

**CLOSING GENDER GAP IN  
EDUCATION OR ELIMINATION  
OF MALE DOMINATION?  
OCCUPATIONAL GENDER  
SEGREGATION IN NORTH CYPRUS**

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**Abstract:** This study examines if the low rate of labour force participation of women is the result of demand constraint which creates occupational gender segregation in North Cyprus labour market between years 2004-2014. Standardized D-index is used to calculate the level of segregation and to decompose and identify the effect of the changes in the occupational structure of the labour force and the effect of the changes in the gender composition within the occupations on segregation index. The study employed data for nine broad occupational categories (ISCO-88 one-digit) from eleven consecutive Household Labour Force Surveys (HLFS) (2004-2014). The results indicate that over the investigated period occupational gender segregation is persistent and increasing. The findings of the decomposition of the segregation index show that the increase in the index over the investigated period is due to the shifts in the gender composition within occupations indicating gender discrimination in North Cyprus labour market. The investigation of the source of the changes in segregation index by human capital and feminist theories reveals that the low LFP of women in North Cyprus is due to the demand constraints; gender stereotypes and domination of men, more than Turkish Cypriot women personal characteristics.

**Keywords:** *North Cyprus, occupational segregation, dissimilarity index, gender.*

# EĞİTİMDE CİNSİYET FARKININ KAPATILMASI MI, ERKEK BASKINLIĞININ KALDIRILMASI MI? KUZEY KIBRIS'TA MESLEKİ CİNSİYET AYRIŞMASI

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**z:** Yapmış olduğumuz çalışma 2004-2014 yılları arasında Kuzey Kıbrıs emek piyasasındaki kadının işgücüne düşük katılımının sebebinin kısıtlı talep kökenli olup olmadığı araştırmaktadır. Bu amaçla mesleki toplumsal cinsiyet ayrışması ölçümü ve sebepleri ortaya çıkarılmak için Hanehalkı İşgücü Anketi verileri kullanılarak 9 ana mesleki grup için analiz edilmiştir. Elde edilen sonuçlar, ilgili zaman dilimi içerisinde mesleki ayrışmanın kalıcı olduğu ve yükseldiği tespit edilmiştir. Bulgular söz konusu yıllar içinde meydana gelen artışın nedeni net ayrışmadan, yani bireysel meslekler içindeki kadın erkek oranında meydana gelen değişmeden (toplumsal cinsiyet ayrımcılığından), kaynaklandığını ortaya koymuştur. Beşeri sermaye ve feminist yaklaşım kullanılarak ayrışmanın kaynaklarının incelenmesi bu ayrışmanın ve ayrımcılığın kadınların kişisel özelliklerinden çok toplumsal cinsiyet kalıp yargılar ve toplum ve ekonomideki erkek egemen yapıdan kaynaklandığını göstermiştir. Sonuç olarak, toplumsal cinsiyet kalıp yargılar ve erkek egemen yapı nedeniyle oluşan kısıtlı kadın emeği talebi kadının meslek grupları arasında hareketini kısıtlamakta ve işgücüne katılımını düşürmektedir.

**Anahtar Sözcükler:** Mesleki ayrışma, toplumsal cinsiyet, Kuzey Kıbrıs.

## INTRODUCTION

Over the last few decades the labour force participation rate of women has strongly increased in most of the developed and developing countries (OECD, 2004). On the contrary, the labour force participation rate among Turkish Cypriot women has been declining during the past 10 years from approximately 40 percent in 2004 to 35 percent in 2014. However, the skills of women workers have been improving as indicated by their high levels of education which one would expect that this improvement in skill levels of women led to a higher labour market attachment of women. Previous studies on characteristics of female employment and determinant of female labour force participation in North Cyprus suggested gender-based occupational segregation as an important determinant of low labour force participation of women (Güven-Lisaniler, 2010; Güven-Lisaniler, Uğural, 2001; Aldemir, 2002; 2004). They argue that the vertical and horizontal gender-based occupational segregation, by widening the wage gap between men and women deteriorate the position of women in the labour market and decrease women's labour force participation. Due to the lack of the time series data on occupational distribution of the labour force before 2004, those studies based their research on population census data (1996), and qualitative and quantitative surveys held by individual researchers and women NGOs.

The present study is designed to expand the body of research on the extent, trends and sources of occupational gender segregation in north Cyprus. The study aims to do so by measuring, describing and analyzing the trends in occupational gender segregation in 9 broad occupational categories (ISCO-88 one-digit) between the years 2004 and 2014. Eleven consecutive Household Labour Force Surveys (HLFS) from 2004 to 2014 conducted in northern Cyprus were used for this purpose. The data provided by the State Planning Organization (SPO) of north Cyprus government. The SPO has been collecting regular and detailed data on the labour market since 2004. The survey is conducted annually in October by the SPO and is designed to collect information on labour activities of around 3000 randomly selected households.

This study focuses only on Turkish Cypriot labour market because Greek Cypriots and Turkish Cypriots operate in two separate labour markets. Greek Cypriots operate in the labour market of the southern part of Cyprus and Turkish Cypriots operate in the labour market of the northern part of Cyprus due to the political and geographic division of the island as north (Turkish Republic of Northern Cyprus) and south (Greek Cypriot Administration) Cyprus in 1974.

The discussion on the findings will be the last part of the study. Following parts will be based on the available empirical evidences of the previous studies on north Cyprus labour market and findings of the surveys on perceptions in association of the

below mentioned theories in the second part of our article and within the cultural context.

## 1. OCCUPATIONAL GENDER SEGREGATION

This section provides general information about the method used to investigate occupational gender segregation and the two key theories applied to explain the main reason of gender based occupational segregation in north Cyprus labour market.

Gender based occupational segregation is measured by applying different methods in labour market literature. Some of the most popular methods are index of dissimilarity (D-Index), the sex ratio, the WE index, standardized sex ratio SR\*, marginal matching measure the IP index, and the Gini coefficient. The index used in this study is the Duncan index of dissimilarity (Duncan, Duncan, 1955) since it is the most unproblematic measure and it is straightforwardly understood (Blau, Hendricks, 1979; Blackburn, 2011). Duncan index of dissimilarity is applied for different case studies for different countries and regions in academic literature to measure the extent of occupational gender segregation. For instance, Swanson concluded that over the years between 1970 and 2000 there have been a slight decrease in the index for the case of US but still the index value is considerably high that more than half of all working women would have to change occupations to bring about full integration (Swanson, 2003). Sousa (2005) also computed Duncan index of dissimilarity to investigate occupational gender segregation and found that segregation was an important factor limiting female labour force in Southern European countries (Sousa, 2003). Detailed information about the index is given in the fourth section of the article.

There are several theories explaining occupational gender segregation. The causes of occupational gender segregation in north Cyprus are investigated through human capital and feminist approaches. Human capital theory explains gender segregation as an outcome of men and women's different investments in human capital and women's stronger preferences of family compared to men. Different investments in human capital creates gender gap in education limiting number of attainable jobs for women and causing occupational gender segregation in the labour market where women channelled certain jobs that will make it easier to perform family responsibilities and prefer to invest less on their human capital since the occupation they channelled require less qualifications (Busch, Holst, 2011). On the other hand, decrease in gender gap in education increase the access of women to professional jobs such as teacher, lawyer, physician etc. but do not enhance the number of attainable jobs, and women's labour force participation. As a result of massive entrance of women to professional jobs segregation increases. It is a supply side explanation of the causes of occupational segregation. On the other hand Feminist approach suggested a demand side explanation.

According to the Feminist approach, occupational gender segregation due to the domination of men on power and control positions that excludes women from ‘good’ jobs; high paid high productive high status jobs and leads gender segregation in the labour market. Both theories recognize the role of gender specific socialization through institutions such as families and schools that perpetuate gender segregated tasks and gender stereotyped behaviours that affect both female and male workers occupational choices. Gender stereotyped behaviours accompanies people throughout their life courses and effect their self-concept which affect their occupation choices and causes occupational gender segregation in the labour market. Detailed information about the index is given in the fourth section of the article.

## **2. EXTENT AND PATTERNS OF GENDER BASED OCCUPATIONAL SEGREGATION IN NORTHERN CYPRUS**

This section provides background information, obtained from Household Labour Force Survey (HLFS) surveys, on female and male labour market experiences in north Cyprus labour market before moving to the measurement and the analysis of the extent and patterns of gender based occupational segregation.

According to the recent HLFS (SPO, 2014), there are 231,424 people in the working age population in which 111,748 of them (48.3 percent) are women. Labour force participation rate is 48.6 percent; being 35.4 for women and 61 percent for men and all of them are far below the world averages of 63.5, 51.4 and 76.7 percent respectively (World-Bank, 2013). Around 80 percent of the employed people are in the services industry and work as salaried workers. Unemployment rate is 8.3 percent. Women’s unemployment rate (12.4%) is almost twice of men’s rate (5.8%).

As illustrated in Table 1, labour force participation of both female and male in north Cyprus showed a declining trend over the years between 2004 and 2014. Although the labour force participation rates of both, female and male, have declined the difference between participation rates of female and male is striking. Female’s participation rates are almost half of the male’s rates. Thus, continued low participation of women is worth to be studied.

**Table 1. Labour Force Participation Rates (2004-2014)**

| Years                   | Total | Men   | Women |
|-------------------------|-------|-------|-------|
| 2004                    | 54.2  | 68.3  | 39.2  |
| 2005                    | 50.3  | 63.9  | 35.6  |
| 2006                    | 53.2  | 66.1  | 39.3  |
| 2007                    | 50.2  | 62.8  | 36.1  |
| 2008                    | 50.1  | 62.7  | 36.2  |
| 2009                    | 49.9  | 61.6  | 36.8  |
| 2010                    | 49.6  | 61.6  | 36.3  |
| 2011                    | 49.8  | 62.1  | 35.9  |
| 2012                    | 49.2  | 61.7  | 36    |
| 2013                    | 48.2  | 59.9  | 35.8  |
| 2014                    | 48.6  | 61    | 35.4  |
| Actual change 2004-2014 | -5.6  | -7.3  | -3.8  |
| % change                | -10.3 | -10.6 | -9.6  |

**Source:** HLFS. 2004-2014, State Planning Organization, Turkish Republic of Northern Cyprus.

The HLFS statistics (2004 to 2014) show that total employment has risen 16.5 percent in the last eleven years from 86,914 to 101,217. The increase in female employment (%18) is higher than the men (%13.5). However, over the whole period it continued to constitute only one third of the total employment. But their representation across sectors has changed. Female workers representation in agriculture and the industry decreased while there is a small increase in construction industry. On the other hand their share in the services industry stayed almost the same in eleven years as illustrated by Table 2. North Cyprus economy is a service based economy and on average it grew by 4.4 percent between years 2004 and 2014. The GDP share of the services sector increased from 60 to 71 percent from 2004 to 2014 (SPO, 2014). In accordance to the increasing GDP share of the services industry employment share of the sector also increased. The employment share of the service industry in total employment increased from 70 percent in 2004 to 78 percent in 2014, indicating an expansion of the size of the occupations within the economy. Besides, female workers became more concentrated in the services industry compared to men. As can be seen from the third column of Table 2, out of every 100 women almost 90 of them are working in the services industry being higher than the total (79) and the men (70).

**Table 2. Total and Female Employment by Sectors (2004 and 2014)**

| Sectors      | (I)<br>Total employment<br>by sectors |       | (II)<br>Percentage of<br>female workers in<br>each sector (%) |      | (III)<br>Distribution of female<br>workers across sectors<br>(%) |       |
|--------------|---------------------------------------|-------|---|------|--|-------|
|              | 2004                                  | 2014  | 2004  | 2014 | 2004   | 2014  |
| Agriculture  | 8.4                                   | 3.9   | 39.6  | 27.6 | 10.0   | 3.2   |
| Industry     | 11.7                                  | 9.7   | 23.5  | 19.8 | 8.3  | 5.7   |
| Construction | 9.3                                   | 7.8   | 4.8   | 6.1  | 1.3  | 1.4   |
| Services     | 70.6                                  | 78.6  | 37.7  | 38.1 | 80.3   | 89.6  |
| Total        | 100.0                                 | 100.0 | 33.2  | 32.4 | 100.0  | 100.0 |

**Source:** HLFS. 2004-2014. State Planning Organization, Turkish Republic of Northern Cyprus.

Besides concentration of women in almost one industry their concentration in certain occupations also increased. Although the women's total employment share has increased by around 18 percent over the period this increase does not lead to a decrease in women's concentration in certain occupations. Both in 2004 and 2014 almost half of the employed women worked in only 2 occupations; professionals and clerks out of 9 occupational categories (Table 3. column I). According to the description of ISCO-88, professionals occupational category includes occupations requiring high level of professional knowledge and experience in the fields of physical and life sciences or social sciences and humanities while clerks occupational category includes occupations requiring the knowledge and experience necessary to organize, store, compute and retrieve information (ILO, 2018). In professionals for every 100 men there were 79.4 women in 2004 and 117 in 2014. In clerks, for every 100 men there were 195.7 women in 2004 and 136 in 2014 (column III). Taking into account the female to male ratio in the total employment where it was only 47 in 2004 and 52 in 2014 it can be seen how high the concentration of women in these two occupations is. Despite the fact that men also concentrated in certain occupations for instance crafts and related workers, only 20 percent of men concentrated in this occupation. The distribution of the employed men across occupations is more evenly distributed compared to women's distribution across occupations (column I and II). Specifically in 2014 occupational choices of men widen compared to women. In addition, employment share of men in 5 out of 9 occupational categories, including occupations as clerks and sales workers which are traditionally associated with women workers is increased (column II). On the other hand, women's employment shares increase only in 3 categories. It seems that women are stucked in certain occupations; professionals, clerks, sales workers and elementary occupations while men's occupational choices has widen. So the observed decrease in occupational segregation seems because of the shifts in male's occupations choices towards from traditionally male occupations to female occupations.

**Table 3. Men and Women Employment Shares in Occupational Categories**

| Years                                      | (I)<br>Distribution of female workers across occupations (%) |      | (II)<br>Distribution of male workers across occupations (%) |       | (III)*<br>Female to male ratio in each occupation (%) |       |
|--|--|------|---|-------|---|-------|
|  | 2004   | 2014 | 2004  | 2014  | 2004  | 2014  |
| Occupational Groups                        |  |      |   |       |   |       |
| Legislators. senior officials and managers | 7.7  | 4.7  | 13.7  | 11.26 | 27.7  | 28.5  |
| Professionals                              | 17.4   | 22.7 | 10.9  | 8.9   | 79.4  | 117.8 |
| Associate Professionals                    | 8.3  | 8.5  | 9.9   | 11.29 | 41.5  | 56.7  |
| Clerks                                     | 25.8   | 22.6 | 6.5   | 8.5   | 195.7   | 136.6 |
| Services. shop and market sales workers    | 12   | 19.6 | 10.3  | 14.7  | 58.1  | 60.8  |
| Skilled agricultural and fishery workers   | 9  | 2.3  | 6.4   | 5.5   | 70.5  | 26.1  |
| Craft workers                              | 3.8  | 2.2  | 20.9  | 20.4  | 9.1   | 6     |
| Plant and machine assemblers               | 0.6  | 1    | 9.9   | 9.3   | 3.1   | 3.9   |
| Elementary Occupations                     | 15.3   | 16.4 | 11.5  | 10.2  | 65.8  | 72.8  |
|  | 100  | 100  | 100   | 100   |   |       |

**Source:** HLFS. 2004-2014. State Planning Organization. Turkish Republic of Northern Cyprus.

\*Number of employed female /number of employed male.

The analysis of the patterns of sectoral and occupational distribution of women and men show that they follow different patterns. On one hand while women's occupational choices are shrinking men's occupational choices are widening. Hence it is hard to reach a conclusion whether north Cyprus labour market become more segregated or integrated. However we can definitely say that women occupational choices channeled towards more to traditionally women occupations in 2014. Furthermore men choices canalized towards traditionally women occupations. To be able to compare the extent and patterns of segregation level over the studied period it necessitates to compute the index of segregation.

From this point forth the following section will compute occupational gender segregation index for consecutive eleven years (2004-2014) for 9 broad occupational categories.

### 3. COMPUTATION OF OCCUPATIONAL GENDER SEGREGATION BETWEEN THE YEARS 2004 AND 2014

The most widely used dissimilarity index which is an unproblematic measure and easy to be straightforwardly understood is the D-index developed by Duncan and Duncan (1955) (Blau, Hendrics, 1979; Blackburn, 2011). The D-Index for time  $t$  is represented by equation (1) as follows;

$$D_t = \frac{1}{2} \sum_i |m_{it} - f_{it}| \quad (1)$$

where  $m_{it}$  and  $f_{it}$  refer to the percentage of the male and female labour employed in occupation  $i$  in time  $t$ , respectively. The index values vary between 0 and 1. Identical distribution of men and women across occupations reflected with index value being equal to 0, while complete segregation with index value equal to 1. In other words, estimating a value equal to 1 tells that women and men are employed in completely different occupations. Besides, the index value can be taken as revealing the percentage share of the total employment that should have to shift occupations in order to equalize the gender composition across occupations.

Over time the changes in the occupational structure of the labour market (the change in the size of the occupations) and changes in the female and male shares of each occupation are captured by the index and affect the extent of aggregate segregation. In our analysis of occupational gender segregation in order to distinguish the effects of the changes in the occupational structure a consistent set of weights were employed which is suggested by Blau and Hendricks (1979). So we employed standardized version of the Duncan index in the computation of the total segregation. Standardized D-index for time  $t$  is represented by equation (2) as follows;

$$S_t = \frac{1}{2} \sum_i \left| \frac{q_{it} T_{it}}{\sum_i q_{it} T_{it}} - \frac{p_{it} T_{it}}{\sum_i p_{it} T_{it}} \right| \quad (2)$$

where  $p_{it} = F_{it} / T_{it}$  and  $q_{it} = (1 - p_{it}) M_{it} / T_{it}$ .  $F_{it}$  standing for the number of females in occupation  $i$  in year  $t$ .  $M_{it}$  representing the number of males in occupation  $i$  in year  $t$  and  $T_{it}$  denoting the total number of employees in occupation  $i$  in year  $t$  being equal to  $F_{it} + M_{it}$ .

With this index the changes could be decomposed into two sources as the mix and the composition effect. The composition effect reflects the changes in index due to

the changes of the gender composition within each occupation where the size of the occupational structure is held constant. The mix effect reflects the changes in segregation index arising from the changes in the occupational structure where the employment share of males and females within each occupation is held constant. Due to fact that the growth rate of female and male employment and changes in the occupational structure of employment are interrelated Blau and Hendricks (1979) suggested the calculation of interaction effect. Interaction effect is the residual; being the difference between the actual change in the index value and the sum of composition and mix effect from time 1 to time 2. It reflects the changes in the segregation index arising from the interaction of composition and mix effects.

Based on equation (2) the following equations are used to compute the occupational mix and composition effects from year 2004 to 2014.

$$MIX_{2004-2014} = \frac{1}{2} \sum_i \left| \frac{q_{i2004}T_{i2014}}{\sum_i q_{i2004}T_{i2014}} - \frac{p_{i2004}T_{i2014}}{\sum_i p_{i2004}T_{i2014}} \right| \quad (3a)$$

$$COMP_{2004-2014} = \frac{1}{2} \sum_i \left| \frac{q_{i2014}T_{i2004}}{\sum_i q_{i2014}T_{i2004}} - \frac{p_{i2014}T_{i2004}}{\sum_i p_{i2014}T_{i2004}} \right| \quad (3b)$$

Equation (3a) is used to calculate the occupation mix which reflects the changes in segregation index arising from the changes in the occupational structure of the economy where the male and females employment proportions within occupations is held constant. On the other hand, equation (3b) is used to reflect the changes in index due to the changes of the male and female employment proportions within occupation (net segregation) where the occupational structure of the labour force is held constant.

As mentioned in introduction part of the paper data employed in the study is provided by the State Planning Organization Statistics Office (SPO); the official statistic office of the north Cyprus. Source of the data is Household Employment Surveys (2004-2014) which is conducted and published annually by SPO since 2004. The level of occupational gender segregation in the north Cyprus is given in Table 4. It reveals the computation of occupational gender segregation over the investigated years.

**Table 4. Standardized D-index 2004-2014**

| Years                     | Standardized D-index |
|---------------------------|----------------------|
| 2004                      | 0.34                 |
| 2005                      | 0.38                 |
| 2006                      | 0.33                 |
| 2007                      | 0.34                 |
| 2008                      | 0.33                 |
| 2009                      | 0.34                 |
| 2010                      | 0.35                 |
| 2011                      | 0.31                 |
| 2012                      | 0.33                 |
| 2013                      | 0.33                 |
| 2014                      | 0.35                 |
| Actual change (2004-2014) | 0.019                |
| % change (2004-2014)      | 3.0                  |

**Sources:** The authors' own calculations based on the north Cyprus Household Labour Force Survey (2004-2014).

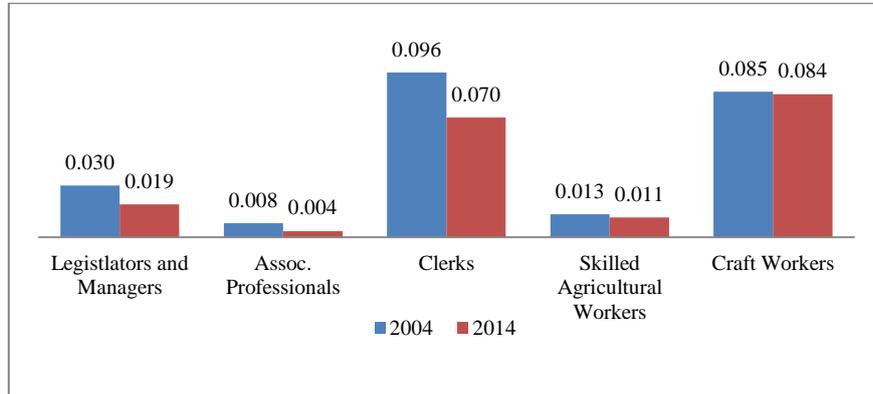
According to the index numbers (Table 4) occupational segregation is high and persistent in north Cyprus labour market. The number of people who needed to change occupations in order to equalize the gender composition across occupations increased over the period. The segregation is comparable to some of the European countries which can be named as highly segregated countries within European Union. For instance, Spain (0.351), Norway (0.344), Poland (0.364), Portugal (0.330), Belgium (0.335) and Austria (0.332) are some of those countries that have comparable segregation level with north Cyprus (European Commission, 2014). Although segregation level is higher in 2014 compared to 2004, between 2004 and 2008 there is an improvement in the integration of the occupations. However after 2008 there is a renewed increase in the segregation level which rises 35 percent in 2014.

Before moving to the discussion of the causes of occupational segregation in north Cyprus we want to provide brief information on economic and social changes. Over the investigated period north Cyprus labour market experienced massive influx of immigrants – mainly from Turkey. In 2005 a bilateral agreement signed by Turkish Cypriot and Turkish authorities which allowed the families of the Turkish *guest workers* to migrate to north Cyprus with permits. After the enforcement of the agreement that

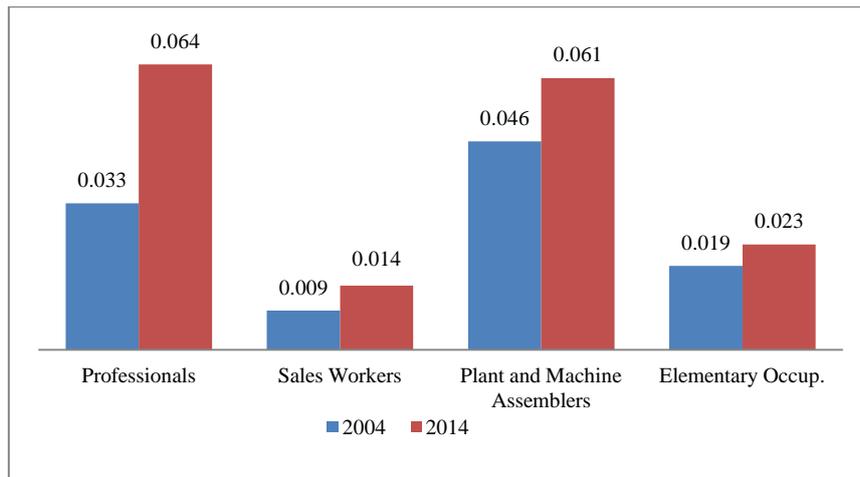
allow the migration of wife and children's of the Turkish *guest workers*, percentage of population who was not born in north Cyprus reached to 44 percent (SPO, 2011) with 37 percent of the population being born in Turkey. Most of those migrant families reside in urban areas and employed mainly in elementary and other occupations that are required relatively low qualifications such as construction, Trade, and tourism sectors (Besim *et al.*, 2015). Besides this, there are huge fluctuations in the output level. In the first three years of the period (2004-2006) economic growth reached to two digit numbers as 15.4, 13.5 and 13.2 percent respectively where growth of the output slow down and economic growth rate decreased to one digit numbers (2.8 percent in 2007) and after experiencing negative growth between the years 2008 and 2009. It is so far established a moderate growth rate around 2 to 4 percent (SPO 2014). Increasing demand for labour; in particular to unskilled labour in construction and services industries during high economic growth and availability of relatively cheap migrant labour provided by the families of *guest workers* are important economic and social ongoing processes that should be taken into account in the analysis of causes of occupational segregation. By the entrance of migrant workers to the labour market, human capital differences between women and men in the labour force is subject to change since migrants average years of schooling 2 years less than native workers on average (Besim *et al.*, 2015). Besides, parallel with the increase in the availability of migrant labours, which has lower supply prices as compared to the local native workers (Besim and Jenkins 2006). The tendency for local companies to employ immigrant workers has also increased. In addition, occupational structure of the labour market subject to change due to the increasing shares of some industries such as construction and trade while some others were shrinking such as manufacturing and agriculture (SPO, 2014).

Turning back to our analysis of segregation, in order to trace the source of the occupational gender segregation, Figure 1 and 2 provide segregation levels of individual occupations by years. Figure 1 provides occupations that are integrated, and Figure 2 provides occupations that are segregated further over the time.

**Figure 1. Integrated Occupations**



**Figure 2. Segregated Occupations**



The figures show that in 5 out of 9 occupations (Figure 1) there is an improvement in the integration of the occupations but 4 of them segregated further (Figure 2). Improvement in the integration of 5 occupations decreased the segregation index by almost 4.5 percent. However segregation in the rest 4 occupations increases segregation index by more than 5.5 percent. As a result, total segregation increase by one percent between years 2004 and 2014. The largest segregation is in professional occupations. It seems the segregation of the professional occupation is the main source of the increase in aggregate occupational segregation. The source of the improvement in the integration of the occupations is the improvement in integration of the occupational category clerks.

As the employment of females and males in these two occupations investigated we observed that the segregation in the professional occupation is due to the increasing number of women in professional jobs where number of men stayed the same. In contrast to human capital theory, women's increasing educational level instead of leading a decrease in occupational gender segregation in this particular case leads to an increase in segregation. On the other hand the improvement in the occupational segregation in clerks occupational category is due to the increasing numbers of men while the number of women almost stayed the same. Or, in other words it is due to the movement of men into a female-dominated occupation.

Furthermore in professionals, sales workers and elementary occupations women's concentration increase. In 2004 17.4 percent of employed women were working as professionals in 2014 it increased to 23 percent. Women working as sales and elementary workers were 12 and 15 percent respectively in 2004 while it increased to 20 and 16 percent respectively in 2014 (Table A in the appendix).

We need to consider one more thing before moving to the discussion of the causes of occupational gender segregation in north Cyprus labour market. We need to take into account the effect of the occupational structure of the economy on the occupational segregation index value which subject to change due to the ongoing economic and social processes. Studies on occupational segregation suggest two main factors leading the changes in the index value over time. These factors are the changes in the gender composition of specific occupational categories and the changes in the occupational structure of the economy (Fuchs, 1975). So, subject to the above mentioned massive migrant flow and economic changes we need to distinguish the effect of changes in the occupational structure of the labour force. We do so by decomposing the changes in the index of segregation over time by employing decomposition method suggested by Blau and Hendrics (1979). The results are displayed in Table 5.

**Table 5. Occupational segregation in North Cyprus – Mix and Composition effects (2004-2014)**

| Standardized Segregation index (2004-2014) |                   |               |             |                     |                     |          |
|--|-------------------|---------------|-------------|---------------------|---------------------|----------|
| Years                                      | Occup. Seg. Index | Actual change | Mix effects | Composition effects | Interaction effects | % Change |
| 2004                                       | 0.34              | 0.01          | 0.0212      | 0.0345              | -0.0457             | 3.0      |
| 2014                                       | 0.35              |               |             |                     |                     |          |

Source: Authors computations based on HLFS data. 2004-2014.

The decomposition results show that 34.5% of the increase in occupational segregation attributed to the changes in the gender composition within occupations. The remainder is attributed to changes in the occupational structure of the labour market

(mix effect), along with the interaction effect. Interaction effect is negative indicating that the interaction between two components; changes in the gender composition of the occupations and the changes in the occupational structure of the labour market have a decreasing effect on the aggregate segregation. However as both composition and mix effects have positive values and their compound effect is larger than interaction effect aggregate segregation has increased.

That is, 34.5% of the increase in occupational segregation was due to changes within occupational categories such as an increase in the share of employment of women in professional and elementary occupations and of men in plant and machine assemblers occupation. The remainder 21.2% of the increase in occupational segregation was due to changes among occupations available such as an increase in employment in associate professionals and sales workers that employ roughly equal numbers of men and women. Interactions of the two components lessen the effect of composition and mix effects. We can conclude that the main source of the increase in total segregation is due to shifts in gender composition within occupations. In other words, both male and female canalized more in certain occupations. For instance, while number of women in professional jobs increased by 55 percent number of men increases only by 4 percent. On the other hand in crafts and related works number of men increase by 3 percent while number of women decreased by more than 30 percent (Appendix Table A1). It should also be mentioned that professional occupation is an enlarging occupation but mostly with the mass entrance of women instead of men. On the other hand, the skilled agricultural and craft workers occupations are shrinking occupations. The share of these occupations is decreasing in total employment. The decrease in female employment in these occupations is striking (Appendix Table A1).

So these two developments; the mass entrance of women to professional jobs and mass exit of women from agricultural and crafts occupations are the most important developments that shaped aggregate occupational segregation level. Professional jobs gender composition change in favour of women and crafts and skilled agricultural occupations in favour of men. All three occupations become more segregated. Besides this pattern entrance of men into clerical and sales jobs is also remarkable. There is 50 percent increase in male employment in clerical jobs and the employment of men in sales jobs is almost doubled. Both occupations were used to be female dominated occupations thus the mass entrance of men into those occupations alters the gender composition within these occupations and decrease segregation in those occupations. They become more integrated in 2014. This could be explained by the increasing availability of these occupations due to the increasing GDP shares of personal services and trade industry, and in addition massive influx of migrant male workers With lower labor supply cost. The changes in the number of women and men in occupational categories are provided in the Table A1 in the Appendix. To summarize, the main

source of increasing segregation is because of the mass entrance of women to certain occupations while the number of men in those occupations remained more or less the same, and the main source of improvement in integration is because of the mass entrance of men to certain occupations while the number of women remained more or less the same. The following section aims to investigate the possible reasons of these mass entrances.

#### 4. THE DISCUSSION ON THE POSSIBLE CAUSES OF THE CHANGES IN THE OCCUPATIONAL GENDER SEGREGATION IN NORTH CYPRUS LABOUR MARKET

As mentioned in the second section of the article feminist and human capital approaches were used as the theoretical framework of this investigation. The key elements which define the theoretical framework for this study are gender gap in education, men's domination in power and control positions, gender-role socialization and gender stereotyped behaviour.

In one dimension, human capital theory fails to explain occupational gender segregation in north Cyprus. Over the investigated period (2004-2014) there is a noticeable improvement in women's education particularly in higher degree levels (Table 6). Women do invest in their human capital however, occupational gender segregation stayed high and still increasing. While the percentage of employed women with university degree increased by almost 10 percent and master and doctorate degree more than 1 percent, occupational segregation, instead of decreasing as suggested by human capital theory, increased by 1 percent. So, decreasing gender gap in education does not help to solve the segregation problem in north Cyprus.

**Table 6. Working Women and Men Distribution According to Education Levels**

|                             | Women |      | Men  |      |
|-----------------------------|-------|------|------|------|
|                             | 2004  | 2014 | 2004 | 2014 |
| Without any diploma         | 6.9   | 3.8  | 4.7  | 3.7  |
| Primary school              | 20.3  | 13.7 | 31.2 | 24.6 |
| Junior high school          | 7.1   | 9.4  | 13.9 | 13.8 |
| High school                 | 38.9  | 34.5 | 31.7 | 31.4 |
| Faculty or higher education | 23.8  | 34.2 | 16.5 | 23.9 |
| Master, doctorate           | 3.0   | 4.4  | 2.0  | 2.6  |

Source: Authors computations based on HLFS data, 2004-2014.

One can say that without changing men's domination in the power and control positions it is hard to expect improvements in occupational gender segregation.

According to feminist approach the domination of men in power and control positions is the main reason of concentration of women in certain occupations; particularly in low productive, low paid, low status jobs (Perrons, 2005). In north Cyprus case; we can assert that the concentration of women in low paid low productive jobs (in elementary or sales workers or clerks occupations) and lower representation of women in managerial occupations is mainly due to the men's domination on power and control positions. In order to investigate whether the domination of men kept women away from good jobs; higher paid and higher ranking jobs, we use the components of Gender Empowerment Measure (GEM); suggested by UNDP as a measure of women's empowerment. GEM is one of the most common indices introduced in 1995 by Human Development Report to determine the level of empowerment of women consisting of 3 main indicators as earning power where per capita income is used, share in professional and managerial jobs and share of parliamentary seats (UNDP, 1995)

To evaluate how close women are to decision making the share of administrative and managerial jobs and to evaluate how close women are to the opportunities for career development the shares of women in professional and technical jobs are used. According to the available data it is obvious that there have been an improvement both in decision making position and opportunities for career development from year 2004 to 2014. For every 100 men there were 28 women in administrative and managerial jobs. It improved in 2014 but improvement is negligible; instead of 28 there were 29 women for every 100 men in that occupation in 2014. Thus men's domination continues in high ranking administrative occupations. On the other hand, the improvement in professional and technical jobs is highly remarkable. For every 100 men there were 79 women in professional jobs while, for every 100 men 118 women in that occupation in 2014.

**Table 7. Female/male ratio at different occupations; 2004-2014**

| OVERALL<br>Occupations             | Years |      |
|------------------------------------|-------|------|
|                                    | 2004  | 2014 |
| Administrative and managerial jobs | 0.28  | 0.29 |
| Professional and technical jobs    | 0.79  | 1.18 |

Comparing the share of parliamentary seats which is the indicator for the access to political opportunities and participation in decision making been improved but not at a noticeable level. It is estimated that 6.3%, of the parliamentary seats were held by women in 2004 and 8.7%, in 2014. So the number of seats held by women increased from 3 to 4 of the total parliamentary seats of 50 from 2004 to 2014. Still it is far below the world average of 10%. Thus men's domination for access to political opportunities and participation in decision making is still high excluding women from parliamentary positions leading gender segregation at decision making positions. Occupational

segregation in North Cyprus can also be explained by women's self-concept and society perceptions of the female by the society (Akerlof, Kranton, 2000). In contrary to the human capital theory (women spend more time and energy on domestic work and prevented from investing in human capital leading some jobs to be unattainable for women and creating segregation), in north Cyprus as the human capital level of women increased there have also been an increase in occupational gender segregation. On the other hand, according to the feminist theory traditionally higher positions are dominated by men, while in north Cyprus professional jobs which can be considered as 'good' or high paid job dominated by women.

Widening wage gap between men and women can be considered as another factor deteriorating the position of women in the labour force. Focusing on the wage gap of female to male ratio across the occupations it is observed that the lowest wage gap belongs to professional followed by clerical occupations, which can also explain why female canalized to that occupations leading professional and clerical jobs to be female dominated. The segregation and dominance of those occupations by women can be the result of flexible working hours since women spend more time for unpaid work preferring working in those occupations which is also supported by the findings of surveys of two local women's NGO; KAYAD Community Centre (2010) and TCAUW (Turkish Cypriots Association for University Women) (Güven-Lisaniler, 2003). According to the survey results of KAYAD including randomly selected 600 women from different districts with different education levels and age distribution of north Cyprus it is found that the perception of 88% of the participant women believed that a woman should be first being a good mother and housewife (KAYAD, 2010). On the other hand, perception of society about working women is a kind of conditional acceptance of women working. According to TCAUW's survey of a sample of 800 north Cyprus citizens selected from north Cyprus electoral registers through multiple cluster, and stratified and systematic random sampling techniques, society perception about women working is positive unless the education of children and the family life not affected negatively (Güven-Lisaniler, 2003). Thus, high dominance of men in managers' occupation where wage gap is low also explained by women being held out as a result of unfair distribution of unpaid work between men and women as a result of both women self-concept and society's perception about working women.

## CONCLUSION

This paper aimed to investigate the extent, trend and the sources of changes in occupational gender segregation in north Cyprus labour market between years 2004-2014 by employing data for nine broad occupational categories (ISCO-88 one-digit) from eleven consecutive Household Labour Force Surveys (HLFS) (2004-2014).

Dissimilarity index (D-index) is employed to compute the occupational gender segregation. Standardized D-index employed to trace the source of the changes over the investigated period.. It is found that occupational gender segregation in north Cyprus labour market is high and persistent. It is also observed that there has been an increase in occupational gender segregation over the years from 2004 to 2014. Decomposition of the index showed that the main source of the increase in total segregation is because both male and female canalized more in certain occupations mostly as a result of the mass entrance of female to certain occupations while the number of male remained more or less the same (such as professional jobs) and mass exit of female from to certain occupations while the number of male remained more or less the same (such as agriculture and crafts occupations).

The possible causes of the changes in the occupational gender segregation in north Cyprus labour market are investigated through human capital and feminist approaches. Human capital approach failed to explain the changes since there is a noticeable improvement in female investment in their human capital but increase in occupational gender segregation over the years between 2004 and 2014. Feminist theory supports our findings for the causes of occupational gender segregation since male domination continues in high ranking administrative occupations and in parliamentary positions which is the indicator for the access to political opportunities and participation in decision making. On the other hand the improvement in professional and technical jobs can be explained by low wage gaps between male and female, but mainly because of flexible working hours since females spend more time for unpaid work preferring working in those occupations. since managers' occupation where wage gap is also low is highly male dominant. Thus, the high dominance of male in managers' occupation is explained also by the unfair distribution of unpaid work since this occupation requires longer working hours away from home leading the occupation not to be preferred by females as a result of women self-concept and society's perception about working women.

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**Appendix****Table A1: Change in the Number of Men and Women in Occupational Categories**

| Occupational categories                    | Change in the number of men | Change in the number of women |
|--|-----------------------------|-------------------------------|
| Legislators. senior officials and managers | -29.17                      | -27.07                        |
| Professionals                              | 4.4                         | 54.92                         |
| Associate Professionals (Technicians)      | -10.90                      | 21.66                         |
| Clerks                                     | 48.9                        | 3.94                          |
| Services. shop and market sales workers    | 85.3                        | 93.88                         |
| Skilled agricultural and fishery workers   | -17.74                      | -69.59                        |
| Craft workers                              | 3.07                        | -32.34                        |
| Plant and machine assemblers               | 50.09                       | 89.20                         |
| Elementary Occupations                     | 15.17                       | 27.42                         |

**Table A2: Wage GAP**

| Occupational categories                    | average wage gap female to male ratio of 2004-2014 | average female share in total employment 2004-2014 | wage gap |
|--|--|--|----------|
| Legislators. senior officials and managers | 84.9   | 27.1   | 15.1     |
| Professionals                              | 93.3   | 49.0   | 6.7      |
| Associate Professionals (Technicians)      | 85.0   | 30.0   | 15       |
| Clerks                                     | 85.1   | 59.9   | 14.9     |
| Services. shop and market sales workers    | 82.4   | 35.4   | 17.6     |
| Skilled agricultural and fishery workers   | 45.9   | 25.8   | 54.1     |
| Craft workers                              | 77.2   | 6.0  | 22.8     |
| Plant and machine assemblers               | 78.2   | 3.3  | 21.8     |
| Elementary Occupations                     | 82.6   | 42.4   | 17.4     |

**Source:** The data are not publicly available. but the authors were given access through special protocols signed by government officials for a research project funded by Turkish Cypriots Chamber of Commerce named “KKTC Kayıtdışı Ekonomi İle Mücadele Projesi”.