EXPLORING THE EXTENT OF INEQUALITY ASSOCIATED WITH OCCUPATIONAL GENDER SEGREGATION IN TURKEY

Cigdem Gedikli [a]

[a] **Norwich Business School, University of East Anglia, Norwich Research Park, Norwich, NR4 7TJ.**

Contact e-mail: C.Gedikli@uea.ac.uk

ABSTRACT

This paper investigates occupational gender segregation and its vertical and horizontal dimensions in Turkey. In order to explore the extent of inequality entailed in occupational gender segregation (measured by the vertical component), average pay levels across occupations are used and it is investigated whether it is men or women who have a greater tendency to be employed in lower-paid occupations. In addition to the economic inequalities captured by pay, in order to explore the social inequalities inherent in occupational segregation, a social stratification scale is constructed by using a Correspondence Analysis. The results show that the extent of inequality associated with occupational segregation is notable. Women are more likely to be employed in lower-paid jobs and in occupations that rank lower across the overall stratification structure whereby men remain at an advantaged position both in terms of pay levels or the positions of the occupations they hold in the social hierarchy. The horizontal component of segregation is found to be larger than the vertical dimension, suggesting that overall differentiation in the employment patterns between men and women owes more to the fact that they are employed in horizontally different occupations.

Keywords

occupational gender segregation; gender inequality; social interaction; social distance; stratification; Turkey

JEL Codes: J16, J71

1. INTRODUCTION

Although enabling women to take part in the workforce is an important step towards achieving a gender equal labour market, it is crucial to acknowledge that it does not necessarily imply an equal distribution of income, skills, social status or power between men and women. Several studies note the roles undertaken by men and women in the labour markets; women typically taking up the clerical and service work and men dominating production and managerial occupations and the striking similarities in the sex-typing of occupations across countries (Hakim, 1979; Roos, 1985; Charles, 1990; Anker et al., 2003). Therefore, regardless of the level of economic development, there is a degree of occupational segregation whereby men and women differ in terms of their employment patterns across occupations, although the extent varies between countries.

It is important to acknowledge that even when women and men are randomly distributed across the occupations, there might be a degree of occupational segregation (Cortese et al., 1976) and, therefore, what is more important than the segregation itself is the potential inequality associated with it. Given the concerns about the potential impact of occupational segregation on gender inequality, Blackburn et al. provide a valuable approach which decomposes occupational segregation into vertical and horizontal components, with a vertical component capturing the extent of inequality entailed in segregation; for example, in terms of difference in pay, occupational prestige and social status. (Blackburn et al., 2001; Blackburn and Jarman, 2005; 2006). The horizontal component, on the other hand, explores the difference in the distribution of men and women across occupations without an implication of inequality in terms of a vertical criterion, although it may imply narrower occupational choices available for them.

This study investigates occupational gender segregation and the associated vertical and horizontal dimensions in Turkey. It, therefore, represents the first application of the approach taken by Blackburn et al. for a developing country. In order to explore the extent of inequality (the vertical component of segregation), average pay levels across occupations are used and it is investigated whether it is men or women who have a greater tendency to be employed in lower-paid occupations. In addition to pay, with the aim to investigate the social inequalities inherent in occupational gender segregation, a social stratification scale similar to CAMSIS ("Cambridge Social Interaction and Stratification Scales", see http://www.camsis.stir.ac.uk and Prandy and Lambert, 2003; Griffiths and Lambert, 2011) is constructed. This is the first

attempt to investigate the social rewards associated with holding an occupation in Turkey by providing a scale which can broadly be defined as the status or prestige scale or a social interaction distance scale based on data for 2010. Although there is a CAMSIS scale for Turkey (Lambert, 2003; http://www.camsis.stir.ac.uk/versions.html#Turkey), it is for an older data source using a now dated classification of occupations. Furthermore, there is no study which applies the CAMSIS for Turkey to estimate occupational segregation indices.

While analysing the horizontal component, it will be argued that, given social and educational conventions, men and women are unlikely to freely choose occupations in Turkey; therefore, a significant difference in the employment patterns of men and women might be the consequence of the limited occupational choices faced. As a result, although the difference in the tendency of men and women to be employed in different occupations may not entail inequality in the form of pay or social stratification, it may imply the existence of social and labour market institutions shaped within the constraints of traditional gender roles that hinder men and women from being employed in gender atypical occupations.

2. BACKGROUND

The main motivation behind analysing the segregation of men and women across occupations has been to shed light on inequality operating to the detriment of women among the occupational structures shaped by gender. In this context, horizontal and vertical segregation have essentially been distinguished from each other. Horizontal segregation has conventionally been defined as the extent to which women and men are employed in different occupations. (Hakim 1979; Rubery and Fagan, 1995; Cousins, 1999; EC, 2009). On the other hand, vertical segregation has usually been defined as the relative position of women working within the same segment of an occupation to men (Hakim, 1979; Reskin and Roos 1990). Therefore, vertical segregation has been regarded as having a fundamental role in examining the inequality that women face in the occupational structure (see for example, Hakim, 1998). However, conceptualising horizontal and vertical segregation in this way is problematic and unsatisfactory. This is because, when vertical segregation is defined as the tendency of women being employed in lower grade jobs within the occupational groupings; for example, women are primary school teachers, men are university teachers; or women are nurses, men are doctors; the possible vertical relationship between occupations (e.g. the vertical relationship between university teachers and nurses) goes unchecked. To put it differently, horizontal

segregation, defined as the tendency of men and women working in different occupations, might include a vertical component (Blackburn and Jarman, 2005; Blackburn, 2009). Therefore, the distinction between vertical and horizontal segregation becomes clouded.

Exploring the extent of inequality associated with occupational gender segregation has been a challenging process. For example, in their influential work, Semuonov and Jones (1999) have argued that occupational segregation does not necessarily amount to occupational inequality and, therefore, segregation and inequality should be analysed separately. In order to do so, the authors distinguish between "nominal segregation" and "ordinal inequality", both associated with the so-called "occupational differentiation" among men and women (Semuonov and Jones, 1999:226). Accordingly, ordinal inequality takes into account the ordering of the occupations on a vertical scale, by status or prestige. However, their approach does not enable researchers to investigate how much of the "occupational differentiation" is due to gender inequality as it does not provide comparable measures for ordinal inequality and nominal segregation.

In a series of related papers, Blackburn et al. have contributed to an important development in terms of exploring the extent of gender inequality prevalent in occupational gender segregation (see for example, Blackburn et al., 2001; Blackburn and Jarman, 2005, Blackburn, 2009). The authors have introduced the term "overall segregation" which can be decomposed into two components: a "vertical" dimension which measures the extent of inequality in terms of the tendency of women and men to be employed in different occupations and a "horizontal" dimension which refers to the difference in their employment patterns without an implication of inequality (Blackburn et al., 2001; Blackburn and Jarman, 2005; Jarman et al., 2012). Therefore, their approach is superior in the sense that it enables researchers to investigate how much of the overall difference in the distribution of men and women across occupations owes to the inequality in occupational outcomes between them. Accordingly, it is only the vertical component that captures the inequality associated with overall segregation and unlike the conventional approach, it investigates the vertical relationship; such as, pay, status and prestige, between all rather than specific sub-sections of occupations. The overall segregation, on the other hand, can be viewed as what has usually been referred to as horizontal segregation in the literature.

The analysis of segregation without investigating its dimensions as suggested by Blackburn et al. can be misleading. For example, Blackburn and Jarman (2005) note significantly higher

levels of (overall) segregation in more egalitarian and gender equal countries such as Sweden and Finland. They, therefore, state that it is crucial to consider segregation as a consequence of vertical and horizontal components and accordingly, differentiate between inequality and difference in the distribution of men and women across occupations. The paradoxical positive relationship between segregation measures and women`s empowerment might then be the consequence of relatively higher levels of horizontal and lower levels of the vertical dimension of segregation. That is to say, the high segregation levels in these countries can be due more to the difference in the occupational distributions of women and men, rather than women being employed in occupations that are less prestigious or less well-rewarded in terms of pay. Indeed, while analysing the vertical dimension of segregation in terms of pay and social stratification in Scandinavian countries together with the USA and Britain, Jarman et al. (2012) find an advantageous position of women in terms of social stratification relative to men, while men are found to have a slight advantage in terms of pay. This is explained by the transition from manual to non-manual work as a result of industrialisation, which contributed to the increasing female labour force participation rates. Moreover, the authors argue that it was generally women who moved into the non-manual occupations and although women were mostly employed in lower level non-manual employment at the beginning of the transition, their share amongst professionals has increased notably over time. Therefore, their study concludes that although men might be employed in relatively well-paid occupations, it is also men who perform the unskilled manual work which ranks significantly lower in the social hierarchy.

Although these explanations might hold for industrialised economies, it is less likely to be the case for less developed countries where the industrialisation process is not yet complete. This paper aims to contribute to the literature by investigating occupational gender segregation and its vertical and horizontal dimensions in Turkey, where the labour market is characterised by very low female labour force participation rates and agriculture continues to be the major economic activity for women. Moreover, the literature on occupational gender segregation is quite limited and dated in Turkey and there is no study which analyses the dimensions of segregation. Amongst the very few studies related to occupational segregation in Turkey, the majority apply the term “horizontal” to what is conceptualised as “overall” segregation in this study. These studies adopt the common measures of segregation, either the Index of Dissimilarity (ID) (Duncan and Duncan, 1955) or Karmel MacLachlan Index (IP) (Karmel and MacLachlan, 1988), which can be interpreted as the share of employed people who would need to move to different occupations in order to achieve no segregation in the workforce. For

example, based on 1994 data provided by the Turkish Statistics Institute, Selim and Ilkkaracan (2002) have found that almost 27.6 percent of the employed people in Turkey would have to change their jobs in order to achieve an equal distribution of men and women across occupations. Rich and Palaz (2008) have investigated the trend in occupational segregation between 1975 and 2000 and noted an even more segregated workforce in Turkey over the time under consideration. However, these studies do not explore the extent of inequality entailed in the segregated workforce or whether the increased segregation, as found by Rich and Palaz (2008), stands for an increased disadvantageous position of women in the occupational structure of the country. Nor do they cover the latter decade of the 21st century where the process of industrialisation has continued to change employment patterns in Turkey.

Vertical occupational segregation has been analysed between the sub-sections of occupations in Turkey; for example, Gunluk-Senesen and Ozar (2001) have examined segregation in the private banking sector based on data for the years 1996 and 1997. Their study differentiates between four hierarchical occupational positions held in the sector[1] in order to investigate how men and women are vertically segregated from each other. However, the ID-index has been used for this purpose and, as the authors also point out, being a segregation measure the ID-index is gender symmetric and, therefore, does not directly refer to men or women who would need to move to different occupations in order to achieve no segregation. As a result, the "vertical segregation" index value of 25.6 percent found in their study does not explore whether it is women or men who are in the disadvantaged situations across the hierarchically ranked positions in the sector. Therefore, in order to expand the analysis, Gunluk-Senesen and Ozar (2001) look at the concentration of men and women across the occupational positions analysed. They find an over-representation of highly educated women in the banking sector jobs which require lower qualifications and offer limited opportunities for promotion. Although this finding is a sign of the disadvantaged position of women in the sector, a measure of concentration – the percentage of women in these jobs – can provide little more than an indirect measure of women`s over-education.

There is, therefore, insufficient evidence on whether there is an unequal differentiation in the employment patterns of women and men across occupations in Turkey and the attempts to

[1] The occupational categories are: i) top management, consisting of general managers, their assistants, and department managers, ii) mid management, consisting of branch managers, their assistants, department heads and their supervisors, iii) skilled personnel, consisting of trained cashiers, tellers, computer operators and other such staff, iv) unskilled personnel, consisting of service workers, janitors, security guards and couriers.

explore women`s disadvantaged position in the occupational hierarchy are not satisfactory. As a result, it becomes crucial to differentiate between vertical and horizontal components of overall segregation and explore the inequality and difference (without inequality) in the tendency of women and men to be employed in different occupations. Several criteria can be introduced to analyse the vertical dimension of occupational segregation. Conventionally, occupations are valued according to their economic and labour market characteristics; such as, pay and skill level (Bottero, 2005). It is true that one of the most important rewards associated with holding an occupation is pay. Therefore, the vertical dimension of segregation is often captured by ranking occupational groups according to average levels of pay, a method also employed in this study. However, although income generated from employment is the main source of economic rewards for the individuals, it is crucial to evaluate the meaning of holding an occupation in a wider context and acknowledge the social rewards associated with employment. Sociological research considers occupation as the major indicator of an individual`s position in the social hierarchy and, therefore, a means to investigate social advantage or disadvantage, such as prestige, status and location of incumbents of occupations in the social stratification structure (see for example, Treiman, 1977; Stewart et al., 1980; Ganzeboom and Treiman, 1996; Prandy and Lambert, 2003; Chan and Goldthorpe, 2004, 2007). Therefore, in order to capture the inequalities between women and men in terms of the locations of the occupations they hold in the social hierarchy, a further criterion should be introduced in order to rank occupations on the vertical dimension of segregation. This is done through constructing a social stratification scale similar to the CAMSIS ("Cambridge Social Interaction and Stratification Scales", see http://www.camsis.stir.ac.uk and Prandy and Lambert, 2003; Griffiths and Lambert, 2011) which is variously defined as "a measure of general social advantage, hierarchical patterns of social relationships, prestige, social class and so on" (Blackburn and Jarman 2006:301).[2]

3. METHODOLOGY

Following the approach taken by Blackburn et al, occupational gender segregation is decomposed into two components; that is, "vertical segregation" and "horizontal segregation" (see for example, Blackburn et al., 2001; Blackburn and Jarman, 2005; Blackburn, 2009).

[2] The details on the features and construction of the scale will be explained in Section 4.

These two components will make up the "overall segregation". Accordingly, the vertical dimension of occupational gender segregation measures the extent of inequality entailed in the tendency of women and men to be separated into different occupations, while the horizontal dimension refers to the difference in their employment patterns without an implication of inequality with respect to vertical criteria.

The analysis of occupational segregation has mostly been based on index measures. The most commonly used index, especially in the US literature, has been the index of dissimilarity (ID) introduced by Duncan and Duncan (1955) which has been interpreted as the share of employed people who would need to move to different occupations in order to achieve no segregation. The ID-index has played a pioneering role in the occupational segregation literature and several other indices; such as, the Moir and Selby-Smith segregation indicator (MSS) (Moir H. and Selby Smith J., 1979), Karmel MacLachlan Index (IP) (Karmel and MacLachlan (1988) and the Marginal Matching Measure (MM) (Blackburn et al, 1993), have evolved from the ID-index. These indices are appropriate when the purpose is to measure what we refer to as "overall" segregation in this study without looking at its dimensions, because there is no way of decomposing these indices into vertical and horizontal components. However, other measures are needed if the purpose is to explore the inequality and difference in how men and women are separated from each other across occupations. Hence, the Gini coefficient is used to measure overall segregation while Somers` D is employed for vertical segregation. The details of the measures are discussed in the next section.

3.1. Measuring the Dimensions of (overall) Occupational Gender Segregation

An attempt to analyse the extent of inequality prevalent in segregation requires adopting measures for vertical and horizontal components that are comparable and consistent with the overall segregation measure (Blackburn, 2009). Therefore, following Blackburn et al., the Gini coefficient is adopted in order to analyse overall segregation, while Somers` D is used for the vertical segregation analysis. This is because, the Gini coefficient is shown to be a limiting case for Somers` D (see Blackburn et al., 2009) in the sense that both use the same statistic for the same occupational groupings; however, the ordering of the occupations is based on different tools.

There are various formulae for the derivation of the Gini coefficient of which the one employed by Siltanen et al. (1995) and Blackburn et al. (2009) is presented here. Accordingly, the Gini coefficient can be computed as:

$$G = \sum_{i=2}^{n} \left[\sum_{1}^{i-1} W_t/W \sum_{1}^{i} M_t/M - \sum_{1}^{i} W_t/W \sum_{1}^{i-1} M_t/M \right] \quad 1.1$$

where t stands for an occupation included in the cumulative total; i denotes a single occupation which can range from 1 to n where n is the total number of occupations included in the analysis.

The formula can be rewritten as;

$$G = [1/WM] \sum_{i-2}^{n} \left[\sum_{1}^{i-1} W_t \left(\sum_{1}^{i-1} M_t + M_i \right) - \left(\sum_{1}^{i-1} W_t + W_i \right) \sum_{1}^{i-1} M_t \right] \quad 1.2$$

$$= [1/WM] \sum_{i-2}^{n} \left(M_t \sum_{1}^{i-1} W_t - W_i \sum_{1}^{i-1} M_t \right) \quad 1.3$$

where

W = the number of women in the workforce.

M = the number of men in the workforce.

W_i, M_i = the number of women and men in occupation i respectively.

W_t, M_t = the number of women and men in occupation t respectively.

The formula for the Gini coefficient can be interpreted as the ordering pairs of occupations by the gender composition of these occupations. If C denotes concordant pairs; that is, the woman is employed in an occupation with a greater share of women and the man in an occupation with a greater proportion of men, and D stands for the discordant pairs, meaning that the woman is employed in a male dominated occupation and the man is in a female dominated occupation, the Gini coefficient then becomes;

$$G = (C - D)/WM \quad 1.4$$

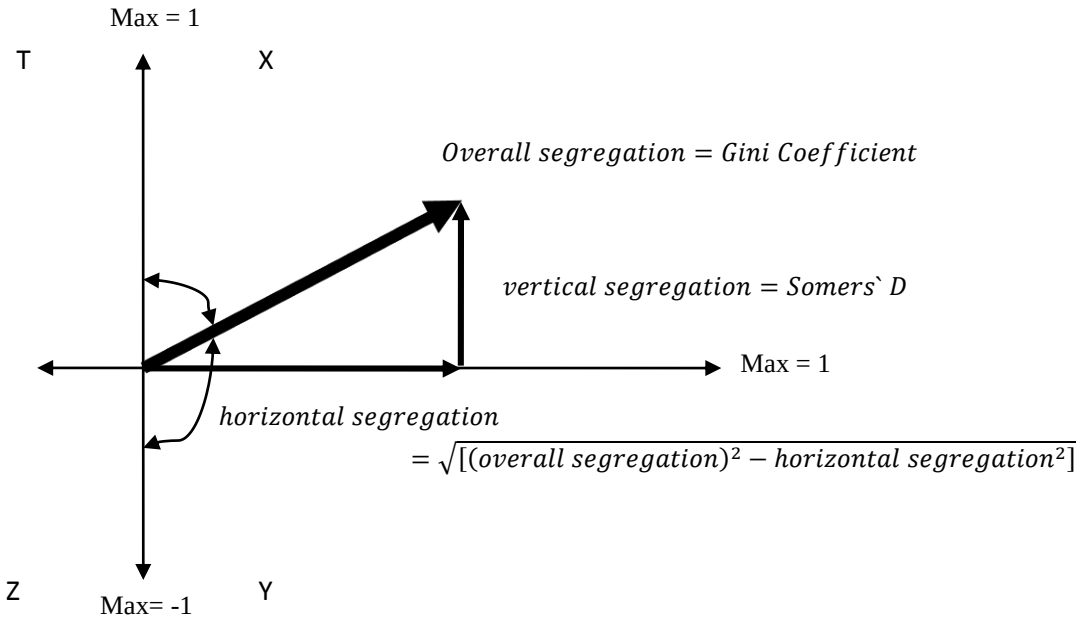
which is actually Somers` D which is a measure of association with an independent variable that can take two values (men and women in this study).[3] In other words, when occupations are ranked from the most female dominated to the lowest or vice versa, the value for Somers` D is maximized and it becomes the Gini coefficient (Blackburn et al., 1994 as cited in Blackburn

[3] See Appendix 1b for further information on Somers` D.

and Jarman 2006). When occupations are ranked by the criteria of occupational inequality - in our case by the mean hourly pay levels and stratification scale scores - Somers` D measures the vertical dimension of segregation. Therefore, the Gini coefficient for the overall segregation and Somers` D for its vertical dimension are strictly comparable measures in the sense that both are measured by Somers` D (since Somers` D becomes the Gini coefficient when occupations are ordered in accordance with their gender composition).

Finally, the horizontal component of segregation is conceptualised in the usual mathematical formulation indicating that it is orthogonal to the vertical component. Therefore, the horizontal component is found by using Pythagoras' theorem (see Figure 1). Blackburn et al. (2001) and Blackburn and Jarman (2006) summarise the mathematical and the conceptual relationship between vertical and horizontal dimension as the result of overall segregation as follows:

Figure 1-Graphical representation of the components of segregation



Source: Blackburn and Jarman (2006) pp.298

Figure 1 illustrates an expected (and usually observed) case where the vertical component is negative indicating men`s advantage over women in terms of pay or social stratification.[4]

[4] Given the fact that we coded the data on gender as 1= man 2 = woman, a positive vertical segregation value measured by Somers `D indicates woman`s disadvantageous position compared to man in a given occupational group. (See Appendix 1b for the further clarification on Somers` D).

However, the vertical component can also be negative indicating an advantage for women.[5] Since horizontal segregation is conceptualised as the difference without inequality, it can only be positive (Blackburn et al., 2001). Therefore, when there is an advantage for women in the vertical segregation measure, the overall segregation will locate at quadrant Y, and when there is a male advantage, it will locate at Quadrant X. Accordingly, the overall segregation cannot be located within quadrants Z and T.

3.2. Data and Descriptive Statistics

The data to analyse occupational gender segregation comes from the 2010 Household Labour Force Survey (HLFS) undertaken by the Turkish Statistics Institute. The sample is restricted to individuals aged 15 to 65 who are currently in employment. The sample contains 153,920 currently working individuals of which 45,029 are women and 108,891 are men. The HLFS provides data on occupations coded at the 2-digit International Standard Classification of Occupations 1988 (ISCO-88). There are no data available for Turkey that provide classifications which are more detailed than 2-digit level occupational categories. It is well established in the literature that segregation measures tend to increase with the number of occupations used in the analysis and, therefore, measures that use a less detailed occupational data are likely to underestimate the extent of occupational segregation (see for example, Anker 1998; Anker et al., 2003; Blackburn et al., 2001 and Blackburn, 2009). However, Anker (1998) argues that disaggregating occupational groupings from 2-digit to 3-digit level does not result in a substantial difference in the segregation measures, whereas one-digit level occupational data usually underestimate occupational gender segregation. Moreover, Blackburn (2009) considers 20 occupational categories as an "appropriate minimum" (2009:14). Accordingly, he states that it is possible to work on a less detailed occupational data if there are no alternatives; however, caution must be exercised when interpreting segregation measures. Therefore, given the unavailability of detailed occupational data for Turkey, we are constrained to work on 2-digit ISCO-88 data that cover 27 occupational categories, which satisfies Blackburn's "appropriate minimum".

Table 1 shows the employment distribution of women and men together with the total sample by occupational groups. It is seen that a very high proportion are engaged in agriculture, accounting for 27.17 percent of the total sample, and women are particularly over-represented

[5] For example, Blackburn and Jarman (2005) find a negative vertical segregation when CAMSIS is used as a measure for occupational inequality.

in agricultural occupations. More than 40 percent of women are employed in either skilled or unskilled agricultural occupations (34.54 percent under major group 6 "skilled agricultural and fishery workers" and 9.22 percent under unskilled "agricultural, fishery and related labourers". The proportion of men in agriculture is around 18 percent of which the vast majority is in skilled agricultural occupations and only 2.23 percent are unskilled agricultural labourers.

Table 1-Percentage Employment Distribution of Men and Women by Occupational Groups

	Total	Women	Men
Major Group 1 Legislators, senior officials and managers	8.39	2.73	10.71
11 Legislators and senior officials	0.43	0.1	0.56
12 Corporate managers	1.89	1.27	2.14
13 Managers of small enterprises	6.07	1.36	8.01
Major Group 2 Professionals	7.27	9.7	6.28
21 Physical, mathematical and engineering science professionals	0.84	0.71	0.9
22 Life science and health professionals	0.94	1.27	0.81
23 Teaching professionals	3.51	6.21	2.4
24 Other professionals	1.98	1.51	2.17
Major Group 3 Technicians and associate professionals	5.81	6.54	5.49
31 Physical and engineering science associate professionals	1.69	1.03	1.96
32 Life science and health associate professionals	1.12	2.73	0.45
33 Teaching associate professionals	0.15	0.37	0.05
34 Other associate professionals	2.85	2.41	3.03
Major Group 4 Clerks	6.62	9.48	5.44
41 Office clerks	4.85	6.79	4.05
42 Customer services clerks	1.77	2.69	1.39
Major Group 5 Service workers and shop and market sales workers	12.22	10.03	13.12
51 Personal and protective services workers	6.94	5.03	7.73
52 Models, salespersons and demonstrators	5.28	5	5.39
Major Group 6 Skilled agricultural and fishery workers	22.89	34.54	16.1
61 Market-oriented Skilled agricultural and fishery workers	20.13	31.78	15.31
62 Subsistence agricultural and fishery workers	1.37	2.76	0.79
Major Group 7 Craft and related trade workers	13.71	6.32	16.77
71 Extraction and building trades workers	4.18	0.07	5.89
72 Metal, machinery and related trades workers	4.26	0.2	5.94
73 Precision, handicraft, craft printing and related trades workers	1.44	3.23	0.7
74 Other craft and related trades workers	3.83	2.82	4.24
Major Group 8 Plant and machine operators and assemblers	9.59	3.09	12.28
81 Stationary plant and related operators	0.63	0.04	0.88
82 Machine operators and assemblers	3.97	3.03	4.36
83 Drivers and mobile plant operators	4.99	0.02	7.04
Major Group 9 Elementary occupations	14.9	17.57	13.8
91 Sales and services elementary occupations	6.75	6.19	6.99
92 Agricultural, fishery and related labourers	4.28	9.22	2.23
93 Labourers in mining, construction, manufacturing and transport	3.87	2.16	4.58
Total	100.0	100.0	100.0
Number of Observations	153,920	45,029	108,891

Source: HLFS 2010

Aside from the agricultural occupations, women are relatively more concentrated in service sector occupations (major group 4 “Clerks” and 6 “Service workers and shop and market sales workers”). On the other hand, men appear to have a more even distribution of employment across occupational groups. The highest proportion of men is observed in “Crafts and Related Trade Workers” which is closely followed by skilled agricultural activities. It is also important to note that women`s representation amongst occupations under major group “legislators, senior officials and managers”, which requires a significant degree of supervisory responsibilities and decision making, are at a markedly low level when compared to that of men. For example, only 0.1 percent of women are in “legislators and senior officials” category, compared to 0.56 percent of men.

Female employment shares across occupational groups are presented in Table 2. It is observed that only 7 percent of the sample working as “legislators and senior officials” is female and their representation amongst “corporate managers” and “managers in small enterprises” remains low compared to men. Women`s employment shares are very low across most occupational categories and they outnumber men in two areas which are at opposite ends of the skills spectrum. Women dominate in very low skill occupations such as “subsistence agricultural and fishery workers”, “agricultural labourers” and “precision, handicraft, craft printing and related trades workers”. Women`s shares also dominate men`s in typically “female” professional occupations such as nurses and associate professionals in primary school education - “Life science and health associate professionals” and “Teaching associate professionals”.

These findings can be regarded as an indicator for the disadvantaged position of women across the occupational structure in the labour market in Turkey. However, it is important to expand the analysis by investigating the overall segregation and its vertical and horizontal components and, therefore, provide a valid estimation for the extent of inequality entailed in the differentiation in the employment patterns between genders. Before doing so, the next section is devoted to explaining the construction of the stratification scale that is used as an indicator of occupational inequality in addition to mean levels of pay in given occupations.

Table 2-Women`s Employment Shares Across Occupational Groups

		Women`s employment shares
11	Legislators and senior officials	0.07
12	Corporate managers	0.20
13	Managers of small enterprises	0.07
21	Physical, mathematical and engineering science professionals	0.25
22	Life science and health professionals	0.39
23	Teaching professionals	0.52
24	Other professionals	0.22
31	Physical and engineering science associate professionals	0.18
32	Life science and health associate professionals	0.71
33	Teaching associate professionals	0.74
34	Other associate professionals	0.25
41	Office clerks	0.41
42	Customer services clerks	0.44
51	Personal and protective services workers	0.21
52	Models, salespersons and demonstrators	0.28
61	Market-oriented Skilled agricultural and fishery workers	0.46
62	Subsistence agricultural and fishery workers	0.59
71	Extraction and building trades workers	0.00
72	Metal, machinery and related trades workers	0.01
73	Precision, handicraft, craft printing and related trades workers	0.66
74	Other craft and related trades workers	0.22
81	Stationary plant and related operators	0.02
82	Machine operators and assemblers	0.22
83	Drivers and mobile plant operators	0.00
91	Sales and services elementary occupations	0.27
92	Agricultural, fishery and related labourers	0.63
93	Labourers in mining, construction, manufacturing and transport	0.16
Total		0.29

Source: 2010 HLFS

4. A SOCIAL STRATIFICATION SCALE FOR TURKEY

The background to the methodology for the construction of the stratification scale is the CAMSIS project ("Cambridge Social Interaction and Stratification Scales", see http://www.camsis.stir.ac.uk). CAMSIS uses the patterns of social interaction, for example in the form of friendship, marriage or cohabitation, between persons across occupational groups, in order to discover the structure of the stratification order in a society (Lambert, 2012). Accordingly, it is argued that "social interaction will occur most frequently between persons who are socially close to one another and relatively infrequently between those that are socially distant" (Prandy, 1999:204). Therefore, the CAMSIS scales are generally defined as "social interaction distance scales" and regarded broadly as an indicator of general social or material advantage, social hierarchy, prestige, social class etc. (Blackburn and Jarman, 2006).

For more than a decade, the CAMSIS project has been analysing the social interactions between occupations across countries and providing scale values indicating an occupation`s relative positioning in the social stratification. There is a CAMSIS scale derived for Turkey (Lambert, 2003, http://www.camsis.stir.ac.uk/Data/Turkey90.html). However, rather than using this, it was decided to construct a new scale on the basis of the methods employed in deriving the CAMSIS scales. This is because the only CAMSIS scale available for Turkey was constructed using 1990 Household Labour Force Survey. Given the significant changes associated with industrialisation, it is believed that it is crucial to generate a new social interaction distance scale for Turkey by adopting a more recent data set.[6] More importantly, this study aims to contribute to the very limited research on the occupational stratification in Turkey as, to the best of our knowledge, there is no socio-economic index or status scale for Turkey or a social interaction distance scale other than the CAMSIS scale based on 1990 data.

4.1. Estimation of the Social Stratification Scale

Following the CAMSIS approach, a social interaction distance analysis is adopted in the construction of the scale. As a statistical model, a Correspondence Analysis (CA) (Greenacre, 1984) is used in order to analyse the interactions between socially connected occupations. Broadly speaking, CA provides a visualisation of the "correspondence" or association between the row and column categories. Taking a two-way contingency table, the observed association between row and column categories is indicated by cell frequencies and CA is the study of how similar or different the certain characteristics of the two traits are.

CA assigns scores to the rows and columns of a cross-tabulation of socially connected occupations so as to maximise the correspondence between them. In other words, it estimates dimensions of difference between categorical positions of connected occupations with respect to the empirical occurrence of various combinations and the estimated parameters representing one or more dimensions of difference. Although more than one dimension of difference is usually reached, it is the first dimension (also called the principle dimension) which is generally

[6] It was also intended to investigate the changes in the stratification structure in Turkey over 20 years by comparing the stratification order observed in the CAMSIS scale for Turkey based on 1990 data to the one obtained by the stratification scale constructed in this study using 2010 data. However, CAMSIS scale for Turkey employs a detailed (3-digit or 4-digit) occupational categories coded in ISCO-68. In order to have comparability, occupational groups coded in ISCO-68 in CAMSIS were first converted to ISCO-88 (as will be discussed in Section 4.2, the data used for the stratification scale in this study is based on ISCO-88) following the tools provided by Harry Ganzeboom (available at http://home.fsw.vu.nl/hbg.ganzeboom/isco68/index.htm). However, as the author also points out, serious loss of information and misclassification occurred when ISCO-68 is recoded into ISCO-88, preventing us from obtaining a reliable comparison between the two scales.

found as an indicator of the social distance structure and, therefore, regarded as an indication of social advantage or disadvantage (Griffiths and Lambert, 2011). Accordingly, it is usually the parameters of the first dimension which generate the social interaction distance scales.[7]

4.2. Data for the Correspondence Analysis

The estimation of social stratification scale scores are based on the 2010 Household Labour Force Survey (HLFS) undertaken by the Turkish Statistics Institute. However, the data are processed quite differently in the social interaction distance analysis. The original HLFS data includes 522,171 individual members of households. In an attempt to construct a data set which links individuals through a "social connection", the data is first converted into a format consisting of pairs of men and women within the households who are cohabiting or married couples. In other words, the data set is sorted into male-female within household occupational combinations.[8] Data on the occupations of cohabiting/married partners have been a major source for many CAMSIS scale estimates (see http://www.camsis.stir.ac.uk/versions.html for information on the national versions of CAMSIS). This is mostly because the information on occupations on married/cohabiting couples is widely available in large scale representative data, such as, census and large scale household surveys, for many countries (Griffiths and Lambert, 2011). Moreover, this enables researchers to work on large number of cases (Chan, 2010a).

As discussed extensively by Prandy and Lambert (2003) and Griffiths and Lambert (2011), there are some potential drawbacks associated with using data on occupations of married/cohabiting couples. First of all, the sample of partners may not be representative of the population of all occupations; for example, the jobs that are likely to be held by the young or the old might be under-represented since it is less likely that data on occupations of partners will be available for these age groups. Similarly, the jobs that are particularly favoured by married women are likely to be over-represented. It, therefore, follows that an analysis based solely on married women`s occupations might also not provide a satisfactory illustration of women`s location in the social hierarchy. However, Prandy and Lambert (2003) justify the use of couple data in order to derive a social stratification scale in the sense that "...emphasis on marriage as an aspect of social reproduction means that we give equal weight to both partners....

[7] Please see Greeanacre (1984) and Beh (2004) for a full discussion about the Correspondence Analysis.
[8] Lambert (2009) provides a guidance to the analysis of data on social connections and do-file exemplars are available at CAMSIS project websites. (http://www.camsis.stir.ac.uk/make_camsis/).

Because of the reciprocal nature of the methods used, if there are structural inconsistencies in the location of wives, this will be reflected in the positions of husbands (which, in turn, will feed back on wives' locations)" (2003:402). Moreover, the evidence from several studies indicates that the occupational links between couples provide a stratification structure that is very similar to those generated by data on occupations linked through other social connections such as friendship (see for example, Prandy and Lambert, 2003 and Chan, 2010b).[9] It is also plausible to regard marriage as the most important form of social connection in a more socially conservative society such as Turkey. Therefore, the analysis in this study explores social interaction distances or to put it differently, the association between occupations, according to the marriage/cohabitation patterns.

The HLFS data had information on 108,589 couples. However, the combinations where both partners are currently working are selected from these couples (25,512 couples) in order to have data on both occupations within married/cohabiting couples. Data on occupations are based on ISCO-88 2-digit sub-major groupings that include 27 occupational categories. CAMSIS methodology strongly recommends the use of the most detailed occupational categories available, since a finer detailed classification of occupations can provide a better insight into the relative positioning of different units.[10] This is an important argument because, the scale values generated for the sub-major groups may not be able to illustrate the potential variation in gender profiles in particular occupational categories. For example, within group 22 – life science and health professionals – men are more likely to be doctors and women are more likely to be nurses; however, a scale score for the sub-major group will not be able to disentangle these differences. Nevertheless, there are a considerable number of studies that use a more aggregate level of occupational groupings, usually 2-digit categories (e.g. Mitchell and Critchley, 1985; Chan and Goldthorpe, 2004, 2007). Moreover, there are examples of the CAMSIS scales for countries presented at a relatively aggregate level of occupational groupings, such as minor or even major groupings, because of the unavailability of detailed

[9] There are various studies which use friendship data that provide information on respondents` and their close friends` occupations in order to analyse social connections between occupations (e.g. Laumann and Guttman, 1966; Stewart et al., 1980; Chan and Goldthorpe, 2004). It could have been a fruitful practice to compare the stratification structure generated from friendship and marriage networks; however, there is no data set which can enable us to derive friendship connections between occupations for Turkey.

[10] An extensive discussion on the CAMSIS methodology can be found at http://www.camsis.stir.ac.uk/

occupational data.[11] More pragmatically, the analysis for Turkey requires working on 2-digit level occupational data as there are no data that provide a more detailed occupational grouping.

4.3. Further Aspects of the Social Interaction Distance Analysis

A further challenge in the social interaction distance analysis relates to the treatment of pairings of occupations which are more likely to be observed. That is, there might be cases where partners hold the same occupation or closely related occupations, not because of the underlying general structure of stratification or inequality but because of the other reasons that give rise to this particular pattern of interaction, such as joint or family owned enterprises or shared institutions (Prandy and Lambert, 2003). As discussed extensively in the CAMSIS approach (see http://www.camsis.stir.ac.uk/overview.html), common examples of such cases include partners both engaging in farming; husbands are farmers and wives are agricultural workers or in retail; husbands are "shopkeepers" and wives "shop assistants" or in terms of more institutional links; husbands are "doctors" who are married to "nurses".

In the CAMSIS approach such combination of occupations are identified and defined as "pseudo-diagonals" and they are conventionally excluded from the analysis in the CA framework (Griffiths and Lambert, 2011). By doing so, the possible effect of the pseudo-diagonals on each occupation`s location on the general scale score is eliminated.[12] In this study, combinations of "market-oriented skilled agricultural and fishery workers" and "subsistence agricultural and fishery workers" are excluded.[13] Unfortunately, ISCO-88 2-digit categories do not enable us to identify further pseudo-diagonals such as combinations of occupations that are institutionally linked. The results from the CA after the exclusion of couples engaged in farming are represented in Table 1a in the Appendix 1a. The results consist of two spaces, one for each row and the columns; that is, one for men and one for women. Except for the case of pseudo-diagonals discussed above, it is expected that the stratification structure is the main determinant of marriage or cohabiting and, therefore, it is the stratification order that appears

[11] For example, the CAMSIS scale for Belgium is based on ISCO-88 2-digit occupational categories due to the unavailability of a finer detailed occupational data. As a consequence of that and the small sample size of the data set used, the scale values are argued not to be fully satisfactory; but still worth to be presented since there is no way of providing a better alternative (Lambert, 2003, available at http://www.camsis.stir.ac.uk/Data/Belgium.html) .

[12] If pseudo diagonals are not eliminated from the analysis of association between couples` occupations, their effect on the derived scores can be significant; for example, pseudo diagonal occupations can be scored at the positive or negative extremes. (see Prandy and Lambert, 2003)

[13] Therefore, 8,001 out of 25,512 married and cohabiting partners are excluded from the analysis.

as the first dimension of each of these two spaces.[14] The coordinates on this first dimension of each row or column points, which stand for occupation categories of men or women, are then regarded as scores indicating their location in the hierarchical social ordering (Prandy and Jones, 2001).[15] The singular value (referred to as the Pearson correlation) associated with the first dimension (shown at the bottom of Table 1a) represents the extent of the correspondence between the occupational scores of men and women. In other words, it is an indicator of the tendency of couples being at similar levels in the social hierarchy. Accordingly, a high singular value or the Pearson correlation coefficient can also be interpreted as a sign of a strong stratification structure generated from the marriage/cohabitation patterns; that is, some couples being at one extreme of the stratification structure and the remainder at the other. Conversely, a low correlation coefficient indicates a less significant social ordering.[16] As can be seen from Table 1a, the singular value associated with the first dimension is 0.79 for Turkey which is a sign of significant stratification structure; however, as argued above, it is possible that this figure would have been lower if a more detailed occupational classification was available.

Another noteworthy feature of our analysis is that it is gender-sensitive in the sense that different scale scores are derived for women and men. The scale for women provides a ranking for women`s occupations in the social hierarchy while the scale for men ranks men`s occupations. Men`s scale scores are identified by the occupations of women they are married to/cohabiting with and women`s scale scores are derived from the occupations of men they are married to/cohabiting with. This is important because holding a particular occupation might have different social meaning for men and women; although we might expect an association between the scale scores for men and women. In the case for Turkey, the correlation between the scale scores for men and women for the overall occupational categories is found to be 0.78 which can be interpreted as a quite similar social ordering of occupations for men and women.

[14] The further dimensions presented in the social distance analysis are more difficult to interpret. However, it can be asserted that they stand for the effect of further elements on the empirical patterns of social interactions between people (in our case, in the form of marriage) other than the general social stratification structure. These elements can be the gender profile or sectoral distribution of the occupations. However, the interpretation of the further dimensions is debatable (see for example, Prandy and Jones, 2001; Prandy and Lambert, 2003 and Griffiths and Lambert, (2011 for further discussion).

[15] This is the initial step in the scale construction. In line with the CAMSIS approach, these scores are then transformed by mean standardisation that will be discussed shortly.

[16] Prandy and Jones (2001) find a very low singular value for Australia and the USA which are regarded as socially egalitarian countries. (2001:173)

4.4. The Stratification Scale Scores for Men and Women

In order to ensure a clearer stratification ranking for men and women, the scale values should be transformed into a more straightforward format. This is done through mean standardisation that ensures that the scale values have the same population mean value and variance parameters as suggested by the CAMSIS project (please see http://www.camsis.stir.ac.uk/construction/transformations.htm for a detailed information on the scale transformation). Accordingly, the scale scores for men and women within non-pseudo couples are standardised around a continuous normal distribution with a mean value of 50 and standard deviation of 15.

The ranking of occupations for women and men by the mean scale scores after the standardisation are presented in Table 3. Broadly speaking, the ranking of women`s and men`s occupations are very similar with some interesting exceptions.[17] Professionals constitute the top positions in the social stratification structure for both men and women and they are followed by corporate managers. As might be expected, manual occupations such as labourers in mining, construction, manufacturing and transport; agricultural, fishery and related labourers; subsistence agricultural and fishery workers; extraction and building trades workers and unskilled sales and services elementary occupations fall into the lowest positions in the stratification order. The middle of the occupational ordering consists of clerical jobs (office clerks and customer service clerks) followed by associate professionals and managers of small enterprises.

One important difference between the scales for men and women is in the relative positioning of various agricultural occupations. For men, they are at the very lowest end of the continuum, whereas their position amongst the ranking of women`s occupations is slightly higher. The agricultural occupations` scale scores are extremely low for men. As previously discussed, the combinations of "market-oriented skilled agricultural and fishery workers" and "subsistence agricultural and fishery workers" are defined as pseudo diagonals in this study and are excluded from the analysis. Prandy and Jones (2001) give the example of farmers and farm workers to

[17] As discussed extensively in the methodology for the stratification scale, different social stratification scales are derived for men and women. The scales for women provide a ranking for women`s occupations in the social hierarchy while the scales for men rank men`s occupations. Therefore, although relative locations of occupations of men and women might be similar, the scale scores for men and women for an occupation need not to be related. Therefore, the analysis of stratification structure is ideally applicable only within gender groups. That`s why a comparison between the value of the scale scores for men and women is avoided and the focus is solely on the relative locations of the occupations for men and women.

illustrate the possible effect of pseudo diagonals on the stratification scale scores. He states that the potential outcome of including the husband and wife combinations in farming would be an artificially high scale score derived for the farm workers for women, as many of them are likely to be wives of farmers. Therefore, the scale score for farm workers are more reliable when these combinations are excluded from the analysis. However, Prandy argues that the exclusion of such combinations reduces the correlation between partners` occupations` scores. He gives the scale scores derived for Britain as an illustration; the scale scores show a notable gap between men and women, women having a significantly higher scale score for farm workers compared to that of men. The difference between the scale scores resulting in a slight difference in agricultural occupations` locations on the stratification scale for men and women observed in Turkey can therefore result from the exclusion of pseudo-diagonals from the analysis.

Table 3-Ranking of Occupations by the Stratification Scale Scores for Women and Men

Women		Men	
Occupational Title	Score	Occupational Title	Score
1.Teaching professionals	71.14	1.Teaching professionals	72.56
2.Life science and health professionals	70.66	2.Life science and health professionals	71.44
3.Physical, mathematical and engineering science professionals	69.49	3.Physical, mathematical and engineering science professionals	70.09
4.Other professionals	66.66	4.Other professionals	67.39
5.Life science and health associate professionals	65.61	5.Corporate managers	67.2
6.Corporate managers	65.16	6.Life science and health associate professionals	66.79
7.Legislators and senior officials	61.72	7.Physical and engineering science associate professionals	60.84
8.Other associate professionals	60.25	8.Other associate professionals	60.39
9.Customer services clerks	59.89	9.Customer services clerks	58.4
10.Office clerks	59.11	10.Office clerks	57.41
11.Drivers and mobile plant operators	56.91	11.Managers of small enterprises	54.37
12.Physical and engineering science associate professionals	56.37	12.Precision, handicraft, craft printing and related trades workers	54.33
13.Managers of small enterprises	55.37	13.Personal and protective services workers	53.23
14.Stationary plant and related operators	54.68	14.Teaching associate professionals	52.73
15.Teaching associate professionals	54.16	15.Legislators and senior officials	52.69
16.Models, salespersons and demonstrators	53.64	16.Models, salespersons and demonstrators	51.76
17.Metal, machinery and related trades workers	51.23	17.Machine operators and assemblers	49.28
18.Personal and protective services workers	51.14	18.Metal, machinery and related trades workers	48.7
19.Precision, handicraft, craft printing and related trades workers	49.71	19.Other craft and related trades workers	48.47
20.Machine operators and assemblers	49.06	20.Stationary plant and related operators	48.41
21.Market-oriented Skilled agricultural and fishery workers	48.46	21.Drivers and mobile plant operators	48.03
22.Sales and services elementary occupations	47.88	22.Extraction and building trades workers	46.06
23.Subsistence agricultural and fishery workers	47.69	23.Sales and services elementary occupations	45.76
24.Other craft and related trades workers	47.27	24.Labourers in mining, construction, manufacturing and transport	43.73
25.Labourers in mining, construction, manufacturing and transport	46.51	25.Agricultural, fishery and related labourers	24.41
26.Extraction and building trades workers	42.53	26.Market-oriented Skilled agricultural and fishery workers	16.62
27.Agricultural, fishery and related labourers	19.77	27.Subsistence agricultural and fishery workers	14.44

Source: 2010 HLFS

4.5. Validation Check

Before using the generated scale scores for the occupational categories in the main data source, it is a common practice to check their validation by investigating their relationships with other gradational measures of stratification. In order to do so, the scale scores are correlated with the "international socio economic index" (ISEI) and the "international CAMSIS" (ICAM) (Ganzeboom et al., 1992; Ganzeboom and Treiman, 1996; De Luca et al., 2010). Ganzeboom at al. (1992) have conceptualised occupations as a means to transform education into earnings. Therefore, they have estimated the ISEI by scaling the occupational categories so as to maximise the indirect effect of education on earnings through occupation and minimise its direct effect. ICAM, which is shown to be strongly correlated with ISEI, has been developed by De Luca et al. (2010). ICAM is a relational scale that uses data for more than 110,000 married/cohabiting couples from the International Social Survey Programme (ISSP) 2002-2007 for 42 countries with detailed ISCO-88 occupation groupings. The correlations between the scale scores for men and women derived for Turkey and ISEI and ICAM are represented in Table 4.[18]

Table 4-Correlations between ISEI and ICAM

	Female Score	Male Score
ISEI	0.8180	0.8418
ICAM	0.8183	0.8179

It is seen that the stratification scales derived for Turkey are highly correlated with the ISEI and ICAM. The correlation coefficients are almost the same for men`s and women` scale scores, with the exception of the correlation between ISEI and the male score being slightly larger. After this validation check, we have safely imported these scale scores to our main data source and assigned the derived scores to the occupational categories.[19]

[18] ICAM and ISEI scores on 2-digit occupational categories are used for the correlation analysis.
[19] The scale scores are reformatted and re-standardised for men and women for the whole population around a continuous normal distribution with a mean value of 50 and standard deviation of 15.
.

5. EMPIRICAL RESULTS ON THE EXTENT OF (OVERALL) OCCUPATIONAL GENDER SEGREGATION AND ITS DIMENSIONS IN TURKEY

As noted earlier, the Gini coefficient is used as a measure for overall occupational gender segregation and it is shown to be the "limiting case of Somers' D" when occupations are cross-tabulated by gender (Blackburn and Jarman, 2006). Accordingly, Somers` D is used to analyse the vertical dimension of overall segregation since it is strictly comparable with the overall segregation measure. Two criteria of occupational disadvantage or inequality are employed in order to rank occupations on the vertical axis. These are the levels of pay and the stratification scale scores for the occupations. In terms of pay, mean hourly pay levels of all workers in an occupation are calculated.[20] In terms of the social stratification scale scores, as discussed in Section 4.3., separate scales are derived for men and women. However, mean scale scores for men are used for the analysis of vertical dimension. It is a common practice to analyse vertical dimension with male CAMSIS scores as more occupational data are typically available for male occupations (Blackburn et al, 2001). Therefore, one reason to choose men`s scores is to achieve comparability with these studies. Furthermore, it is believed that the advantages of holding an occupation would be better illustrated by the ordering of the more favourable, mostly full-time, uninterrupted career opportunities; that is the occupational structure of men (see Blackburn, et al., 1997).

5.1. Occupational Gender Segregation amongst Non-Agricultural, Regular or Casual Employees

At the first stage, the analysis on overall segregation as the result of vertical and horizontal components is performed amongst "regular or casual employees". This is because the pay data is available only for regular/casual employees. As shown in the basic descriptive statistics, a significant portion of the workforce, especially women, is employed in agriculture. Therefore, there were concerns about whether this would blur the analysis of occupational segregation as women`s over-representation in agriculture is likely to dominate the segregation patterns. There are several instances where the occupational gender segregation is analysed only for the non-agricultural labour force (see for example, Anker, 1998 and Melkas and Anker, 1998). According to Anker et al. (2003), occupational gender segregation does not typically apply to

[20] Mean hourly pay levels are obtained through dividing monthly payment by 4.3 in order to obtain weekly pay. The resulting weekly pay is then divided by the total weekly hours of work.

family labour and it is crucial to analyse the driving force behind women`s exclusion from non-family employment.[21] Therefore, as an initial stage, we followed this convention and analyse the occupational gender segregation amongst non-agricultural, regular/casual employees.

Table 5 presents the results for the non-agricultural, regular/casual employees. Looking at the level of segregation when the vertical dimension is measured by pay, it is seen that the vertical dimension is associated with a positive sign (0.154), indicating the expected advantageous position of men in terms of mean hourly pay. In other words, women have a greater tendency to be employed in lower-paid jobs. However, the horizontal dimension is considerably larger than the vertical dimension. Therefore, it can be asserted that the overall segregation amongst regular/casual employees owes more to the differences in the patterns of male and female employment across occupations rather than the inequality (measured by pay) prevalent in this pattern.

Table 5-Overall Segregation and the associated Vertical and Horizontal Dimensions (Regular/Casual Employees)

	(Vertical segregation measured by mean hourly pay)	(Vertical segregation measured by the stratification scale)
Overall	0.484	0.484
Horizontal	0.458	0.415
Vertical	0.154	0.248
Number of occupations	27	27

Source: 2010 HLFS

The vertical dimension measured by the social stratification scale is 0.248 which is substantially larger than the value obtained for pay. That is to say, women are at an even more disadvantaged situation in terms of social stratification; they have a greater tendency than men to be employed in occupations that rank lower in the overall social hierarchy. Once again, the horizontal dimension is larger than the vertical dimension. Therefore, the overall segregation is due more to the fact that men and women are employed in horizontally different occupations; however, it is accompanied by a considerably greater level of inequality this time.

It can, therefore, be concluded that women are always found to be in a disadvantaged position with respect to men amongst the non-agricultural regular/casual employees. It is particularly

[21] Anker et al. (2003) investigate the level and pattern of occupational gender segregation in several countries for the non-agricultural labour force regardless of the extent of agriculture in these countries` economies. The countries included in their study are Hong Kong, China, Korea, Republic of Thailand, Egypt, Iran, Islamic Republic of Jordan, Austria, France, Spain, United States, Poland, Czech Republic, Costa Rica, Ecuador and Uruguay.

striking that women have a substantially greater probability of being employed in lower ranked occupations across the social stratification structure. Therefore, in addition to the economic inequalities women face, they are also exposed to social inequalities in the occupational structure. A bigger horizontal dimension of overall segregation is found regardless of whether the vertical dimension is measured by pay or social stratification scale, although the extent is relatively smaller in the latter. However, it is important to note that, although horizontal dimension does not bring about inequality, it contributes to a more limited set of occupational choices for both women and men.

5.2. Occupational Gender Segregation amongst the Whole Sample

In order to expand the analysis on the extent of occupational gender segregation in the labour market in Turkey, this section analyses the overall segregation and its components for the whole sample, including agricultural occupations and all kinds of employment status.[22] The vertical dimension is measured only by the stratification scale scores here, as the data on pay are not available for those who are not regular/casual employees. Table 6 shows the results for the overall segregation and its components for the whole sample.

Table 6-Overall Segregation and the associated Vertical and Horizontal Dimensions for the whole sample

Overall Segregation	-0.518 [a]
Horizontal Segregation	0.503
Vertical Segregation	-0.124[b]
Number of occupations	27

[a] Overall segregation is shown with a negative sign because it locates at quadrant Y (Figure 1, p.13) when the vertical component is negative. [b] Vertical segregation is measured by male stratification scale scores. Source: 2010 HLFS

As can be seen from Table 6, surprisingly, the vertical dimension of overall segregation is negative. Therefore, when the occupational segregation analysis is performed for the whole sample, women appear to have an advantage compared to men in terms of the positions of the occupations they hold in the social stratification structure. There are several instances in the literature where women are found to be employed in occupations that are higher up the social stratification structure (i.e. the vertical component of the overall segregation shows a negative sign) (see, Blackburn et al. 2001; Blackburn and Jarman, 2006; Jarman et al., 2012). For

[22] 2010 HLFS classifies employment status as i) regular/casual employee, ii) employer, iii) self-employed and iv) unpaid family worker.

example, while analysing the occupational gender segregation patterns in the USA and Britain, Blackburn and Jarman (2005) find a positive vertical dimension when measured by pay, but a negative sign when measured by CAMSIS. In a more recent article, Jarman, et al. (2012) expand the analysis by including more countries, the majority of which are developed countries.[23] They observe a similar pattern in the vertical segregation; a positive and a negative sign when the vertical dimension is measured by pay and CAMSIS respectively. According to the authors, the distribution of women and men across occupations could provide an explanation for this fact. Although men might be employed in the well-paid occupations, it is also true that the unskilled heavy work, which is located at a lower position in the social hierarchy, is undertaken by men. Furthermore, the authors indicate that the advantageous position of women in the stratification structure is rather recent and could be explained by the changing characteristics of the occupational structure in industrialised countries. Prior to industrialisation, there were a limited number of women in the workforce and they were more likely to be employed in manual occupations compared to men. However, the shift from manual to non-manual work as a result of industrialisation provided additional job opportunities for women and it has mostly been women who moved into non-manual occupations. Therefore, it is now men who have a greater tendency to perform manual work. While at the beginning of this transition, women were mostly employed in lower level non-manual employment, such as clerical jobs, they now have a considerable share in the professional occupations.[24]

Although these explanations provide a very strong argument for the developed countries, we will argue that it is less likely to be true for Turkey for several reasons. The labour market in Turkey is characterised by a significantly low participation rates of women.[25] The U-shaped impact of economic development and urbanisation, together with the rural-urban migration over the last 50 years in the country, are amongst the common explanations for the under-

[23] The authors analyse the occupational gender segregation across 30 countries. However, the sample is reduced to 10 countries while analysing the vertical dimension of segregation by pay and CAMSIS scores due to the unavailability of data. These countries are; Sweden, Russia, Germany, Slovenia, Hungary, UK, USA, Czech Republic, Switzerland and Austria. The vertical dimension measured by pay is found to be positive for all countries except Slovenia and the countries are found to have a negative vertical dimension when measured by CAMSIS with the exception of Austria in which the vertical component is shown to have a positive sign.
[24] While analysing the occupational segregation pattern in Britain in 1991 and 1996 and for the USA in 1990, Blackburn et al. (2001) find the vertical segregation to be negative (women`s advantageous position) for manual work while it is shown to be positive (women`s disadvantageous position) for non-manual work when the vertical dimension is measured by CAMSIS. Therefore, it remains to be seen whether the recent increase in the proportion of women amongst high level non-manual occupations in developed countries; such as, professionals, will be enough to offset women`s disadvantaged position amongst non-manual work.
[25] The labour force participation rates of women were around 25 percent in 2000s. The figure has increased to 30.8 percent in 2013 (TURKSTAT, 2013. Available at http://tuikapp.tuik.gov.tr/isgucuapp/isgucu.zul?dil=2).

representation of women in the labour market (see for example, Tansel, 2002; Gunduz-Hosgor and Smits, 2006; Dayioglu and Kirdar, 2010). Accordingly, the industrialisation process in Turkey has been criticized on the grounds that it reduced the importance of agriculture and failed to create job opportunities for women. In other words, it is argued that women who used to work in agricultural activities in rural areas devoted themselves to housework rather than participating in the urban labour market because of their limited labour market characteristics, such as their lower educational levels and experience.

The studies testing the impact of economic development on women`s employment in Turkey note that the country can still be considered to be at the intermediate phase of industrialisation where women`s participation rates in the labour market are the lowest (Tansel, 2002; Gunduz-Hosgor and Smits, 2006). These studies anticipate a transition to an upward trend in the coming years which is supported by the national figures indicating that the decline has slowed down and there has been a slight improvement in the participation rates of women since 2007. However, this is likely to have a lagged effect and it may be some years before the positive effects of industrialisation on women`s employment in Turkey are observed. Moreover, although declining in prevalence, agriculture continues to be the main economic activity for women.[26] Therefore, women in Turkey continue to be employed more in manual work and they are underrepresented in non-manual occupations, especially among the ones that rank highly in the social stratification structure. That is to say, the labour market structure in Turkey is still quite different from many industrialised countries. Therefore, the negative sign observed for the vertical dimension should be investigated on different grounds.

In order to find a plausible explanation on why women appear to have an advantageous position, it would be useful to refer back to the social interaction and distance analysis for Turkey. As discussed earlier, the scale scores for men are used in order to analyse the vertical segregation. It was shown that the professionals, followed closely by corporate managers, constitute the top positions in the social stratification structure. The male scores were observed to be more or less the same for the occupations that rank in the middle of the scale. However, the agricultural occupations were found to be located at the bottom of the stratification structure and their scale scores were strikingly low compared to all other occupational categories (see Table 3, pp. 22). These findings lead to concerns about whether the negative sign observed in

[26] Almost 40 percent of women were reported to engage in agricultural activities in 2009. (TURKSTAT, 2009; available at http://www.turkstat.gov.tr/PreTablo.do?alt_id=1007).

the vertical dimension is due to the agricultural occupations, because a great portion of the total sample engages in agricultural activities (see descriptive data analysis in Section 3.2) which ranks notably lower in the social stratification structure.

In order to better illustrate our argument, Table 7 shows the distribution of women and men by agricultural occupations together with the scale scores associated with them.

Table 7-The distribution of agricultural occupations among women and men and the associated scale scores

Code	Occupational Title	Women		Men		Scale Score	Women`s employment share
		Frequency	Percentage amongst Women	Frequency	Percentage Amongst Men		
92	Agricultural, fishery & related Labourers	4,152	9.22	2,430	2.23	24.41	63 %
61	Market-oriented skilled agricultural & fishery workers	14,309	31.78	16,673	15.31	16.62	46 %
62	Subsistence agricultural & fishery workers	1,244	2.76	864	0.79	14.44	59%

Source: 2010 HLFS

It is seen that the scale scores for agricultural occupations are extremely low so as to have a dominating impact on the vertical segregation measure. The percentage employed in agricultural occupations are notably greater for the female population. Women`s share is greater than men`s among "agricultural, fishery and related labourers" and "subsistence agriculture and fishery workers", although the frequencies of men and women are not notably different from each other in the latter (the lowest ranked occupational category in the social stratification).[27] Furthermore, men`s share is larger than women amongst "market oriented skilled agricultural and fishery workers" whose score is almost as low as "subsistence agriculture and fishery workers". Therefore, although agricultural occupations constitute a

[27] The descriptive data analysis in Section 3.2 has indicated that the employment shares of women across occupations are significantly lower than men and beside agricultural occupations, they outnumber men notably only in "life-science and health" and "teaching" associate professionals (see Table 2 on page 18). The life science and health associate professionals rank as the 6th while teaching associate professionals are the 14th across the social ordering of the occupations, which means that they do not locate significantly up in the social hierarchy which could explain the advantageous position of women in the social stratification structure.

notably greater part in women`s employment, women are still either outnumbered by men or have almost the same shares across the agricultural occupations that rank considerably lower in the social hierarchy. In order to establish whether this can explain why women seem to have an advantaged position concerning the location of their occupations in the social hierarchy, the segregation measures are calculated by excluding each agricultural occupation separately and the effect of each practice on the extent of vertical segregation is investigated.

5.3.Occupational Gender Segregation after the Exclusion of Agricultural Occupations

In order to analyse how agricultural occupations affect the level of segregation and particularly, to investigate whether they are the driving source behind the negative vertical component, group 61 (market oriented skilled agricultural and fishery workers) are first excluded from the analysis, since it includes the greatest number of men and women. Looking at Table 8, it is seen that, although the size of the vertical segregation is very low, it is no longer negative when group 61 is eliminated from the sample. However, the vertical segregation index continues to be negative, indicating women`s occupational advantage concerning the stratification structure, when group 92 (agricultural, fishery and related labourers) and 62 (subsistence agricultural and fishery workers) are excluded respectively. Therefore, it can be concluded that the negative vertical dimension is connected with the ranking of group 61 and the counter-intuitive results disappear when this group is excluded from the analysis. This highlights the dominating effect of group 61 in the occupational segregation analysis. A vast majority of the sample is employed in this group. Moreover, although the greatest proportion of the women in the labour force is employed in this group, the number of men outweighs the number of women. Therefore, women artificially appear to have a better occupational standing in terms of the relative position of the occupations they hold across the stratification structure.

Table 8-Overall Segregation and the associated Vertical and Horizontal Dimensions after excluding agricultural occupations separately

	Group-61 is excluded	Group-92 is excluded	Group-62 is excluded
Overall	0.554	-0.504	-0.516
Horizontal	0.549	0.498	0.504
Vertical	0.075	-0.077	-0.108
Number of Occupations	26	26	26
Number of Observations	122,938	147,338	151,812

Source: 2010 HLFS. 61- Market-oriented Skilled agricultural and fishery workers; 92- Agricultural, fishery and related labourers; 62- Subsistence agricultural and fishery workers.

In order to expand the analysis, the effects of the further exclusions of combined agricultural occupations are investigated. The results from these exclusions are presented in Table 9. It is seen that, except from the extremely small but negative vertical dimension observed with the exclusion of groups 62 and 92, the vertical dimensions are all associated with a positive sign, indicating the expected disadvantaged position of women. The only negative sign can be interpreted as, given the relatively few members in these groups, the elimination of groups 62 and 92 from the analysis is not enough to offset the dominating effect of group 61 on the vertical segregation measure.

Looking at the first column in Table 9, which shows the occupational segregation measures with the exclusion of groups 61 and 62, a modest advantage to men is seen with a vertical dimension of 0.112. The level of overall segregation is observed to be the highest in this sample and it is mostly because of the difference in the occupations that women and men are employed (with a horizontal dimension of 0.537). Comparing these results with the ones observed when groups 61 and 92 are excluded (the third column in Table 9), it is seen that the vertical component of overall segregation is substantially larger in the latter. Correspondingly, the extent of horizontal segregation is lower, although it still constitutes a greater part in the overall segregation.

Table 9-Overall Segregation and the associated Vertical and Horizontal Dimensions after excluding combined agricultural occupations

	Groups 61and 62 are excluded	Groups 62 and 92 are excluded	Groups 61 and 92 are excluded	Groups 61, 62 and 92 are excluded
Overall	0.549	0.500	0.528	0.519
Horizontal	0.537	0.496	0.481	0.442
Vertical	0.112	-0.057	0.218	0.271
Number of Occupations	25	25	25	24
Number of Observations	120,830	145,230	116,356	114,248

Source: 2010 HLFS. 61- Market-oriented Skilled agricultural and fishery workers; 92- Agricultural, fishery and related labourers; 62- Subsistence agricultural and fishery workers.

Finally, the biggest vertical dimension is observed when all the agricultural occupations are excluded from the analysis (see the last column in Table 9). The horizontal dimension is even lower than that is observed when groups 61 and 92 are excluded. This result is expected because the difference in the employment patterns between men and women is likely to be lower when a great number of women engaged in agriculture are excluded from the analysis. Moreover, although the horizontal dimension constitutes a greater proportion of the overall segregation,

there is a notable effect of vertical dimension this time; women are working in the occupations that rank lower in the social hierarchy.

6. CONCLUSION

This study attempts to analyse occupational gender segregation in Turkey as a consequence of horizontal and vertical dimensions as suggested by Blackburn et al. It is, therefore, the first study which explores the extent of inequality entailed in the tendency of men and women to be employed in different occupations in the labour market in Turkey. Accordingly, it is argued that the actual degree of unequal differentiation in the employment patterns between men and women can be captured by the vertical dimension of segregation, while the horizontal dimension stands for the difference in this pattern without an implication of inequality. In order to rank occupations on the vertical axis, in addition to the mean hourly pay levels, a gender sensitive social stratification scale is constructed following the CAMSIS approach by using a Correspondence Analysis. To the best of our knowledge, it is the first socio-economic index or status scale or a social interaction distance scale apart from the CAMSIS scale based on 1990 data for Turkey. The scale derived for Turkey is found to be highly correlated with the ICAM and ISEI which ensures the validity of the scale. The scale presents a similar stratification structure for men and women in Turkey; professionals and corporate managers locating at the higher end of the continuum and manual workers are at the lowest position in the stratification order, with the exception of agricultural occupations ranking slightly higher for women relative to men.

The vertical and horizontal dimensions associated with the overall segregation of men and women into different occupations are first analysed for the non-agricultural regular/casual employee mostly because the pay data is available only for this category. Women are consistently found to be at a disadvantaged position with respect to men and the extent of inequality is even larger when the occupations are ranked by the social stratification scale scores. In other words, women are more likely to be employed in lower-paid occupations relative to men and their chance of being employed in the lower ranked occupations across the social hierarchy is even greater. However, when the analysis is expanded to the whole sample, including agricultural occupations and all kinds of employment status, counter-intuitive results are obtained for the vertical dimension measured by the stratification scale scores.

Interestingly, women appear to have a greater tendency to be employed in occupations that are higher up the social stratification structure.

It is not peculiar to our study to find an advantaged position of women in the social stratification structure; several studies suggest similar results for the developed countries (see for example, Blackburn et al., 2001; Blackburn and Jarman, 2006; Jarman et al., 2012). Women`s favourable position relative to men is reasonably attributed to changing employment patterns in the industrialised countries where women are increasingly employed in non-manual occupations such as professionals, which rank more highly in the social hierarchy. However, this study argues that the explanation is likely to be different for Turkey as manual work, especially agriculture, is still an important part in women`s employment in Turkey. Women are still under-represented to a large extent across the prestigious occupations ranking highly in the social stratification structure. Consequently, it is shown that it is actually the agricultural occupations, especially the market oriented skilled agricultural and fishery workers, which rank so low across the stratification scale as to have a dominating effect on the vertical segregation measure. Although agriculture is not the main source of employment for men as it is for women in Turkey, they either have similar shares or men outnumber women amongst the agricultural occupations. Accordingly, the artificial advantage to women is shown to disappear when each agricultural occupation is excluded from the analysis and women are observed to be at a marked disadvantaged position across the social hierarchy amongst the non-agricultural workforce. For precisely this reason - the possibility of agricultural occupations to blur the investigation on the extent of occupational segregation - agriculture is often excluded from the analysis. Finally, as with the studies for the industrialised countries (see for example, Jarman et al., 2012), the horizontal component is found to be larger than the vertical component in each case, suggesting that the overall differentiation in the employment patterns between men and women owes more to the fact that they are employed in horizontally different occupations.

This study provides important insights into the extent of occupational gender segregation in the labour market in Turkey which might be of interest to policymakers aiming to eliminate gender inequalities. First of all, it shows that the extent of inequality associated with occupational gender segregation is substantial and it is operating to the detriment of women. Moreover, although the horizontal component does not represent an inequality in terms of vertical criteria, it may well result in limited occupational choices both for men and women. Most importantly, it might be a sign of the effect traditional gender roles on social and labour market institutions, preventing women and men from being employed in gender-atypical

occupations. It is, therefore, crucial to recognise the root causes of the problem and challenge the dominant norms in Turkey that recognise men as breadwinners and women as homemakers, or second earners in the family. New educational and training programs are necessary to encourage women, as well as men, in choosing an "atypical" field of studies. In line with this argument, it is also essential to monitor the transition between education and the labour market, particularly for women, as organisations can be reluctant to hire women or create barriers to women`s advancement in traditionally male dominated occupations. Furthermore, policies aiming at reconciling work, family and private life, affordable and accessible childcare and care for elderly, along with parental leave provision, have a vital role in enabling men and women to share domestic work and allow women to have equal opportunities in the labour market.

References

Anker, R. (1998) *Gender and Jobs, Sex Segregation of Occupations in the World*. Geneva: International Labour Office.

Anker, R., Melkas, H. and Korten, A. (2003) 'Gender-Based Occupational Segregation in the 1990`s' *Working Paper*, International Labour Office.

Beh, E.J. (2004) 'Simple Correspondence Analysis: A Bibliographic Review', *International Statistical Review*, 72(2), pp. 257–284.

Blackburn, R. M., Jarman J. and Siltanen S. (1993) 'The analysis of occupational gender segregation over time and place: considerations of measurement and some new evidence', *Work, Employment and Society,* 7(3) , pp. 335-362.

Blackburn, R. M., Dale, A. and Jarman, J. (1997) 'Ethnic differences in attainment in education, occupation and life-style', in V. Karn (ed), *Ethnicity in the 1991 Census Volume 4.* ONS/Stationery Office.

Blackburn, R. M., Brooks, B. and Jarman, J. (2001) 'Occupational stratification: The vertical dimension of occupational segregation', *Work, Employment and Society*, 15(3), pp. 511-538.

Blackburn, R. M., Jarman, J. (2005) 'Stratification and Gender', *ESRC Gender and Equality Network, Working Paper*, 4. Available at http://www.genet.ac.uk/workpapers/GeNet2005p4.pdf (accessed May 2014).

Blackburn, R. M. and Jarman, J. (2006) 'Gendered occupations: Exploring the relationship between gender segregation and inequality', *International Sociology*, 21(2), pp. 289–315.

Blackburn, R. M. (2009) 'Measuring Occupational Segregation and its Dimensions of Inequality and Difference', *Cambridge Studies in Social Research*, 12. Available at http://www.sociology.cam.ac.uk/srg/workingpapers/CS12MeasuringSegregation.pdf (accessed May 2014).

Bottero, W. (2005) 'Interaction distance and the social meaning of occupations', *The Sociological Review*, 53, pp. 56-72.

Chan, T. W. and Goldthorpe, J. H. (2004) 'Is There a Status Order in Contemporary British Society', *European Sociological Review*, 20(5), pp. 383-401.

Chan, T. W. and Goldthorpe, J. H. (2007) 'Class and Status: The Conceptual Distinction and its Empirical Relevance', *American Sociological Review*, 72, 512-532.

Chan, T. W. (2010a) 'The social status scale: Its construction and properties', in T. W. Chan (ed.) *Social Status and Cultural Consumption*. Cambridge: Cambridge University Press, pp. 28-56.

Chan, T. W. (2010b) 'Social Status' [Online] Available at http://users.ox.ac.uk/~sfos0006/papers/status2.pdf (accessed August 2014).

Charles, M (1990) *Occupational sex segregation: A Log Linear Analysis of Patterns in 25 Industrial Countries.* Stanford University, Stanford, CA.

Cortese, C. F., Falk, R. F. and Cohen, J. K. (1976) 'Further Considerations on the Methodological Analysis of Segregation Indices', *American Sociological Review*, 41(4), pp. 630-637

Cousins, C. (1999) *Society, Work and Welfare in Europe*. London: Macmillan.

Dayioglu, M. and Murat G. K. (2010) 'Determinants of and trends in labor force participation of women in Turkey', *Working Papers 5,* State Planning Organization of the Republic of Turkey and World Bank Welfare and Social Policy Analytical Work Program.

De Luca, D., Meraviglia, C. and Ganzeboom, H. G. (2010) "Social Distance and Socio-Economic Status: Different Dimensions or Different Indicators of Occupational Stratification?" Cambridge Social Stratification Seminar, Utrecht University. Available at: http://www.harryganzeboom.nl/Pdf/index.htm (accessed February 2014).

Duncan, O.D. and Duncan, B. (1955) 'A Methodological Analysis of Segregation Indices', *American Sociological Review*, 20(2), pp. 210-217.

European Commission (EC) (2009) Gender Segregation in the Labour Market: Root Causes and Policy Responses in the EU. Luxembourg: European Union. Available at: http://ec.europa.eu/social/BlobServlet?docId=4028&langId=en (accessed May 2014).

Ganzeboom, H. B. G. and Treiman, D. J. (1996) 'Internationally Comparable Measures of Occupational Status for the 1988 International Standard Classification of Occupations', *Social Science Research*, 25, pp. 201-239.

Ganzeboom, H. B. G., De Graaf, P. M. and Treiman, D. J. (1992) ʻA Standard International Socio-Economic Index of Occupational Status', *Social Science Research*, 21, pp 1-56.

Greenacre, M. J. (1984) *Theory and Applications of Correspondence Analysis*. London: Academic Press.

Griffiths, D. and Lambert, P.S. (2011) 'A review of data sources for studying social interactions between the incumbents of occupations', *Technical Paper 2 of the ESRC research project 'Social Networks and Occupational Structures*, Stirling: School of Applied Social Science, University of Stirling. Available at http://www.camsis.stir.ac.uk/sonocs/downloads/tp2_sonocs_1_1.pdf (accessed June 2014).

Gunduz-Hosgor, A. and Jeroen, S. (2006) 'Variation in Labor Market Participation of Married Women in Turkey', *NICE Working Papers 2*, Radboud University.

Gunluk-Senesen, G. and Ozar, S. (2001) 'Gender-based occupational segregation in the Turkish banking sector', in (ed.) *The Economics of Women and Work in the Middle East and North Africa (Research in Middle East Economics, Volume 4)*, Emerald Group Publishing Limited, pp. 247-267.

Hakim, C. (1979) 'Occupational Segregation: a comparative study of the degree and pattern of the differentiation between men and women's work in Britain, the United States, and other countries', *Research Paper*, 9. London, Department of Employment.

Hakim, C. (1998) *Social Change and Innovation in the Labour Market*. Oxford: Oxford University Press.

Karmel, T. and Maclachlan, M. (1988) 'Occupational Sex Segregation - Increasing or Decreasing', *Economic Record*, 64(3), pp. 187-195.

Kendall, M. G. and J. D. Gibbons (1990) *Rank Correlation Methods*. New York: Oxford University Press.

Jarman, J., Blackburn, R. M and Racko, G. (2012) 'The Dimensions of Occupational Gender Segregation in Industrial Countries', *Sociology*. Available at http://soc.sagepub.com/content/early/2012/05/15/0038038511435063 (accessed July 2014).

Lambert, P.S. (2003) *CAMSIS for Belgium, ISCO88* (electronic file, version 1.0, date of release: 06.01.2003). Available at http://www.camsis.stir.ac.uk/Data/Belgium.html (accessed June 2014).

Lambert, P.S. (2003) *CAMSIS for Turkey, ISCO68* (electronic file, version 1.0, date of release: 22.01.2003). Available at http://www.camsis.stir.ac.uk/Data/Turkey90.html (accessed June 2014).

Lambert, P.S. (2009) *CAMSIS project webpages: make CAMSIS - A resource for deriving CAMSIS measures with Stata*. Available at http://www.camsis.stir.ac.uk/make_camsis/ (accessed June 2014).

Lambert, P.S. (2012) *CAMSIS project webpages: Cambridge Social Interaction and Stratification Scales.* Available at http://www.camsis.stir.ac.uk/ (accessed June 2014).

Laumann, E. O., and Guttman, L. (1966) 'The relative associational contiguity of occupations in an urban setting', *American Sociological Review*, 31(2), pp. 169-178.

Melkas, H. and Anker, R. (1998) *Gender equality and occupational segregation in Nordic labour markets.* Geneva: International Labour Office.

Mitchell, J. C. and Critchley, F. (1985) 'Configurational Similarity in Three Class Contexts in British Society', *Sociology*, 19(1), pp.72-92.

Moir H. and Selby Smith J. (1979) 'Industrial segregation in the Australian labour market', *Journal of Industrial Relations*, 21(3), pp. 281-291.

Prandy, K. (1999) 'The social interaction approach to the measurement and analysis of social stratification', *International Journal of Sociology and Social Policy*, 19, pp.204 – 236.

Prandy, K. and Jones, F. L. (2001) 'An International Comparative Analysis of Marriage Patterns and Social Stratification', *International Journal of Sociology and Social Policy*, 21, pp.165 – 183.

Prandy, K. and Lambert, P. (2003) 'Marriage, Social Distance and the Social Space: An Alternative Derivation and Validation of the Cambridge Scale', *Sociology*, 37(3), pp. 397-411.

Reskin, B. and Roos, P. (1990) *Job Queues, Gender Queues - Explaining Women's Inroads into Male Occupations*. Philadelphia, PA: Temple University Press.

Rich, J. and Palaz, S. (2008) 'Why Has Occupational Sex Segregation in Turkey Increased since 1975?', *LABOUR*, 22 (1), pp. 185–218.

Roos, P. (1985) *Gender and Work: A Comparative Analysis of Industrial Societies*. Albany: State University of New York Press.

Rubery, J. and Fagan, C (1995) 'Gender segregation in societal context', *Work, Employment and Society*, 9(2), pp. 213–40.

Selim, R. and Ilkkaracan, I. (2002). 'Gender Inequalities in the Labor Market in Turkey: Differentials in Wages, Industrial & Occupational Distribution of Men and Women'. [Online] Available at http://content.csbs.utah.edu/~ehrbar/erc2002/pdf/P405.pdf (accessed April 2014).

Semuonov, M. and Jones, F. L. (1999) 'Dimensions of Gender Occupational Differentiation in Segregation and Inequality: a Cross-National Analysis', *Social Indicators Research*, 46(2), pp. 225–47.

Siltanen, J., Jarman, J. and Blackburn, R. M. (1995) *Gender Inequality in the Labour Market: Occupational Concentration and Segregation.* Geneva: International Labour Office.

Somers, R. H. (1962) 'A new asymmetric measure of association for ordinal variables' *American Sociological Review*, 27, pp. 799–811.
Stewart, A., Prandy, K., and Blackburn, R. M. (1980) *Social Stratification and Occupations.* London: MacMillan.

Tansel, A. (2002) 'Economic Development and Female Labor Force Participation in Turkey: Time Series Evidence and Cross Province Estimates', *ERC Working Papers in Economics*, 01(05). Available at http://erc.metu.edu/menu/series01/0105.pdf (accessed July 2014).

Treiman, D. J. (1977) *Occupational Prestige in Comparative Perspective*. New York: Academic Press.

Turkish Statistical Institute (TURKSTAT) (2009) Household Labor Force Survey. http://tuikapp.tuik.gov.tr/isgucuapp/isgucu.zul?dil=2) (accessed August 2014).

Turkish Statistical Institute (TURKSTAT) (2013) Household Labor Force Survey. http://tuikapp.tuik.gov.tr/isgucuapp/isgucu.zul?dil=2 (accessed August 2014).

APPENDIX

Appendix 1a

Table 1a-Results from the Correspondence Analysis

	Scores for women and men			
	Dim 1 coordinates (stratification)		Dim 2 coordinates (gender?)	
Occupational Groups	(Women)	(Men)	(Women)	(Men)
11-Legislators & Senior officials	0.70	0.16	-0.25	0.26
12-Corporate Managers	0.90	1.02	-0.64	-0.87
13-Managers of small enterprises	0.32	0.26	0.25	0.40
21-Physical, Mathematical & Engineering science	1.16	1.19	-1.06	-1.15
22-Life science and Health professionals	1.23	1.27	-1.30	-1.37
23-Teaching professionals	1.25	1.34	-1.36	-1.53
24-Other professionals	0.99	1.03	-0.85	-0.90
31-Physical and Engineering Associate Professionals	0.38	0.64	0.23	-0.11
32-Life science & Health Associate Professional	0.93	1.00	-0.70	-0.74
33-Teaching Associate Professionals	0.25	0.16	0.07	-0.04
34-Other Associate Professionals	0.61	0.62	-0.20	-0.19
41-Office clerks	0.54	0.44	0.01	0.07
42-Customer service clerks	0.59	0.50	-0.01	-0.02
51-Personal & Protective Services workers	0.07	0.19	0.65	0.48
52-Models, Salesperson & Demonstrators	0.22	0.10	0.59	0.59
61-Market oriented skilled agricultural & fishery workers	-0.09	-1.98	0.73	-1.20
62-Subsistence agricultural & fishery workers	-0.14	-2.11	0.79	-1.30
71-Extraction & building trades workers	-0.44	-0.23	0.46	0.71
72-Metal, machinery & related trades workers	0.07	-0.08	0.78	0.62
73-Precision, handicraft & related trades workers	-0.02	0.26	0.70	0.51
74-Other craft & related trades workers	-0.16	-0.09	0.67	0.84
81-Stationary plant & related operators	0.28	-0.09	0.38	0.67
82-Machine operators & assemblers	-0.06	-0.04	0.81	0.86
83-Drivers & mobile plant operators	0.41	-0.12	-0.16	0.69
91-Sales & Services Elementary Occupations	-0.13	-0.25	0.84	0.86
92-Agricultural, fishery & related labourers	-1.79	-1.52	-0.98	-0.59
93-Labourers in mining, construction, manufacturing & transport	-0.21	-0.37	0.70	0.66

Source: 2010 HLFS

Model Fit Statistics	Dim1 inertia	Dim2 inertia
Total inertia= 1.7037 (27 rows by 27 columns)	0.625	0.446
Singular value from first dimension = 0.79		

APPENDIX 1b

SOMERS` D as a measure of association:

Somers` D introduced by Somers (1962) can be formulated in terms of Kendall's τ_a (Kendall and Gibbons, 1990). For the pairs of observations (x_l, y_l) and (x_k, y_k) Kendall's τ_a is defined as:

$$\tau_a = E[sign(x_l - y_k)sign(y_l - x_l)]$$

Where E denotes expectations or as the difference between the probability that two pairs are concordant or discordant. The pair of observations (x_l, y_l) and (x_k, y_k) for the variables (X, Y) are said to be concordant when $x_l > x_k$ and $y_l > y_k$ or $x_l < x_k$ and $y_l < y_k$.In other words, they are consistently ordered pairs. The pairs are defined as discordant when $x_l > x_k$ and $y_l < y_k$or $x_l < x_k$ and $y_l > y_k$; that is when the pairs are inconsistent. To put it simply, pairs are defined to be concordant if the larger X value is paired with the larger Y value, and is said to be discordant if the larger X value is paired with the smaller Y value.

Somers` D of X in terms of Y can then be written as;

$$D(Y|X) = \tau(X, Y)/\tau(X, X)$$

which stands for the difference between the two conditional probabilities of pairs being concordant or discordant.