

DOKUZ EYLÜL UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES

**THE ORDERED LOGIT MODEL AND
STRUCTURAL EQUATION MODELING IN
WOMEN ISSUES ON WORKING LIFE**

by

Senem TÜRKAYDIN ELMALI

June, 2015

İZMİR

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STRUCTURAL EQUATION MODELING IN
WOMEN ISSUES ON WORKING LIFE**

**A Thesis Submitted to the
Graduate School of Natural and Applied Sciences of Dokuz Eylül University
In Partial Fulfillment of the Requirements for the Master of Science in
Statistics, Statistics Program**

**by
Senem TÜRKYAYDIN ELMALI**

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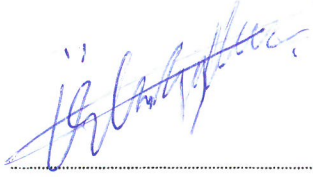
M.Sc THESIS EXAMINATION RESULT FORM

We have read the thesis entitled “**THE ORDERED LOGIT MODEL AND STRUCTURAL EQUATION MODELING IN WOMEN ISSUES ON WORKING LIFE** ” completed by **SENEM TÜRKEYDİN ELMALI** under supervision of **ASSOC. PROF. DR. EMEL KURUOĞLU KANDEMİR** and we certify that in our opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Science.




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THE ORDERED LOGIT MODEL AND STRUCTURAL EQUATION MODELING IN WOMEN ISSUES ON WORKING LIFE

ABSTRACT

According to OECD countries in 2011, the employment rate of women is the lowest rate is 27.8 percent in Turkey. In 2012, the ratio of housewives is 61.3 percent, the females not in labour force. In Turkish Statistical Institute's data of year 2012, when it is asked why women are unaccepted to work, nearly 60 percent of both women and men's answers are that primary duties of women are child care and houseworks.

By thinking of these problems, the questionnaire in Appendix-1 is applied to 250 women in City of İzmir, Gaziemir County, Dokuz Eylül Area. 221 practicable data are acquired from these applied questionnaires. By using Attitude Scale on Labor Force Participation of Women (ASLFPW), the attitude on work life participation of the women is determined. In accordingly created structural equation model, it is seen that internal and external factors has an important effect, which hinders the participation of labor force, on the negativity of working from the point of women.

Then, the relationships between the satisfaction of work of the 114 women, which are working from the 221 participations, and marital status, education, parental education, maternal education and age variables are examined by using ordered logit model, and it is determined that there is a relationship between satisfaction of work and education and parental education.

As a result, two models has been applied about the working issues of women and interpreted.

Keywords: Women employment, structural equation modeling (SEM), ordinal logit model

ÇALIŞMA YAŞAMINDAKİ KADIN SORUNLARINDA SIRALI LOGIT MODELİ VE YAPISAL EŞİTLİK MODELİ

ÖZ

OECD ülkeleri karşılaştırıldığında kadının istihdama katılma oranı 2011 yılında en düşük oranda yüzde 27,8 ile Türkiye'dedir. 2012 yılında işgücüne dahil olmayan kadınların yüzde 61,3'ü ev işleriyle meşguldür. Türkiye istatistik kurumunun 2012 verilerine göre kadınların çalışması neden uygun değildir diye sorulduğunda kadınların ve erkeklerin neredeyse yüzde 60'ı kadının asli görevi çocuk bakımı ve ev işleridir demişlerdir.

Bu sorunlar düşünülerek bu çalışmada İzmir ili Gaziemir ilçesi Dokuz Eylül Mahallesinde yaşayan 250 kadına Ek-1'de yer alan anket uygulanmıştır. Uygulanan anketlerin 221'inden kullanılabilir veri elde edilmiştir. Kadınların Çalışma Yaşamına Katılımlarına Yönelik Tutum Ölçeği (KÇYKYTÖ) kullanılarak ankete katılan kadınların çalışma yaşamına katılımlarına yönelik tutumları saptanmıştır. Buna göre oluşturulan yapısal eşitlik modelinde kadın açısından çalışmanın olumsuzlukları faktörü üzerinde İş gücüne katılımı engelleyen içsel faktörler ve dışsal faktörlerin önemli bir etkiye sahip olduğu görülmüştür.

Daha sonra çalışmaya katılan 221 kadın arasından çalışan 114 kadının çalıştıkları işten memnuniyeti ile medeni durum, eğitim, baba eğitimi, anne eğitimi ve yaş değişkenleri arasındaki ilişkiler sıralı logit modeli ile incelenmiş ve çalıştıkları işten memnuniyetleri ile eğitim ve baba eğitimi arasında ilişki olduğu saptanmıştır.

Sonuç olarak kadınların çalışma sorunları ile ilgili iki model uygulanmış ve yorumlanmıştır.

Anahtar kelimeler: Kadın istihdamı, yapısal eşitlik modelleri (YEM), sıralı logit model

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CHAPTER ONE

INTRODUCTION

During last years Structural Equation Model (SEM) applications had become an integral part of several scientific research interferences, which is used in behavioral and educational scientific researches, also in biological, marketing and medical researches and whose usage frequency is increasing day by day (Şimşek, 2007) (Yılmaz & Çelik, 2009). These models go beyond ordinary regression models to incorporate multiple independent and dependent variables as well as hypothetical latent constructs that cluster of observed variables might represent. They also provide a way to test the specified set of relationships among observed and latent variables as a whole, and allow theory testing even when experiments are not possible. The aims of SEM are to understand the patterns of correlation/covariance among a set of variables and to explain as much of their variance as possible with the model specified.

There are several studies based on SEM in the literature. For instance, Resinger and Mavando (2006) used these techniques to determine the tourist satisfaction. SEM has been recommended for environmental research such as plant conservation by Iriando, Albert and Escurado (2003). Many other uses of SEM have been studied in the literature for example McQuitty (2003), Bollen and Noble (2011), Demir (2011), Ustasüleyman and Eyuboğlu (2010), Şeşen (2010), Kocagöz & Dursun (2010) and Kılınç (2006).

Logistics regression analysis has become a preferred multivariable analysis method because it enables to create the regression model relatively flexible without any need of assumption that similar analysis needs. Tiered Logistics Regression Analysis is used in cases of calculation by tiered scale of dependent variable. Many other uses of logistic regression analysis have been studied in the literature for example Çelik et al. (2014), Şerbetçi & Özçomak (2013), and Güloğlu & Akın (2014).

Rapid change and development takes places in all areas as a result of globalizing world. Organizations have started to make the transition to self-governing organizations giving up the bureaucratic management approach. At this point the concept of "Organizational Justice" gains importance. The perception of Organizational Justice is an important factor on the behaviours and attitudes of individuals within the organization. Because of these improvements in Organizational Justice concept women problems in business life have come to the forefront.

Women make up approximately half of the world's population. Therefore, in every period of history women have become as important as men being a part of economic and social life. However, women participation in economic life and the level of their contribution to social and economic development is not directly proportional. This is mostly related to the economic level of the country, but in general, women have fallen behind men in all societies.

There are several reasons for women staying secondary in economic and social sense. Some of these reasons are closely related to the structural features of society. Gender-based workloads, maintenance services and being married are serious factors in reducing labor force participation of women in Turkey, especially in urban areas. Women must think about the possibility of disruption of the housework, care of the children and the elderly, the time they can create for housework outside working hours when they are making the decision of working outside or not. Another reason reducing the women's participation to working life is the community-based inequalities in education. In addition, skill requirements of the jobs are getting higher everyday as a result of technological advancements, having a negative impact in terms of labor force participation of women without high skills.

The purpose of the study "The Ordered Logit Model and Structural Equation Modeling in Women Issues on Working Life" is to determine both the causes of women's issues in working life in Turkey and the factors affecting their satisfaction with their jobs. In second chapter the data of Turkish Statistical Institute about

women employment is examined. In third chapter literature review is made about Structural Equation Model, in fourth chapter literature review is made about Ordered Logit Model. In fifth chapter, Structural Equation Model and Ordered Logit Model is applied and in last chapter the conclusion is placed.



CHAPTER TWO

CURRENT SITUATION ANALYSIS IN WOMEN EMPLOYMENT

The labor force participation of women is a critical point for the individual and social sustainable development of a country. If we look at the human history, women have always been a part of home-based labor force, except individual tries for earning money (Karabıyık, 2012).

Turkey's economical, social and political progress is in direct proportion to the women's role in industrial and service sectors. To have a competitive economy in global sense, women, which are 50% population of the country, should be a main figure in working life (Ayvaz Kızılgöl, 2012).

The economic development's "sine qua non" provision is the usage of factors of production in high quality. Unfortunately men have the advantage of usage of labor force in the whole world comparing women (Özer & Biçer, 2004).

Women's participation to the financial life is the main goal for the equality of woman and man and for the productivity. Women's participation to the labor market will be a balance for the equality. Also, women's participation to labor force will rise economical productivity and potential of country's progress (Tansel, 2002).

Women's labor force being a part of working life with earning and examining the political rules according to this aim is a critical point for the progress of the country. To reach this aim women's labor force should be examined carefully. In this chapter, women's labor force in Turkey will be examined. At the second step, based on the studies and statistical information, the profile of women in working life will be discussed.

2.1 Employment Rate of Women, OECD Countries 2011

As shown in figure 2.1, according to the OECD countries in 2011, the employment rate of women is the highest in Iceland (77.3 %) and the lowest rate is 27.8 % in Turkey (Türkiye İstatistik Kurumu [TÜİK], 2013).

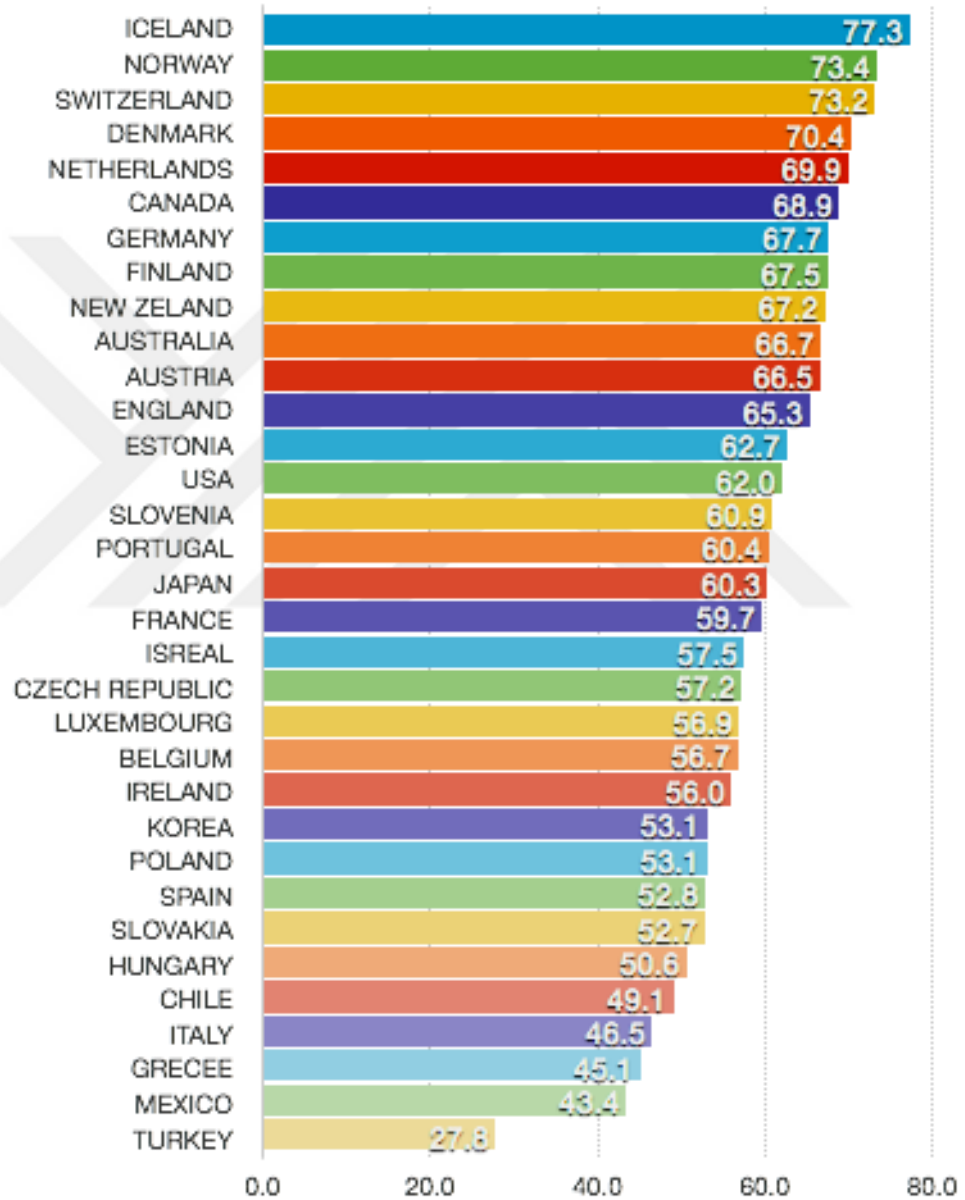


Figure 2.1 Employment rate of women, OECD countries 2011

2.2 Reasons of Not Being in Labour Force

As shown in figure 2.2, in 2012, the ratio of retired males is 37.9 %, 29 % students not in labour force. The ratio of female housewives is 61.3 %, 11 % students from the females not in labour force in the same period.

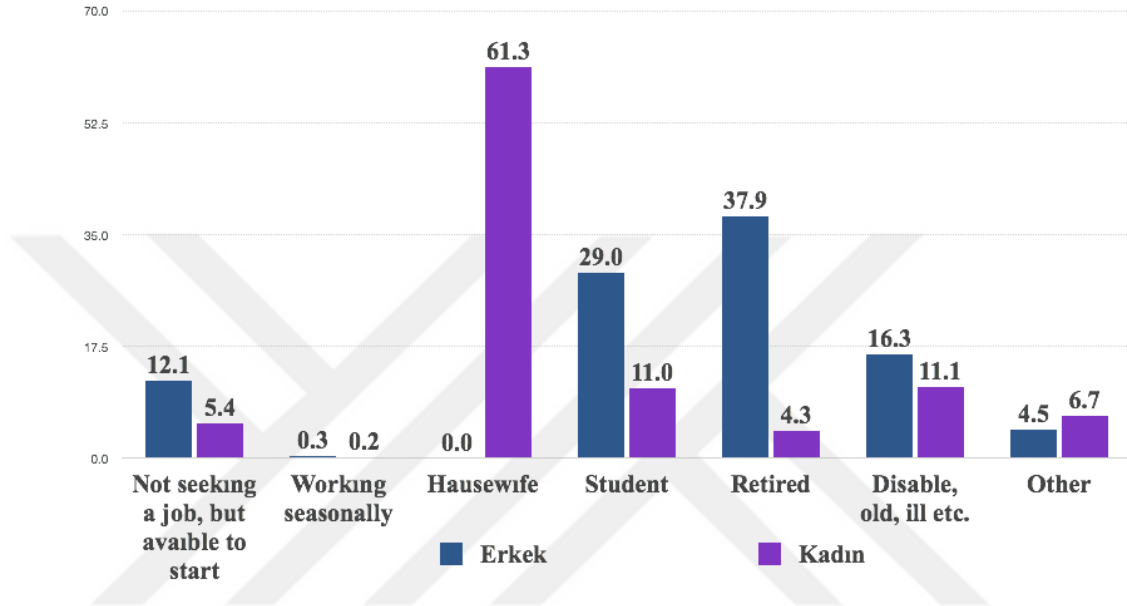


Figure 2.2 Reasons of not being in labour force, 2012 (TUIK, 2013)

2.3 Employment Status

As shown in figure 2.3, around one-third of working females is employed as unpaid family worker in 2012 year. While the ratio of females is 54.3 % in regular employee and casual employee, 10.8 % in own account worker. The ratio of males is 66.5 % in regular employee and casual employee, 22.3 % in own account worker

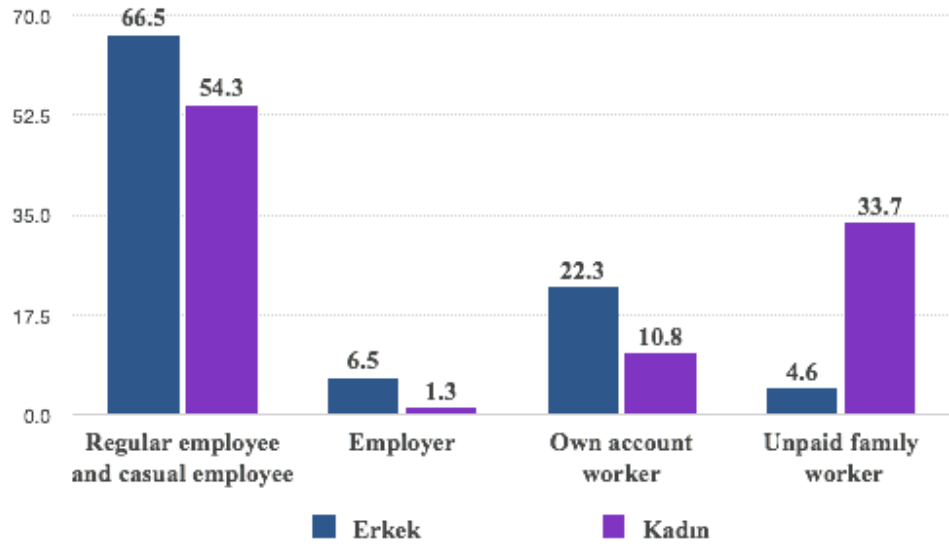


Figure 2.3 Employment status, 2012 (TUİK, 2013)

2.4 Gender Pay Gap by Educational Attainment and Major Occupational Group

As shown in table 2.1, while gender pay gap was in favor of female employees (-1.1 %) at the total, it was in favor of male employees at all levels of education. This situation can be explained by examination of the distribution of wage earners by educational attainment. While the highest educational attainment that the female employees occupy was “higher education” with 35.3 %, this group was “primary school and below” with 27.4 % for male employees.

Table 2.1 Employment rate by marital status (TÜİK, 2013)

		Gender pay employees occupy			Annual average gross wage (TL)			Gender pay gap (%)
		Total	Male	Female	Total	Male	Female	
Total		100.0	100.0	100.0	17 884	17 837	18 029	-1.1
Educational attainment								
	Primary school and below	25.0	27.4	17.7	12 237	12 597	10 519	16.5
	Primary education and secondary school	18.3	19.9	13.5	12 192	12 571	10 470	16.7
	High school	24.4	23.7	26.3	15 117	15 531	13 969	10.1
	Vocational high school	9.9	10.8	7.3	18 759	19 442	15 647	19.5
	Higher education	22.4	18.3	35.3	31 486	33 574	28 184	16.1
Major occupational group								
	Managers				43 825	43 073	46 201	-7.3
	Professionals				31 520	34 549	27 861	19.4
	Technicians and associate professionals				22 082	22 536	20 865	7.4
	Clerical support workers				18 875	19 383	18 203	6.1
	Service and sales workers				12 922	13 167	12 188	7.4
	Craft and related trades workers				15 278	15 586	13 004	16.6
	Plant and machine operators and assemblers				13 336	13 851	10 518	24.1
	Elementary occupations				12 075	12 449	10 713	13.9

2.5 Satisfaction from Work

As shown in table 2.2 and figure 2.4, according to Turkish Statistical Institute's data of year 2012 there is no big difference between the degree of work satisfaction of men and women. Gathered from point of view of several objective standarts, even though the work conditions of women are worse than men's, it is seen that nearly 63% of both women and men have work satisfaction.

Table 2.2 Satisfaction from work (TUIK, 2013)

	2006	2007	2008	2009	2010	2011	2012
Female							
Very satisfied	9.9	10.3	10.0	7.8	6.4	7.5	7.2
Satisfied	50.5	63.6	55.1	59.8	62.5	61.8	62.9
Niether satisfied, nor unsatisfied	28.5	14.3	17.7	16.0	15.9	16.1	15.2
Not satisfied	7.9	9.3	14.7	12.0	12.0	12.2	12.4
Not satisfied at all	3.1	2.5	2.6	4.4	3.2	2.3	2.3
Male							
Very satisfied	7.6	7.4	7.0	7.7	9.3	7.7	8.0
Satisfied	47.6	60.9	58.4	54.9	59.3	63.0	63.2
Niether satisfied, nor unsatisfied	32.1	14.7	14.9	17.4	15.6	15.2	14.6
Not satisfied	10.2	14.5	16.2	14.3	12.0	12.3	12.0
Not satisfied at all	2.5	2.6	3.5	5.6	3.8	1.8	2.3

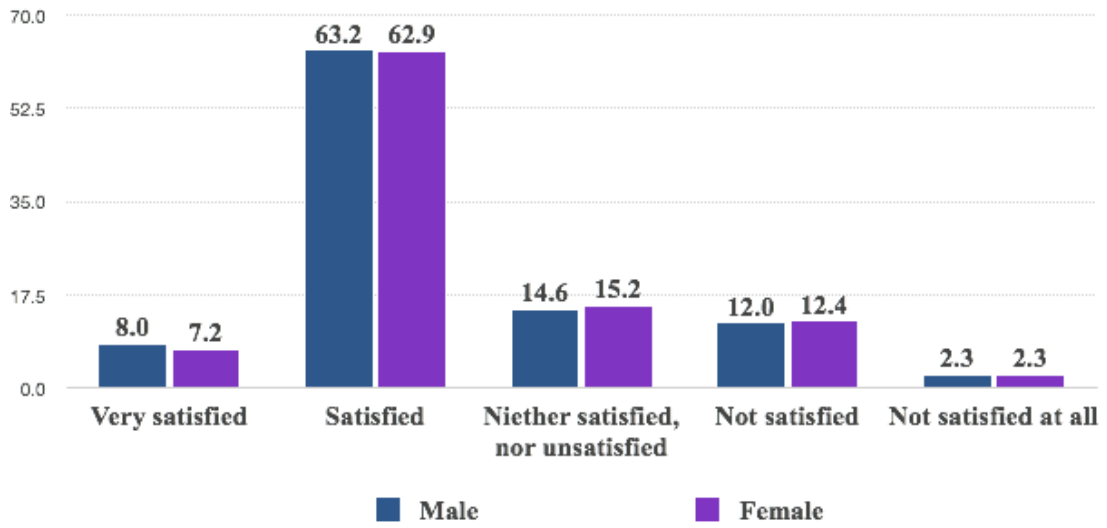


Figure 2.4 Satisfaction from work, 2012 (TUIK, 2013)

2.6 Satisfaction from Earning

As shown in figure 2.5, according to Turkish Statistical Institute's data of year 2012, 21.5% of women and 2.1% of men do not have any income. On the other side, 29.6% of women and 36.1% of men are satisfied with their income.

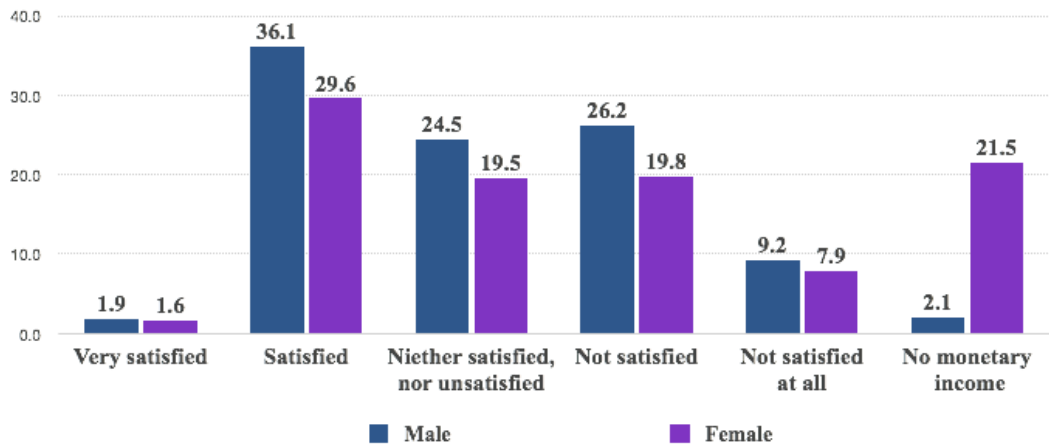


Figure 2.5 Satisfaction from earning, 2012 (TUIK, 2013)

2.7 Reason for Women's Work Accepted Unsuitable by Sex

As shown in figure 2.6, in Turkish Statistical Institute's data of year 2012, when it is asked why women are unaccepted to work, nearly 60% of both women and men's answers are that primary duties of women are child care and houseworks.

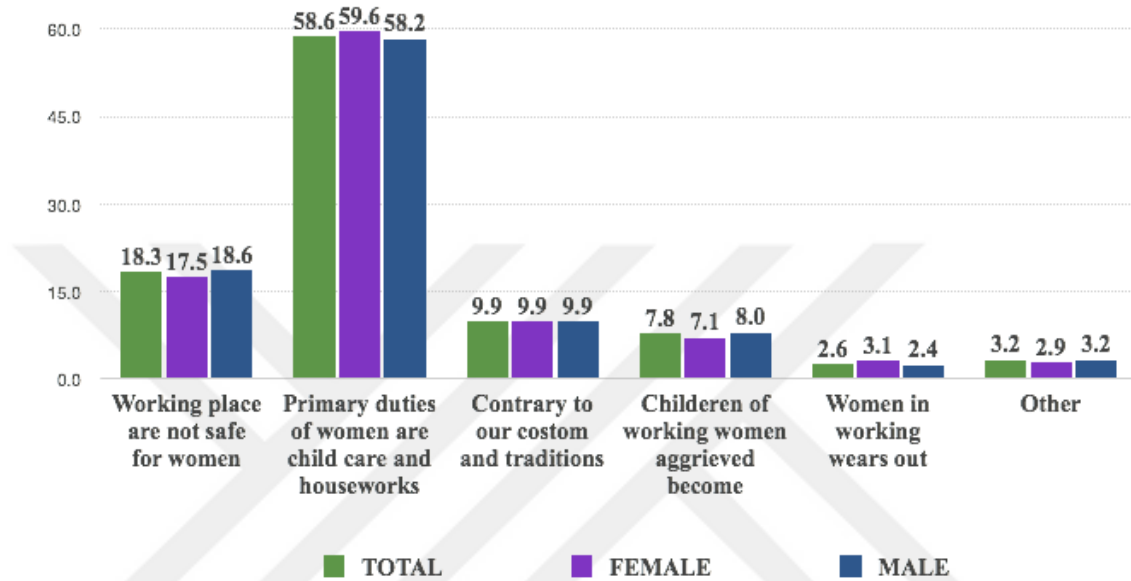


Figure 2.6 Reason for women's work accepted unsuitable by sex (TUİK, 2013)

2.8 Workloads on Women

Workloads on women due to their gender and nursing services and marriage are the main hold-ups for women to be the part of participation of labor force, especially in cities. Women have to be thinking the daily work they do, who would be taking care of children and old people at home before deciding to work outside. The inequality of education due to social habits is also another important factor for the lack of labor force. Special needs and skills are needed in the modern world as technology is developing, and the women have a disadvantage as they are not educated and have the abilities and skills suitable for the modern world (Karaca, 2013).

CHAPTER THREE

STRUCTURAL EQUATION MODEL

Structural Equation Model (SEM) takes its fundamentals from the path analysis, which is found by biologist Sewall Wright from Chicago University 80 years before. Sewall has shown that linear relationships can be represented by path and path coefficient (Ayyıldız & Cengiz, 2006).

SEM has appeared from the point of view of Multiple Regression Analysis, Path Analysis, Explanatory Factor Analysis, Confirmatory Factor Analysis and Simultaneous Equations Model in econometrics, and approaches to the relations between observable and latent variables and examines the structural model of the relationship between latent variables (Bayram, 2010).

SEM is based on examining the model, which belongs to the relationship between the variables those exist before starting research, in research specialist's mind, by the data, collected before starting research. According to this, the research specialist has an idea about the relationship between the variables in real world and which identifies the directions of these relationships of these variables and this idea is a basic model. The research specialist collects data by using the scales of the variables that he is interested in and he analysis these data according to the relations, which are in his mind. SEM is a statistical method, which enables this analysis (Ayyıldız & Cengiz, 2006). In another word the basic purpose of structural equation studies is to match the data, the research specialist owns and the propositions of cognitive world in his mind and to determine how they adapt each other (Şimşek, 2007).

SEM is a very powerful statistical technique that can model interactivities, can get through to the situations which are not linear, can permit the correlation between the variables, can incorporate the errors of measurement into the model, that considers the errors of measurement which has correlation between each other and that can reveal and that can test the relations between the multiple dependent and independent latent variables, which can be measured by several observable variables. While lots

of multivariate statistical methods has exploratory characteristic, SEM has a confirmatory structure. Besides the other multivariate statistical methods can not guess measurement errors, but SEM incorporates almost all measurement parameters to the transaction and calculates the solution accordingly.

The main reason of high frequency of usage of SEM in scientific researches is because it is a multivariate method, which evidently considers the measurement errors related on the variables (both dependent and independent) that are observed in a model (Bayram, 2010). The powerful characteristic of SEM related on evidently considering the measurement errors, enables to detailed approach the transactions between the structures (Yılmaz & Çelik, 2009). While the relationship between the variables is being researched, the released relationship coefficients, in other words standardized path coefficients can be calculated as debugged. And it means to procure much more reliable results (Şimşek, 2007). Opposite to SEM, in traditional regression analysis, the probable measurement errors in explanatory variables are ignored. Because of that the results of regression analysis can be wrong and misleading.

Besides SEM overcomes of the measurement errors, it enables the research specialists to improve multivariate complex models, guess and test and SEM takes in consideration the direct and indirect effects of the variables in the model (Bayram, 2010).

3.1 Some Characteristic Properties of Structural Equation Model

- The models identify the structures which can not be directly measured and the relationship between the structures. As an example for the structures; concern, attitude, intelligence, motivation, personality, talent of reading and writing, aggression, socio-economic status and loyalty can be given.

- Models take in consideration the probable measurement errors of observed variables. It would make that by incorporating each error premise of each measurement to the model.

- Models are approached by basing the opposing and related indicator matrixes.

These characteristic properties are being used to separate SEM from the classical modeling approaches (Yılmaz & Çelik, 2009).

3.2 Model

Model is one of the most important concepts of subject SEM. Each SEM study fundamentally aims to examine a model that has a solid theoretical roof. Both in confirmatory factor analysis studies used in scale studies and in path analysis studies which tests a series of cause and effect relation, it is always a matter to examine one or more than one model (Şimşek, 2007).

The biggest difference between SEM and other customary statistical methods like Variable Analysis, MANOVA, Factor Analysis, and Regression is SEM can examine the relationship between lots of variables by models.

A model is to perceive and formalization a system or a general premises which shows an abstract picture of a real situation. Because of that, models are not the reality; they are the ways of perceiving the reality.

Because the models manifest the relations between the variables of the researched subjects, they ease to easily understand the complex situation and to find solutions. Models also affect the decider's usage of the existing data and information (Ayyıldız & Cengiz, 2006).

Structural equation studies separates in three sections in the view of modeling.

- Confirmation modeling strategy: In this kind of modeling studies the main aim of the research specialist is to test a model which is clearly identified, if it confirmed or non-confirmed by data. But it doesn't mean that it is completely confirmed when it is confirmed by data (Şimşek, 2007). In this approach the research specialist just proves that the model he set up can not be confirmed.
- Alternative models strategy: In this approach more than one model is evaluated from the view of which one is more corresponded with observed data.
- Improving model strategy: In practice most of SEM uses this approach. If the research specialist tests and determines a model is inadequate by using SEM, he makes changes in the model by using SEM modification indices and he tries to get benefit harmony (Ayyıldız & Cengiz, 2006). As understood from the name, the main aim of this kind of studies is to test a model which is assumed that it can explain the relationship between a series of variables best and based on analysis results, to make ameliorations to improve the model (Şimşek, 2007).

3.3 Observed and Latent Variables

Structural equation model (SEM) is an extensive statistical technique which is used to examine the causality between observable and latent variables. SEM assumes that there is causality between latent variable set and that latent variables can be measured by observable variables (Yılmaz & Çelik, 2009).

As a result of data collecting process, the cluster of observed variables is obtained. This can be age, sexuality, income, examination results etc. In behavioral sciences, frequently the research specialists are interested in non-observable theoretical structures. These are named as latent variables (Bayram, 2010).

Latent variables concept is one of the most important terms of SEM and it corresponds to abstract concepts or psychological structures that the research specialists are essentially interested in, like intelligence, motive, emotion, and attitude. This kind of structures are only can be observed by the variables which can be measured based on implicitly specific behaviors or indicators. Sometimes it would not be possible to directly measure the abstracts which are being interested in the fields like psychology, sociology, education, economics and marketing. It can be given as an example for latent variables; in psychology, personal perspective to himself and motivation; in sociology, desperation and anxiety; in education, verbal talent and expectation of trainer; in economics, behaviors, customer satisfaction, quality perception, etc. The regarding latent variables can not be directly measured because they can not be observed. Because of that the research specialist has to associate the latent variables with observable variables in terms of assumed structure to identify the latent variables as operational (Alpaykut, 2014). In another words, latent variables are the structures which are assumed as they exist and assumed that they could only be measured some indicators (Şimşek, 2007).

3.4 The Application Levels of SEM

- To improve an abstract model,
- To draw a path diagram which shows casual relationship for the improved abstract model,
- To parse the structural and solution model by using path diagram,
- To collect the estimations relevant with proposed model,
- To evaluate the structural model and model generally, to evaluate the appropriation of the model and to construe the results (Yılmaz & Çelik, 2009).

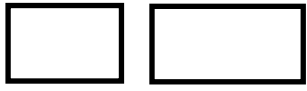

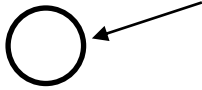
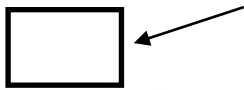


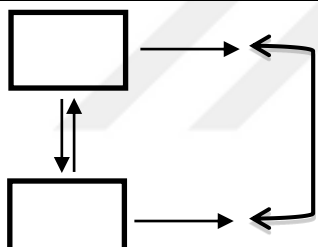
3.5 Path Analysis

Path Analysis is a method for structural equation models. There are three components of path analysis; (1) path diagram, (2) to parse the covariable and correlations according to the parameters in the model and (3) to parse the direct, indirect and total effects of another variable of the variables.

A path analysis is used to explain and easily construe the systems, which contain complex casual relationships.

While identifying a model by path analysis, the analysis is done by clarifying the directions of the effects of internal variables on external variables. To clarify the path coefficients, the correlations between the variables of the model must be calculated. The calculated path coefficients would show the variation value which is expected in internal variable, relevant to the variation of one unit in external variable. The main advantage of path diagram is to present the identified assumed relations with a picture. In the table 3.1 the main symbols are shown which are used in path diagram (Yılmaz & Çelik, 2009).

Table 3.1 The main symbols which are used in path diagram

Symbols	Description
	Observed variables (x,y)
	Latent variables (ξ, η)
	The error in latent variable
	The error in observed variable
	Regression coefficient of observed variable
	Casual relationship between latent variables
	Bidirectional flow; correlations between variables

3.6 Confirmatory Factor Analysis (CFA)

CFA is study that attends to the measure models of the relationship between latent variables and observed calculations (Yılmaz & Çelik, 2009). Each structure in the model is calculated by a set of observed variables. Therefore in CFA, not the relationships in one direction, the relationship between structures and just the relationship that has potentially correlation with each other are studied (Bayram, 2010).

The main characteristic of CFA is its hypothesizing nature. CFA is used during the scale improving process to analysis the latent structure of measuring equipment (Yılmaz & Çelik, 2009).

In the figure 3.1 it is presented confirmatory factor analysis model contents two factors.

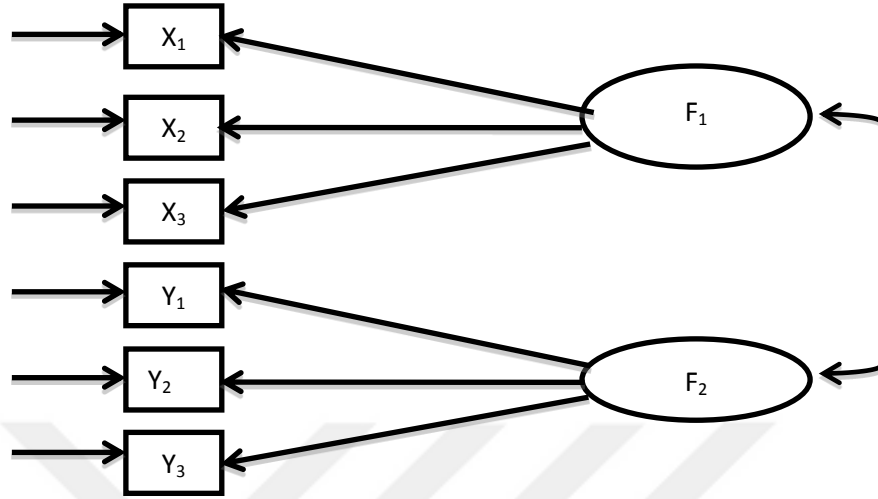


Figure 3.1 Cofirmatory factor analysis model

3.7 Projection Matrix of Structural Equation Model

SEM is a statistical method which combines several statistical approach or represents these approaches. SEM has been in prominence by Karl Jöreskog from Uppsala University and it is known by below most used matrix equation, (3.1) (3.2) (3.3) (Ayyıldız & Cengiz, 2006).

$$h_{(mx1)} = B_{(mxm)} * h_{(mx1)} + G_{(m \times n)} * x_{(nx1)} + Z_{(mx1)} \quad (3.1)$$

$$y_{(px1)} = L_{y(p \times m)} * h_{(mx1)} + e_{(px1)} \quad (3.2)$$

$$x_{(qx1)} = L_{x(q \times n)} * x_{(nx1)} + d_{(qx1)} \quad (3.3)$$

But in practice it is represented graphically as figure 3.2 more than this matrix. In figure 3.2 the explanation of the components of SEM is given by titles.

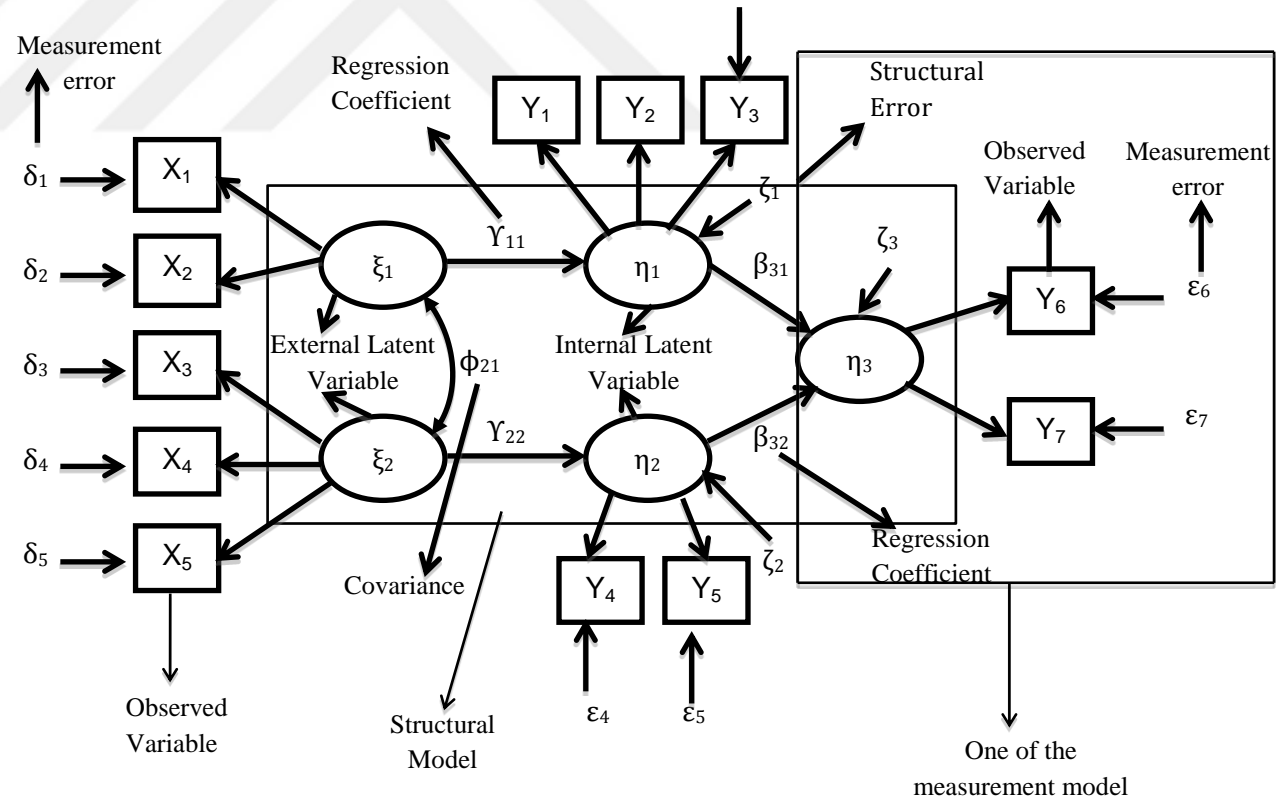


Figure 3.2 The explanation of the components of SEM

3.8 Evaluation of the Model and Fit Indices

It is evaluated how good a predetermined model can explain the collected data by goodness of fit index. Goodness of fit tests are the levels of decision of acceptance or refusion of the model.

Table 3.2 The evaluation of model

Fit Indices	Well	Acceptable
χ^2	$0 \leq \chi^2 \leq 2sd$	$2sd \leq \chi^2 \leq 3sd$
P value	$0.05 \leq p \leq 1.00$	$0.01 \leq p \leq 0.05$
χ^2/sd	$0 \leq \chi^2/sd \leq 2$	$2 \leq \chi^2/sd \leq 3$
RMSEA	$0 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$

In table 3.2 chart it is presented the practical approaches about the evaluation of model (Ayyıldız & Cengiz, 2006).

CHAPTER FOUR

ORDINAL LOGIT MODEL

Logistic regression is a model which helps to make classification and assignment operation which allows getting the response variables' expected values according to the explanatory variable / risk factors as a probability. Logistic regression methods are commonly used in biology, medicine, economics, agriculture, veterinary medicine and transport in recent years (Şerbetçi & Özçomak, 2013).

Logistic Regression Analysis is preferred instead of the other methods that are used to explain the relationships between variables in the circumstances of dependent variables are categorical. The most important reason is dependent variables are proper for multivariable normal distribution and it can be used without any need of very important assumptions of being homogeneous (equal) of the covariances of the variances of the groups, which are known as it owns. Logistic Regression Analysis can be examined in three different groups according to the property of dependent variable as Binary Logistic Regression, Multinomial Logistics Regression and Ordinal Logistic Regression (Akın & Şentürk, 2012).

It was the first time when Berkson had proposed to use Logistic Model in biological experiments (1994), Cox reviewed this model and made several applications (1970), brief improvements were firstly given by Anderson (1979,1983). Commonly usage of the logistic regression models caused to improve the estimation models of error and to examine the logistic regression models in detail, Cornfield (1962) had popularized the logistic regression models by firstly using the discriminate function approach in the assumption operations of the coefficient in logistic regression. The study that J. Cornfield (1962), Gordon and Kannel had carried out about the cardiologic diseases had been the inception of the binary logistic regression (Şerbetçi & Özçomak, 2013).

Ordinal models were been used the first time by McKelvey and Zavonia (1975). In the circumstances which dependent variable is categorical besides ordinal, ordered logit or probit estimators can be used (Emeç, 2002). While ordinal probit model

depends on normal probability distribution, ordinal logit model depends on standardized logistic probability distribution. The distinctive feature of ordinal logit model then probit model is the distribution of errors logistically (Selim, 2009).

There are some advantages of ordinal logistic regression analysis comparing with other regression analysis methods;

To be feasible of classical linear regression technique, there is the provision of being the dependent and independent variables always numeric variables. However in some studies classical linear technique could be applied for ordered categorical variables. There are some inconveniences of this technique for ordered categorical variables.

Because one of the error terms, which was collected for each combination of ordered categorical independent variable levels, would be chosen randomly, error terms would not distribute normally. Thus the rule of classical linear regression model “error terms are distributed normally” would be violated. Because dependent variable is not continuous least-square technique would be meaningless predictions.

Coding is done for nominal dependent variables completely randomly and for ordered dependent variable coding till a fixed transformation would be arbitrary. Nevertheless saved dependent variable would give very different results.

Therefore, when ordered categorical dependent variable is a matter, “Ordinal Logistic Regression Model” is used. Ordinal logistic regression is the only alternative model for ordered categorical dependent variables (Şerbetçi & Özçomak, 2013).

Ordinal logistic regression analysis is based on the idea that there is a non-observable and continuous variable behind the observable, sparse and ordered categorized Y dependent variable. Hence this variable is named “Latent Variable”

and it is stated as “y”. This latent variable is explained by X independent variables and the presence of it is as formul 4.1:

$$y^* = \sum_{k=1}^K \beta_k x_k + \varepsilon \quad (4.1)$$

As understood, y^* is an alternative which presents the variables those never can directly observed and the interpretations which would be done in this model that is similar to linear regression model would be similar. The ε , which states the error term, is assumed that it has an average of 0 and it is symmetrically distributed (Akin & Şentürk, 2012).

The probability of observing and observation value in ordered logit is as formul 4.2;

The minimum value of $i=1$ category variable is defined like, $i=2$ the next ordered value, ... $i=j$, j ordered value (Emeç, 2002).

$$\begin{aligned} \Pr(Y = i) &= \Pr(\text{cut}_{i-1} < \sum_j \beta_j x_j + u \leq \text{cut}_i) \\ &= \frac{1}{1 + \exp(-\text{cut}_i + \sum_j \beta_j x_j)} - \frac{1}{1 + \exp(-\text{cut}_{i-1} + \sum_j \beta_j x_j)} \end{aligned} \quad (4.2)$$

In ordered models another hypothesis is parallelism hypothesis, which means that β assumptions are fixed in thresholds. In other words; the effects of x , namely the coefficients have to be fixed, it would not matter which category. This situation is known in literature as Parallel Slopes Assumption or Proportional Odds Assumption (Selim, 2009).

The main properties of ordinal logistic regression model can be defined as below three sections;

- When the related dependent variable is non-observed continuous latent variable, it can be regularized again as ordered and grouped categorical variable.

However, it is not certain if ordered variable's categories are separated in equal intervals.

- Ordinal logistic regression analysis uses connection function to explain the effects on explanatory ordered categorical variable with no need of normality and fixed variance assumption.

- Because the value of regression coefficient does not depend on ordered categorical variable's categories, ordinal logistic regression model assumes that the relationship between the explanatory variable and ordered categorical variable is independent of category (Şerbetçi & Özçomak, 2013).

The coefficients in ordinal logit model do not show the marginal effects of independent variables (Selim, 2009).

The most difficult part of ordinal logit regression is interpretation of the coefficients. There are different ways to interpret the coefficient predictions (Emeç, 2002).

- Calculation of standardized coefficients
- Calculation predicted probabilities
- Calculation of the factor change in predicted probabilities
- Calculation of the percent change in predicted probabilities

In ordinal logit models while interpreting the coefficients mostly getting benefit of rate of change of factor. In qualitative variable while other all variables are fixed, assumed $\exp(\beta_k)$ gives the factor change. For standardized factor change while all other variables are fixed $s_k =$ standard deviation value and $\exp(\beta_k * s_k)$ is calculated. In quantitative variables, $(\exp(\beta-1)*100)$ calculation is used to find the percentage change. With a simple calculation, independent variables can be standardized (Tavşancı, 2010).

CHAPTER FIVE

APPLICATIONS

The questionnaire in Appendix-1 had been applied to randomly chosen 250 women between 3849 women above 18 years of age in İzmir, Gaziemir county, Dokuz Eylül area after classifying based on ages. 221 of the questionnaires had been collected are practicable data.

5.1 Demographic Information

The demographic properties of the women answered to the questionnaire are given in Table 5.1. It is observed that most of the women's age group (47.5 %) who attended to the questionnaire is between 31-40 years. When we survey to the marital status of the women, it is observed that 60.6% is married, 24.9% is never married and 14.5% is divorced or widowed. It is observed that more than a half (50.7%) of the women has been borned in city center when examined according to the place of birth. When we survey to the educational status of the women, graduated from high school ranks first with 37.1%, graduated from a higher education ranks second with 35.7% and graduated from primary school and below ranks third with 27.1%. 76.5% of the mothers' and 61.5% of the fathers' of the participations are graduated from primary school and below. More than a half (57.9%) of the participations own 0-2 siblings, close to half of them (46.6%) own more siblings. When it is asked to the participations as "how do you feel yourself as healthwise?", 57.9% of them answered as good, just 1 woman (0.5%) answered that she felt pretty bad.

Table 5.1 Demographic information

Variables	Categories	Frequency	Percent
Age Group	30 and below	49	22.2
	31-40	105	47.5
	41 and above	67	30.3
	Total	221	100.0
Marital Status	Never Married	55	24.9
	Married	134	60.6
	Divorced / Widowed	32	14.5
	Total	221	100.0
Place of Birth	Village	48	21.7
	County Town	61	27.6
	City Center	112	50.7
	Total	221	100.0
Education	Primary school and below	60	27.1
	High school	82	37.1
	Higher education	79	35.7
	Total	221	100.0
Paternal Education	Primary school and below	136	61.5
	High school	48	21.7
	Higher education	37	16.7
	Total	221	100.0
Maternal Education	Primary school and below	169	76.5
	High school	36	16.3
	Higher education	16	7.2
	Total	221	100.0
Number of Siblings	0-2	128	57.9
	3-5	72	32.6
	6 and above	21	9.5
	Total	221	100.0
Home Status	Host	67	30.3
	Owner	103	46.6
	Belongs a family member	51	23.1
	Total	221	100.0
Health Status	Pretty bad	1	0.5
	Bad	8	3.6
	Neither good, nor bad	53	24.0
	Good	128	57.9
	Pretty good	31	14.0
	Total	221	100.0

5.2 Application of SEM

Attitude Scale on Labor Force Participation of Women (ASLFPW), is improved by Karaca (2013) to determine the reasons of downward tendency of labor force participation rate of women and the attitude intended to labour force participation force in today's world which has extremely importance of social gender inequality. There are 11 articles and it is asked to participations in which participation level they approve by using five point likert scales (1-Completely Disagree; 5-Completely Agree). The scale comprises of external disincentives of labor force participation (4 articles), internal disincentives of labor force participation (3 articles) and the sub-dimensions of The disadvantages of working for women (4 articles). Karaca (2013), has determined the total confidence of the scale (Cronbach alfa) as 0.84 in his study, and total confidence of the scale (Cronbach alfa) is calculated in our study as 0.73, as a result of the questionnaire applied to 221 people.

To test the validity of the applied scale confirmatory factor analysis is done. In Table 5.2, the unstandardized parameter values with latent variable of each observed variable, explained variance values (R^2), error variance values and T-Statistics are given. T-statistics are significant with 95% confidence level. In table 5.3, the values are described.

Table 5.2 Second Level CFA results

Variables		Correlation Coefficients	Error Variance	t - Statistics	R ²
External Disincentives of Labor Force Participation	SEM4	0.98	1.2	6.98	0.44
	SEM5	0.75	1.3	6.18	0.3
	SEM7	0.51	1.68	4.21	0.13
	SEM8	0.56	1.47	4.9	0.18
Internal Disincentives of Labor Force Participation	SEM1	1.05	0.63	11.46	0.64
	SEM2	1.39	0.013	14.07	0.99
	SEM3	0.47	1.59	5.14	0.12
The disadvantages of working for women	SEM6	0.67	1.09	4.8	0.29
	SEM9	0.83	1.13	5.67	0.37
	SEM10	0.58	1.41	4.61	0.19
	SEM11	0.96	0.85	5.89	0.52

Table 5.3 Description of variables

VARIABLES	DESCRIPTION
SEM1	Women cannot work because the families don't allow
SEM2	Women cannot work because their husbands don't allow
SEM3	Women cannot work because of taking care of their children.
SEM4	I think it's difficult to find a job due to the economic crisis.
SEM5	I think women cannot find jobs suitable to their qualifications.
SEM6	I think that working will lose woman's home comfort.
SEM7	I think that lower levels of education make it difficult to find a job.
SEM8	I think that not having a profession makes it difficult to find a job.
SEM9	I believe that the working conditions would wear women out.
SEM10	I think that working would prevent woman to have enough time for her family
SEM11	I believe that the difficulty of working conditions reduces woman's desire to work

The path diagram of standardized factor load (path coefficient) values is shown in Figure 5.1.

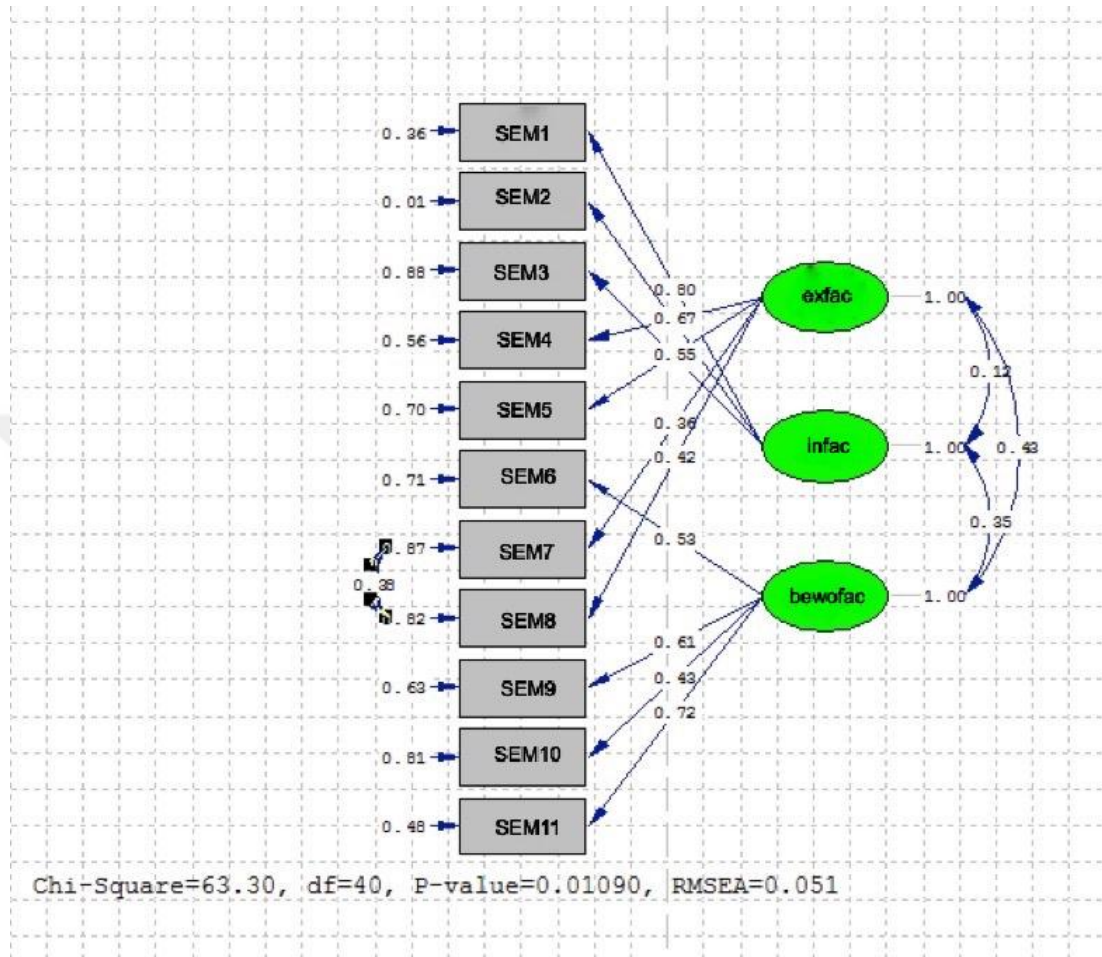


Figure 5.1 The path diagram of standardized factor load (path coefficient) value

By modification between (SEM7) independent variable and (SEM8) independent variable, 0.85 point of increase in Chi-square value is provided.

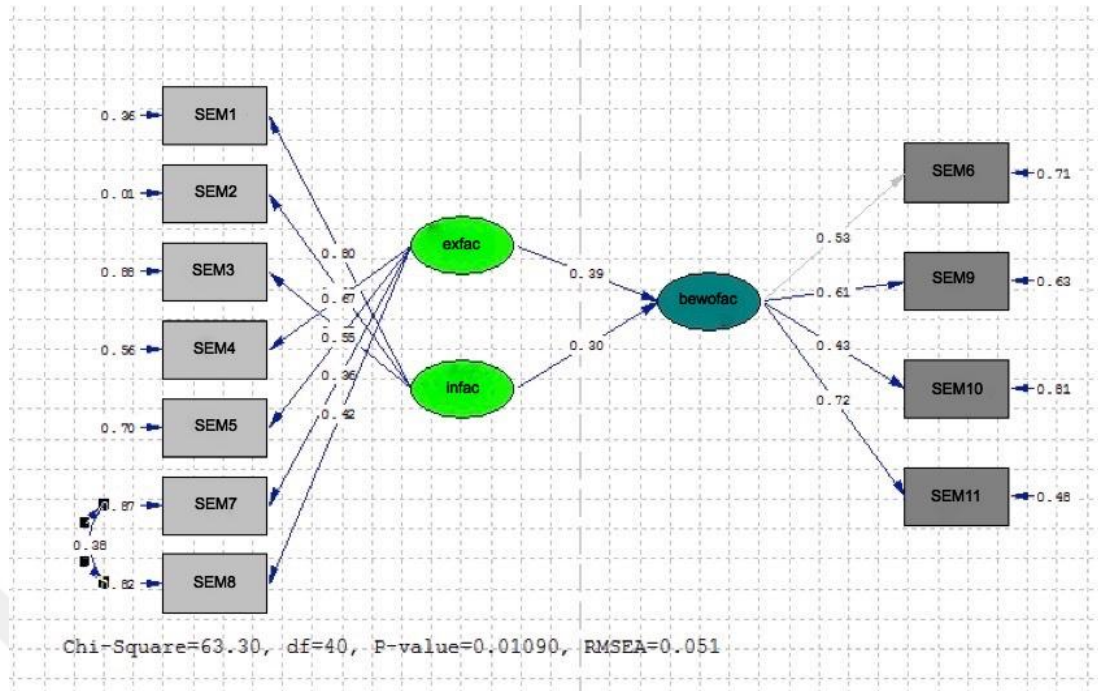


Figure 5.2 Structural equation model

The exchange in (Bewofac) latent variable is explained by (exfac) latent as 23% ratio. The explained variance is 0.77. It is important that the explained variance is high in regard of the model is interpretable.

$$\text{bewofac} = 0.48 * \text{exfac}, \text{Errorvar.} = 0.77, R^2 = 0.23 \quad (5.1)$$

(0.12)	(0.24)
3.98	3.15

As similar the exchange in (Bewofac) latent variable is explained by (infac) latent as 12% ratio. The explained variance is 0.88'. It is important that the explained variance is high in regard of the model is interpretable.

$$\text{bewofac} = 0.35 * \text{infac}, \text{Errorvar.} = 0.88, R^2 = 0.12 \quad (5.2)$$

(0.093)	(0.26)
3.72	3.38

In SEM model, (exfac) and (infac) latent variables are tied to (bewofac) variable with factor loads of 0.39 and 0.30. in SEM model all T-values are significant in 95% level. In the model, given as equation 5.3, explains 71% of total variance.

$$\begin{array}{l} \text{bewofac} = 0.39*\text{exfac} + 0.30*\text{infac}, \text{Errorvar.} = 0.71, R^2 = 0.27 \\ \quad (0.11) \quad (0.088) \quad (0.21) \\ \quad 3.55 \quad 3.42 \quad 3.37 \end{array} \quad (5.3)$$

5.3 Fit Indices

When fit indices are examined, it is observed that the p-value is significant in 95% level. This value informs about the significance of the difference between the expected covariance matrix and observed covariance matrix (Chi-square).

- To control the fit of a model, Chi-square value (χ^2) should be checked.

H_0 : Estimated covariance matrix of the model is equal to observed covariance matrix. $\Sigma_E = \Sigma_O$

H_1 : Estimated covariance matrix of the model is unequal to observed covariance matrix. $\Sigma_E \neq \Sigma_O$

$\chi^2_{(303)} = 67.28$, p-value=0.00 is resulted. Theoretically the expectation is that the estimated covariance shouldn't be different then the observed covariance. According to the Chi-square statistics zero hypothesis is refused, which means estimated covariance and observed covariance are not equal. That is why there is criterion improved regarding the chi-square. The threshold values of this criterion are 2 and 5. If Chi-square/sd value is less then 5, it shows good fit, if it is less then 2, it shows the perfect fit. In this model, it is calculated as; Chi-square/sd=67.28/40= 1.99. According to the fit criterions, perfect fit comes into question.

- Nevertheless as the RMSEA value is 0.51, we can declare that there is “perfect fit” in regard of fit indexes.

Table 5.4 The values of fit index

Fit Index	Values	Perfect Fit
Normed Fit Index(NFI)	0.89	≥ 0.90
Non-Normed Fit Index (NNFI)	0.93	≥ 0.90
Comparative Fit Index (CFI)	0.95	≥ 0.90
Root Mean Square Residual (RMR) = 0.13	0.13	≤ 0.05
Standardized RMR	0.070	≤ 0.08
Adjusted Goodness of Fit Index (AGFI)	0.92	≥ 0.95
Parsimony Goodness of Fit Index (PGFI) = 0.58	0.58	1
Goodness of Fit Index(GFI)	0.95	≥ 0.90

Because Root Mean Square Error of Approximation = 0.051, the model is in acceptable fit. Nevertheless RMSEA provides required conditions; because as shown in table 5.4 NFI, NNFI, CFI, RMR, Standardized RMR, AGFI, PGFI and GFI indexes are in good fit, the model is interpretable.

5.4 Application of Ordinal Logit Model

In this study the job satisfaction of working women is examined demographically. 114 of 221 participants are working in a job. In this study, 114 women data were used.

Before modeling job satisfaction, which is dependent variable, and independent variables have to be examined together and the connection between them has to be revealed. This information is placed in Table 5.5.

Table 5.5 Job satisfaction, according to independent variable

Variables	Categories	Satisfaction From Work						TOTAL	P-VALUE
		Not satisfied		Neither satisfied, nor unsatisfied		Satisfied			
		People	Percent	People	Percent	People	Percent		
Education	Primary school and below	10	62.50	1	6.25	5	31.25	16	0.04
	High school	12	32.43	12	32.43	13	35.14	37	
	Higher education	10	16.39	18	29.51	33	54.10	61	
Paternal Education	Primary school and below	25	40.32	11	17.74	26	41.94	62	0.01
	High school	4	16.00	11	44.00	10	40.00	25	
	Higher education	3	11.11	9	33.33	15	55.56	27	
Numbers of Siblings	0-2	18	24.32	24	32.43	32	43.24	74	0.05
	3-5	8	25.81	6	19.35	17	54.84	31	
	6 and above	6	66.67	1	11.11	2	22.22	9	
Years of Marriage	0-10	5	31.25	4	25.00	7	43.75	16	0.031
	11-20	11	61.11	2	11.11	5	27.78	18	
	21 and above	2	20.00	1	10.00	7	70.00	10	
	Never Marriage	6	15.00	15	37.50	19	47.50	40	
	Divorced / Widowed	8	26.67	9	30.00	13	43.33	30	
Health	Bad	4	80.00	1	20.00	0	0.00	5	0.00
	Neither good, nor bad	14	51.85	6	22.22	7	25.93	27	
	Good	14	17.07	24	29.27	44	53.66	82	
Monthly Average Income	Less than 1000 Tl	14	50.00	4	14.29	10	35.71	28	0.02
	1000 Tl - 1999 Tl	15	28.85	16	30.77	21	40.38	52	
	2000 Tl - 2999 Tl	1	6.67	8	53.33	6	40.00	15	
	3000 Tl and above	2	10.53	3	15.79	14	73.68	19	
Work Related Issues -Work Conditions	Yes	20	40.82	13	26.53	16	32.65	49	0.02
	No	12	18.46	18	27.69	35	53.85	65	
Satisfaction from Workplace Relations	Not satisfied	13	54.17	7	29.17	4	16.67	24	0.00
	Neither satisfied, nor unsatisfied	14	31.11	14	31.11	17	37.78	45	
	Satisfied	5	11.11	10	22.22	30	66.67	45	
Satisfaction from Earning	Not satisfied	19	38.78	17	34.69	13	26.53	49	0.03
	Neither satisfied, nor unsatisfied	11	23.91	12	26.09	23	50.00	46	
	Satisfied	2	10.53	2	10.53	15	78.95	19	

The below information is got when Table 5.5 is examined;

- When education increases, satisfaction from work increases.
- When paternal education increases, satisfaction from work increases. While 40.32% of the participants graduated from Primary school and below group are not satisfied, 11.11% of the participants graduated from a higher education are not satisfied, 55.56% of them are satisfied.
- When the child quantity is increased satisfaction of work decreases. 66.67% of the participants who own 6 and more children are not satisfied of the jobs that they work.
- 70% of the participants who are married for 21 and more years are satisfied of the jobs that they are working. 61.11% of the participants who are married between 11-20 years are not satisfied of the jobs they are working.
- When we examine the job satisfaction situation according to the health variable, it is observed that the participants who feel bad are not also satisfied of their jobs. While 53.66% of good feeling participants are satisfied of their jobs, none of the bad feeling participants said “I am satisfied of my work”.
- When monthly average income and satisfaction from work are examined together, it is observed that there is a direct proportion between them.
- According to the job status, 53.66% of the managers and professionals are satisfied of their jobs, 50% of the other groups are not satisfied of their jobs.
- It is understood that when the participants who have problems with work environment are not satisfied of their jobs, the ones who don't have any work environmental problems are satisfied of their jobs.

- There is a direct proportion between the satisfactions of labor relations and satisfaction of work. 66.67% of the participants, who are satisfied of labor relations, are satisfied of the jobs that they work, too; 54.17% of the participants who are not satisfied of labor relations are not satisfied of their jobs that they work, neither.

- Also there is a direct proportion between the satisfaction of income and satisfaction of work. 78.95% of the participants who are satisfied of their income are also satisfied of their jobs that they work.

- Because the P-value is less than 0.05, these relationships are statistically significant.

There is no significant relationship between satisfaction of work and age group, marital status, place of birth, maternal education, home, employment starting age, business situation of husband, education of husband, number of children, employment status and the problems regarding the work; managerial issues, injustice in wages, amount of wages.

5.5 Modeling the Data

The modeling is done by logit connection function. The first provision is to confirm a model of stipulation of parallelism assumption. Hence firstly it has to be tested for the convenience of this assumption.

Table 5.6 The test of parallelism assumption

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	255.998			
Final	239.261	16.738	10	0.080

Link function: Logit.

$$\begin{aligned}
 H_0 &= \text{Parameter estimates passes through the same cut-off point.} \\
 H_1 &= \text{Parameter estimates passes through the different cut-off point.}
 \end{aligned}
 \tag{5.4}$$

By paralelism assumption there is a stipulation that for the estimate values of parameters' dependent variable's all categories should pass through the same inception point. Paralellism assumption is tested by Chi-square test. As shown in table 5.6, P probability is 0.080. Because $P > 0.05$, H_0 can not be rejected and it can be declared that it ensures the paralelism assumption. It means that the categories of satisfaction of work which are dependent variable are paralel to each other; which means that parameters are equal in each category. Because this assumption is ensured, the goodness of fit is examined which is next step.

Table 5.7 The goodness of fit test by test statistics

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	220.613	210	0.294
Deviance	176.239	210	0.957

Link function: Logit.

$$\begin{aligned}
 H_0 &= \text{In good fit by model data.} \\
 H_1 &= \text{Not in good fit by model data.}
 \end{aligned}
 \tag{5.4}$$

As seen in Table 5.7, the deviation and the probability of chi-square test statistics are bigger then 0.05. Therefore the hypothesis which states that the model is in fit with the data, can not be rejected. And it shows that the model provides the goodness of fit.

Table 5.8 The examine of goodness of fit by Pseudo values

Pseudo R-Square	
Cox and Snell	0.137
Nagelkerke	0.143
McFadden	0.048

Link function: Logit.

The goodness of fit of model is examined also by R^2 . R^2 presents what percentage of the dependent variables is stated by independent variables. However because the values are not good criterion for logistics regression, they are resulting low. As it is

seen in table 5.8, while Cox and Snell R^2 value is 0.137, the Nagelkerke value is relatively high to annihilate the finiteness of R^2 value (0.143).

After these examines, the assessments of parameter significance of acquired model have to be done. Firstly In table 5.9, independent variables are described.

Table 5.9 Description of independent variables

Independent Variables	DESCRIPTION
[S2_MStat=1]	Marial Status: Never Married
[S2_MStat=2]	Marial Status: Married
[S2_MStat=3]	Marial Status: Divorced / Widowed
[S5_Educa=1]	Education: Primary school and below
[S5_Educa=2]	Education: High school
[S5_Educa=3]	Education: Higher education
[S7_PEduc=1]	Paternal Education: Primary school and below
[S7_PEduc=2]	Paternal Education: High school
[S7_PEduc=3]	Paternal Education: Higher education
[S9_MEduc=1]	Maternal Education: Primary school and below
[S9_MEduc=2]	Maternal Education: High school
[S9_MEduc=3]	Maternal Education: Higher education
[Age=1]	Age group: 30 and below
[Age=2]	Age group: 31-40
[Age=3]	Age group: 41 and above

Table 5.10 Parameter estimates

*Dependent Variable is Work Satisfaction with four categories		Estimate	Wald	e^{β}	Sig.
Independent Variables	[S2_MStat=1]	0.009	0.000		0.987
	[S2_MStat=2]	0.084	0.026		0.872
	[S2_MStat=3]	0 ^a			
	[S5_Educa=1]	-1.665	6.791	0.18912	0.009
	[S5_Educa=2]	-0.993	4.896	0.37048	0.027
	[S5_Educa=3]	0 ^a			
	[S7_PEduc=1]	-1.187	4.980	0.30527	0.026
	[S7_PEduc=2]	-1.009	3.247		0.072
	[S7_PEduc=3]	0 ^a			
	[S9_MEduc=1]	1.251	2.793		0.095
	[S9_MEduc=2]	0.867	1.505		0.220
	[S9_MEduc=3]	0 ^a			
	[Age=1]	0.216	0.157		0.692
	[Age=2]	0.063	0.023		0.878
	[Age=3]	0 ^a			

In this model there 5 total independent variables. To make interpretation the probability values of these variables have to be checked. These probability values are the ones which belong to Wald Test which is used to test the significance of parameters. Just the probability values which are below 0.05 (statistically significant variables) are interpreted. But before interpretation e^{β} value have to be calculated. By this way acquired values can be interpreted. But to interpret reference categories have to be determined. When Table 5.10 is examined it is understood that the reference categories of the variables are the last categories. Therefore, the interpretations are done based on this reference category. Examining of parameter significance in this way is called as “interpretation according to the odds ratio”. In this phase the variables will be interpreted according to the odds ratio.

According to the data in the table 5.10 of the 5 independent variable are significant by determined categories. Hence, these 2 variables will be interpreted by significant categories, other 3 variables will be determined as insignificant and will not be interpreted.

When the table is examined, it is seen that the reference category of education variable is “Higher education” category. Therefore the significant categories have to be interpreted according to this category. The satisfaction of work of the women which graduated from primary school and below is approximately 0.19 multiple then the women graduated from higher education. In other words, higher educated women are $(1/0.19)$ 5.29 multiple more satisfied of their work then the women who graduated from primary school and below. Besides higher educated women are $(1/0.37)$ 2.7 multiple more satisfied of thier work then the high educated women.

Because Paternal education level’s reference category is “Higher education” category; we come to conclusion that the satisfaction of work of the women whose paternal graduation is higher education is $(1/0.305)$ 3.28 multiple more then the women whose paternal graduation is Primary school and below.

CHAPTER SIX

CONCLUSION

In this study firstly the data of Turkish Statistical Institute about women employment has been examined, then has been made a literature review about Structural Equation Model and Ordered Logit Model.

In application part, using Attitude Scale on Labor Force Participation of Women (ASLFPW) Women's attitude toward the participation in working life has been determined for women living in Dokuz Eylül area of Gaziemir district in İzmir. In accordingly created structural equation model it is observed that both Internal Disincentives of Labor Force Participation and External Disincentives of Labor Force Participation have a significant effect on "The disadvantages of working for women" factor.

Then, the relationships between the satisfaction of work of the women who live in of İzmir, Gaziemir County, Dokuz Eylül Area, and their marital status, education, parental education, maternal education and age variables are examined, and it is determined that there is a relationship between satisfaction of work and education and parental education.

As a result, two models has been applied about the working issues of women and interpreted. It is foreseen that this study will guide the women's studies based on gender mainstreaming. Within this scope, consciousness raising studies have to be done to decrease the effects of the external and internal factors which hinders the labor force participation, later then repeating this study, the effects of regarding studies on women, have to be examined.

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Appendix-1 : Survey

Sayın Katılımcı

Bu çalışma, Dokuz Eylül Üniversitesi, Fen Bilimleri Enstitüsü, İstatistik Yüksek Lisansı programı kapsamında hazırlanan “Çalışma Hayatındaki Kadın Sorunları” hakkında bir tez çalışmasıdır. Çalışmanın amacı, katılımcıların çalışma hayatına yönelik tutum ve eğilimleriyle ilgili bilgi toplamaktır. Çalışmaya katılım tamamıyla gönüllülük temelinde olmalıdır. Ankette, sizden kimlik belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir; elde edilecek bilgiler bilimsel yayınlarda kullanılacaktır. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz.

ANKET FORMU

BİRİNCİ BÖLÜM

DEMOGRAFİK VE TOPLUMSAL KÖKEN ÖZELLİKLERİ

1. Doğum Tarihiniz/...../.....
gün / ay / yıl
2. Medeni Durumunuz ()Hiç evlenmedi () Evli ()Boşanmış () Dul (Eşi vefat etmiş)
3. Doğum Yeriniz () Köy () İlçe Merkezi () İl Merkezi
4. Doğum yeriniz hangi ilimizin sınırları içindedir?
5. En son mezun olduğunuz okul: () İlkokul Bitirmemiş () Lise
() İlkokul () Meslek Lisesi
() Ortaokul () Yüksekokul ve üstü
6. Babanız en son hangi okuldaki mezun oldu ? () İlkokul Bitirmemiş () Lise
() İlkokul () Meslek Lisesi
() Ortaokul () Yüksekokul ve üstü
7. Anneniz en son hangi okuldaki mezun oldu? () İlkokul Bitirmemiş () Lise
() İlkokul () Meslek Lisesi
() Ortaokul () Yüksekokul ve üstü
8. Kaç kardeşiniz var? (siz hariç) ErkekKız
9. Oturduğunuz evin mülkiyet durumu? () Ev Sahibi () Kiracı () Aile Fertlerinden Birine ait
10. Sağlık açısından kendinizi nasıl değerlendiriyorsunuz?
() Oldukça iyi () İyi () Ne İyi Ne Kötü () Kötü () Oldukça Kötü
11. Sosyal güvenceniz var mı? () Evet () Hayır

12. Kazanç getiren bir işte çalışmaya başladığınızda kaç yaşındaydınız?
13. Herhangi bir sebeple iş değiştirmek zorunda kaldınız mı? () Evet () Hayır
14. İş değiştirme nedeniniz?
() Tayin () Terfi () Eş Durumu () Maddi nedenler () Sağlık () Hamilelik - Çocuk
() Eş Baskısı () İş yerinde ayrımcılığa veya psikolojik baskıya maruz kalma ()
Diğer.....

15-17. soruları evli olanlar cevaplayacaktır.

15. Kaç yıldır evlisiniz?
16. Eşiniz çalışıyor mu? () Evet () Hayır
17. Eşiniz en son hangi okuldan mezun oldu? () İlkokul Bitirmemiş () Lise
() İlkokul () Meslek Lisesi
() Ortaokul () Yüksekokul ve üstü
21. Kaç çocuğunuz var? Yaşları neler?.....

İKİNCİ BÖLÜM

1. Herhangi bir işte çalışıyor musunuz?
A. Evet B. Hayır
2. Herhangi bir işte çalışmıyorsanız hangisi sizi daha iyi tanımlıyor?
A. İş aramıyorum ama çalışmaya hazırım D. Öğrenciyim
B. Mevsimlik çalışıyorum E. Emekliyim
C. Ev işleriyle meşgulüm F. Çalışamaz haldeyim
3. Herhangi bir işte çalışıyorsanız hangisi çalışma durumunuzu tanımlıyor?
A. Ücretli veya yevmiyeli D. Kendi hesabına
B. İşveren E. Ücretsiz aile işçisi
4. Çalıştığınız işten memnun musunuz?
A. Çok memnunum B. Memnunum C. Orta
D. Memnun değilim E. Hiç memnun değilim

5. Aylık olarak ortalama ne kadar net ücret alıyorsunuz.....
6. Hangi meslek grubunda istihdam edilmektesiniz?
- A. Kanun yapıcı, üst düzey yönetici veya müdür
 - B. Profesyonel meslek mensubu
 - C. Yardımcı profesyonel meslek mensubu
 - D. Büro ve müşteri hizmetlerinde çalışan eleman
 - E. Hizmet ve satış elemanı
 - F. Nitelikli tarım, hayvancılık, avcılık, ormancılık ve su ürünleri çalışanları
 - G. Sanatkarlar ve ilgili işlerde çalışanlar
 - H. Tesis ve makina operatörleri ve montajcılar
 - İ. Nitelik gerektirmeyen işlerde çalışanlar
7. İşe ilişkin sorunlarınız? (Birden fazla seçenek işaretleyebilirsiniz)
- A. İdari Konular
 - B. Ücret dengesizliği
 - C. Ücret miktarı
 - D. Çalışma koşulları
 - E. Sorunum Yok
 - F. Çalışmıyorum
8. İşyeri ilişkilerinden memnun musunuz?
- A. Çok memnunum
 - B. Memnunum
 - C. Orta
 - D. Memnun değilim
 - E. Hiç memnun değilim
9. Kazancınızdan memnun musunuz?
- A. Çok memnunum
 - B. Memnunum
 - C. Orta
 - D. Memnun değilim
 - E. Parasal kazancım yok
10. Sizce kadınların çalışması uygun mudur?
- A. Evet
 - B. Hayır
11. Cevabınız “Hayır” ise sebebi sizce hangisi?
- A. Çalışma ortamları kadın için güvenli değil
 - B. Kadının asli görevi çocuk bakımı ve ev işleridir.
 - C. Gelenek-göreneklerimize aykırı
 - D. Çalışan kadınların çocukları mağdur olur
 - E. Bir işte çalışma kadını yıpratır
 - F. Diğer (.....)

ÜÇÜNCÜ BÖLÜM

Kadınların Çalışma Yaşamına Katılımlarına Yönelik Tutum Ölçeği

Tutum İfadeleri 1: Kesinlikle Katılmıyorum 2: Katılmıyorum 3: Kararsızım 4: Katılıyorum 5: Kesinlikle Katılıyorum	Algı Düzeyiniz				
	1	2	3	4	5
1. Aile izin vermediği için kadınlar çalışmamaktadır.					
2. Eş izin vermediği için kadınlar çalışmamaktadır.					
3. Çocuklarının bakımını üstlendiği için kadınlar çalışmamaktadır.					
4. Ekonomik kriz nedeniyle iş bulmanın zor olduğunu düşünüyorum.					
5. Kadınların niteliklerine uygun iş bulamayacağını düşünüyorum.					
6. Çalışmanın, kadının evdeki rahatını kaybettireceğini düşünüyorum.					
7. Eğitim düzeyinin düşüklüğünün işe girişi zorlaştırdığını düşünüyorum.					
8. Meslek sahibi olmamanın iş bulmayı zorlaştırdığına inanıyorum.					
9. Çalışma koşullarının kadınları yıpratacağına inanıyorum.					
10. Çalışmanın, kadının ailesine yeterince zaman ayırmasına engel olacağını düşünüyorum.					
11. Çalışma koşullarının zorluğunun, kadının çalışma isteğini azaltacağına inanıyorum.					