

THE INDIVIDUAL PENSION SYSTEM IN TURKEY: A GENDERED PERSPECTIVE

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Abstract

The changing role of women both within family and in the labour market is one of the most crucial issues of constructing a new social policy in our century. In line with neo-liberal developments, private pension schemes have reached higher proportions in social security systems all over the world. However, it is a fact that disadvantages of women (i.e. lower level of wage, intermittent work life, and higher life expectancy) have negative consequences on private pension schemes in terms of retirement income compared with traditional pay-as-you-go systems. Turkey, in line with the current trend, introduced a privately managed individual pension scheme, the Individual Pension System in 2003. This study (conducted in 2008 - 2009), using the actual data of 102,724 participants (sampled from a total of 1,457,704) provided by the Pension Monitoring Center, examines the effects of social variables (i.e. age, occupation, province, marital status, income, social security and education) on regular contributions of individuals to the system and analyzes the gender gap by using the generalized linear model.

Keywords: *Individual Pension Plan, Social Policy, Gender, Turkey*

JEL Classification: *G23, J16*

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Türkiye’de Bireysel Emeklilik Sistemi: Toplumsal Cinsiyetçi Bir Yaklaşım

Özet

Kadınların hem aile içinde hem de emek piyasasında değişen rolleri bu yüzyılda yeni bir sosyal politika oluşturmanın en önemli konulardan biridir. Neo-liberal gelişmelerle birlikte özel emeklilik planları tüm dünyada sosyal güvenlik sistemleri içinde daha yüksek bir paya ulaştı. Ancak, kadınların dezavantajları (daha düşük ücret düzeyi, kesikli iş yaşamı ve daha uzun yaşam beklentisi vb.) geleneksel dağıtım sistemleri ile karşılaştırıldığında emeklilik geliri anlamında özel emeklilik sistemlerinde olumsuz sonuçlar doğurur. Türkiye bu mevcut trendle birlikte 2003 yılında özel sektör tarafından yönetilen emeklilik planı Bireysel Emeklilik Sistemini oluşturdu. Emeklilik Gözetim Merkezi’nin sağladığı toplam 1,457,704 kişiden örneklem olarak alınan 102,896 katılımcıya ait verileri kullanan ve 2008 - 2009 döneminde gerçekleştirilen bu çalışma genelleştirilmiş lineer model kullanarak sosyal değişkenlerin (örneğin yaş, meslek, şehir, medeni durum, gelir, sosyal güvenlik kurumu ve eğitim gibi) bireylerin sisteme yaptıkları düzenli katkı payları üzerindeki etkilerini ve toplumsal cinsiyet eşitsizliğini incelemektedir.

Anahtar Kelimeler: *Bireysel Emeklilik Planları, Sosyal Politika, Toplumsal Cinsiyet, Türkiye*

JEL Sınıflaması: *G23, J16*

1. Introduction

Since the early 1980s the welfare state has been restructured in an age of neo-liberalism. This era has witnessed a changing understanding of social welfare and a restructuring of state responsibilities. As a result of a transformation in social policy paradigm many countries have moved from pay-as-you-go (PAYG) systems, in which the annual contributions of the working population are used to finance the payments of the current retired population, to variants of privatized social security. Private pension schemes have been propagated by pointing at demographic changes, and with the assertion that public schemes would no longer be able to cope due to aging populations, an expanding informal economy, low pension coverage, inefficiency in the administrative and political management of funds, and changing

role of women both in family and in the labour market¹ (Andrews 2006:15-16; Schwarz and Demirguc-Kunt 1999:28-29).

Turkey has reformed her social security system as well and introduced a privately managed individual pension scheme, namely the Individual Pension System (IPS) in 2003. Turkey started to change the legal structure of the system based on recommendations of the International Monetary Fund (IMF) and the World Bank (WB), particularly in the late 1990s. The European Union accession process was another key factor in shaping the reforms (Elveren 2008a: 215-217).

Gender has been an important analytical category in sizeable literature on social security reforms due to the fact that the role of women both in family and in the labour market changed. Gender-aware analyses such as Andrew (1984), Estes (2004), Fraser (1994), Sainsbury 1994, and Quadagno and Fobes (1995) note that the unequal conditions for women and gender-biased social relations are reproduced by means of the welfare state. They state that women are disadvantaged as citizens. Women are on the whole given social rights as mother or wife, rather than as individual citizens. Benefits are tied to the reproductive roles of women, in which they are seen as dependent upon the “male breadwinner.” Gender division of labour (unpaid family work and informal paid work), wage discrimination against women, intermittent working life and greater longevity of women are some factors that increase the gender gap particularly in private pension schemes².

While there is a remarkable literature on Turkey’s social security reform addressing at problems of the system, there are only few studies dealing with the gender dimension (Bozkus and Elveren, 2008; Elveren, 2008b; Kar and Elveren, 2008; Sahin, 2008; Sahin and Elveren, 2009) of social security and the gender effects of the reform. This work aims to contribute by examining the IPS by using the actual data of 1,457,704 people in the system with a focus on its gender dimension. The effect of some socio-demographic and socio-economic factors such as sex, age, education, marital status, occupation, social security institution, income and province on participation and contribution to the IPS are discussed. By examining these factors, and using the generalized linear model analysis on both gender neutral and gender specific data, we argue whether there is a gender gap in terms of retirement incomes in the IPS in Turkey. This work differs from Bozkus and Elveren’s (2008), which uses comparable data, mainly in two ways: First, the samples under consideration are different. While Bozkus and Elveren (2008)

¹ See Hemerijck 2002 and Tuominen and Laitinen-Kuikka 2006 for excellent discussions on the transformation of the European welfare regimes and Dion 2008 for Mexico.

² See Sahin and Elveren 2009 for a detailed discussion on this issue.

basically focus on a certain income category, here all available data is used to examine the effects of the social variables on the participation of the system. Furthermore, the data was updated using the data by the end of 2007.³ Second, different methods are employed. A lognormal distribution is assumed for the regular contribution amounts to the system, using the Generalized Linear Modeling technique, whereas Bozkus and Elveren (2008) use OLS Regression Analysis assuming normally distributed dependent variables.

The objective of this analysis is to examine whether there is a significant difference between the regular contribution rates of women and men which may result in a gender gap in the retirement incomes. The analysis also determines which factors are important in terms of affecting the contribution rates.

2. Restructuring the Social Security System in Turkey

In line with the neo-liberal paradigm, many countries have “restructured” their social security systems toward a more market-oriented structure, ranging from introducing private pension schemes to replacing the whole public system with private pension funds.

For many years, the defined benefit (DB) plan was the main type of pension plan offered by employers. The benefit is designated according to a formula the computation of which is based on the employee’s salary and years of service. In return to some specified deduction from the employee’s salary, the defined benefit plan guarantees a fixed retirement benefit per year for life. This plan specifies a minimum time of employment to be served before the employee has a right for retirement benefits. In this plan, employees feel secure, because they are promised specific benefits during their retirement period. This traditional pension plan is especially common in the public sector. Social insurance mainly operates on the pay as you go (PAYG) system. PAYG refers to an unfunded system in which current contributors to the system pay the expenses for the current recipients. In a pure PAYG system, no reserves are accumulated and all contributions are paid out in the same period.

On the other hand, defined contribution (DC) plan is based on the contributions of the individuals and investment returns. Besides the employer, the employee, too, may make contributions to the fund at regular intervals. Rather than

³ The data of 2008 was not available during the completion of this study. However, there are no major changes in the distribution of the socioeconomic and demographic features of the participants in 2008 compared with 2007.

guaranteeing a specific benefit at retirement, the DC system specifies the amount that is contributed by the plan's sponsor based on the final average salary level. At the time of retirement, the employee has an account balance which completely depends on how much has been put into the fund and how these contributions have grown over time as they had been invested. The amount of benefit is determined at retirement date based on the amount of the accumulated contributions and investment earnings, and the interest and mortality rates that apply at that time. Therefore, the DC plan which is based on the funded system is the opposite of a PAYG system. DC plan is common in the private sector. In the last 25-30 years there has been a considerable increase in the shift from DB plans to DC plans⁴. This can also be named as the shift from 'welfare' to 'workfare' since the social services are highly linked to the employment status⁵. Bob Jessop (1994: 24) entitled this development as 'Schumpeterian workfare state' in which 'redistributive welfare rights take second place to a productivist reordering of social policy'.

The crucial difference is that, while the PAYG plans assign accrual risk to the state, the DC plans assign accrual risk to the individuals. However advantages of private pension schemes over traditional social security systems – for instance increasing "savings" and thereby leading to higher growth rates - have been highly advocated by the World Bank and the Chilean case has been shown as a "miracle" (WB, 1994). Yet, neither the wisdoms of privatization of social security (Orszag and Stiglitz, 1999: 40; Singh, 1996: 4-7), nor the Chilean miracle were "real" (Gill, Packard and Yermo, 2005: 131), so the WB accepted the fact that social security reforms should be designed according to the structure of the economy (Holzmann, 2002: 12). In line with this trend Turkey, too, has restructured its social security system particularly in the 1990s as discussed below (Elveren, 2008a: 217).

The welfare regime in Turkey can be referred to as an "indirect and minimalist welfare regime" out of Esping-Andersen's categorization (Arın, 2002: 75; Esping-Andersen, 1990: 26-27). Esping-Andersen's analysis of the welfare state is based on state-market relations, stratification, and de-commodification. However, in his original work he ignores the crucial fact that the family is the main part of private care and welfare provisioning. The family is the most important welfare and care provider in all welfare states even in social democratic countries (Daly, 1994:

⁴See Ergökmen (2006) and Sahin (2006) for the modeling of the conversion from DB to DC schemes for Turkish case.

⁵ Under workfare, recipients have to meet certain participation requirements to continue to receive their welfare benefits. These requirements are often a combination of activities that are intended to improve the recipient's job prospects (such as training, rehabilitation and work experience) and those designated as contributing to society (such as unpaid or low-paid work).

107). That is, the distinction between paid and unpaid work is decisive in order to recognize the role of women. Therefore, the welfare state is not the relation between state, market and just the family but rather men and women who are the main care and welfare providers in families as later on stated by Esping-Andersen as well (Esping-Andersen, 1996: 3-9; 2002: 19-21). What seem to be particularly lacking in the original analysis of Esping-Andersen is a systematic discussion of the family and its role in the welfare state and a serious treatment of the degree to which women are excluded from or included in the labour market (Arts and Gelissen, 2002: 140). Gornick and Jacobs (1998: 691) address at the fact that Esping-Andersen also argues that each regime-type is associated with women's employment levels.

Indeed, Turkey is included in the Southern European model which has common features in welfare regimes (Gough, 1996). Leibfried was the first scholar who stressed the similarities of the Southern European countries and distinguished four social policy regimes within the countries of the European Community: the Scandinavian welfare states, the 'Bismarck' countries, the Anglo-Saxon countries and the Latin Rim countries which comprise Spain, Portugal, Greece, to some extent Italy and, to the least degree, France (Leibfried, 1992). According to Leibfried, the "Latin Rim", which he also labels as the "Rudimentary Welfare State", is characterized by a lack of social rights. In these countries social rights are rarely institutionalized and implemented on a very low level. Instead, certain social security programs, such as disability pensions in southern Italy, function practically as basic income measures. In addition, these countries lack a full-employment tradition; show a dominance of agricultural labour, and the discrimination of women in terms of access to the official labour market. Leibfried also stresses the role the church plays in the provision of social services and benefits (Leibfried, 1992). Gough, Bradshaw, Ditch, Eardley and Whiteford (1997) include Turkey in *rudimentary assistance* programmes together with Southern European countries. Accordingly, "[m]eans-testing is not especially stringent and, apart from Turkey, obligations do not extend beyond the nuclear family. Cash assistance tends to be integrated with social work and other services. Benefits are very low and for some groups and geographical areas non-existent" (ibid. pp. 36-37).

A more comprehensive definition of a "Southern Welfare Model" was offered by M. Ferrera in 1996. Accordingly, the social protection systems of Southern countries are highly fragmented and although there is no articulated net of minimum social protection, some benefits' levels such as old age pensions are very generous. Moreover, in these countries health care is institutionalized as a right of citizenship. However, in general, there is relatively little state intervention in the welfare sphere (Ferrera, 1996).

Bugra and Keyder (2006: 212) explain the similarities between the welfare regime in Turkey and Southern Europe by referring to Ferrera (1996), Mingione (2001), Guillen and Matsaganis (2000) and Saraceno (2002). First of all, Turkey has a labour market structure in which employment provided by small employers, self-employment, and unpaid family labour and informal employment are very important. Second, the social security system is highly fragmented and social rights are unequally distributed. Health and pension benefits are given to formally employed heads of household according to their status at work. Third, the formal social security system has limited functions in fighting against poverty and social exclusion. Finally, due to the absence of an advance social assistance scheme the family plays a crucial role in coping with social risks. That is, the family is the core element in the welfare regime as observed in the Southern European model (Bugra and Keyder, 2006: 220; Kalaycıoğlu and Rittersberger-Tılıç, 2000: 539).

In Turkish society the extended family plays an important role in supporting individuals against some contingencies. However, it is argued that development in socio-economic life has changed this phenomenon deeply. First, in case of extended family, they do not have sufficient income to support its members; and secondly, traditional extended family is being replaced by a nuclear family (Bugra and Keyder, 2003: 19-29). Kalaycıoğlu (2006) states that, in the Turkish experience, existence of family/kin and other social networks may be effective in preventing their members from falling into absolute poverty⁶, but relative poverty⁷ will persist, for dependence on such networks is itself an indicator of relative poverty. Furthermore, from a gender perspective, family/kin support systems force both women and men to feel dependent to the family/kin in all aspects of life.

In this context, Bugra and Keyder (2006: 213-226) analyse the ongoing discussion on the social security system based on mainly two problems which reflect the nature of the Turkish welfare regime: the unsustainability of the existing social security system and the challenge of “new” poverty. They argue that the present government’s (i.e. AKP, Justice and Development Party) approach to these problems reflects a “liberal residualism, flavoured with social conservative values that are premised upon the centrality of the family and the significance of communal solidarity” (ibid. pp. 213). They describe AKP’s attitude towards social policy as a

⁶ Absolute poverty is the situation in which a household or an individual can not reach the welfare sufficient to continue their lives 1 USD per day.

⁷ Relative poverty is the state in which the individual is below the average welfare level of the society. For this respect, the households having incomes and expenditures below a specified line compared to the general population shall be defined to be the poor in a relative meaning. / give a hint – e.g. minimum wage in Turkey

mixture of neo-liberalism with social conservatism. Nonetheless, there are particularities deriving from Turkey's conservative-corporatist history of social policy and the "specific ideological mix which pits the Islamic liberalism of the government against the leftist modernism of most of the opposition" (ibid. pp.213).

Similar to Central and Eastern European states, fiscal constraints have a central place and the public budget is overburdened by debts accumulated during the highly corrupt 1990s (ibid. p. 212). (1) Stand-by agreements with the IMF, which require 6.5 surplus in primary budget, (2) the aim of dropping the ratio of the budget deficits to the national product to the level of 3%, which is required by the Maastricht Criteria within the framework of the European Union adaptation process, and (3) influence of the World Bank, directly or indirectly, have been three crucial aspects of the social security reform in Turkey (Elveren, 2008a: 215-220). Turkey started to restructure the legal framework of the social security system in order to reduce the unsustainable deficit that broke out in the late 1990s due to low retirement age, an expanding informal economy, low pension coverage, and inefficiency in the administrative and political management of the fund. The deficit was as high as 4.5 per cent of GNP in 2004. This has urged the comprehensive social security reform (see Kar and Elveren, 2008: 74).

Turkey launched its social security reform in 1999. The government implemented a two-pillar system, in which current social security institutions (the first pillar) were kept with rehabilitations in their structure and private pension schemes would provide the support (the second pillar). The main goal of the 1999 reform was to extend the average contribution period and shorten the benefit collection period by increasing the minimum entitlement age. The reform was twofold. The first proposal was to set out the legal framework for voluntary private pension funds in 'The Individual Pension System (IPS)'. Thus, aiming to complement the public pension system that officially was commenced in 2003. The second proposal in the reform package was to set up a series of administrative reforms to rein in the deficit of Turkey's three state social security funds. With the 2006 reform, these institutions, namely The Social Insurance Institution (SSK), The Retirement Fund (ES), and The Social Security Institution of Craftsmen, Tradesmen and other Self-Employed (Bağ-Kur), were integrated under a single roof, namely the Social Security Institution. Parallel to this reform the General Health Insurance (GHI) system was established. The main objective of GHI is to integrate all health insurance benefits and cover all citizens. This scheme is financed by obligatory premiums, which will be paid by all citizens. The health insurance of the poor will be provided by the state.

3. Individual Pension System in Turkey

As stated above, the Individual Pension System (IPS) has been introduced as complementary to the state social security system on the basis of voluntary participation and the defined contribution principle to provide a supplementary income during retirement (Elveren, 2003b; 2005: 5). These individual savings to investment also aimed to contribute to economic development by creating long term resources for the economy and thereby increase employment (Elveren, 2003a: 23). At present there are twelve pension companies operating in the system.

Pension rights in the IPS are specified based on the defined contribution system, i.e. on the total amount of the contributions and their returns; the savings are tracked in individual accounts and are safe kept by a custodian approved by the Capital Markets Board (CMB). Participants have alternatives at every stage of the system to make choices about their investments and they are provided with tax incentives at the stages of saving, investment and retirement. Individuals become entitled for retirement after 10 years of contribution and age 56.

4. Gender Dimension of Social Security Reforms

Mainstream economists have continued to ignore the gendered nature of the social security system, the changing role of women both in family and in the labour market and the effect of welfare regime on this (Orloff, 1996: 74; Steinhilber, 2004). Gender-aware analyses state that gender-biased social relations are reproduced by means of the welfare state (see Fraser, 1994; Lewis, 1992: 161; 1997: 162; Orloff, 1996: 74; Sainsbury 1994; Quadagno and Fobes, 1995: 171).

This dependency of women on men and the general income inequality in retirement years have deepened with the introduction of private pension schemes. Since, -as we discussed above- retirement benefits in DC plans are directly linked to the individual contributions into the system during their active working years, women are more likely to have lower incomes. Because, in general, labour force participation of women is low and due to having children and child-rearing women work less, mostly work in part-time jobs, even for the same job they are being paid less, they make less contribution to the system; due to having a tendency to be more risk-averse they are likely to get lower return; and because of having a higher life expectancy their capital accumulation spreads over a longer time period, i.e. they earn less annuities. Therefore, retirement income in individual pension accounts would be lower for women⁸. Also, the disadvantage of early retirement is much detrimental in private schemes.

⁸ MacDonald (1998), Williamson and Rix (1999), IWPR (2000), James, Edwards and Wong (2003), Estes (2004), Elveren (2008b), and see Sahin and Elveren (2009) for a comprehensive review and see Gilbert (2006), Boje and Leira (2000) and Leitner (2001) for discussions on the EU countries.

There are a few studies dealing with a gender dimension of social security reform and analyzing the effect of social security privatization on women's retirement income in Turkey.

Kar and Elveren (2008: 83-91) analyze gender gap pension benefits in several projections. They showed that difference in benefits range from 55% to 76% based on different assumptions on return rate and paid working years.

Elveren (2008b: 46) use a model to show the total effect of some disadvantages of women, namely shorter working life, less earning, longer life expectancy, wage growth, administrative costs, and risk-averseness, on retirement benefits of women in Turkey. He showed that woman's pension benefits as percentage of those of men decline up to 30% in rural areas, in the elderly, and in low education levels, whereas the lowest gap, 79%, is among the youngest individuals in urban areas.

On the other hand, there is only one study which examines the gender dimension of the IPS by using the actual data of participants of the system. Bozkus and Elveren (2008: 96-102) address the effects of certain variables on regular contributions differentiating according to men and women similar to this study. But, here a more comprehensive analysis of the participation profile of the IPS is provided by examining its evolution since 2004, presenting some descriptive statistics. Furthermore, the sample is compared with all the available data to see how well it represents the population. So, the original data in this study has been updated one year and contains the information of 1,457,704 participants of the system by the end of 2007. Second, our data additionally includes the 'social security institution' in which the participants are registered and the categories defined for 'marital status' and 'occupation' have been determined differently⁹. Third, the sample (102,724 participants) was determined by considering the largest available data including socio-demographic and socio-economic information, while Bozkus and Elveren (2008: 97) mainly focus on a specific income group. Fourth, we use the Generalized Linear Modelling approach to examine the data assuming a lognormal distribution for the dependent variable rather than a normal distribution assumption of OLS Regression Analysis applied by Bozkus and Elveren (2008). Finally, the analysis of the data points out some important problems related with the technique and the reliability of the collected data. Therefore, this study can be used as a guide to gather more efficient and accurate information related with the participant profile of the IPS.

⁹We use three categories for marital status as single, married and divorced/widow which are introduced in Section 5 while Bozkus and Elveren (2008) provides two categories for marital status as 'never married' and 'married'. As for the 'occupation' we specify some drawbacks related with the classification of the occupation data and propose a different categorization referring to the Revenue Administration's income elements rather than using the overlapping categories published in the IPS Progress Reports (RA, 2008).

5. Statistical Analysis of the Individual Pension System

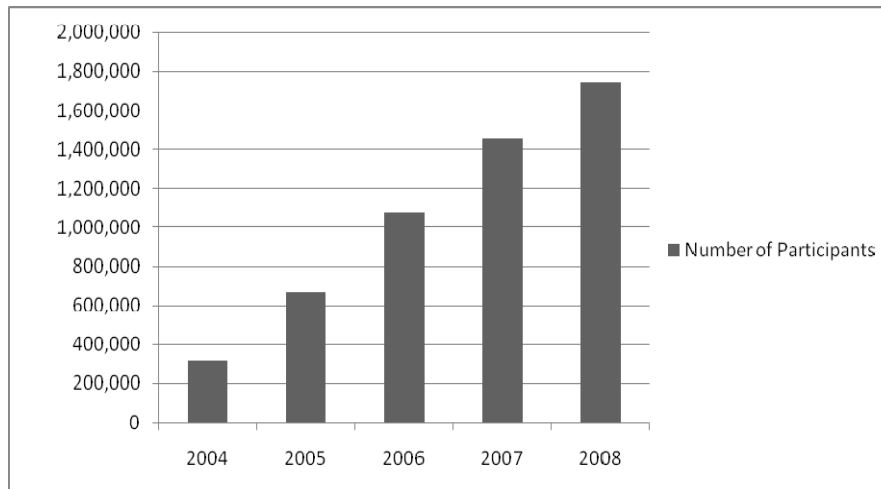
5.1. Descriptive Statistics

5.1.1. Population Data

The participant profile of the IPS is a vital aspect of this work. Moreover gender, socio-demographic and socio-economic characteristics such as age, education, and province lived in, occupation, marital status, social security and income level can affect not only the participation but also the regular contribution rates to the system. The evolution of the participant profile of the system was analyzed using the collected data available from the Individual Pension System Progress Reports, starting with the year 2004 until 2008.

Since the IPS was introduced, there has been a steep increase in the number of participants in the system as illustrated in Figure 1. While there were about 315 thousand people in the system by the end of 2004, this number doubled by the end of 2005 and reached to 666 thousand. The participation rate continued to increase and around 400 thousand more people were involved in the system each year since then. This number has reached 1,745,354 by the end of 2008.

Figure 1: Number of participants in the IPS



Source: PMC (Pension Monitoring Center) (2009).

5.1.2. Sample Data

In the analysis 2007 year-end data provided by the Pension Monitoring Center was used. The original data include the sex, age, occupation, province, social security, marital status, education, income, total contribution and the entrance date to the system of 1,457,704 participants. There are many missing values in the data. Since all the characteristics mentioned above are considered as important for the analysis the participants with lacking information were eliminated. Afterwards the regular monthly contributions were calculated by dividing the total contribution amounts by the number of months spent in the system and discarding the observations less than 50 TL. Those observations were omitted because examining the values it had been realized that there were many cases in which the individuals joined the system but stopped their payments shortly after having joined the system. On the other hand, the monthly contributions cannot be less than the 5% of the gross minimum wage. Therefore, all missing values and the observations having less than 50 TL regular contributions were eliminated and the remaining information of 102,724 participants was used as a sample for the analysis¹⁰.

To analyze how good the sample represents the population a summary of the data using some descriptive statistics will be provided.

- Age distribution of the sample has almost the same shape with the distributions presented in the IPS Progress Reports. Most of the participants of the system belong to *working age*.
- The ratio of women participants is 29% for men it is 71%. These ratios are different from the ones in the original data -about 10%- which indicates that women have a higher rate of incomplete information than men. Since we omit the incomplete data, the ratio of women in the sample has decreased.
- As in the original data, most of the participants have high school (31%) and university (37%) degrees.
- 29.28% of the participants are single, 7.58% are married and 0.14% are divorced or widowed.
- Income information gathered from the sample has a different distribution than the population as seen in Table 1. In the sample, almost half of the

¹⁰ Another reason to eliminate the contributions less than 50 TL is that the pension companies have different limits for the minimum amount of contributions, depending on the product they offer (based on occupations or special needs such as “housewives pension plan”, “police care and donation fund individual pension plan”, “income oriented ‘TL’ instruments individual pension plan”, “Members of Turkish Armed Forces Pension Plan”).

participants are from the group whose income is between GMW and GMW*2 while in the population this group only includes 22% of the participants. Another important difference in the ratios is in the income group between GMW*2 and GMW*3 since 42% of the participants belong to this group in the population while only 2% is in this group in the sample data.

- The descriptive statistics based on the social security information show that most of the participants are registered to the ES (39%) and SSK (32%) just as in the population.

Table 1: Distribution of the participants according to sex and income

Sex/ Income	Income ≤ GMW	GMW < Income < GMW*2	GMW*2 < Income < GMW*3	GMW*3 < Income < GMW*6	GMW*6 < Income < GMW*10	Income > GMW
Female	348 (0.28%)	10071 (9.6%)	375 (0.4%)	853 (0.84%)	5614 (5.61%)	13018 (12.69%)
Male	2155 (1.72%)	39655 (38.4%)	1466 (1.6%)	3137 (3.16%)	11308 (11.39%)	14896 (14.31%)
Total	2503 (2%)	49726 (48%)	1841 (2%)	3990 (4%)	16922 (17%)	27914 (27%)

- The provinces where the participants live are useful information provided by the data. As in Bozkus and Elveren (2008) two groups were constructed according to the development level of the provinces the participants live and which are defined in the “Human Development Index” (HDI) as “high level of development” and “medium level of development”. According to the HDI, (Human Development Report Turkey, 2004) Kocaeli, Yalova, Istanbul, Bursa, İzmir, Mugla, Sakarya, Bolu and Tekirdag are the cities which are ranked as high human development and the others are ranked as medium level human development. 55% of the participants live in the cities which are ranked medium level of development and the remaining 45% live in the cities which are ranked as high level of development.

The occupations were re-categorised based on the income elements listed by the Revenue Administration (RA, 2008) such as business profits, agricultural incomes, salaries and wages, income from independent personal services, since tax incentives are important for the system and these incentives depend on the taxable

income. Besides these categories there are retirees, students, unemployed and housewives. “Retired” includes the participants who are retired from SSK, Bağ-Kur, ES; and the retirees whose social security institutions are not known and constitute 2% of the participants. A “Self-Employed” stand for the “independent personal services” and it includes the professionals such as engineers, architects, doctors and lawyers which is 3%. “Wage and Salaried” includes both manual and mental workers, i.e. officers, workers, bank personals, non-commissioned officers, teachers, military officers, nurses, policemen, academics, generals and admirals which are 66%. “Agricultural incomes” includes farmers which is 0.3%. “Business profits” includes self-employers and pharmacists which is 22.2%. Furthermore, housewives constitute 5.5% and the student and unemployed constitutes 1% of the participants in the sample data.

5.2. Results of the Generalized Linear Model Analysis

In this study, we employed the “Generalized Linear Model” (GLM) analysis¹¹ which is an extension of the linear modelling process that allows to be fit to data that follow probability distributions other than the Normal distribution, such as the Poisson, Binomial, Multinomial, etc. The GLM also relax the requirement of equality or constancy of variances that is required for hypothesis tests in traditional linear models (see McCullagh and Nelder, 1989 for more information). By using the GLM, regular contributions (RC) of the participants which are assumed to be lognormally distributed are regressed the social variables, sex, age, occupation, province, marital status, income, social security and education to examine the effects of these variables on the monthly contributions. The same analysis was performed for men and women to see possible sex differences.

Table 2 introduces the variables, defines the categories and explains the operationalization of the variables used in the analysis. The categories in bold represent the baseline categories used in the analysis.

¹¹ R programming language is used to apply the GLM analysis on the data, <http://www.r-project.org>, last accessed on February 8, 2009.

Table 2: Definitions and operationalizations of the variables

Variable	Definition	Operationalizations
Regular Contribution (RC) (Dependent Variable)	Amount of Monthly Regular Payments (TL)	Continuous variable
Sex	Sex of the participant	Female Male
Age	Age of the participant by 2007	Continuous variable
Occupation	Occupation category of the participant	Housewife Student/Unemployed* Retired Self-Employed Waged and Salaried Agricultural Income Business Profit
Province	Development level of the province in which the participant lives according to HDI	Medium level of development High level of development
Marital Status	Marital status of the participant	Single Divorced/Widowed Married
Income	Income category of the participants in terms of GMW	Income \leq GMW GMW \leq Income $<$ GMW*2 GMW*2 \leq Income $<$ GMW*3 GMW*3 \leq Income $<$ GMW*6 GMW*6 \leq Income $<$ GMW*10 GMW*10 $<$ Income
Social Security	Social security institution of the participant	Bağ-Kur ES SSK Vakıf ¹²
Education	Education category of the participant	Primary/Secondary High School Vocational School/Associate Degree University Master

*For overall sample and females the baseline category for the occupation is “housewife” but for the males the baseline category is “student/unemployed”.

¹² ‘Vakıf’ is a second pillar voluntary social security system provided by some companies such as banks in Turkey.

Table 3: Results of GLM analysis for the overall sample

OVERALL SAMPLE	Estimate	Std. Error	Significance Level	Wald Test		
				Chi-square	P - value	Significance Level
(Intercept)	2.712	0.055	***			
Age	0.030	0.0006	***			
Occupation/Income Element				2676	<2.2e-16	***
Student/Unemployed	0.150	0.053	**			
Retired	0.441	0.060	***			
Self Employed	0.644	0.050	***			
Waged and Salaried (White/Blue collar)	0.163	0.020	**			
Agricultural Income	0.049	0.088				
Business Profit	0.329	0.052	***			
Province (Human Development Level)				96646	<2.2e-16	***
Medium	-0.035	0.008	***			
Marital Status				153969	<2.2e-16	***
Divorced/Widowed	-0.229	0.112	*			
Married	-0.104	0.010	***			
Income Group				2608	<2.2e-16	***
Income <= GMW	-0.460	0.015	***			
GMW <= Income < GMW*2	-0.324	0.012	***			
GMW*2 <= Income < GMW*3	-0.283	0.033	***			
GMW*3 <= Income < GMW*6	-0.079	0.024	***			
GMW*6 <= Income < GMW*10	0.348	0.029	***			
Social Security				609150	<2.2e-16	***
ES	-0.365	0.018	***			
SSK	-0.078	0.017	***			
Vakıf	-0.014	0.019				
Education				1380	<2.2e-16	***
High School	0.219	0.013	***			
Vocational School/ Associate's Degree	0.305	0.021	***			
University Degree	0.401	0.012	***			
Master's Degree	0.646	0.025	***			
Significance Level	*** 0.001 ** 0.01 * 0.05					

Table 3 shows the GLM results for the overall sample. Among the participants in the sample, there is no significant difference in the regular contribution rates between females and males, i.e. gender gap is negligible for the current situation because when we include the other socio-economic variables “sex” loses its significance. Since the system is on a voluntary basis and the participants of the system are from middle or upper classes, their contribution rates are close to each other. Therefore, our final model does not include “sex” as an explanatory variable.

“Age” has a significant positive effect on the regular contribution rates meaning that as age increases the contribution rate increases. The Individual Pension System Progress Report 2007 also presents a positive correlation between age and the amount of monthly contribution rates which is consistent with our findings. This positive correlation can be explained by the fact that as people get older they have fewer years to make savings. If they contribute higher, their investment returns become higher in this shorter period. Therefore, they have higher retirement incomes.

When we include “occupation”, we use “housewife” as a baseline category and examine the effect of the other occupations on the RC comparing with the “housewife”. The GLM results show that all other occupation groups contribute more than the housewife group. However the RCs of the “agricultural income” are not significantly different from the RCs of the housewives. The analysis indicate that the RCs of the “retired” and “self employed” income groups are the highest. The participation of women into the labour market is very low in Turkey (%23,5)¹³ This is largely explained by cultural barriers towards the employment of women “outside the house”. The low participation of women is also typically for the so called “middle classes”, women usually better educated. Interestingly women in these strata are probably also those who do invest and have the economic power to invest in private insurance schemes.

When we look at the estimate of the medium development level for the “province”, we see that it is negative and significant which means that participants living in the cities which are ranked as the medium level of development pay slightly less contribution than the participants living in the cities which are ranked as high development level.

In the marital status, “single” is the baseline category and the effects of other two categories, “divorced/widowed” and “married” are determined based on this

¹³ According the WB and SPO report, Women’s Participation into the Turkish Labor Market, 2010, p.11 .

category. According to the analysis, the RC rate of the married people is less than singles and the divorced or widowed are less than the married. This can be explained by the fact that the males are the only “breadwinner” for most of the families in Turkey and when they get married they may not have enough money to make extra savings plus they see themselves as responsible because their salaries support the family. The contribution of women’s incomes to the household incomes is usually perceived as a kind of “pin money”. Therefore, considering this assumption we expect that the marital status will be a significant factor affecting the RCs especially for males.

For the “income” groups, we chose the participants whose income are greater than 10 times of the GMW as a baseline category since we wanted to analyze the relative effects of the other income groups. As we discussed above, a person whose income is less than the GMW hardly has enough money to make extra savings which means that some of the participants did not give the accurate information especially when they were asked for their income level. According to our analysis, as income level decreases (except for the group whose income is $GMW*6 \leq \text{Income} < GMW*10$) the contribution rate decreases. Although the analysis provides reasonable results we should keep in mind that when the income is considered people might give misleading information.

Analyzing the RCs in terms of social security institutions which the participants are registered, there is no significant difference in the RCs paid by the member of the Bağ-Kur (baseline category) and the Vakıf but the SSK members make less contribution than the Bağ-Kur and the ES members make less contribution than the SSK. This may indicate that, although the 2006 reform aims to unite the social security institutions and thus the services, the privileged of the ES members given by the current fragmented system (providing retirement bonus different from the other institutions and higher retirement income) affects the contribution rates of these participants because they will already have a respectively decent standard of living during their retirement period and they do not need to make extra savings as much as the others do. On the other hand, the ES members who participate to the IPS may have seen the system as an investment vehicle rather than a retirement fund. We know that many participants plan to spend their accumulations for the university education of their children.

The last variable which is important to explain the rate of RCs is “education”. The baseline category is “primary/secondary school” graduates and it is seen that as education level increases the rate of RCs increases. There may be several reasons for this. First of all, as education level increases, people have a chance to get better jobs and higher salaries and enough money to invest into the IPS. Second, these better

jobs may be in big holdings and most of these holdings have their own insurance companies in which they automatically make their members participate to the IPS of that company. Third one is that people who have higher education may be more interested in the IPS and read and search about it and find especially the tax incentives attractive. Thus, the ability to get more information (which can be gained by education) about the system can increase the possibility to be involved into the system. Furthermore, these people are the ones addressed at by advertisement campaigns.

Table 4: Results of GLM analysis for women data

Women	Estimate	Std. Error	Significance Level	Wald Test		
				Chi-square	P - value	Significance Level
(Intercept)	2.759	0.093	***			
Age	0.035	0.001	***			
Occupation / Income Element				458.91	< 2.2e-16	***
Student/Unemployed	-0.095	0.084				
Retired	0.142	0.098				
Self Employed	0.355	0.093	***			
Waged and Salaried (Mental/Manual)	-0.033	0.081				
Agricultural Income	-0.854	0.322	**			
Business Profit	0.070	0.085				
Income Group				719.57	< 2.2e-16	***
Income <= GMW	-0.488	0.026	***			
GMW <= Income < GMW*2	-0.263	0.023	***			
GMW*2 <= Income < GMW*3	-0.045	0.074				
GMW*3 <= Income < GMW*6	0.131	0.052	*			
GMW*6 <= Income < GMW*10	0.481	0.078	***			
Social Security				380.93	< 2.2e-16	***
ES	-0.524	0.038	***			
SSK	-0.115	0.035	**			

Vakıf	-0.182	0.038	***			
Education				345.74	< 2.2e-16	***
High School	0.219	0.027	***			
Vocational School/ Associate's Degree	0.264	0.037	***			
University Degree	0.383	0.023	***			
Master's Degree	0.649	0.046	***			
Significance Level	****' 0.001 ***' 0.01 **' 0.05					

Table 4 shows the GLM analysis results for women data. The effect of the only continuous variable, age is significant, positive and slightly higher than the overall sample age effect means that as age increases the rate of RC among the women increases. According to the analysis, except from the province and marital status all factors are significant and have effect on the RCs. Since province and marital status are not significant, we can say that the RCs of the sample are homogenous in terms of these two explanatory variables among women.

Considering the occupations, we can conclude that while the RCs of “student/unemployed”, “retired”, “waged and salaried” and “business profit” are not significantly different from the RCs of housewives; the RCs of self-employed are greater and the RCs of the “agricultural income” are less than the RCs of housewives.

When we examine the income effect on the RCs for women, we reach the same conclusion as the one in the analysis of the overall sample. As income increases, the RCs increases although the difference for some income groups are not significant.

For the social security, the Bağ-Kur participants pay the highest amount to the system, then the SSK, the Vakıf and the ES participants, respectively.

Finally, as education increases the amount of RCs made to the system increases for women and this result is consistent with the result of the overall sample.

Table 5: Results of GLM analysis for men data

Men	Estimate	Std.Error	Significance Level	Wald Test		
				Chi-square	P - value	Significance Level
(Intercept)	2.667	0.07	***			
Age	0.029	0.001	***			
Occupation/Income Element				2430	< 2.2e-16	***
Retired	0.591	0.078	***			
Self Employed	0.803	0.071	***			
Waged and Salaried (Mental/Manual)	0.286	0.065	***			
Agricultural Income	0.22	0.097	*			
Business Profit	0.482	0.066	***			
Province (Human Development Level)				79	< 2.2e-16	***
Medium	-0.049	0.01	***			
Marital Status				174	< 2.2e-16	***
Divorced/Widowed	-0.226	0.183				
Married	-0.143	0.013	***			
Income Group				1981	< 2.2e-16	***
Income <= GMW	-0.443	0.018	***			
GMW <= Income < GMW*2	-0.387	0.015	***			
GMW*2 <= Income < GMW*3	-0.357	0.036	***			
GMW*3 <= Income < GMW*6	-0.152	0.027	***			
GMW*6 <= Income < GMW*10	0.31	0.032	***			
Social Security				306	< 2.2e-16	***
ES	-0.303	0.022	***			
SSK	-0.085	0.019	***			
Vakıf	0.085	0.022	***			
Education				967	< 2.2e-16	***
High School	0.21	0.014	***			
Vocational School/ Associate's Degree	0.316	0.026	***			
University Degree	0.399	0.015	***			
Master's Degree	0.637	0.03	***			
Significance Level	***' 0.001 '**' 0.01 '*' 0.05					

For the men, according to Table 5, age has a positive effect on the amount of RCs, its effect is even slightly smaller than the effect in the overall sample. As it is mentioned above, the baseline category for the occupation is “student/unemployed” for the men. Self-employed contribute to the system the most, then retirees, those with commercial earning, waged and salaried and agricultural earnings respectively.

Different from women, the province and marital status affect the RCs for men. The participants who live in “medium developed” cities pay little but significantly less than the participants who live in “high developed” cities. Moreover, the RCs of single men participants are significantly higher than the RCs of married men participants which confirm our assumption of the “breadwinner” model. Although not significant, widows/divorcees pay less than the married (we have comparatively few observations for this group).

On the other hand, the income level has the same effect on the RCs as for the overall sample and women. Thus, as income increases the RC rates increase. For the social security institution information, the ES members pay the smallest amount, and then followed by those members of SSK and Bağ-Kur respectively, while the Vakıf members pay the highest amount among men.

Finally, the education factor has the same effect on men’s contribution rates as it has for the overall sample and women. As education increases, the rate of RC increases.

6. Conclusion

The social security system of Turkey has been restructured particularly since early 1990s in line with the neo-liberal paradigm. The IMF, the WB and the EU policies were (are) main guidance in this transformation process. Turkey, adopted a two pillar system, where the private pension scheme, namely the Individual Pension System, has been introduced as the second pillar that is complementary to the traditional pay-as-you-go (PAYG) system. Turkey is a country with a very great percentage of young population. Still, Turkey will experience in the coming decades a mentionable increase in elderly population. Although aging population is not a big threat for Turkey, in contrast to countries of the EU, it was used as of the main justifications in addition to structural problems; such as an expanding informal economy, low pension coverage, inefficiency in the administrative and political management of funds, and the structural change in the labour market, to argue for a change in the social security system.

Although gender equality has become a popular issue in line with the EU accession, it can easily be argued that neither the academia nor the policy makers

pay enough attention to this issue in relation to social security in Turkey. Indeed, as it has been discussed by feminist scholars for decades unequal conditions for women and gender-biased social relations are reproduced by means of the welfare state. Taking the reproductive role of women, unpaid housework and discriminations in the labour market into account is important in order to establish a “just” social protection system that addresses the changing role of women both within the family and in the labour market. Maybe, we should emphasize here once more the fact that women do not consist of an important part of the formal labour market and they are traditionally linked to the agricultural sector and to the informal service sectors. In the restructuration of the welfare system in Turkey, the role of women remains in the field of family, being the predominant caretakers for children, ill, and the elderly. New policies support these developments.

Considering the fact that gender inequality is being perpetuated in a more market oriented social security systems (i.e. introducing private pension schemes) and Turkey is also part of this trend overall the world, we analyze the IPS with a special attention to its gender dimension. This is the first comprehensive statistical analysis of the individual pension system in Turkey by using all available information about the participants of the system. We applied the GLM analysis on the sample which has 102,724 observations. The fitted regression model states that there is no significant difference between the regular contributions of men and women. Thus, we conclude that there is no gender gap in terms of contribution rates in the IPS as it is still voluntary basis and the most of the participants are from middle or upper classes regardless of their sexes.

In this model, all other factors have significant negative or positive effects on the contribution rates. As education level, income or age increases the contribution amount increases. We applied the same analysis on women and men separately. Except marital status and province, all other factors are significant for the women. On the other hand, for men, all those factors are significant. Another important point which should be emphasized is that the analysis we applied to the data shows that there might be some important problems related with the reliability of some of the information collected from the participants. Besides, a significant number of missing information shows that there is no standardization in the information gathered from the participants in the policies sold by different insurance companies. Since this new system is very important to analyze the transformation of the Turkish welfare regime, it is necessary to collect accurate information. Therefore, this work also points out the problems related with the data collected by the insurance companies which may be a guide to be used for obtaining better information.

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