

African Development Bank Group

# Working paper series

No 203 – June 2014

## Immigrants, Skills and Wages in the Gambian Labor Market

Ousman Gajigo and Audrey Verdier-Chouchane



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Correct citation: Gajigo, O.; and Verdier-Chouchane, A. (2014), Immigrants, Skills and Wages in The Gambian Labor Market, Working Paper Series N° **203** African Development Bank, Tunis, Tunisia.



**AFRICAN DEVELOPMENT BANK GROUP**

## **Immigrants, Skills and Wages in the Gambian Labor Market**

**Ousman Gajigo and Audrey Verdier-Chouchane<sup>1</sup>**

Working Paper No. 203

June 2014

**Office of the Chief Economist**

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## **ABSTRACT**

Using data from the Household Poverty Surveys in 2003 and 2010, this paper analyzes characteristics of immigrants in The Gambian labor market. The analysis indicates that immigrants are relatively young, low-skilled (though with skill levels comparable to Gambians) and mainly come from neighboring West African countries. While immigrants on average earn more than

Gambians, this labor market advantage varies significantly depending on workers' skill level. For instance, unskilled immigrants have a wage advantage but such an advantage does not exist among the skilled immigrants. Given that The Gambia is a country with high skilled emigration rates, these and other findings in this paper have important policy implications.

## **I. Introduction**

Migration has been a livelihood strategy for many Africans, particularly for refugees and youth looking for better economic prospects. This paper focuses on a related issue – the characteristics and impact of immigrants that have migrated and become part of The Gambian labor market. Using original data from the 2003 and 2010 Household Poverty Surveys, we analyze the labor market status of the immigrants, their individual characteristics, their sectors of activity and wages. Our paper sheds light on the interaction among employment, skills and labor market returns in the context of a country that has both a non-trivial immigrant population and a high emigration rate among the skilled population.

This topic is of importance to virtually all African countries given the significant number of net migration rates in many countries and corresponding issues of both brain drain and remittances. In the case of The Gambia, the issue of brain drain and how to retain highly skilled workers would certainly deserve significant attention as the country is experiencing one of the highest levels of skilled emigration in Africa. It also has a long history of receiving migrants from neighboring countries. Therefore, the experience of The Gambia is potentially relevant to other African countries that are grappling, to different degrees, with emigration and immigration.

The literature on the economics of immigration reveals a range of findings on the effects of immigrants on the wages of natives.<sup>2</sup> In the past, the literature has treated migrants as a homogenous group without taking into account skills heterogeneity (Cattaneo

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<sup>2</sup> For a comprehensive survey of the literature on the labor market impact of immigration, see Okkerse (2008).

2008). In this context, the neoclassical model would apply and migration could be considered as an increase in the supply of labor. Specifically, an increase in the supply of labor as a result of immigration would be expected to increase total employment, resulting in a lower equilibrium market wage, all else being equal. In a way, the impact of immigration can be viewed as redistributing national employment depending on the wage elasticity of labor. In addition to this distributional effect, immigration also has the potential to expand national output or income (see Levine 2010).

Migrants are not distinctive only by nationality but also along other dimensions such as skills or education (Dustmann *et al.* 2008). Given the importance of skills and training to income and productivity, effects on wages would be expected if migrants change the skill structure of the receiving countries. More recent papers distinguish between skilled and unskilled migration and focus on economic models with various assumptions regarding the complementarities of factors of production and their price elasticities. For example, Dustmann *et al.* (2008) suggests that the way immigration affects outcomes depends crucially on the skill structure of immigrants relative to that of natives, as well as on the elasticity of capital supply.

This new literature also puts considerable emphasis on potential benefits for the host country. For example, Ratha and Shaw (2007) claim that even the temporary movement of low-skilled labor can have positive effects such as skills upgrading, 'brain circulation' and remittances. Ratha *et al.* (2011) show that low skilled migrants often take the low-paying jobs that most natives are not willing to do at prevailing wages. In addition, the

authors highlight that migrants could bring scarce skills into the local economy and, by lowering the cost of labor, they can increase productivity and competitiveness of local firms and improve the overall economic welfare of countries. Other empirical evidence also shows that highly skilled migrants have a better labor market integration (Barrett and Duffy 2008; Amuedo-Duarantes and De La Rica 2007). They are also likely to integrate better socially and tend to stay longer in the receiving country because they typically work in more permanent jobs and are accompanied by their family, which enhances integration. On the other hand, less educated migrants tend to restrict their social interactions within their immediate neighborhoods, which in turn can encourage the creation of enclaves and contribute to their marginalization (Borjas 2000; Edin et al. 2003).

This paper is comprised of five sections and after the introduction, the rest is structured as follows. Section 2 presents the data and Section 3 describes the Gambian labor market with a focus on the immigrants' characteristics. The regression analysis in Section 4 is twofold. First, using a *probit* model, we identify the significant differences between the native and the foreign-born workers in the labor market. Secondly, we analyze the determinants of monthly wages as migrants, on average, earn significantly more than the Gambian citizens. This section also analyzes how skills heterogeneity among immigrants mediates the observed differences in labor market earnings between immigrants and Gambians. Section 5 provides some policy implications and concludes the paper.

## II. THE DATA

The Gambia's economy is agriculture and service based, with little manufacturing. Average economic growth since the independence in 1965 to 2012 has been low (0.7%) but growth has picked up recently with an average GDP growth rate of about 6% over the past five years (African Development Bank *et al.* 2013). The gross national income per capita in 2012 was USD 1,900, purchasing power parity adjusted (World Bank, 2013).

The main source of data in this paper is the Household Poverty Survey carried out in 2003 and 2010 by the Central Bureau of Statistics in The Gambia. These data are nationally representative and cover all the seven regional administrative areas and districts. The surveys are repeated cross-sections and are carried out approximately every five years. The numbers of households sampled in 2003 and 2010 were 4,672 and 4,781, respectively. These combined surveys result in a total sample size of 77,115 individuals. Out of this sample, we consider the working age group as individuals between the ages of 15 and 65, inclusive<sup>3</sup>. About 40% of the working age population was working at the time of the surveys.

Table 1 presents the summary statistics of key variables for individuals within the working age category. The two time periods show very similar characteristics for most of the variables listed. The share of self-identified non-Gambians in the working age population is about 6.5%, with no significant changes over time. Given that the sample in that table refers to adults of working age, the average age is 30 years. This is

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<sup>3</sup> These lower and upper age limits correspond to the ILO's usual definition of the working age population.



significantly higher than the average age of the population, which is about 22 years.

Both surveys have significant coverage of the rural areas (51%).

**Table 1:** The summary statistics of individuals of working age group (aged 15-65, inclusive) from the 2003 and 2010 Household Poverty Survey.

	All				2003		2010		Is the difference in means between 2003 and 2010 significant?
	Mean	Standard Deviation	Min	Max	Mean	Standard Deviation	Mean	Standard Deviation	
Gambian	0.935	0.247	0	1	0.930	0.255	0.939	0.239	Yes***
Noncitizen/ Migrant	0.065	0.247	0	1	0.070	0.255	0.061	0.239	Yes***
Female	0.519	0.500	0	1	0.504	0.500	0.534	0.499	Yes**
Age	30.49	12.70	15	65	30.34	12.59	30.64	12.81	Yes***
Single	0.406	0.491	0	1	0.422	0.494	0.390	0.488	Yes***
Married	0.463	0.499	0	1	0.373	0.484	0.552	0.497	Yes***
Divorced/ separated	0.010	0.098	0	1	0.000	0.000	0.019	0.137	Yes***
Widowed	0.015	0.121	0	1	0.000	0.000	0.030	0.170	Yes***
No school	0.520	0.500	0	1	0.553	0.497	0.487	0.500	Yes***
Primary level	0.120	0.325	0	1	0.105	0.307	0.134	0.341	Yes***
Secondary level	0.270	0.444	0	1	0.244	0.430	0.296	0.456	Yes***
Tertiary level	0.067	0.250	0	1	0.096	0.295	0.038	0.192	Yes***
Vocational training	0.007	0.086	0	1	0.006	0.079	0.009	0.093	Yes***
Monthly wage <sup>†</sup>	2884.4	21495.0	0	1920124	2517.7	22639.9	3099.6	20792.0	No
Rural	0.509	0.500	0	1	0.567	0.495	0.452	0.498	Yes***
Sample size	42409				21117		21292		

<sup>†</sup>In 2010 dalasis. In 2010, one US dollar was equivalent to 28 dalasis (World Bank 2013). The sample size for monthly wage is 6036 in 2003 and 10288 in 2010.

\*\*\*significant at 1%; \*\*significant 5%; \*significant at 10%.

**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

### III. THE GAMBIAN LABOR MARKET

Before analyzing the impact of immigration in the labor market, we start by providing a brief overview of the Gambian labor market. The Gambian economy is dominated by both the agriculture and service sectors (table 2). About 43% of the working adults are employed in agriculture. This share of the workforce is significantly larger than the agricultural sector's share of GDP, which is about 25%, suggesting that the sector's value addition per worker is relatively low. The next important sector is services and trade, which accounts for about 23% of GDP. This sector, on the other hand, it contributes about 30% of GDP, implying relatively high value addition per worker (AfDB *et al.* 2013). The country has a limited manufacturing base, with only about 7% of adults employed in this sector. This share is almost identical to the sector's contribution to GDP.

**Table 2:** The sector breakdown (percentage) of the Gambian labor market for 2003 and 2010, averaged across both surveys.

	<b>Percent (%)</b>
Agriculture, fishing, mining, etc.	41.9
Manufacturing	6.8
Public services	0.7
Construction	4.4
Retail, wholesale, Hospitality (e.g. tourism)	20.6
Transport and telecommunications	4.5
Finance and business services	2.6
Communal services	14.0
Others	4.5
	100%

**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

Among employed adults, the majority (55%) are self-employed or own account workers. The next largest group (20%) is comprised of individuals who help other family members in their enterprise. Employees account respectively for about 15% and 9% of the labor force in

private firms and in the public sector. The smallest occupational group is employers or business owners (those with businesses that employ other individuals beside the owners). This group constitutes about 2% of employed adults.

In 2010, the average monthly wage of working adults was 3,100 dalasis. And in 2003, the average wage (in constant 2010 dalasis) was 2,379 dalasis, a growth rate of about 4% per annum.<sup>4</sup> Not surprisingly, the average wages differ significantly across sectors (table 3). The highest average wages are found in the service sectors such as tourism, finance and business, where they are approximately 74% higher than the overall average wage. The lowest paying sector is agriculture, which only accounts for one-third of the national average. Among occupations, business owners have the highest average income. They are followed by public sector workers, whose wages are significantly higher than private sector workers (figure 1). Not surprisingly, the lowest paid workers are individuals who serve as family helpers. It is also worth noting that the wage variance across sectors is significantly higher than within occupations. This relationship holds true in both survey periods (2003 and 2010). This is mostly due to the fact that the wage gap between agriculture and the services sectors is far higher than the wage differential between any two occupations.

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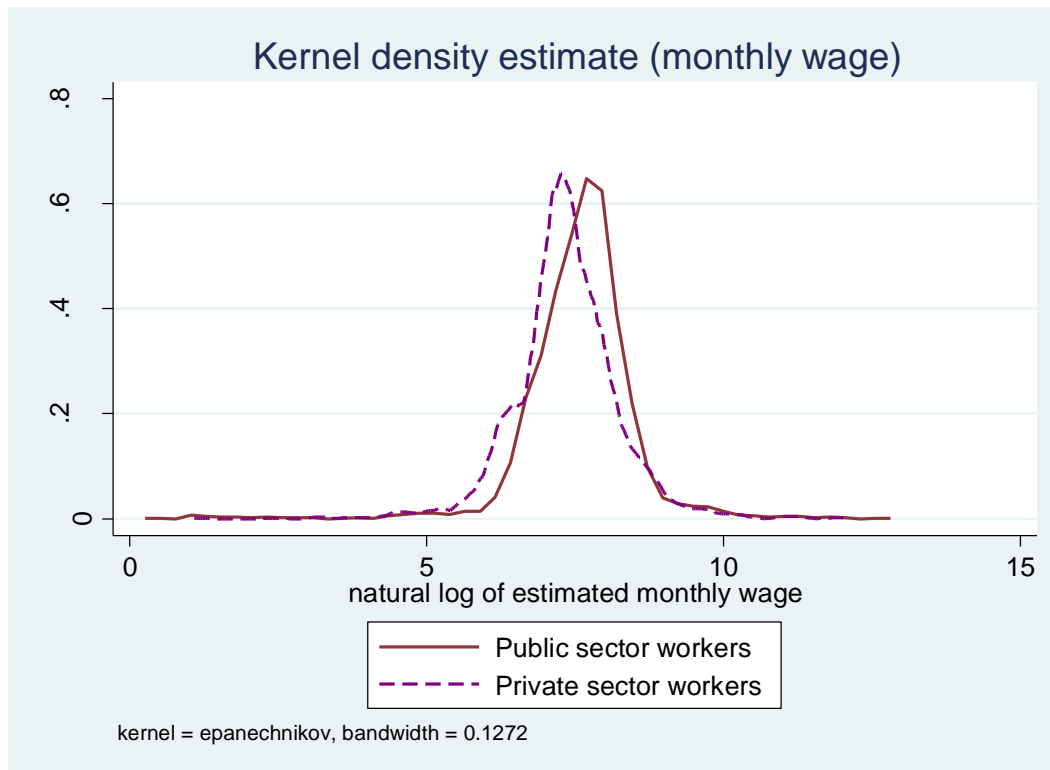
<sup>4</sup> In 2010, one US dollar was equivalent to 28 dalasis (World Bank 2013). The monthly wage was USD 84.96 in 2003 and USD 110.71 in 2010.

**Table 3:** Average monthly earnings (in 2010 Dalasis) by sector for working age adults in the pooled 2003 and 2010 surveys.

	Observations	Mean	Standard Deviation
Agriculture, fishing, mining, etc.	5822	1,023	5,705
Manufacturing	1171	4,106	17,742
Public services	127	4,050	7,290
Construction	796	3,323	6,648
Retail, wholesale, Hospitality	3654	4,959	41,400
Transport and telecommunications	782	3,719	9,351
Finance and business services	404	4,488	7,961
Communal services	1847	3,092	9,667
Others	769	2,667	6,459

**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.  
**Note:** In 2010, one US dollar was equivalent to 28 dalasis (World Bank 2013).

**Figure 1:** Wage distribution for public and private sectors for working age adults.



**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

Using the standard definition of unemployment rate<sup>5</sup>, The Gambia technically has a very low unemployment rate, which was 3% in 2003 and respectively 5% in 2010. The economic inactivity rate (the share of adult population out of the labor force) is 50%<sup>6</sup>. However, one should not place much significance on these numbers. This is mainly because the agricultural sector, which is the biggest employer, is seasonal. So the employment rate is highly time-sensitive depending on the survey period. For instance, the Gambian agricultural season runs from July to October. A survey carried out in October versus another one carried out in May will most likely come up with vastly different labor force participation and unemployment rates if questions are restricted to individuals' work activities over the preceding month. Another possible explanation why this number appears so low is that category of discouraged workers is likely to be large in the country, and would not be captured by this number.

About half of all Gambian workers have no formal education, and therefore variations in education and skills are bound to be important. According to Docquier and Marfouk (2004) and Easterly and Nyarko (2009), a skilled individual is defined as someone with tertiary level education. Based on this definition, only about 7% of the resident adult Gambian workforce would qualify as skilled workers. As is well documented (Easterly and Nyarko 2009), a majority (63%) of skilled Gambians emigrate. This skilled emigration rate is second only to Cape Verde in Africa. As a result, the percentage of skilled Gambians would be higher in the absence of emigration.

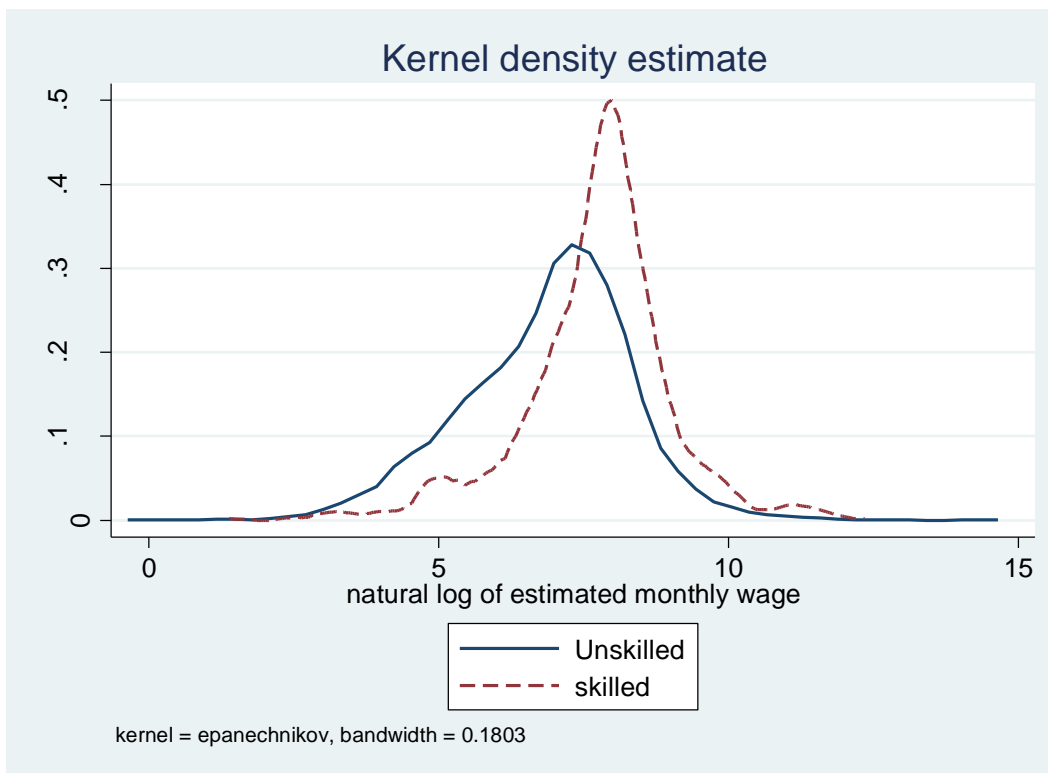
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<sup>5</sup> Unemployment rate is defined as the percentage of the labor force (the sum of the employed and unemployed adults) currently not working but looking for a job and available to start work immediately. The unemployed are defined as adults who have no current employment but have been looking for work over the preceding 30 days.

<sup>6</sup> This figure is significantly less than the value in the World Bank (2013), which is 78%.

There is a strong correlation between skills and earnings (figure 2), which has already been documented (Foltz and Gajigo 2012). The proportion of skilled workers is lowest in agriculture (2%) and highest in sectors such as finance and business services (15%) and public services (10%). Among occupations, public sector workers show the highest proportion (20%), followed distantly by private sector workers at 12%. They are followed closely by business owners (8%). Self-employed individuals and family helpers are the bottom for working adults at 2% and 4% respectively.

**Figure 2:** Skilled wage premium for working age adults.



**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

**Note:** Skilled workers are defined as individuals with tertiary education.

Gender is a salient factor in most labor markets due to earning differentials and representation across sectors. The Gambia is no exception. The share of males in the labor

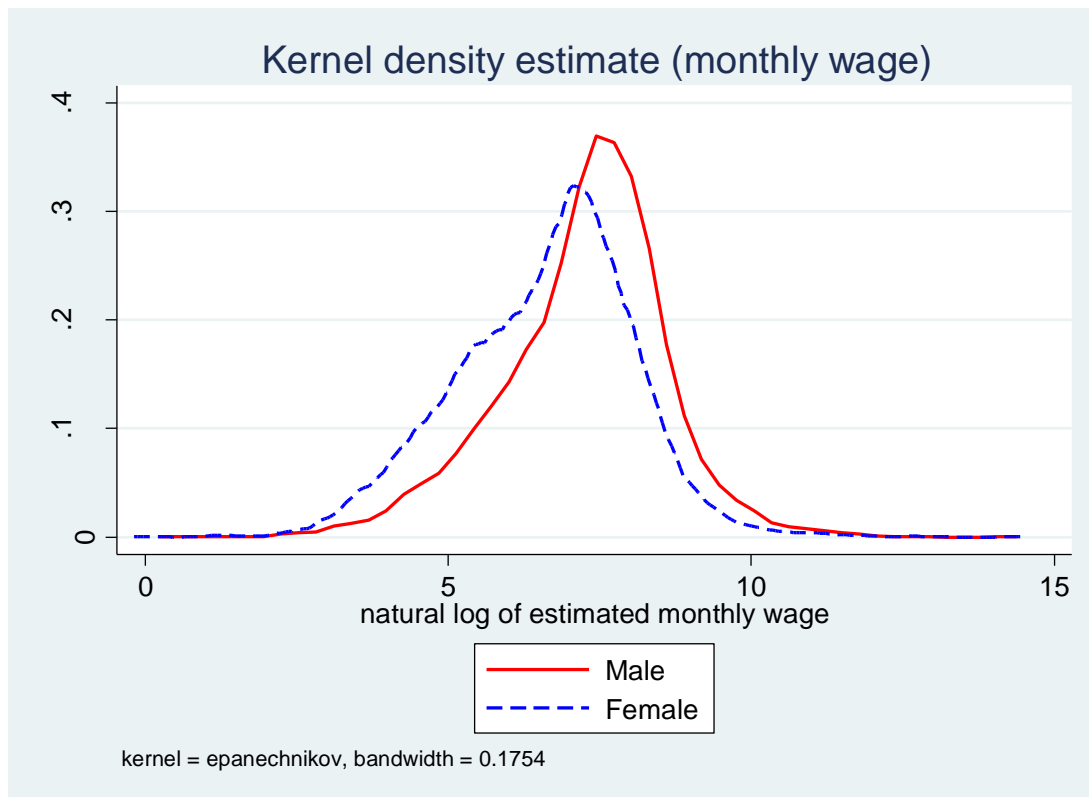
force is higher than the share of women (54% versus 48%). And the average earning of males is 18% above the mean while that of female is 25% below the mean (figure 3). Part of this wage differential can be explained by the different concentration across sectors and occupations by gender. For instance, females are over-represented in low-wage agriculture (58% versus 42%) while they are under-represented in high-wage finance and business services (44% versus 56%). In addition, there are more self-employed females (54%) than males (46%), and greater under-representation of females across high-paying occupations such as business owners (34%) and public sector wage earners (33%). However, even after controlling for variables such as sector, occupation, skills (education), experience, marital status and urban/rural residency, female workers in The Gambia still earn about 39% less than their male counterparts. Given that this gender wage differential cannot be explained by observed labor market attributes, gender discrimination remains the most plausible explanation<sup>7</sup>.

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<sup>7</sup> According to the Institute for Women's Policy Research (<http://www.iwpr.org/>), this is a global phenomenon. The average gender wage gap was 23.5% for full-time workers in 2012.



**Figure 3:** Gender wage differentials in The Gambia for working age adults.



**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

#### **IV. Comparison of immigrants relative to Gambian Nationals in the Labor Market**

Migrants have had a long presence in The Gambian labor market. The agricultural sector in particular has attracted migrant workers for centuries (Swindell 1980; Swindell and Jeng 2006). For instance, the seasonal arrival of workers from neighboring countries became significant and regular since the introduction of groundnut cultivation as a cash crop in the early 1800s (Brooks 1975). This significant wave of seasonal migration has lessened to some extent since independence, particularly due to the diminishing importance of groundnut cultivation relative to the economy as a whole (Gajigo and Saine 2011).

From the household surveys conducted, about 7% of the adult population within The Gambia is comprised of immigrants who are non-citizens<sup>8</sup>. These individuals can either be in the country temporarily or permanently. As shown in table 4, the share of migrants in the labor force is almost stable between 2003 (7%) and 2010 (6%). Most of them are immigrant workers from neighboring countries (Figure 4). Among this group, the largest source countries are Senegal (38.7%) and Guinea Conakry (31.9%). Other countries supplying a sizable number of their nationals are Sierra Leone, Mali, Mauritania and Nigeria. Other African countries beyond West Africa constitute 0.8% of the immigrant population, while non-Africans constitute about 1.3%. As would be expected, distance, which should be proportional to the cost of migrating, is a significant determinant of migration (Ratha and Shaw 2007). Specifically, the size of the migrant population from a given place is inversely proportional to the distance (or cost of traveling) from that source country. The unemployment rate of migrants is low given that economic consideration has to be one of the major motivations for migration (Arthur 1991). Specifically, the unemployment rate for migrants is 3.9%, and very similar to the rate for Gambian nationals (4.1%). In this paper, we do not differentiate between temporary and permanent migrants mainly because the dataset does not enable us to make that distinction.

It is important to point out that the proportion of non-citizen immigrants estimated from the household surveys is most likely an underestimation of their actual percentage in the country over the relevant time period for a number of reasons. It is highly likely that a significant number of immigrants are residents in the country without formal authorization. Therefore there is an incentive to misrepresent their true nationalities in a government-associated

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<sup>8</sup> We define a migrant as any individual who indicated in the survey that he/she is not a Gambian citizen. They could be short-term or long-term migrants, but this distinction was not available in the data set.

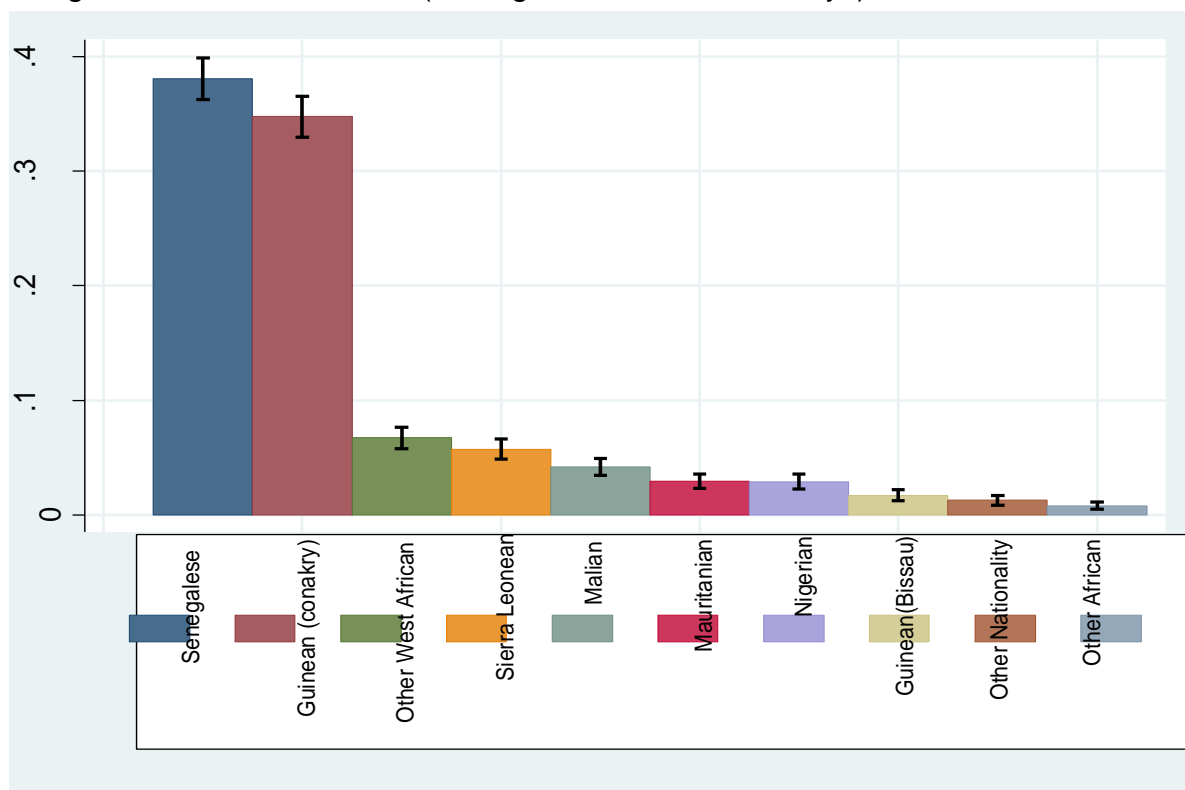
exercise such as a household survey. Secondly, mis-reporting can occur since survey enumerators typically rely on few adults per households without actually interviewing every single household member. These potential issues and the fact that the World Bank (from the Migration and Remittances database) estimates The Gambia's immigrant stock to be 16% of the population, suggests that undercounting of non-Gambians is non-trivial in these household surveys. So there is some non-negligible risk of bias in our analysis that can arise from the possible systematic misclassification of undocumented migrants as Gambians or their omission altogether in the sample.

**Table 4:** Breakdown of the labor market in The Gambia by nationality

	All		2003		2010	
	observations	Percent (%)	observations	Percent (%)	observations	Percent (%)
Gambian	39,643	93.53	19,642	93.05	20,001	94
Senegalese	1,061	2.5	576	2.73	485	2.28
Guinean (Conakry)	958	2.26	485	2.3	473	2.22
Mauritanian	81	0.19	29	0.14	52	0.24
Guinean (Bissau)	47	0.11	25	0.12	22	0.1
Malian	115	0.27	63	0.3	52	0.24
Sierra Leonean	158	0.37	77	0.36	81	0.38
Nigerian	80	0.19	49	0.23	31	0.15
Other West African	185	0.44	124	0.59	61	0.29
Other African	22	0.05	15	0.07	7	0.03
Other Nationality (non-African)	35	0.08	23	0.11	12	0.06
		100		100		100

**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

**Figure 4:** The relative shares (95% confidence intervals) of source countries for Gambian immigrants in 2003 and 2010 (averaged across both surveys).



**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

The distribution of migrant workers across sectors is different from that of the Gambian citizens (tables 5 and 6). While agriculture is the largest employment sector for Gambian workers, only about 16% of migrants are employed in that sector. This is not surprising since access to land is a major prerequisite for the form of agriculture practiced in The Gambia. The small rural proportion among migrants is partly a consequence of the fact that international migrants for the most part gravitate towards urban areas where economic opportunities are high. The largest sector employing migrants in The Gambia is retail, wholesale and tourism, constituting 43%. Migrants are also well represented in manufacturing (10%) and finance and business services (5%). Annex 1 provides a list of the 10 main activities for native-born versus foreign-born workers.

There are also some significant differences in distribution across occupations<sup>9</sup>. There are more migrant workers employed in private businesses relative to Gambians (25% to 14%). Also, 4% of migrants (versus only 1% of Gambians) are employers through business ownerships. Only 3% of migrant workers are employed in the public sector. This group is mostly composed of high-skilled migrants employed primarily as teachers. Also, a lower proportion of migrants (12%) are employed as family helpers. The main similarity between Gambians and migrants in terms of occupation is the proportion that is self-employed – approximately 55% for both.

**Table 5:** Breakdown by sector (percentages) of working age Gambian and migrants using both the 2003 and 2010 data.

	All (%)	Migrant/non-Gambian (%)	Gambian (%)
Agric., fishing, mining, etc.	43	16	45
Manufacturing	7	10	7
Public services	1	1	1
Construction	4	4	4
Retail, wholesale, hotels	20	43	18
Transport and telecom	4	3	4
Finance and business services	3	5	3
Social/communal services	14	10	14
Others not well specified	5	8	4
	100%	100%	100%

**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

<sup>9</sup> A more detailed breakdown of occupational activities by both immigrants and Gambian nationals is provided in Annex I.

**Table 6:** Differential returns in sector between Gambians and migrants (working age adults). The monthly wage is in 2010 Dalasis.

	Gambians			Non-Gambians			Is the difference in means between Gambian and non-Gambians statistically significant* ?
	observations	Monthly wage (mean)	Standard Deviation	observations	Monthly wage (mean)	Standard Deviation	
Agric., fishing, mining, etc.	5,609	991	6,358	204	3,056	8,219	Yes***
Manufacturing	1,054	3,130	7,492	129	8,136	30,881	Yes*
Public services	122	3,371	2,795	9	12,581	25,207	No
Construction	728	3,181	5,931	58	2,799	1,918	No
Retail, Hotels	3,074	5,040	44,989	595	4,752	8,814	No
Transport and telecommunications	727	3,762	9,618	47	2,115	1,923	Yes***
Finance and business services.	347	4,969	23,013	64	4,672	5,333	No
Communal services	1,743	3,023	9,885	129	3,131	3,630	No
Others not well specified	682	2,656	6,437	107	1,758	1,901	Yes**

\*\*\*significant at 1%; \*\*significant 5%; \*significant at 10%.

**Source:** Authors' based on the Household Poverty Surveys 2003 and 2010.

Note: In 2010, one US dollar was equivalent to 28 dalasis (World Bank 2013).

Migrant workers are predominantly male (57%), which is significantly more than the gender parity of 50% one would observe for citizens of most countries (Table 7). Moreover, there is an inverse relationship between the proportion of women and the distance of the source country from The Gambia. For instance, while women comprise 45% of the Senegalese adult immigrant population in The Gambia, the female share falls to about 35% among other West Africans and other African migrants from outside of West Africa that are in The Gambia.

**Table 7:** Differences in individual characteristics between Gambian and migrant workers.

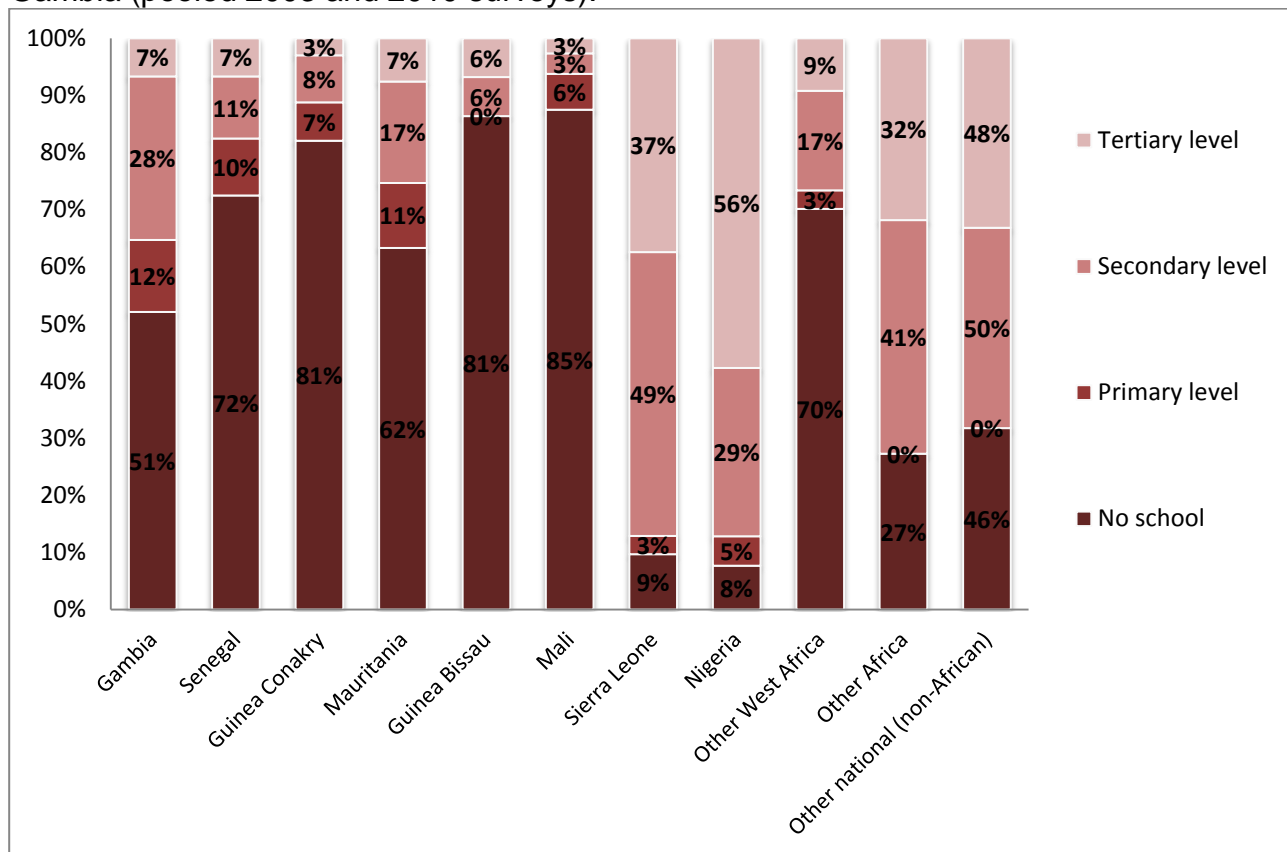
	Gambians Nationals (Observation=39643)		Non-Gambian/Migrants (Observation=2766)		Is the difference in means between Gambian and non-Gambians statistically significant?
	Mean	Standard Deviation	Mean	Standard Deviation	
Gambian	1	0	0	0	
Non-citizen	0	0	1	0	
Female	0.53	0.50	0.43	0.49	Yes***
Age	30.33	12.80	32.72	11.00	Yes***
Single	0.42	0.49	0.27	0.44	Yes***
Married	0.47	0.50	0.37	0.48	Yes***
Divorced/separated	0.01	0.10	0.01	0.10	No
Widowed	0.02	0.12	0.01	0.08	Yes***
No school	0.51	0.50	0.68	0.47	Yes***
Primary level	0.12	0.33	0.07	0.26	Yes***
Secondary level	0.28	0.45	0.13	0.34	Yes***
Tertiary level	0.07	0.25	0.10	0.29	Yes***
Vocational	0.01	0.09	0.00	0.07	Yes***
Rural	0.53	0.50	0.24	0.43	Yes***

**Source:** Authors' based on the Household Poverty Surveys 2003 and 2010.

\*\*\*significant at 1%; \*\*significant 5%; \*significant at 10%.

On average, adult working-age Gambians have comparable skill levels (7%) with immigrants (9%). However, the lower average among migrant workers hides significant heterogeneity within the group, which ranges from 3% on average for Malians to about 56% for Nigerians and Sierra Leoneans. In general, for immigrants whose nationality is known, there is a positive correlation between skill level and English being the official language of the country of origin (figure 5). Given that English is the official language in The Gambia, skilled migrants that are fluent in English would be expected to have an advantage given the greater ease of finding employment commensurate with their skill levels.

**Figure 5:** Skill levels (educational attainment) and national origins of immigrants in The Gambia (pooled 2003 and 2010 surveys).



**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

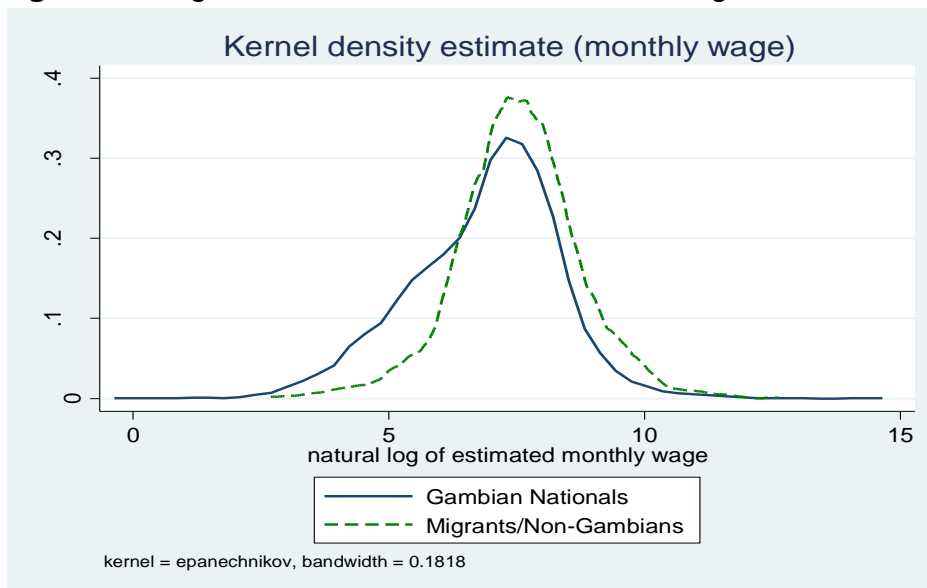
If we proxy labor market experience by age, there is little difference between Gambians and non-citizens (or within migrants themselves) among working age adults. The average age of Gambians among the working age category is 31. For non-citizens, the average is 33. Migrants from Guinea Conakry have the lowest average age (31 years) among migrants, while Malians have the highest (36 years).

Given the major differences in labor market outcomes, it would not be surprising for wage differentials to exist between Gambians and migrants (figure 6). In 2010 values, the average wage of Gambians is approximately 2,750 dalasis (USD 98.21) and that of non-Gambians is



4,000 dalasis (USD 142.86). The wage variation among migrants is quite large. However, even the migrant group with the lowest average wage is still higher than that of the Gambian average. Specifically, the average wage ranges from 3,017 dalasis (USD 107.75) for Malians to about 8,600 for Mauritians (USD 307.14)<sup>10</sup>. Part of the differentials in the average wages between Gambians and non-Gambians was alluded to earlier given the different concentrations across sectors and occupations with varying average remunerations.

**Figure 6:** Wage distribution difference between migrants and Gambian nationals.



**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

## V. MIGRANT CHARACTERISTICS AND RETURNS IN THE LABOR MARKET: A REGRESSION ANALYSIS

The preceding discussion shed some light on the differences between migrants and Gambian nationals in the labor market. However, it has been done without controlling for other variables. Thus, in this section, we carry out a regression analysis to identify the significant differences between the two while controlling for a host of other relevant variables. We

<sup>10</sup> The sample sizes for Mali, Mauritania and Guinea Bissau are quite small, so these average should be interpreted with caution.

estimate the following equation where  $Migrant_i$  is a dummy variable with a value of 1 if the considered individual is a migrant/non-Gambian and zero otherwise, while  $X_i$  is a vector of individual characteristics such as education, marital status, experience and gender.

$$Migrant_i = X_i' \beta + \varepsilon_i \quad (1)$$

The analysis is restricted to individuals between the ages of 15 and 65, inclusive. Given that the dependent variable is a dummy variable, equation (1) is estimated with *probit*, and the results are presented in Table 8. The reported coefficients are the marginal effects evaluated at the mean for continuous independent variables and discrete changes from 0 to 1 for dummy variables.

The regression results are consistent with the summaries provided earlier. Migrant workers are more likely to be male, single and resident in urban areas. They are also significantly more likely to have little or no formal education. Given the fact that they are non-Gambian, it is not surprising that they are less likely to work for the government or public agencies, due to citizenship requirements. They are most likely to be self-employed, business owners or wage workers for private businesses. These results, which control for other variables are consistent with the uncontrolled summary statistics presented in the preceding section. The results also accord well with other findings that show that migrants are not randomly drawn from the population (Hanson 2008; Kaestner and Malamud 2010).

**Table 8:** The *probit* (marginal effects) estimation of equation (1) for working age adults.

	<i>Probit</i> (marginal effects)			
	1	2	3	4
Female	-0.020*** (0.002)	-0.019*** (0.002)	-0.016*** (0.002)	-0.037*** (0.003)
Age	0.0005*** (0.0001)	0.008*** (0.0005)	0.007*** (0.0005)	0.008*** (0.001)
Age squared		-0.0001*** (0.00001)	-0.0001*** (0.00001)	-0.0001*** (0.00001)
Married	-0.027*** (0.002)	-0.031*** (0.002)	-0.032*** (0.002)	-0.032*** (0.004)
Divorced/Separated	-0.019** (0.007)	-0.023*** (0.006)	-0.024*** (0.005)	-0.023** (0.007)
Widowed	-0.039*** (0.003)	-0.034*** (0.003)	-0.033*** (0.003)	-0.041*** (0.004)
Primary level education <sup>†</sup>	-0.036*** (0.002)	-0.031*** (0.002)	-0.029*** (0.002)	-0.026*** (0.003)
Secondary level education <sup>†</sup>	-0.057*** (0.002)	-0.053*** (0.002)	-0.048*** (0.002)	-0.045*** (0.003)
Tertiary level education <sup>†</sup>	-0.012*** (0.003)	-0.013*** (0.003)	-0.007** (0.003)	0.001 (0.006)
Self-employed <sup>§</sup>			0.033*** (0.003)	0.015** (0.005)
Family helper <sup>§</sup>			0.008** (0.004)	-0.001 (0.006)
Public sector worker <sup>§</sup>			-0.024*** (0.003)	-0.031*** (0.004)
Private sector worker <sup>§</sup>			0.048*** (0.005)	0.030*** (0.008)
Rural	-0.077*** (0.002)	-0.071*** (0.002)	-0.072*** (0.002)	-0.055*** (0.004)
2010 Dummy	-0.0002 (0.002)	0.002 (0.002)	-0.005** (0.002)	-0.009** (0.004)
Sector Dummies	No	No	No	Yes
Observations	42408	42408	42408	20074

\*\*\*significant at 1%; \*\*significant 5%; \*significant at 10%. ‡There reference category is single/never married. †The reference education group is no education; §The reference occupation is business owner with employees.

**Note:** The dependent variable is a dummy that is equal to one if the individual is a non-citizen/migrant. Standard errors are in parentheses.

As we have seen, the average wage of migrants in The Gambia is significantly higher than that of natives. However, this simple difference still leaves open the question of the relative contributions of various individual and labor market factors since earnings in the labor market are functions of labor demand by firms as well as worker characteristics such as skills and experience. It is therefore important to control for other variables to shed light on the contributing factors, including those that are relevant for policy recommendations. Therefore, we carry out a simple estimation of labor market returns based on the following equation:

$$Wage_i = \hat{X}_i' \gamma + \epsilon_i \quad (2)$$

where  $Wage_i$  is the natural log of monthly wage of individual  $i$ ,  $\hat{X}$  is the vector of individual characteristics relevant for labor market returns such as experience, skills, sector, occupation and gender. Also included in  $\hat{X}$  is whether the considered individual is a migrant/non-citizen, assuming that for this variable, the referent variable is Gambian natives. The results are presented in Table 9 in columns 1 to 4. Since the dependent variable is in natural log, the coefficients represent percentage changes in monthly wages associated with a unit increase in the independent variables. Migrants in The Gambia earn approximately 40% higher wages than native Gambians. This statistically significant wage differential remains robust even after controlling for individual (age, gender, skills and marital status), location and sector variables. In other words, the wage differential cannot be attributable to differences in skills, education, age, experience or average differences in returns across sectors.

The results in Table 9 (columns 1 to 4) also show some other interesting findings. As already demonstrated by Foltz and Gajigo (2012), in the Gambian labor market as a whole, returns to education are high. Interestingly though, returns to education are much higher for native Gambians than for immigrants (column 4 of table 9). Taking account of the interaction terms,

the returns to education are only significant for immigrants who are very highly skilled (with tertiary education) but not for those with secondary school education. This result suggests the importance of taking into account the heterogeneity of skill levels when analyzing the interaction between migration and skills.

We investigate further the intersection between skills and literacy. Column 5 adds interaction terms for skilled, migrants and English literacy<sup>11</sup>, and this leads to interesting results. Specifically, the inclusion of skills and English literacy reduces the wage gap between Gambian nationals and non-citizens. The degree of this change is significant both economically and statistically. First, the wage gap between unskilled immigrants and unskilled Gambians has been reduced to 14%. Secondly, the column 5 also shows that the premium for being skilled is very similar to that of having English literacy. Indeed, the difference between the two coefficients is not statistically significant. Thirdly, neither skilled immigrants nor immigrants with English literacy have significant higher earnings than their Gambian counterparts. In other words, only the unskilled immigrants have a wage advantage over their unskilled Gambian counterparts. The importance of language compatibility and fluency for migrants in a given host country is well documented (Chiswick and Miller 1995; Dustmann and Fabbri 2003; Lewis 2012; Mcmanus *et al.* 1983). One possible explanation why skilled Gambians do not show a lower wage relative to skilled immigrants could be that they have access to the high-paying and high-skilled government positions which require citizenship and are therefore not subject to as much competition in the labor market than their fellow unskilled citizens.

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<sup>11</sup> The English literacy variable is not available for the 2003 survey. So Column 5 is estimated only with 2010 data set.

**Table 9:** The OLS estimation of equation (2) for working age adults.

	OLS				
	1	2	3	4	5
Migrant/non-citizen	0.385*** (0.036)	0.489*** (0.051)	0.509*** (0.051)	0.395*** (0.049)	0.121** (0.041)
Female	- 0.457*** (0.022)	-0.451*** (0.022)	-0.429*** (0.022)	-0.349*** (0.022)	-0.579*** (0.025)
Age	0.011*** (0.001)	0.057*** (0.005)	0.053*** (0.005)	0.037*** (0.005)	0.058*** (0.006)
Age squared		-0.001*** (0.0001)	-0.001*** (0.0001)	-0.0003*** (0.0001)	-0.001*** (0.0001)
Female*Migrant		-0.079 (0.073)	-0.108 (0.073)	-0.226*** (0.070)	
Married <sup>‡</sup>	0.112*** (0.025)	0.079*** (0.025)	0.102*** (0.025)	0.154*** (0.024)	0.142*** (0.033)
Divorced/Separated <sup>‡</sup>	0.269*** (0.086)	0.222** (0.086)	0.236** (0.085)	0.213** (0.078)	0.236*** (0.075)
Widowed <sup>‡</sup>	0.134* (0.079)	0.170** (0.079)	0.199** (0.079)	0.164** (0.072)	0.196** (0.072)
Primary level education <sup>†</sup>	0.283*** (0.036)	0.315*** (0.038)	0.293*** (0.037)	0.144*** (0.035)	
Secondary level education <sup>†</sup>	0.452*** (0.027)	0.486*** (0.028)	0.406*** (0.029)	0.269*** (0.027)	
Tertiary level education <sup>†</sup>	0.814*** (0.042)	0.846*** (0.046)	0.718*** (0.047)	0.531*** (0.045)	
Primary level education*Migrant		-0.180 (0.132)	-0.150 (0.131)	-0.093 (0.124)	
Secondary level education*Migrant		-0.415*** (0.105)	-0.356*** (0.105)	-0.272** (0.099)	
Tertiary level education*Migrant		-0.345** (0.118)	-0.301** (0.118)	-0.097 (0.114)	
Skilled					0.598** (0.202)
English literacy					0.228** (0.028)
Skilled*English Literacy					-0.173 (0.209)
Skilled*Migrant					-0.255 (0.471)
Skilled*English Literacy*Migrant					0.094 (0.489)
Self-employed <sup>§</sup>			-0.072 (0.060)	0.032 (0.057)	0.194*** (0.063)
Family helper <sup>§</sup>			-0.054 (0.068)	0.154** (0.065)	0.556*** (0.074)

Public/Govt worker <sup>§</sup>			0.294*** (0.067)	0.263*** (0.067)	0.226** (0.077)
Private firm worker <sup>§</sup>			0.183** (0.063)	0.096 (0.061)	0.122* (0.068)
Rural	- 0.943*** (0.022)	-0.922*** (0.022)	-0.875*** (0.022)	-0.250*** (0.024)	-0.375*** (0.027)
2010 Dummy	0.211*** (0.024)	0.192*** (0.024)	0.225*** (0.025)	0.178*** (0.024)	
Constant	6.783*** (0.042)	6.026*** (0.089)	6.045*** (0.105)	5.072*** (0.101)	4.921*** (0.121)
Sector control	No	No	No	Yes	Yes
Observations	15369	15369	15369	14587	10064
R squared	0.24	0.24	0.25	0.39	0.457

\*\*\*significant at 1%; \*\*significant 5%; \*significant at 10%. †There reference category is single/never married. †The reference education group is no education; §The reference occupation is business owner with employees.

**Note:** The dependent variable is log of monthly wage, and standard errors are in parentheses. Column 5 is estimated only with the 2010 data set because the English literacy variable is not available in the 2003 survey.

The reasons of the significant difference in earnings need to be addressed. The literature suggests several explanations. One possible reason is that migrants (especially those crossing borders as opposed to internal migrants) are not a random sample of adults from their countries of origin. These individuals are likely to be highly motivated and hardworking, and it is therefore possible for them to earn higher wages even if they start at a low level (Galor and Stark 1991). Empirically, the isolation of this factor is challenging because the level of motivation of an individual or effort exertion is not observable.

Another possible reason is that migrants could be drawn to regions and economic sectors that are experiencing high wage growth even if they were likely to command low wages at the time of migration (Friedberg and Hunt 1995). This effect could also imply a differential in average wage between migrants and natives even if their skills, motivation and willingness to work hard are initially the same. In The Gambia, average urban wages are significantly higher than

that of rural areas, by a factor of almost three. Between 2003 and 2008, the average wage growth per annum was 0.4% and 8% for urban and rural areas respectively. Given the large differences in average income levels, it would still take many years before rural wages reach that of urban areas even in the absence of internal migration among Gambian nationals<sup>12</sup>. So it seems unlikely that the wage growth is a significant explanatory factor for migrant-native wage differential.

It is worth pointing out that, given the fact that migrants in The Gambia come from different countries, a wide range of motivations could explain migration. Therefore, all the above factors, and possibly others that have not been discussed, can explain the immigrant-native wage differential. Additionally, our discussion of immigrants and their labor market effects has focused only on the host country, The Gambia. Despite the fact that we do not discuss the economic and policy factors in immigrants' countries, they are still important. For instance, the importance of risk mitigation through household income diversification and household liquidity as a driver of migration is a documented fact (Wouterse and Taylor 2006). Despite this importance, we restrict our analysis to the host country (The Gambia) for data limitation reasons.

### **Implications for non-Random Selection of Migrants**

The analysis in the paper clearly shows a significant difference between immigrants and Gambians in the labor market. And it is also clear that the immigrants are a non-random subset from their countries of origin. The reasons for the selection of immigrants on a non-randomness basis in the frame of our analyses are varied. Migrants and non-migrants may

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<sup>12</sup> In reality, given the presence of internal migration among Gambians, average rural wage always lags that of the average urban wage.



have different reservation wages and therefore, different likelihoods of participating in the labor market. This would in turn have immediate implications for the likelihood of observation of any labor marketing earnings. Furthermore, given that the decision to migrate is mostly economic in nature, the number of migrants and their labor market incomes are likely to be positively correlated. Therefore, an estimation that does not take these factors into account may be biased.

However, addressing the above potential selection problem and incorporating it in our analysis is challenging. For instance, one must identify a variable that is not only correlated with the likelihood of an individual being a migrant but also uncorrelated with wage earnings in The Gambia so that selection bias correction (e.g. Heckman model) can be implemented. Unfortunately, a variable that satisfies this condition is not available in our data set. Specifically, the Gambian household surveys give very little information on either the motivations for migration or socio-economic conditions of migrants prior to moving to The Gambia.

## **VI. POLICY IMPLICATIONS AND CONCLUSION**

From the results of our analysis, immigrants in The Gambia are predominantly single and male and work in the urban and coastal areas of the country. The comparison between native-born and foreign-born workers' participation in the labor market reveals that on average the immigrants tend to be less skilled but earn about 40% more than the Gambians. This wage gap is explained mostly but not exclusively by the fact that immigrants work mainly in the high-paying sectors (tourism, finance and business), in high-yielding occupations (e.g. business owners with employees) and in coastal regions (Greater Banjul and the Western

Region) that offer the highest average wages. It should also be noted that a significant part of the wage differential between immigrants and Gambians is likely due to some unobserved but relevant labor market factors, including motivation. Regarding the returns to education in the labor market, the econometric analysis shows that there is a strong correlation between skills and wages. However, there is significant heterogeneity in labor market returns between skilled workers (individuals with secondary education and higher) and unskilled workers. Unskilled immigrants have a significant wage advantage over unskilled Gambians while skilled immigrants have no such advantage over their skilled Gambian counterparts. The results of our analyses illustrate the need to distinguish among skill levels when assessing the labor market effects of immigration.

Looking at the broader picture, there is room for improvement in the migration situation in The Gambia. In recent years, most skilled Gambians have emigrated whereas immigrants are relatively low-skilled. In terms of policy recommendations, there is a need to retain skilled Gambians and/or to attract skilled migration given the country's low per capita income. This would involve substantial national dialogue and reflections to address the causes of such high levels of migration. Changing the skill composition of migration would benefit the country<sup>13</sup>. Needless to say, broad-based economic growth, accompanied by economic transformation would play a significant role to stanch the flow of emigrants. In addition, the need to increase the level of skills among nationals, through investments in education and training cannot be over-emphasized. Although this area has already received considerable attention from the Gambian government, and there has been significant improvement in educational attainment,

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<sup>13</sup> We do acknowledge that The Gambia benefits significantly from remittances sent by emigrants. Whether the benefits of these emigrants out-weigh the loss of skills is an issue beyond the scope of this paper.

the gross enrollment rates at the secondary school level still remain low at 50% in 2010 (World Bank 2013).

Our findings also reveal that there is a large rural-urban disparity in earning, mostly owing to the dominance of the agricultural sector in rural areas. This regional earnings differential explains to a great extent the wage disparity that exists between unskilled Gambians and their foreign counterparts in urban areas. Similarly, there is also a persistent gender wage gap of 39% that cannot be explained by differences in education, experience, occupation or sector concentration between men and women. This suggests that the wage differentials can be significantly explained by socio-cultural factors driving gender biases that are deep-rooted. Nevertheless, there is still room for policies that are gender sensitive such as the implementation of labor policies that seek to equalize compensation for similarly qualified candidates irrespective of their gender.

Illegal immigration is almost impossible to measure in the Gambia given various data limitations (Ratha and Shaw 2007). It is nonetheless important to be cognizant of its existence since it usually leaves individuals open to exploitation, poor working conditions and harassment or abuse by employers and the police. For the time being, the Gambia does not have a comprehensive migration policy and deals with immigration on an ad-hoc basis (Kebbeh 2013). A legal and policy framework to that addresses outward migration by Gambians, as well as immigration into the country would be recommended.

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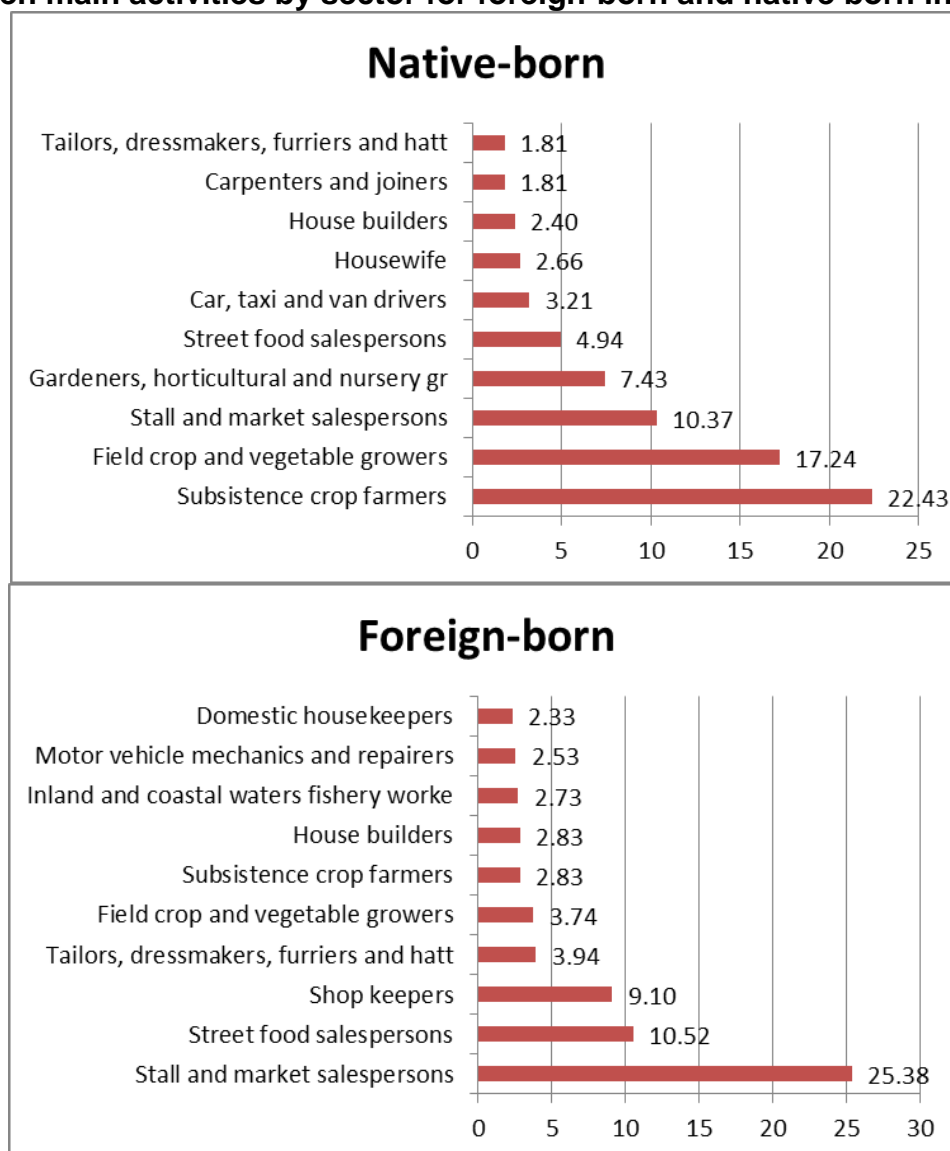
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**Annex 1: Ten main activities by sector for foreign-born and native born in the Gambia**



**Source:** Authors' calculations based on the Household Poverty Surveys 2003 and 2010.

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