IMPACT OF STRUCTURAL CHANGE AND HUMAN CAPITAL INVESTMENT ON FEMALE LABOR FORCE PARTICIPATION RATES: A CROSS-COUNTRY ANALYSIS OF THE MIDDLE EAST AND NORTH AFRICAN REGION

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Abstract: With the lowest rates of female labor force participation (FLFP), the Middle East and North African region stands out from the rest of the world. This article uses a regional cross-country analysis of the factors affecting FLFP rates in the region and provides possible explanation for the regional patterns. We find no evidence of a possible causal link between female education and increased labor participation or increased FLFP and economic growth. However, there is strong evidence for the existence of a positive relationship between increased FLFP and the growth of the service sector. This positive relationship is supported with the existing literature and suggests that women in the Middle East and North Africa are not employed as a direct result of their educational standards, but rather as a response to growing need for them in a more female-friendly service sector.

Keywords: FLFPR, MENA, Human Capital, Service Sector, Economic Growth

Özet: Orta Doğu ve Kuzey Afrika (MENA) bölgesi dünyanın en düşük kadın işgücüne sahip bölge olarak öne çıkmaktadır. Çalışma karşılaştırmalı ülke analizi yaparak bu duruma neden olan faktörleri ortaya çıkarmakta ve bölgesel özelliklerle ilgili açıklamaklar içermektedir. Çalışma, eğitimin kadın işgücüne katılımını artırdığı yönünde bir nedensellik ilişkisi bulamadığı gibi artan kadın işgücüne katılım oranı ile ekonomik büyüme arasında da bölge için bir nedensellik ilişkisine rastlamadı. Ancak çalışma artan kadın işgücüne katılım oranı ile hizmetler sektörünün gelişmesi arasında pozitif güçlü bir ilişki olduğunu ortaya koydu. Mevcut literatürle de uyum gösteren bu bulguyu çalışma, bölgede kadın iş gücüne katılım oranının eğitim gibi nedenlerden artmadığı ancak dünyanın her yerinde kadına daha uygun çalışma imkanı sunan hizmetler sektöründeki ihtiyaç ile açıklamaktadır.

Anahtar Kelimeler: Kadın İşgücüne Katılım Oranı, MENA, Beşeri Sermaye, Hizmet Sektörü, Ekonomik Büyüme

1. INTRODUCTION

Numerous studies have been conducted to seek for an answer for the role of female labor supply on economic growth in developing economies. With the forces of globalization, increased educational attainments, changing economic structures and increased awareness of independence and self-support on the side of women, national statistics of many developing economies show signs of increased FLFP in the economic arena. Accounting for the factors that have resulted in this increase, one can identify a number of reasons that might have an influence in this upward trend. Using existing data for the Middle East and the North African (MENA) region, we aim to pinpoint the relationship between educational attainments of women, the increased share of the service sector, increased FLFP and economic growth rates in the region. Even though there are many studies analyzing the structure and behavior of female labor supply, quite few studies focus on the MENA region.

The choice of MENA is not a random one. The Middle East and North Africa, as a region, has the lowest FLFP rates in the world with a mere 21% in 2010 up from 19% in 2002. These numbers are substantially below world averages with a 63.6% in East Asia and the Pacific region in 2010, 50.3% in Europe and Central Asia, 50.3% in the European Union, 53.2% in Latin America and the Caribbean, 31.7% in South Asia, and 63% in Sub-Saharan Africa (World Bank, 2012). Figure 1 below indicates the regional differences in FLFP rates in 2010.

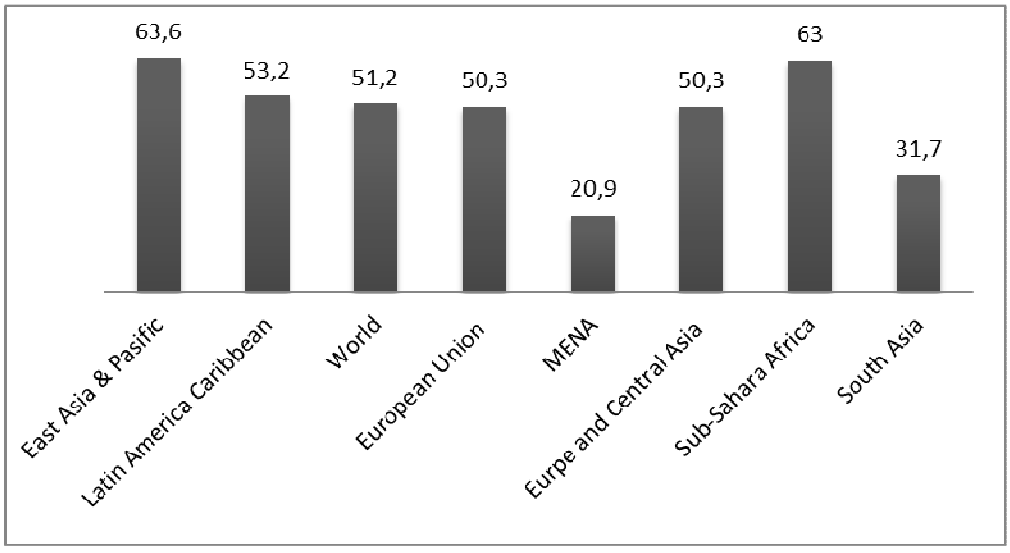

Figure 1: FLFP rates in various regions of the world in 2010 (as percent of female population ages 15 +)

Source: World Bank, WDI Online 2012, http://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS/countries/1W-Z4-ZQ-Z7-ZJ-ZG-8S?display=graph, 22.9.2012

As the region with lowest FLFP rates, the rate of return to increased female labor force participation might be more significant compared to the rate of return to increased

female participation in regions that already have high participation rates. One way of hypothesizing the FLFP and the impacts of increased participation rates at the national economic level is to identify possible cause and effect relationships. This study uses a regional cross-country analysis of the factors affecting FLFP rates in the MENA region and provides possible explanation for the regional patterns to show the similarities and differences from the literature.

The objectives of this paper are different from many other studies in the field. While there exist vast amount of research questioning the reasons for increased FLFP, or many other studies analyzing the relationship between human capital investment and economic growth, this paper does things a little differently. As opposed to formulating growth regressions in order to look for a relationship between FLFP and economic growth, this paper looks for causal relationships to explain female integration into the labor force in the MENA region. It will also be of interest to study the relationship between changing industrial organization and FLFP rates as well as the relationship between educational attainments and integration into the labor force. Finally, the paper will address the possible causal relationship between increased FLFP rates and economic growth in the region.

2. THE ROLE OF SERVICE SECTOR ON ECONOMIC GROWTH

Many studies in the literature analyze the relationship between growth of the service sector and economic development. In his cross country study Gemmell (1982) obtained strong support for the view that service sector has an important effect on economic growth. He also found that service sector expands more rapidly than the industrial sector in all stages of development. Eichengreen and Gupta (2009) worked on two wave model of service sector to analyze the relationship between growth of services and per capita income and they found a positive relation for two satges of service sector. Kuznets (1957), Chenery (1979), and Fuchs (1980) also point out to strong positive association between economic growth and increased share of services. Essentially, the positive association has been tied to fact that a growth in the share of services brings with it necessary structural change. “These included the effect of economies of plant scale in concentrating production in a limited number of localities and thus increasing the need for distributive services, the increase in financial services with growing personal wealth, the expansion of government services by the shift away from family and rural production to production by units employing wage earners concentrated in urban areas, and the increase in military expenditures” (Kuznets, 1966 adopted from Kravis, Heston and Summers, 1982). Fuchs (1968), as one of the pioneering advocates of the relationship between the service sector employment and economic growth shows the precise relationship between employment in alternative industries and economic growth in 20 OECD countries by the following figure where the strong positive relationship between service sector employment and increase in per capita income is accentuated.

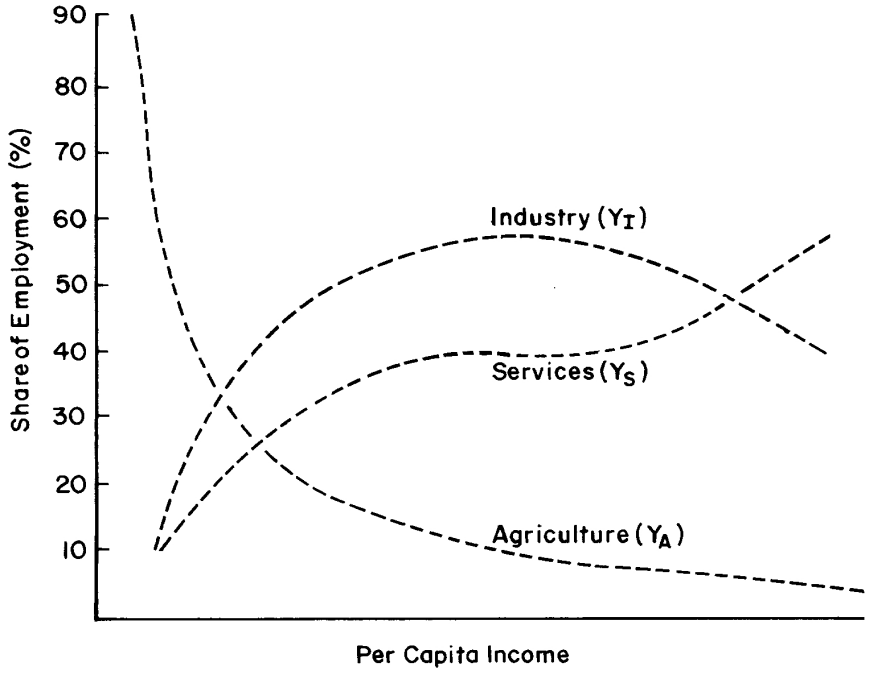

Figure 2: Relationships between Sector Employment Shares and Per Capita Income

Source: Fuchs V. (1968), *The Service Economy*, NBER, http://www.nber.org/ books/fuch68-1, retrieved at 10.5.2011.

A similar analysis could be conducted for the MENA region as a whole to observe the trending behavior of the sectoral growth of GDP and their relationship with per capita income. Figure 3 below summarizes the shares of agriculture, industry and the services sectors in GDP in a time series between 1980 and 2007. Even though the share of services in GDP exhibit an increasing pattern in many parts of the world, surprisingly, the MENA region as a whole fail to provide evidence for this trend. The share of the service sector exhibits a stationary path along these years. Given this regional behavior, it should be interesting to observe the individual behavior of the countries within the region with respect to service sector growth and per capita income to unravel any possible causal relationship. Accounting for the individual variances and aggregate regional behavior, we will be able to assess the standing of the region with respect to the wide acceptance in literature pertaining to the positive causal relationship between the share of the service sector and per capita income growth. This comparison is performed in table 1 below:

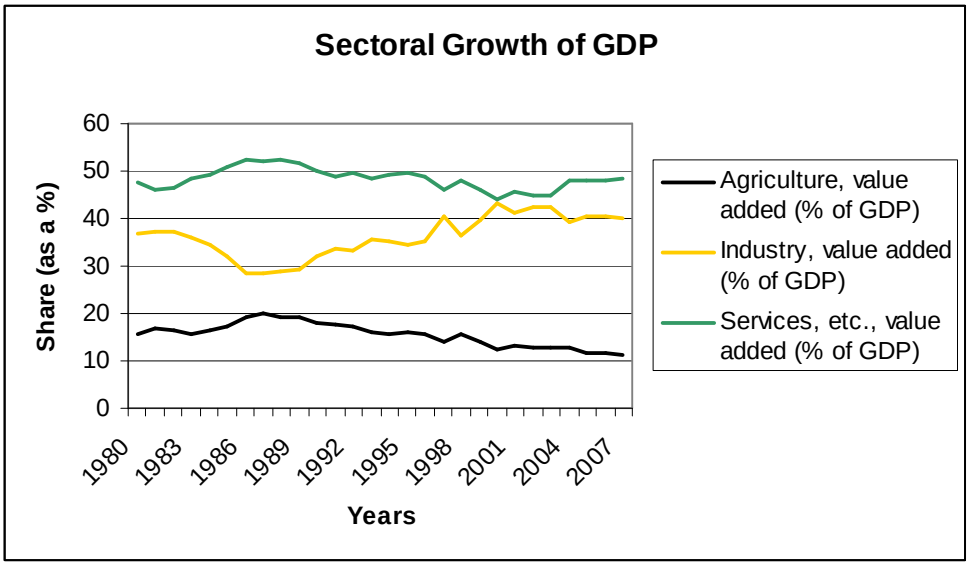

Figure 3: Sectoral Shares of GDP in the MENA region (1980-2007)
Source: World Bank, WDI Online (2012).

Data provided in Table 1 lists the MENA countries according to their growth rates of per capita income. As evidenced by the table, fastest growing countries have also experienced higher growth rates in the share of their service sector compared to the MENA averages, which is found to be 16 percent for the given time period. Based on this data, one might be tempted to suggest a role for the service sector in per capita GDP growth in the region. However, listing the countries according to their service sector growth rates indicates no indication of a relationship of this sort. Table 2 provides evidence of no observable generalizable causality running from service sector growth to per capita income growth in the region.

Table 1: The Relationship between the Share of the Service Sector and Per Capita Growth in the MENA region (1980-2010)

	Per capita GDP Growth Rates			Service Sector GDP Shares		
Country	**1980 ($)**	**2010 ($)**	**Growth %**	**1980 %**	**2010 %**	**Growth %**
Malta	4,481	19,845	**343**	54	65	**20**
Oman	4,512	17,280	**283**	8	43	**54**
Iraq	697	2,565	**268**	16	21	**31**
Tunisia	1,350	4,199	**211**	55	60	**9**
Iran	1,464	4,526	**209**	53	45	**-15**
Egypt	881	2,698	**206**	5	48	**7**
Syria	1,056	2,893	**174**	55	46	**-16**
Morocco	1,036	2,796	**170**	50	55	**10**
Algeria	1,876	4,567	**143**	34	31	**-9**
Jordan	1,931	4,560	**136**	64	66	**3**
Lebanon	3,966	9,228	**133**	67	72	**7**
Kuwait	20,286	41,365	**104**	25	49	**96**
Bahrain	11,479	17,609	**53**	40	59	**39**
Djibouti	1,177	1,203	**2**	76	79	**4**
Saudi A	16,005	15,836	**-1**	27	35	**29**
UAE	46,605	39,623	**-15**	22	46	**109**
MENA Average			**151**			**16**

Source: Own Calculations Based on WB, WD Indicators Online (2012)

Those countries that have experienced fastest growth in their service sectors within the 1980-2010 time period are also the ones that have experienced the slowest growth rates in their per capita income, with the exception of Oman. One this note, we cannot plausibly argue for a service-led growth hypothesis in the region but it seems plausible to suggest that those countries that have in fact achieved economic growth realize higher growth rates in their service sector, suggesting a reverse causality as opposed to findings of literary work in this field.

Table 2: The Relationship between the Share of the Service Sector and Per Capita Growth in the MENA region (1980-2010)

	Per capita GDP Growth Rates			Share of the Service Sector as a % of GDP		
Country	**1980 ($)**	**2010 ($)**	**Growth %**	**1980 %**	**2010 %**	**Growth %**
UAE	46,605	39,623	**-15**	22	46	**109**
Kuwait	20,286	41,365	**104**	25	49	**96**
Oman	4,512	17,280	**283**	28	43	**54**
Bahrain	11,479	17,609	**53**	40	59	**48**
Iraq	697	2,565	**268**	16	21	**31**
SA	16,005	15,836	**-1**	27	35	**29**
Malta	4,481	19,845	**343**	54	65	**20**
Morocco	1,036	2,796	**170**	50	55	**10**
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Syria	1,056	2,893	**174**	55	46	**-16**
MENA Average			**151**			**16**

Source: Own Calculations Based on WB, WD Indicators Online (2012)

As surprising as this reverse causality might sound, it should be noted that it is a preliminary finding that needs to be substantiated with empirical evidence. However, it does possess a quality that is worth a closer analysis. Economic growth represents a real increase in GDP, which necessitates better use of resources and efficient allocation. Those economies that achieve efficiency in resource allocation not only achieve it in goods production, but also in services production. As a result, efficiency in the service sector will enable better marketing of these services both domestically and abroad, suggesting a parallel growth to the one experienced in GDP.

2.1.Service Sector Growth and Female Employment

A substantial number of studies indicate the existence of a strong relationship between the role of service sector and increased FLFP. Gilroy and Warren (1976:415) "argue that labor force participation maybe determined in part by employment opportunities for secondary workers". This argument is based on the integration of women into the labor force as wage earners by opting out of their role as unpaid domestic caregivers. In other words, FLFP could be seen as being contingent upon the availability of female-friendly employment in the service sector. Statistical evidence also points out to a relationship in this direction. "In fact, in many countries, it was the service sector – rather than agriculture and manufacturing – that absorbed much of the increase in female labor force participation between 1970 and 1990 (from 26 percent to

35 percent in the Middle East and North Africa)" (Kabeer, 2008). Furthermore, Duffield (2002) reports that in the United Kingdom, "ninety per cent of jobs taken by women are in services. Some 35 per cent in March 2002 worked in public administration, education and health; 26 per cent worked in distribution, hotels and restaurants; and 19 per cent worked in finance and business services. Less than one in ten women's jobs were in the manufacturing sector." Further evidence comes from the Euro zone where 82 percent of all working females were employed in the service sector in 2007 (WDI, 2009). Schultz (1990), in his cross-sectional analysis found out that 1% increase in income decreases 0.20% the female agricultural share of the labor force. According to Schultz the decline in agricultural share of female employment results with increase in service sector female employment, suggesting a switch of female employment from the agricultural sector to the service sector. As a consequence, the service sector grows, hence increasing GDP growth. He supported his findings with Kuznet's (1957) study. With all this information intact, there seems to exist a strong correlation with service sector growth and female employment. The following table provides evidence for this precise relationship between the service sector growth and FLFP in the MENA region.

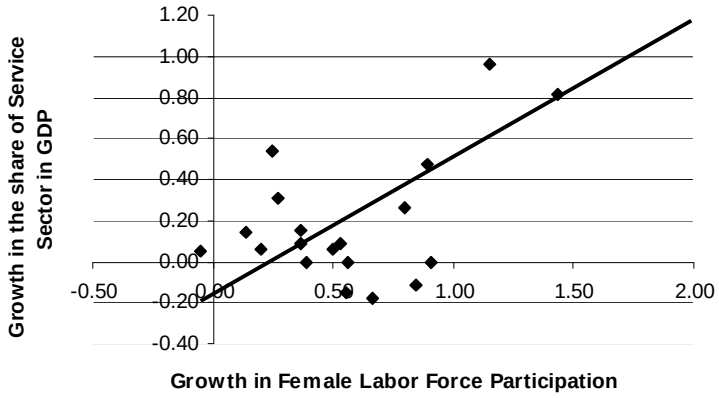
Table 3: The Relationship Between Female Labor Force Participation and the Share of Service Sector in MENA

	Female Labor Force Participation Rate		%	**Share of the Service Sector as a % of GDP**		%
Country	1980	2010	Growth	1980	2010	Growth
UAE	16	44	**175**	22	46	109
Bahrain	18	39	**116**	40	59	48
Kuwait	20	43	**115**	25	49	96
SA	10	17	**70**	27	35	30
Egypt	15	24	**60**	34	48	41
Malta	22	35	**59**	54	65	20
Jordan	10	15	**50**	64	66	3
Oman	20	28	**40**	28	43	53
Tunisia	19	25	**32**	55	60	9
Iraq	11	14	**27**	16	21	31
Morocco	22	26	**18**	50	55	10
Lebanon	20	23	**15**	67	72	7
Djibouti	32	36	**13**	76	79	4
Syria	12	13	**8**	55	46	-16
Algeria	14	15	**7**	34	31	-9
Iran	20	16	**-20**	53	45	-15
MENA Average						16

Source: World Bank, World Development Inidcators Online (2012).

Data provides evidence for a strong relationship between female employment and service sector growth rates in the region with a few exceptions. Top three fastest growing FLFP rates are also in top four countries with fastest service sector growth rates. Figure 4 below also strengthens this argument by relating the growth rates in the service sector and FLFP rates on a single diagram for the entire region.

Figure 4: Correlation Between FLFP rates and the Share of Services in GDP in MENA



Source: Own calculations based on WB, WD Indicators (2012)

With the existing relationship between economic growth and the service sector and the service sector with female employment, we shall next analyze the relationship between female education and female labor supply in order to be able to suggest any possible causation between the role of the service sector and FLFP rates. Hence, what we are trying to answer is, are more women working because there are more women-friendly service sector jobs? Or are they more eligible to work with their educational credentials?

2.2. Education and Female Labor Supply

One way of assessing the importance of factors behind increased FLFP rests in the analysis of the causation between female education and labor supply. However, the number of studies in this field is far below sufficient for the developing parts of the world. Theoretically speaking, higher education results in better skills and qualifications in obtaining employment, hence, enhances the chances of finding a job. Euwals, Knoef and Vuuren (2007; 2011) estimate that one-sixth of increased FLFP in the Netherlands between 1992 and 2004 has been due to increased female schooling. In Turkey, Tansel (2002) suggests that "participation rates increase sharply by level of education above middle school and vocational middle school and highest rates are achieved at the university level". Psacharapoulos and Tzannatos (1989) also point out that "education is seen as a potential booster of the officially recorded female labor supply in developing countries". World Bank data on female education and labor force participation seem to conform to the statements above. According to regional averages in the Middle East and North Africa, the increase in FLFP from 18 percent in mid-1990s to 21 percent in 2010 is accompanied by an increase of females in tertiary school enrollment from 9 percent in early 1990s to 25 percent in 2006. (WDI, 2009) Further evidence comes from Lamelas (2004): "The increase in percentage of higher school attained in the female population is a main factor in the growing women's labor force participation rates in Latin America, in two past decades." Champlou et al. (2011) found out that there is a positive relation with the higher education and FLFP in MENA region but not with the lower levels of education.

FLFP rates differ according to education levels. It is high for illiterate women; (because they are working in agricultural and informal sector) lower for primary and secondary graduates and higher for college graduates (Cameron, Dowling and Worswick, 2001). Kottis (1990), in his case study found out that development stage of a country determines the effect of education on FLFPR. In other words FLFPR and education has a U-shaped relation. At the initial stage of the development, education will not affect the FLFPR positively (Kottis 1990). Kottis explains this result with the market being unready for provision of jobs for the newly qualified female labor force seeking employment. Perhaps, this finding suggests that increased female labor force participation is not only related with higher educational attainments, but also with the availability of jobs for educated women, which is relateded with the growth of the service sector. We shall now turn our focus on the relationship between female

education and FLFP rates for the MENA region. Table 4 below lists all of the MENA countries according to their growth rates of FLFP.

Table 4: A Comparison of FLFPR and Female Education in the MENA region (1980-2010)

	Female Labor Force Participation Rate		%	Female secondary School Enrollment rates		%
Country	**1980**	**2010**	**Growth**	**1980**	**2010**	**Growth**
UAE	16	44	**175**	45	86	**69**
Bahrain	18	39	**116**	54	104	**93**
Kuwait	20	43	**115**	74	98	**32**
SA	10	17	**70**	22	86	**291**
Egypt	15	24	**60**	38	85	**124**
Malta	22	35	**59**	76	100	**32**
Jordan	10	15	**50**	71	88	**24**
Oman	20	28	**40**	4	86	**-**
Tunisia	19	25	**32**	19	87	**358**
Iraq	11	14	**27**	31	36	**16**
Morocco	22	26	**18**	18	45	**150**
Lebanon	20	23	**15**	55	85	**55**
Djibouti	32	36	**13**	6	18	**200**
Syria	12	13	**8**	35	65	**86**
Algeria	14	15	**7**	24	86	**258**
Iran	20	16	**-20**	32	78	**144**

Source: World Bank, World Development Indicators Online (2012).

Using a similar approach to those in tables 1, 2 and 3, we try to find traces of any possible causal relationship between the two variables in the region. Countries with fastest growth in their FLFPR tend to observe high rates of growth in female secondary education. However, we also observe an increase in female education in those countries that have not achieved fast growth in FLFPR. Hence, one cannot draw any conclusions as to whether FLFP is a condition that promotes increased educational standards for women. We are urged to perform a closer analysis of the relationship by looking at it from the opposite angle: How have the countries with fastest growth in female educational standards performed with respect to FLFPR?

It is impossible to draw a conclusion for the precise relationship in the MENA region given the inconsistent data. Perhaps, this inconclusive observation may be substantiated with further empirical tests on the available data.

Finally, we will discuss the growth promoting aspect of increased FLFP rates in the region. Are countries with faster female integration in their economies are able to make use of the previously unexplored female capacity in the economic arena?

3. FLFP AND ECONOMIC GROWTH

One of the strong arguments for the correlation between FLFP and economic development stems from the work of Durand (1975). This argument suggests a U-shaped relationship between the growth of FLFP rates and the development stages of economy. At low levels of economic development, countries face with high FLFP rates in terms of family-based agricultural work. As the economy becomes more market oriented and more capitalized, employment opportunities especially for women tend to fall. Finally, with more advances in technology and the shift towards service sector orientation, demand for female labor also tends to increase (Schultz, 1991). Pampel and Tanaka, (1986) and Kottis, (1990) found out almost same positive relationship between technology service sector and FLFP. Hence, our findings which shows that there is positive relation between service sector expansion and female employment in the MENA region conform to this literature.

As far as the precise relationship between increased FLFP in the economy and GDP, literature fails to present substantial evidence. Common sense follows that female integration into employment should increase efficiency and productivity as previously unused capacity is now being put into use. However, research in this field is predominantly focused on the link between female employment and stages of economic development rather than growth. Among the very few literary works of female labor and economic growth nexus, Claudia Goldin (1995) suggests that in the United States, "Had the female labor force not expanded over this period (1890-1980), national income per capita would probably have been at least 14% lower than it actually was". Mulligan and Rubinstein (2004), cover the period after 1973 in the U.S. economy and find that "essentially all earnings growth, and a large fraction of GDP growth, since 1973 has derived from the changing human capital supply of women." In the MENA region, there is conflicting evidence regarding the impact of increased female employment on economic growth. Table below lists the MENA countries according to the rate of economic growth achieved between 1980-2010.

Table 5: FLFPR and Economic Growth in MENA

	Per capita GDP Growth Rates			**FLFPR Growth Rates**		
Country	**1980 ($)**	**2010 ($)**	**Growth %**	**1980 %**	**2010 %**	**Growth %**
Malta	4,481	19,845	**343**	22	35	**59**
Oman	4,512	17,280	**283**	20	28	**40**
Iraq	697	2,565	**268**	11	14	**27**
Tunisia	1,350	4,199	**211**	19	25	**32**
Iran	1,464	4,526	**209**	20	16	**-20**
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Lebanon	3,966	9,228	**133**	20	23	**15**
Kuwait	20,286	41,365	**104**	20	43	**115**
Bahrain	11,479	17,609	**53**	18	39	**116**
Djibouti	1,177	1,203	**2**	32	36	**13**
SA	16,005	15,836	**-1**	10	17	**70**
UAE	46,605	39,623	**-15**	16	44	**175**

Source: World Bank, World Development Indicators Online (2012).

Even though the MENA countries have experienced various economic growth rates within this time period, they all have observed substantially higher growth rates in female labor force participation. Although Table 6 lists countries according to their rates of per capita GDP growth, we cannot conclude as to whether there is evidence of a positive relationship between the per capita growth rates and growth in FLFP. Perhaps, listing the countries according to their growth rates in FLFP might shed some light on our analysis.

Table 6: FLFPR and Economic Growth in MENA

	Per capita GDP Growth Rates			FLFPR Growth Rates		
Country	**1980 ($)**	**2010 ($)**	**Growth %**	**1980 %**	**2010 %**	**Growth %**
UAE	46,605	39,623	**-15**	16	44	**175**
Bahrain	11,479	17,609	**53**	18	39	**116**
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Iran	1,464	4,526	**209**	20	16	**-20**

Source: World Bank, World Development Indicators Online (2012).

When viewed from this perspective, it is evident that a positive causal relationship does not exist between high growth of female participation and economic growth in the MENA region. Quite the contrary, the very countries that have experienced highest growth in female employment within the past 30 year period have in fact experienced very low and even negative in UAE (United Arab Emirates), which has the highest growth rate in FLFP.

4. CONCLUSION

One solid argument that can be drawn based on the findings of this paper is the fact that female labor force participation tends to respond to increased employment opportunities through the expansion of the service sector. But the study could not find evidence for the relationship between education and FLFP. Even though increased FLFP on and the growth of the service sector seem to be causally related in both directions, we cannot say the same thing about the share of the service sector and economic growth. Even though data on the region suggests that growing countries also

have growing service sectors, those countries having highest growth rates in the share of services do not necessarily have high economic growth rates.

The study found out that there is a strong relationship between female employment and service sector growth rates in the region with a few exceptions. Top three fastest growing FLFP rates are also in top four countries with fastest service sector growth rates. Our findings of the MENA region indicate to the fact that female integration into the labor force becomes possible not because females are more educated and better suited for the jobs with higher qualifications, but rather, more female friendly jobs become available when the service sector expands. Perhaps this is the main underlying reason for our inability to find any causality between increased FLFP and economic growth in the region. The reasons of this finding could be different for each MENA country which differentiates the region from the literature that supports a causal relation between service sector and economic growth. This could be a topic for further studies to investigate why there is a causal relation between FLFPR and service sector growth but there is no causal relation between service sector growth and economic growth.

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