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Higher Education and Female Labor Market Outcomes in Six Muslim Countries

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Introduction

The secular increase in education and schooling years has been accelerated by the recent expansion in tertiary education in a large number of countries, especially since the late 1990s to early 2000s. This growth has not been even across countries and gender, nor has its impact on the composition of the labor force and on labor force participation (LFP) rates been uniform.

This chapter aims to compare the performance of labor market indicators for female populations with advanced levels of education. We consider predominantly Muslim-populated countries where female labor force participation (FLFP) is considered to be relatively low, and compare them with non-Muslim countries with comparable levels of development. We focus on six Muslim countries from different regions: Egypt (Northern Africa), Kyrgyzstan (Central Asia), Indonesia (Southeastern Asia),

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A. M. de Albuquerque Moreira et al. (eds.), *Intercultural Studies in Higher Education*, Intercultural Studies in Education,
https://doi.org/10.1007/978-3-030-15758-6_12

Pakistan (Southern Asia), Tunisia (Northern Africa), and Turkey (Western Asia),[1] with 94.9, 88, 87.2, 96.4, 99.5, and 98% Muslim inhabitants, respectively.[2] They provide a good sample for comparative analysis as they belong to different geographical areas, have diverse levels of development, and have varied historical and socio-political backgrounds. Another difference is the state–religion relationship: in Egypt, Pakistan, and Tunisia Islam is officially the state religion, with Pakistan's constitution further providing "at least in part, that Islamic law serves as a source of law or legislation." Indonesia, Kyrgyzstan, and Turkey are formally secular Muslim countries.[3] We compare these countries with selected, culturally and regionally diverse, non-Muslim countries that have, at the same time, similar levels of development as measured by GDP per capita: Poland, the Philippines, Thailand, and Vietnam.[4]

Throughout the chapter, we systematically compare populations and labor force within the selected Muslim and non-Muslim countries across three dimensions—country, gender, and educational level—stressing the differences in the evolution of female indicators. In section "Higher Education Expansion" we describe the expansion of higher education through expenditure, enrollment, and attainment. In section "Labor Force Distribution and Labor Market Indicators" we first discuss how this evolution is reflected in the composition of the labor force and labor market indicators, namely LFP, and employment and unemployment rates. In section "Labor Market Opportunities" we consider these indicators in relation to structure

[1]Geographic regions from the United Nations Geoscheme system following the M49 coding classification, https://unstats.un.org/unsd/methodology/m49/.

[2]World Muslim population by country, PEW Research Center, http://www.pewforum.org/2009/10/07/mapping-the-global-muslim-population23/.

[3]The classification is adopted from the United States Commission on International Religious Freedom (2012). As mentioned in the report, practices and legislations vary within the different groups of Muslim countries.

[4]Following the Inglehart–Welzel Cultural Map (Inglehart et al. 2014) we chose countries outside the African-Islamic group, as defined by the sixth wave of the World Values Survey, where the selected Muslim countries are situated (except Pakistan and Egypt where data is not available). Poland and the Philippines are part of the Latin American group, and Thailand and Vietnam part of the South Asian group. The groupings have been carried out according to two criteria: "Survival vs self-expression values" and "Traditional vs rational-secular values". The Latin American and South Asian groups are two of the three neighboring groups to the African-Islamic group, i.e., relatively close in terms of value measures by the WVS. http://www.worldvaluessurvey.org/images/Culture_Map_2017_conclusive.png.

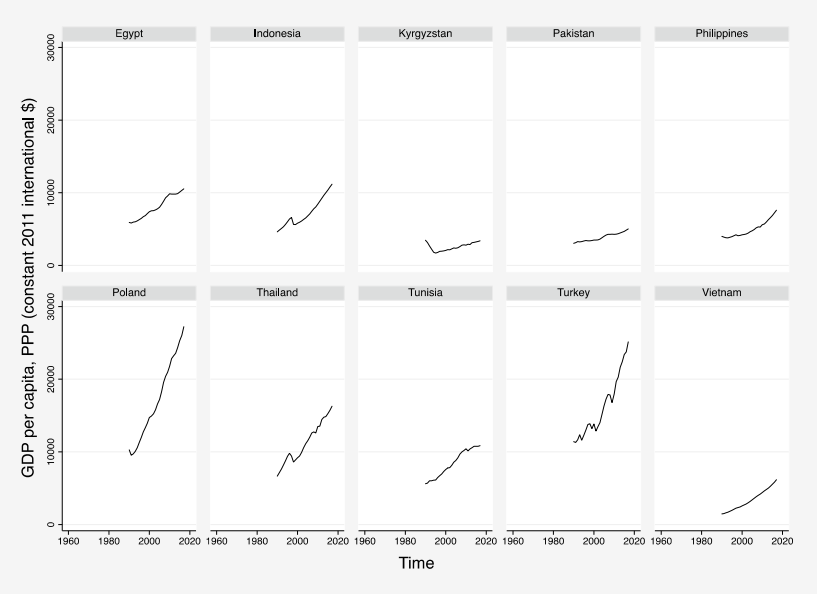

Fig. 12.1 GDP per capita (*Source* World Development Indicators)

of economy, namely the share of employment in services, and discuss whether differences persist between Muslim and non-Muslim populations. Section "Conclusions" concludes the analysis.

Higher Education Expansion

In terms of development, Kyrgyzstan and Pakistan are similar to Vietnam and the Philippines with the lowest level of per capita GDP, and they constitute the first group of countries examined (Fig. 12.1). Egypt, Tunisia and Indonesia are middle-income countries, which have development levels that range between the Philippines' and Thailand's. Finally, Turkey has the highest level of per capita GDP and is comparable to Poland.

Following the secular increase in primary and secondary education, higher education has been expanding over the last 3 decades in a large number of countries, following a sharp increase in demand from household

and labor market requirements. This has led to a substantial increase in the population attending higher education institutions (HEIs), the number of HEIs, and private and public expenditure on higher education. The level of development partly explains the differences in expenditure on total and tertiary education (Table 12.1): Tunisia, Turkey, and Poland are the countries with the highest ratio of government expenditure on tertiary education to GDP (1.1–1.8%). Tunisia's spending ratios are particularly high (1.6–1.8%) compared with its level of development and to other countries with similar levels of development, such as Indonesia and Thailand (0.6–0.7%). Other countries have less than 1% expenditure. What is interesting is the decrease in the ratios of Pakistan and Kyrgyzstan, a decrease that can also be observed in terms of expenditure on total education, implying that these countries have been experiencing a particular policy shift within government expenditure. Tunisia, Poland, and Turkey are the countries with the highest levels of spending on tertiary education in total government educational expenditure (from 23 to 35%). Alongside the public sector, private supply has also increased, although its share did not greatly change (except in Tunisia and Turkey, although the private sector share remains relatively low) in most countries during the period for which data is available (2004–2014).[5] Apart from in the Philippines and Indonesia, where the majority of students are enrolled in private institutions, the public sector remains the main provider. All countries selected for this study, except Kyrgyzstan and Thailand, also benefit from the support of the World Bank Group through the World Bank and/or the International Finance Corporation (World Bank 2017).

How do these expenditure figures reflect on the evolution of the percentage of population with higher education? Turkey and Poland are countries with the highest rates of enrollment, followed by Thailand, Kyrgyzstan, and Tunisia (Fig. 12.2). All other countries have lower rates, with Pakistan having the lowest. Kyrgyzstan is a low-income country with a comparatively high ratio compared with its development level, probably as a result of the communist legacy. At the other end of the scale, Pakistan is the only country where the ratios are extremely low when compared with

[5] Many countries made changes to their legal framework during the 1990s and early 2000s in order to accommodate the expansion of non-public HEIs (https://www.prophe.org/en/data-laws/national-laws/).

Table 12.1 Government expenditure on tertiary education and enrollment in private tertiary education

	Government expenditure on tertiary education as a percentage of GDP (%)							Expenditure on tertiary education as a percentage of overall government expenditure on education (%)							Enrollment in private tertiary education (%)[a]	
	2011	2012	2013	2014	2015	2016	2017	2011	2012	2013	2014	2015	2016	2017	2004	2014
Kyrgyzstan	–	0.89	0.87	0.26	–	–	–	–	12.03	12.78	4.64	–	–	–	7.3	12.0
Pakistan	–	–	0.80	0.55	0.60	0.27	0.28	–	–	32.23	22.32	22.79	10.73	10.18	12.0	15.1
Philippines	–	–	–	–	–	–	–	–	–	–	–	–	–	–	65.7	56.8
Vietnam	0.76	0.82	0.85	–	–	–	–	15.73	14.83	15.01	–	–	–	–	10.2[b]	13.8
Egypt	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	19.2
Tunisia	–	1.76	1.78	1.66	1.58	–	–	–	28.13	–	–	23.94	–	–	0.7	7.8
Indonesia	–	0.59	0.55	0.49	0.57	–	–	–	17.18	16.41	15.05	15.80	–	–	65.2	66.9
Thailand	0.72	0.65	0.64	–	–	–	–	14.92	14.42	15.55	–	–	–	–	18.5	15.8
Turkey	–	1.54	1.53	1.55	–	–	–	–	34.94	34.98	35.48	–	–	–	3.9	6.6
Poland	1.10	1.13	1.21	1.18	–	–	–	22.82	23.39	24.46	24.12	–	–	–	28.5	26.5

[a] UIS–UNESCO

[b] (2005)

Source World Development Indicators

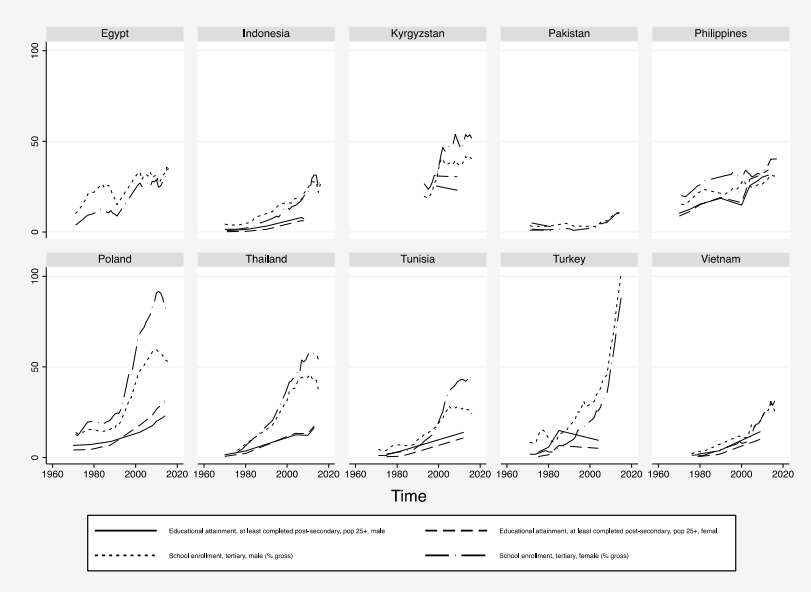

Fig. 12.2 Educational attainment rates and enrollment ratios in tertiary education (*Source* World Development Indicators)

other countries with similar levels of development, such as Vietnam and the Philippines. All other Muslim countries have similar ratios to countries with comparable levels of development. One major difference is that Muslim countries have higher rates of male enrollment when compared with non-Muslim countries, where female enrollment rates are higher. Tunisia is the only country where the female enrollment ratio is higher than the male ratio, from the 2000s onward. Again, Kyrgyzstan is the Muslim outlier where the female ratio is higher. These observations and trends hold for the population aged 25 years or above, qualified to at least a postsecondary degree level (where data is available).

Apart from per capita income levels, there are other factors that affect unequal access to education and educational attainment, i.e., poverty, gender, and health (Table 12.2). The poverty rankings of countries do not necessarily match their level of development measured in terms of per capita income; i.e., the Philippines and Indonesia, wealthier countries

than Kyrgyzstan and Pakistan, have higher levels of absolute poverty. This affects education: completion rates of children from the poorest fifth of households decrease with level of education. These levels are particularly low in Pakistan but also in Tunisia and Vietnam. Upper secondary school completion rates of the poorest populations in Pakistan are extremely low; they are highest in Poland and Kyrgyzstan (data is unavailable for Turkey but is likely to be high also). For other countries, the rate ranges from 14 to 41%. This rate is an important indicator as it is an eligibility criterion for higher education and affects the probability of the poorest levels of a population from attaining higher education.

Male populations are relatively more affected by poverty compared with female populations in terms of completion rate in other countries, and this increases with the level of education. Pakistan and Indonesia are exceptions, where completion rates are lower for female populations across all educational levels. The largest impact of poverty is also reflected in figures on malnutrition: Pakistan, Indonesia, and the Philippines are the most affected populations, with a high child mortality rate in the case of Pakistan. These countries are typically accumulating inequalities in terms of poverty, health, and gender.

Although primary-level education expansion is now affecting the population, inequalities continue to impact on higher levels of education (Table 12.3). Pakistan and Indonesia lag behind at all levels, with worse outcomes in the case of female populations. The amount of people with tertiary education is by far the lowest in Pakistan, but also in Indonesia and the Philippines. Gross enrollment ratios (GERs) in these countries suggest that the recent cohorts are continuing to suffer. The female/male GER in tertiary education is highest in Kyrgyzstan, the Philippines, Tunisia, Thailand, and Poland.

Table 12.2 Completion rates, poverty, and malnutrition

	Completion rate (%) of the poorest students[a]						Poverty and malnutrition	
	Primary	Primary	Lower secondary	Lower secondary	Upper secondary	Upper secondary	Population living on less than PPP US$1.90 a day (%)	Under-5 moderate or severe stunting rate (%)[c]
	Male	Female	Male	Female	Male	Female		
	2010–2015[b]						2004–2014[b]	2010–2015[b]
Kyrgyzstan	98	98	88	92	76	84	1.3	13
Pakistan	30	16	18	5	6	1	6.1	45
Philippines	63	84	–	–	–	–	13.1	30
Vietnam	86	88	51	61	19	19	3.1	25
Egypt	87	87	70	71	27	27	–	22
Tunisia	80	85	41	46	14	22	2.0	10
Indonesia	86	88	53	50	24	20	8.3	36
Thailand	97	99	69	85	23	41	0.0	16
Turkey	–	–	–	–	–	–	0.3	10
Poland	–	–	92	99	78	91	0.0	–

[a]GEM Report 2017/2018 team calculations using household surveys. Population from the poorest fifth of households
[b]Data are for the most recent year available in the period specified
[c]UNICEF, WHO, and World Bank joint child malnutrition estimates (May 2017)
Source GEM Report 2017/2018 (2018)

Table 12.3 Educational attainment and GERs in tertiary education

	Percentage of adults (25 and over) (%) who have attained at least:								Gross enrollment ratio (GER) in tertiary education (%)	
	Primary (ISCED level 1–8)		Lower secondary education (ISCED level 2–8)		Upper secondary education (ISCED level 3–8)		Short-cycle tertiary education (ISCED level 5–8)			
	2010–2015[a]								School year ending in 2015	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Kyrgyzstan	–	–	–	–	–	–	–	–	41	53
Pakistan	63	37	47	27	34	21	11	6	11	9
Philippines	82	86	69	71	57	60	25	28	31[b]	40
Vietnam	–	–	–	–	–	–	–	–	29	29
Egypt	–	–	–	–	–	–	–	–	37	36
Tunisia	–	–	47	33	–	–	–	–	26	43
Indonesia	82	74	53	44	36	29	10	9	23	26
Thailand	70	62	48	43	34	32	18	20	41	57
Turkey	95	82	67	46	44	30	20	15	101	88
Poland	99	98	87	81	86	81	21	26	54[b]	83

[a]Data are for the most recent year available in the period specified
[b]Data are for the school year ending in 2014
Source GEM Report 2017/2018 (2018) using UIS database

Labor Force Distribution and Labor Market Indicators

Labor Force Distribution

How are these reflected in labor market indicators? How did the distribution of education by level and gender evolve in terms of the labor force? In other words, is the increase in the share of the population with higher education reflected in the composition of the labor force? Table 12.4 gives the percentages of individuals (female and male) with advanced levels of education.

Similar to the increase noted in the size of the population holding post-secondary education, the share of the labor force holding higher education qualifications has also increased in most countries. The percentage of females with advanced levels of education in the total female labor force is higher (from 10 to 43%) than that of the male population (from 10 to 26%). This is an expected outcome given that females tend to participate more in higher levels of education. The same can be said for the distribution of employment and unemployment.

Among Muslim countries, Pakistan and Tunisia differ from those non-Muslim countries with similar levels of development. In Pakistan the differences between female and male populations, in terms of labor force and employment distributions, are lower despite the higher participation of women in higher education. The number of unemployed among the female population with advanced levels of education is also particularly high (60%) in Pakistan, meaning that there is a limited number of employed highly educated women and many, thus, remain unemployed. The fact that there is a higher number of women with advanced education among unemployed females in Pakistan than in other countries (both Muslim and non-Muslim) points to a particular problem of access to female employment. In the case of Tunisia, the amount of women with further education is particularly high compared with the male population in the total labor force, and also in employment and unemployment.

Apart from in these two countries, there is no indication that the female distribution within the labor force is different from that of males in Muslim countries compared to non-Muslim countries with comparable

Table 12.4 Labor force distribution and percentage of the population with advanced levels of education

		Kyrgyzstan	Pakistan	Philippines	Vietnam	Egypt	Tunisia	Indonesia	Thailand	Turkey	Poland
		2013	2015	2016	2017	2016	2013	2017	2016	2017	2017
Female	Labor force	22.5	9.1	32.6	13.3	28.5	32.7	15.1	20.2	29.6	42.8
	Unemployment	15.7	59.7	40.7	34.7	37.2	59.6	18.9	46.3	38.2	23.0
	Employment	23.3	5.8	32.1	12.9	25.8	24.6	15.0	20.0	28.3	43.8
	Unemployment/ employment	0.7	10.3	1.3	2.7	1.4	2.4	1.3	2.3	1.3	0.5
Male	Labor force	15.3	9.0	21.0	11.8	15.8	14.3	10.4	12.6	20.1	26.3
	Unemployment	16.9	31.0	32.0	20.3	26.4	21.8	10.2	26.8	18.5	11.7
	Employment	15.1	8.4	20.4	11.6	14.8	13.2	10.4	12.5	20.3	27.0
	Unemployment/ employment	1.1	3.7	1.6	1.7	1.8	1.7	1.0	2.1	0.9	0.4

Source ILOSTAT-ILO, https://www.ilo.org/ilostat/, data for the most recent year available

development levels, expenditure in tertiary education, enrollment rates, and number of people in the population with postsecondary education. This implies that the expansion in tertiary education has not had a significantly differentiated impact on the evolution of the structure of the labor force, employment, and unemployment in Muslim countries. In other words, the supply of highly educated women has not affected differently the composition of the labor force. In the next section we turn to LFP, and employment and unemployment rates, in order to assess the impact of the change in the composition of the labor force and whether there is a difference between Muslim and non-Muslim countries.

Labor Market Indicators

FLFP has been evolving differently across gender, territories, and time. However, as a common feature, men's participation has historically been higher as female labor has been solicited in unpaid activities within the household, and not counted as part of the labor force, thus, increasing the opportunity cost of labor market participation for women.

The works of Boserup (1970) and Goldin (1995) have contributed to explaining the relationship between long-term economic development and the evolution of FLFP. With the process of economic development, defined as a decrease in agricultural employment, followed by an increase in manufacturing activities and later services, it has been argued that the FLFP rate follows a U-shaped pattern. This pattern, originally tested for the United States, has been much debated and subject to a vast empirical literature.[6] The blue-collar, manufacturing sector of employment is male-intensive and may additionally be a stigma against female workers. Moreover, if the production structure is not male-intensive, the transition from a rural society based on smaller communities where female work is usually confined to the family, to an urban society where employment environments are predominantly anonymous, may also constitute a stigma in itself. Likewise, during this transition phase men's wages, which

[6]For a recent comprehensive worldwide cross-country study see Gaddis and Klasen (2014). Olivetti (2014) reassesses the long-term U.S. historical experience in comparison with other advanced economies.

increase household income, can cause decreasing female participation. Later, as the tertiary sector expands, demand for female-intensive services increases, and white-collar activities contribute to the decrease in the stigma against FLFP. Alongside structural changes in production, there are other secular transformations that are likely to positively affect FLFP by decreasing the opportunity cost of employment for women: health policies reducing maternal mortality and fertility, education expansion increasing productivity and employability, technological change increasing women's household productivity, the provision of care for children and the elderly, and legal reforms benefitting women's empowerment.[7]

There are a number of other factors that interact with this process that may counteract the U-feminization process. First, the relationship between industrialization and FLFP is ambiguous, as certain manufacturing activities may be female-intensive. Second, many developing and emerging economies are not following the structural change today's advanced economies have experienced, or at least not with the same magnitude. Many countries are going through shorter, and less intense processes of industrialization, and a more rapid transition to services, some at low levels of GDP per capita. Third, cultural approaches posit that there are culturally specific norms that may be more or less conducive to FLFP. Typically, more conservative, religious societies may have stronger patriarchal values, discouraging FLFP, while conversely, ex-communist societies have higher levels of FLFP. A number of factors increasing the opportunity cost of employment stated above may capture part of the specificities that seem culture-specific. Through the various policies or secular transformations, the "cultural" component may, in turn, be subject to change (Fernández 2013). Fourth, education may also increase productivity within the household (e.g., child rearing) in which case there is a trade-off with labor participation, which is complementary to the "education for marriage" argument. Overall, FLFP is affected by the magnitude and timing of these factors and the incidence of reverse causality.

The LFP rate is the ratio of employed and unemployed individuals to the working age population. The female–male comparison reveals that

[7] See Besamusca et al. (2015) for a comprehensive cross-country assessment of the role of these various factors and age effects on FLFP.

women participate less in the countries selected. This is true for both total population (all educational levels) and the population with advanced levels of education (Table 12.5). However, the gap is lower for the latter. This implies that indeed women with higher education participate more. A similar conclusion can be reached by comparing FLFP rates between total population and population with higher education. The gap between the participation rates of total female population and female population with advanced levels of education is highest in Egypt, Tunisia, and Turkey, which are all Muslim countries. These countries have respectively, 23, 25.6, and 33.5% LFP for the total female population, against 65.7, 59.7, and 72.3% LFP for the female population with higher education.

Kyrgyzstan and Pakistan stand out as outliers. Kyrgyzstan and Indonesia are the Muslim countries of the sample with higher FLFP rates, closer to non-Muslim countries. At the other extreme, in Pakistan, not only is the LFP for total female population low (24.2%), close to rates for Egypt and Tunisia, but the LFP for women with advanced levels of education is also extremely low (39.1%), far behind the rate in the Philippines, the country with the second lowest rate (56.7%).

The unemployment rate, which is the ratio of unemployed to labor force, is higher for populations with advanced levels of education, except in Kyrgyzstan and Poland for the female population. The gap is highest in Egypt, Tunisia, and Turkey where the unemployment rate for the total female population is 30.8, 42, and 17.9%, respectively, and for the female population with advanced education is 45.5, 34.6, and 59.4%. These rates are 6.1 and 40.2% in Pakistan. These rates are higher than non-Muslim countries with comparable levels of development.

This is an important difference. Given that for the female population the share of labor force and unemployment for those with higher education in these countries is similar to other non-Muslim countries (except Pakistan), the relatively steep unemployment rate for highly educated women (defined as the ratio of unemployed with higher education to labor force with higher education) is an issue. There are two possible explanations for this: a supply-side argument outlining that labor force attachment is greater for women with higher education, and a demand-side argument according to which labor market conditions may be unfavorable.

Table 12.5 Labor force participation, and unemployment and employment rates

			Kyrgyzstan	Pakistan	Philippines	Vietnam	Egypt	Tunisia	Indonesia	Thailand	Turkey	Poland
		Education level	2013	2015	2016	2017	2016	2013	2017	2016	2017	2017
Female	Labor force	Total	49.2	24.2	49.4	71.5	23.0	25.6	52.2	60.2	33.5	48.4
	Labor force	Advanced	67.9	39.1	56.7	87.8	65.7	59.7	79.5	83.0	72.3	77.3
	Unemployment	Total	9.7	6.1	5.2	1.7	23.6	23.0	3.9	0.7	13.9	4.9
	Unemployment	Advanced	6.7	40.2	6.5	4.5	30.8	42.0	4.9	1.6	17.9	2.6
	Employment	Total	44.5	22.7	46.8	70.2	17.6	19.7	50.1	59.8	28.9	46.0
	Employment	Advanced	63.4	23.4	53.0	83.9	45.5	34.6	75.6	81.7	59.4	75.3
Male	Labor force	Total	76.4	79.7	77.6	81.1	69.6	70.0	81.8	76.9	72.4	65.2
	Labor force	Advanced	85.6	90.0	71.5	87.5	87.1	67.2	91.3	85.9	86.4	84.3
	Unemployment	Total	7.4	2.8	5.6	2.1	8.8	13.3	4.4	0.7	9.4	4.9
	Unemployment	Advanced	8.2	9.6	8.5	3.5	14.8	20.1	4.3	1.4	8.6	2.2
	Employment	Total	70.7	77.5	73.2	79.4	63.5	60.7	78.3	76.4	65.7	62.0
	Employment	Advanced	78.6	81.4	65.5	84.4	74.2	53.7	87.4	84.7	78.9	82.4

Source ILOSTAT-ILO, https://www.ilo.org/ilostat/, data for the most recent year available

Labor market attachment is greater at higher levels of education, especially in the case of women. In other words, jobless women with higher education who are willing to work are likely to search for jobs more actively than those without education: because the opportunity cost of employment is higher, they will search with greater intensity when jobless. Search intensity is higher if reservation wages are higher, i.e., if the opportunity cost of actively searching for a job is not high. The latter depends on overall household income and wealth, which is likely to be greater among populations with higher education, in which case, income differences between higher and lower educated households partly explain differences in female unemployment rates at different educational levels. As the definition for unemployment entails a jobless individual to be actively seeking a job, and that actively seeking a job has a cost, it is expected that jobless women with higher education are more likely to search actively, i.e., to be counted as unemployed, especially with respect to women without higher education. Can we assert that the labor market attachment of women in these countries with advanced levels of education is higher than those in other countries considered here with similar levels of development and labor force and unemployment compositions? Looking at the unemployment rates of men with further education we observe that unemployment is also a serious issue among men with tertiary education, especially in Egypt (14.8%) and Tunisia (20.1%). These figures imply that there may be issues related to market conditions, rather than gender.

The employment rate can be considered as an indirect measure of market opportunities. The employment rate is the ratio of employed individuals to the working age population, which includes all individuals of working age regardless of their participation in the labor force. Unemployment has a narrow definition, in that only individuals not working, ready-to-work, and/or searching actively for a job are considered unemployed. The intensity of job search is an ambiguous issue, and survey participants' responses are subjective. Hence, the employment rate can be considered an inverse of the lack of job opportunities as non-employment includes all jobless people. Admittedly, this measure also has its limitations: as mentioned, joblessness may be a choice, in which case the employment rate is used as a supply-side measure, or women may self-select into higher paid jobs, requiring higher skills and education, if the opportunity cost

of employment is higher. Nevertheless, its comparison with unemployment rates and using cross-country evaluation can give an idea of demand conditions.

If discrepancies are high across countries in terms of employment and unemployment rates relative to LFP rates, we may have a differentiated picture of labor market conditions. There is a negative relationship between employment and unemployment rates, implying that low employment rates are probably not only a supply-side choice issue. Clearly, in Tunisia and Egypt more highly educated women participate in the labor market and are confronted with poor employment opportunities. Alongside high unemployment rates, employment rates range among the lowest: 45.5 and 34.6% in Egypt and Tunisia, respectively, for the female population with advanced levels of education, and 17.6 and 19.7% for the total female population. Turkey also has a relatively low employment rate among highly educated women (59.4%) when compared with Poland (75.3%) or Thailand (81.7%). Again, Indonesia and Kyrgyzstan have the highest rates (75.6 and 63.4%) and Pakistan the lowest (23.4%) among the selected Muslim countries.

Labor Market Opportunities

As mentioned above, the U-feminization hypothesis has been extensively explored; while early studies found support for the hypothesis, more recent work is ambiguous. The ambiguity mainly comes from the fact that the structural change patterns of today's developing economies are highly diverse, and most do not follow the pattern or pace of current advanced economies (Gaddis and Klasen 2014): many go through a less intense industrialization process and tertiarize at earlier stages of GDP per capita. Likewise, the relationship between industrialization and FLFP is ambiguous as improved working conditions can have a positive effect, whereas the capital-intense highly technological content of production can have a negative effect (Kucera and Tejani 2014), and trade can have a positive impact through increased demand or a negative impact if exports are capital-intensive and have a relatively high technological content. Nevertheless, a less controversial result seems to be the relationship between tertiarization

and increase in FLFP. Whereas early studies tested the validity of the U-shaped feminization trend, and the indicator used for development was GDP per capita, Gaddis and Klasen (2014) argue that this indicator has measurement flows and that the share of services in production is a better indicator, capturing directly structural change.

Pakistan is the country with the highest share of employment in agriculture and the lowest in services in the female population: 71.8% of women are in agriculture against 30.6% of men, and 13.6% of women are in services against 41.3% of men (Table 12.6). The figures for men are within the normal range, whereas those for women stand out as outliers. Given that female participation in agriculture is likely to be higher, this evidence, together with the labor market indicators discussed in section "Labor Market Indicators", imply that there is a serious obstacle for women accessing urban, tertiary activities, hindering FLFP at all educational levels. Agricultural employment is important in Vietnam for both women (34.1%) and men (36.8%). Outside Pakistan and Vietnam, all other countries have total figures for employment in services that range from 45.2% (Thailand) to 57.9% (Poland). Egypt and Turkey are also two countries where the percentage working in agriculture in terms of total female employment is high compared with men, although to a lesser extent. The share is respectively 38.3 and 28.3% for women against 22.1 and 15.4% for men.

One important characteristic of Middle East and North African (MENA) countries is the prevalence of public employment (Assaad 2014). In the oil-rich economies, this is based on the availability of rents and the political economy of rent distribution and the specific state-society equilibrium on which these societies' governance is based. In other MENA countries the large public sector has been historically a result of centralized bureaucratic states' polities characterized by relatively weak non-state actors, where state-led development strategies, in time, created rent creation and distribution mechanisms that formally and informally constituted entry barriers that prevented the development of private sector employment, not only by limiting job creation but also by the high public–private wage differentials (public wage premium). Besides higher wages, the social security system has patriarchal features (extended benefits to spouse and children through healthcare coverage, survivor benefits, etc.) which cause an income effect for married women, by increasing their

Table 12.6 Sectoral composition of employment

		Kyrgyzstan	Pakistan	Philippines	Vietnam	Egypt	Tunisia	Indonesia	Thailand	Turkey	Poland
		2013	2015	2016	2017	2016	2013	2017	2016	2017	2017
Female	Agriculture	32.9	71.8	17.3	41.5	38.3	11.8	28.8	28.4	28.3	8.8
	Market services	27.2	2.0	44.1	25.1	13.8	18.5	34.9	35.2	29.1	37.2
	Public services	28.9	11.6	28.7	11.7	41.4	35.4	19.6	15.9	27.1	36.4
	Services total	56.1	13.6	72.8	36.8	55.2	53.9	54.5	51.1	56.2	73.6
Male	Agriculture	30.8	32.0	33.3	38.9	22.1	16.5	32.0	33.5	15.4	11.3
	Market services	31.3	30.6	33.8	22.2	29.0	30.4	30.2	29.8	38.1	32.7
	Public services	11.6	10.7	10.7	9.4	18.1	19.7	12.3	10.4	15.1	12.5
	Services total	42.9	41.3	44.5	31.6	47.1	50.1	42.5	40.2	53.2	45.2
Total	Market services	29.6	24.1	37.8	23.6	25.8	27.4	32.0	32.3	35.3	34.7
	Services total	48.1	35.0	55.5	34.1	48.9	51.1	47.2	45.2	54.1	57.9

Source ILOSTAT-ILO, https://www.ilo.org/ilostat/, data for the most recent year available

opportunity cost of employment. On the other hand, scarcity of private sector employment in market services limited employment opportunities to women no longer employed in agricultural activities. Although policies have been subject to change over the last decade, change is slow. Consequently, we expect low levels of the share of female employment in market services to decrease LFP. As a share of services, market services in total employment are not significantly different across countries. Put differently, there are no major differences in terms of the tertiarization of employment (Table 12.6): most of them have a share in services above 45%. The only two countries that remain rural are Pakistan and Vietnam. The main differences are gender differences: Pakistan, Egypt, Tunisia, and Turkey are the countries where share of market services is lower in total female employment (2, 13.8, 18.5, and 29.1%, respectively) compared to men's (30.6, 29.0, 30.4, and 38.1%). In Egypt and Tunisia this is partly due to the inflated public sector employment in total female employment (41.4 and 35.4%, respectively); note that this is also an issue for male employment in these countries, although at a lower magnitude (18.1 and 19.7%).

High unemployment among the population with tertiary education has also been interpreted as the result of a mismatch due to education quality or field of study. Tunisia is a very interesting example as, since the late 2000s, it is the country that has performed the worst among the selected countries. Paradoxically, it ranks among the best performers in terms of expenditure on education and tertiary education (Table 12.1) and share of female graduates from tertiary education. At the aggregate level, the issue of a mismatch of the female population at the tertiary level is assessed by the percentage of female graduates from science, technology, engineering, and mathematics (STEM) (Table 12.7). Here, again, Tunisia outperforms the other selected countries. There is not much difference across other countries where the percentages of female graduates from STEM programs range from 30 to 40%.

Table 12.7 Percentage of graduates from science, technology, engineering, and mathematics programs in tertiary education who are female

	2011	2012	2013	2014	2015	2016
Egypt						36.9
Indonesia				37.5		
Kyrgyzstan	40.0	41.3			30.2	29.1
Pakistan						
Tunisia		43.1			53.3	54.4
Turkey	33.2	34.6		34.7		
France		30.3	30.8	30.6	31.2	
Germany						
United Kingdom	30.3	30.6	37.3	37.9	38.0	
United States	30.9	31.0	31.6	31.9	33.4	

Source World Development Indicators

Conclusions

Unlike male LFP, FLFP has evolved differently over time and space. Following differentiated gender roles, women's opportunity cost of employment has been larger. Among other factors, economic modernization and secular structural change of production, on the one hand, and education expansion, on the other, has affected men and women in different ways. Among regional and cultural differences, the low levels of FLFP in the MENA region and Muslim societies at large has been subject to intense research, with controversial results. Religiosity, and relatedly conservatism and patriarchal values, are associated with stigmatized FLFP and a greater opportunity cost of female employment. Nevertheless, recent cross-country evidence suggests that once controlling for country-specific characteristics other than values that affect FLFP, the role of Islam may not be greater than that of Catholicism, and that FLFP is higher, relatively speaking, among Protestant populations and those with no religion,[8] and the interaction of greater FLFP, education, and transformation of cultural values reveals complex causalities.

[8]See Gaddis and Klasen (2014, pp. 645, 659) for a summary of contrasting findings. See also Bussemakers et al. (2017).

Considering six predominantly Muslim-populated economies from different regions and historical backgrounds (Egypt, Indonesia, Kyrgyzstan, Pakistan, Tunisia, and Turkey), our descriptive analysis systematically compares these countries with other non-Muslim countries at comparable development levels, using labor market indicators, namely LFP, employment, and unemployment rates, and distribution of populations according to educational levels, by gender breakdown, for populations with all educational levels versus populations with advanced-level education.

At comparable levels of development and public expenditure in tertiary education, the expansion of populations with higher education does not seem to have substantially impacted the distribution of the female labor force, and unemployment and employment, except in Pakistan where the number of women with advanced education is particularly high among the female unemployed population relative to the male population and to other countries. However, in terms of LFP, and unemployment and employment rates of the female population with advanced education, the comparisons suggest large discrepancies across countries.

We find four types of countries under discussion. Indonesia and Kyrgyzstan are two Muslim countries that have features that do not match FLFP patterns typically attributed to Muslim populations. Overall, there are no, or very small, gender gaps for all labor market indicators. These two countries are also relatively poor countries but are undergoing structural change. Indonesia's deruralization process is effectively being accompanied by a tertiarization process where labor market opportunities are expanding into market services, and by an expansion of the labor force and employment with higher education. The increase in opportunities and educated populations has led to an improvement in FLFP with advanced education where the employment rate has been increasing and unemployment decreasing. Nevertheless, the significantly poor access to higher education in Indonesia suggests that there is greater room for progress. Kyrgyzstan, due to its communist past, is characterized by a larger public sector and a highly educated population and, besides gender parity, performs within world averages.

Pakistan is the other less wealthy country whose performance is in opposition to Indonesia's and Kyrgyzstan's in terms of all the indicators. As such, it can be qualified as the country that has the most gender-biased

FLFP pattern, closest to the culturalist argument where the fact of being an Islamic State may also be institutionally reinforcing patriarchal values. Alongside very poor gender parity across the indicators, it is the country that is undergoing the most gender-biased structural change, where FLFP is low and female employment continues to be largely in agriculture, as opposed to male employment which is more prevalent in the tertiary sector. Pakistan is also experiencing an increase in its educated population, including the female population, whose LFP is increasing; however, the unemployment rate is also increasing while that of employment remains stable despite the low levels of women with higher education.

The issue of an increasing number of more highly educated women in the female working age population and female LF, accompanied by poor employment and unemployment rate indicators, is also a feature of the third group of countries, constituted by Egypt and Tunisia. These countries also exhibit less gender parity compared with the first group of countries. The most important characteristic of this group is the importance of public services. Low FLFP in the region has been attributed to a strong public sector and employment which tend to limit market employment opportunities—even more so for women. Compared with the rest of the world the low FLFP in Egypt and Tunisia is related to the relatively low levels of female employment in market employment. Female employment rates are low and unemployment rates high for all types of population. More importantly, unemployment rates for populations with advanced education are increasing for both genders, although in terms of male unemployment, rates are relatively low. Tunisia's situation is worse as the employment rate for men with higher education is below world average, and the unemployment rate for the total male population is above world average.

Turkey stands between the first group of countries and Egypt and Tunisia. The percentage of market service employment has been substantially increasing, and that of public services has not been as high as in Egypt and Turkey. The number of people with advanced levels of education (both male and female) is relatively high, close to figures for Kyrgyzstan, Egypt, and Tunisia. Turkey records the highest improvement in FLFP and gender parity of LFP, as market service employment opportunities expand.

The growth of higher education is expected to increase FLFP; however, this trend is also accompanied by high female unemployment rates for populations with advanced education in some countries with large educated female workforces. The evidence suggests that further research on labor market opportunities and differences of income effects and labor market attachment across education levels (and possibly cohorts) may contribute to our understanding of the differences between countries.

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