer that among cities, most of the highly educated labor force lies in Islamabad, Karachi, and Hyderabad. However, the native-labor force of Karachi and Hyderabad also has a medium level of education.

Figure 6 illustrates the city-wise distribution of the immigrant labor force by education attainment levels for 2007-8. It is evident from the figure that among the cities having most of the illiterate immigrant, Quetta rank 1st, Peshawar rank second, and Faisalabad rank third. On the higher side, among the cities, Islamabad rank first, Sargodha rank second, and Hyderabad rank 3rd for having a high proportion of immigrant with post-secondary education.

Figure 6: Labor Force Distribution of Immigrants by Education & City (2007-08)



Source: Authors' illustration based on LFS, 2007-08

Note: circles in Figure 3indicateranking of education levels across cities

The below two figures (7 and 8) depict the distribution of native and migrant labor force by education attainment level for 2012-13. Among the 14 large cities of Pakistan, Islamabad ranks 1st in having the majority of native labor force with post-secondary education, while Karachi ranks second. Regarding the illiterate labor force, Figure 7 shows that Bahawalpur, Multan, Faisalabad, and Peshawar cities have the most illiterate native labor force.

Figure 7: Distribution of Labor Force Native Born by Education &City (2012-13)

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

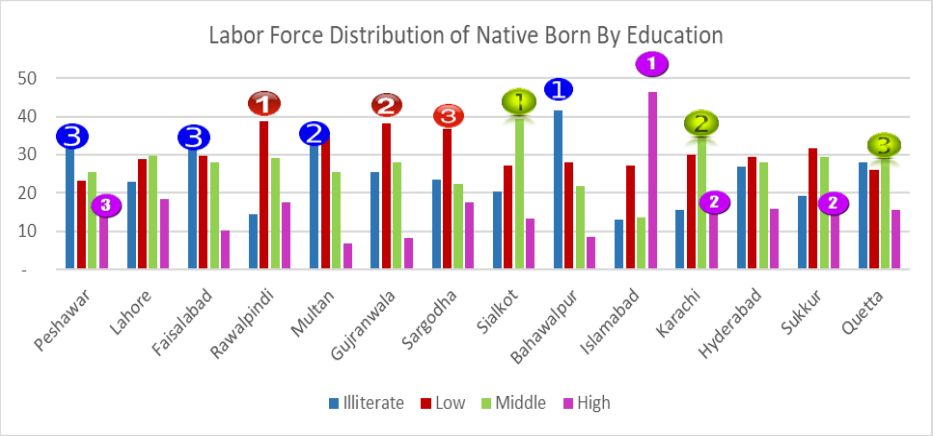
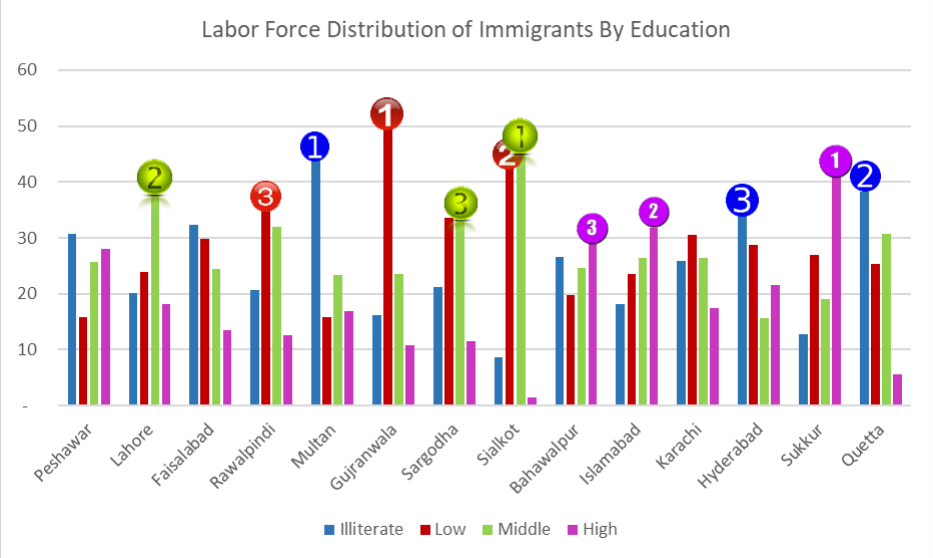


Figure 8: Distribution of Labor Force Immigrants by Education &City (2007-08)

Source: Authors' illustration based on LFS, 2012-13

Figure 8, on the other hand, depicts the city-wise situation of immigrants by education attainment for 2012-13. Figure 8 depicts the distribution of illiterate migrant labor force for 2012-13, which is highest in Multan, while Quetta and Hyderabad rank second and third, respectively. Further, Sukkur, Islamabad, and Bahawalpur are the top three cities with high labor force mobility with post-secondary education.

Figure 8: Distribution of Labor Force immigrants by Education &City (2012-13)



Source: Authors' illustration based on LFS, 2012-13

Comparative Analyses of Labor Force Distribution by Native Born, Immigrants & Education for 2007-08 & 2012-13

Table 9 in the annexure shows that the native labor force over time has increased for most cities except in Faisalabad, Hyderabad, Rawalpindi, and Sukkur. As far as the proportion of the migrant labor force is concerned, the proportion has decreased in almost all cities over time except in Faisalabad, Hyderabad, Rawalpindi, and Sukkur – cities where the native labor force has declined over time. Though this increase and decrease is not so significant across time, this could be because the five years that the study has used to analyze the changes in the labor force may not be enough.

The labor force composition (migrant vs. nonmigrant) across time and cities. The figure shows that in cities like Bahawalpur, Faisalabad Gujranwala, Lahore, Peshawar, and Sukkur, the proportion of migrant labor force with post-secondary education has increased over time while in cities like Hyderabad, Islamabad, Quetta, Rawalpindi, Sargodha and Sialkot the immigrant with post-secondary education had declined. For Karachi, the data shows a slight decline in migrants having post-secondary education.

Table A3 in the appendix further provides another view of labor force distribution by educational attainment in 2013 across major cities for migrant and native workforce; it also highlights the changes since 20008. Changes over time for an illiterate immigrant are positive only for Hyderabad (4%), Islamabad (5%), Karachi (1%), Rawalpindi (1%), and Sargodha (5%). In comparison, for the migrants with a high level of education, the changes are as high as 13% for Peshawar city to as low as – 22% for Sargodha. Cities showing positive trends in the mobility of the labor force with post-secondary education include Bahawalpur, Faisalabad, Gujranwala, Lahore, Multan, Peshawar, and Sukkur.

Pseudo Cohort Approach

The analysis is based on the demographic accounting framework in which the study analyzed the net changes from 2008 to 2013 for a particular characteristic and decomposed the labor force into young workers, new immigrants, prime-age workers, and older workforce. The changes in the age-related features are estimated using the pseudo-age cohort in 2008 and 2013 – see section 2 for more detail.

The positive growth in the labor force is recorded for cities like Bahawalpur (17%), Gujranwala (21%), Islamabad (22%), Karachi (11%), Multan (2%), Quetta (19%), Sargodha (7%) and Sialkot (17%). Cities that exhibit negative growth include Faisalabad (-13%), Hyderabad (-11%), Lahore (-23%), Rawalpindi (-35%) and Sukkur (-7%).

The growth in the inflows of young workers (New entrants) into the labor force is lower than in outflows of retirees (older workers) in almost all the cities except for Bahawalpur, Islamabad, Multan, and Peshawar. The growth in young workers is highest in Quetta (24%) and is lowest in Rawalpindi (4%). The growth in the prime age worker is again negative for almost all the cities except for Gujranwala and Islamabad.

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

Further growth in the old age worker is less than 10% in all cities. The growth in the migrant workforce is highest in Islamabad (13%), followed by Peshawar (7%) and Bahawalpur (5%). The rest of the cities show less than 5% growth in the migrant workforce. The net turnover ranges from 12% for Karachi to 21% for Lahore. Faisalabad, Peshawar and Rawalpindi also show 20% net turnover.

Table 1: Contributions to growth in the labor force and contributions to growth by demographic group, 2008-13

	Total growth of the labor force	Young Workers (New Entrants)	New Immigrants	Prime-age Worker	Older Workers (retirees)	Net turnover	Replacement surplus (entrants of younger + retirement of older)
	(A+B+C+D)	(A)	(B)	(C)	(D)	(See Notes)	(A+D)
Bahawalpur	17	22	5	-7	-2	18	20
Faisalabad	-13	11	3	-20	-6	20	4
Gujranwala	21	22	1	1	-3	14	19
Hyderabad	-11	12	1	-19	-4	18	7
Islamabad	22	7	13	6	-4	15	3
Karachi	11	16	2	-3	-4	12	12
Lahore	-23	7	2	-27	-6	21	2
Multan	2	12	2	-10	-2	13	10
Peshawar	0	13	7	-17	-3	20	10
Quetta	19	24	1	-3	-2	15	21
Rawalpindi	-25	4	4	-28	-5	20	-1
Sargodha	7	20	0	-10	-3	16	17
Sialkot	17	21	3	-1	-6	16	15
Sukkur	-7	12	1	-14	-5	16	7

Source: Authors' calculations based on LFS various issues. *Note*: The contribution of each group is the net change in the labor force for the group divided by the total number of persons in the labor force in 2008.

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

Discussion

This study compares the educational attainment of immigrants and residents (natives) based on their skills over the two periods when they enter the country and enter the country's labor market. The study is based on the argument that Immigrant and native workers if they compete for a similar skill or job, become substitutes for the native-born otherwise complements.

The detailed descriptive analysis presented above depicts that Migration of Unskilled labor (illiterate) is higher in Bahawalpur, Faisalabad, Hyderabad, Multan, Peshawar, and Quetta. In all these cities, the proportion of illiterate natives is also higher, showing increased competition for unskilled jobs. The unskilled labor force may complement the highly educated labor force. However, as the proportion of highly skilled immigrants is also higher in most cities, the substitution effect seems more pronounced than the complementary effect.

Further, the movement of relatively skilled migrants is higher in cities like Karachi, Islamabad, and Lahore. The presence of comparatively same proportion of natives and migrants by education level pointed that there will be high competition in the job market of these cities as well. Once again, the labor force seems to be substituting then complementing the natives.

Moreover, according to the supply and demand framework, an increase in the growth of the labor force (because of new entrants and new immigrants) causes wages to fall in the short run. As the immigrant workers in most of the cities are substituted rather than complemented, this will further induce employment and wages of native workers to decrease.

Overall, we conclude the discussion by saying that the residents who live in the host city can benefit as long as there exists a difference in their educational attainment. However, the residents (natives) gain if their educational level matches with the immigrants, while the residents or natives lose if they attain a similar educational level to the immigrants.

Conclusions

Literature on Migration usually identified positive impacts on economic growth by considering the effect of remittances; however, its effect on labor market conditions may vary depending on the characteristics of the native vs. migrant workforce. The paper examines the labor force composition in fourteen major cities of Pakistan by education attainment. The paper is based on the argument that the effect of migration on the local labor market depends on the skills of immigrants and the native workforce. The effect depends on how much migrant skills are substituted or complemented by the skills of native workers. If the skills are substitutable, it will create competition in the labor market. Contrary to this, if the skills are complementary, it will have a positive effect. The overall effect of immigrants on the local economy thus can only be generalized by examining the characteristics of natives and immigrants. The paper thus provided a comprehensive

This work is licensed under a Creative Commons Attribution 4.0 International License.

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

comparison of the native and immigrant workforce across cities and by time. However, we do acknowledge that our study faces certain limitations. For example, due to the unavailability of city codes for back years, preferably for 2000, this study fails to show a drastic trend in the distributional analysis of migrant and non-migrant labor force across major cities.

A comprehensive analysis based on the distributional analysis of the labor force (migrant vs. non-migrant) presented in this study ends up with additional questions that must be answered to attain sustainable economic development. Such as follows:

- As we know, migrants arrive in a host city with skills that affect that city's human capital. Therefore, a skill-based analysis of migrant vs. non-migrant labor force must be examined.

- Another question is what skills are needed in an occupation of a specific city and whether this demand is being met. Thus, a need-based assessment also remains for future research.

Thus, future research at these nodes remains to be done.

Recommendations

Based on the discussion, these policies need to be adopted to avoid the substation of labor in large cities.

- The education level of the natives must be increased to avoid competition from migrants.

- There is a need to create more job opportunities in all areas to avoid migration that substitutes natives.

- There is a need to implement policies that provide the native priority without losing the competition in the market.

References

Borjas, G. J. (2015). The labor demand curve is downward sloping: Reexamining the impact of immigration on the labor market. *The Quarterly Journal of Economics*, 130(4), 1553-1604.

Dustmann, C., Frattini, T., & Halls, C. (2014). The fiscal effects of immigration to the UK. *Economic Journal*, 124(580), F593-F643.

Dustmann, C., Frattini, T., and Preston, I. (2013). The Effect of Immigration along the Distribution of Wages. *The Review of Economic Studies*, 80(1), 145-173.

Fasih, T. (2008). Linking education policy to labor market outcomes. *World Bank Publications*.

Khan, I. A., Mahmood, S., Yasin, G., &Shahbaz, B. (2010). Impact of international migration on social protection of migrants families left behind in agrarian communities of district Toba TekSignh, Punjab, Pakistan. *Pak. J. Agri. Sci*, *47*(4), 425-428.

Farooq, M., Mateen, A., & Cheema, M. A. (2005). Determinants of migration in Punjab, Pakistan: A case study of Faisalabad metropolitan. *Journal of Agriculture and Social Sciences (Pakistan)*.

Hasan, A. (2010). Migration, small towns and social transformations in Pakistan. *Environment and Urbanization*, *22*(1), 33-50.

Menon, R. (2005). Pakistan: Internal migration and poverty reduction.*Migration Development and Poverty Reduction Asia*.

Manacorda, M., Manning, A., & Wadsworth, J. (2012). The Impact of Immigration on the Structure of Wages: Theory and Evidence from Britain. Journal of the European Economic Association, 10(1), 120-151.

Ottaviano, G. I. and Peri, G. (2012). Rethinking the Effect of Immigration on Wages. Journal of the European Economic Association, 10(1), 152-197.

Hamid, S. (2010). Rural to urban migration in Pakistan: the gender perspective. *Working Papers & Research Reports*, *2010*.

Oda, H. (2005). Labor Migration from Rural Pakistan: Evidence from Village in Rain-fed Area of Punjab. *Internal Labor Migration in Pakistan. ASEDP*, (72).

OECD/European Union (2014), Matching Economic Migration with Labor Market Needs, OECDPublishing.http://dx.doi.org/10.1787/9789264216501-en

OECD (2016). International Migration Outlook 2016. Paris: OECD Publishing.

ILO – International Labor Office (2011), ILO Estimates and Projections of the Economically Active Population: 1990-2020 (sixth edition) – Methodological Description

United Nations (2011). *UN World Population Prospects: The 2010 Revision*,http://esa.un.org/unpd/wpp/index.htm, May 2011.

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

Annexure - A

Table A1: Comparison of Labor Force distribution by Native Born & Immigrants.

City	2008		2013	
	Native	Migrants	Native	Migrants
Bahawalpur	78	22	86	14
Faisalabad	79	21	78	22
Gujranwala	78	22	85	15
Hyderabad	90	10	88	12
Islamabad	22	78	31	69
Karachi	75	25	77	23
Lahore	77	23	79	21
Multan	86	14	89	11
Peshawar	70	30	71	29
Quetta	92	8	95	5
Rawalpindi	63	37	61	39
Sargodha	88	12	93	7
Sialkot	86	14	93	7
Sukkur	94	6	92	8

Source: Authors' calculations based on LFS's various issues

Table A2.1

	Bahawalpur							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	38	36	26	26	21	19	15	18
2013	42	27	28	20	22	25	8	29

Table A2.2

	Faisalabad							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	29	41	36	35	28	17	7	7
2013	32	32	30	30	28	24	10	14

Table A2.3

	Gujranwala							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	29	38	28	34	35	23	8	4
2013	25	16	38	49	28	23	8	11

Table A2.4

	Hyderabad							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	24	30	31	16	25	23	20	30
2013	27	34	29	29	28	16	16	22

Table A2.5

	Islamabad							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	8	13	17	17	36	28	39	42
2013	13	18	27	24	13	26	46	32

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

Table A2.6

	Karachi							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	16	25	26	22	38	34	21	19
2013	15	26	30	30	35	26	20	17

Table A2.7

	Lahore							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	24	33	28	26	32	31	15	10
2013	23	20	29	24	30	38	18	18

Table A2.8

	Multan							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	35	31	31	19	24	35	9	15
2013	33	44	35	16	25	23	7	17

Table A2.9

	Peshawar							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	41	42	25	20	22	22	12	15
2013	32	31	23	16	25	26	19	28

Table A2.10

	Quetta							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	28	45	28	21	32	23	12	11
2013	28	38	26	25	31	31	16	6

Table A2.11

	Rawalpindi							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	10	19	26	29	46	35	18	17
2013	15	21	39	35	29	32	18	13

Table A2.12

	Sargodha							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	23	16	28	23	34	28	15	34
2013	23	21	37	34	22	34	17	11

Table A2.13

	Sialkot							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	22	38	31	26	36	20	11	16
2013	20	9	27	43	39	47	13	1

Table A2.14

	Sukkur							
	Illiterate		Low		Middle		High	
	Native	Immigrants	Native	Immigrants	Native	Immigrants	Native	Immigrants
2008	21	34	29	30	31	16	18	20
2013	19	13	32	27	29	19	20	41

ISSN (Print): 2788-4821 ISSN (Online): 2788-483X
Volume 3, Issue 4, Page 75-96, December 31, 2022

Table A3: Distribution of educational attainment of the labor force by level and immigrant status (2013)and Evolution 2008-13

	Immigrants							
	Distribution 2013				Compared to Native Born			
	Illiterate	Low	Middle	High	Illiterate	Low	Middle	High
Bahawalpur	27	20	25	29	27	20	25	-71
Faisalabad	32	30	24	14	32	30	-33	-30
Gujranwala	16	49	23	11	1	20	14	-35
Hyderabad	34	29	16	22	34	29	16	22
Islamabad	18	24	26	32	18	-38	26	-6
Karachi	26	30	26	17	17	6	-13	-10
Lahore	20	24	38	18	20	-68	29	18
Multan	44	16	23	17	44	16	23	-83
Peshawar	31	16	26	28	-5	-26	11	19
Quetta	38	25	31	6	38	25	31	6
Rawalpindi	21	35	32	13	21	35	-50	-6
Sargodha	21	34	34	11	21	-66	34	11
Sialkot	9	43	47	1	-2	16	-14	0
Sukkur	13	27	19	41	13	27	19	41

	Change in Share 2008 - 2013							
	Immigrants				Native Born			
	Illiterate	Low	Middle	High	Illiterate	Low	Middle	High
Bahawalpur	-9	-6	5	10	0	-52	-17	69
Faisalabad	-9	-5	7	7	-32	-15	25	21
Gujranwala	-22	15	0	7	-26	-1	-4	31
Hyderabad	4	13	-7	-9	-100	0	0	0
Islamabad	5	6	-2	-10	0	47	0	-47
Karachi	1	9	-8	-2	-5	5	13	-13
Lahore	-13	-2	7	8	-68	91	2	-26
Multan	13	-3	-12	2	0	0	0	0
Peshawar	-12	-5	3	13	-27	23	2	2
Quetta	-7	4	8	-5	0	0	0	0
Rawalpindi	1	6	-3	-5	-2	-65	53	15
Sargodha	5	11	6	-22	-10	100	-90	0
Sialkot	-30	17	27	-14	-21	1	23	-4
Sukkur	-21	-3	3	21	0	0	0	0

Source: Authors' calculations based on LFS's various issues