

GALATASARAY UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
ECONOMICS DEPARTMENT

TRUST IN FAMILY CONTEXT: THE CASE OF TURKEY

MASTER'S THESIS

Muhammed Alperen YAŞAR

Thesis Supervisor: Assoc. Prof. Sezgin POLAT

JUNE 2021

Preface

I am very grateful to Assoc. Prof. Sezgin Polat for his irreplaceable help and patience in a completely strange field to me. I would not be able to complete this thesis without his expertise in empirical studies.

Without inspirations of my professors in Galatasaray University, I would not be able to pursue an academics career. I am thankful to all of them for their continuous encouragements.

I would like to thank my father and my mother for their help and support in my journey to academics. I always will try to be as hardworking as them, which will be quite difficult.

Finally, I am very happy to be with a wonderful woman who was always helpful, cheerful and patient. I am grateful to *Özlem*, who always motivated me to follow my dreams.

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Acronyms

ESS European Social Survey. 12, 18

EVS European Values Survey. 6, 12, 17, 18

GSS General Social Survey. 6, 11, 12

OLS Ordinary Least Squares. 11, 23

PIACC Programme for the International Assessment of Adult Competencies. 2, 17

SILC Statistics on Income and Living Conditions. 2, 11–13, 17, 20, 23, 31, 32, 35, 36

SOEP Socio-Economic Panel. 10, 31

TUIK Turkish Statistical Institute. 12, 17

WVS World Values Survey. 6, 8, 11, 12, 17, 18

Résumé

La confiance bilatérale crée un environnement sûr pour les interactions sociales. Lorsque la confiance est absente d'une communauté, les interactions s'arrêtent à un degré où la croissance économique est paralysée. Lorsque les gens ne se font pas confiance, ils décident de ne pas investir dans des projets ou de créer de nouveaux partenariats. Cette méfiance amène également les gens à penser que leurs interactions répétées s'arrêteront à tout moment, ce qui les amène à agir de manière égoïste plutôt qu'altruiste.

Le capital social est l'accumulation de réseaux qui relient une communauté. Ces réseaux permettent des interactions interpersonnelles créatrices de valeur ajoutée. C'est une partie substantielle de l'économie, de la sociologie ou de tout autre domaine comportemental. La raison pour laquelle le capital social est essentiel tient au fait qu'il ne se détériore pas lorsqu'il est utilisé. Au contraire, la plupart des interactions augmentent la confiance entre les parties.

Le capital social a gagné en popularité en économie après le célèbre livre "Bowling Alone" (Putnam, 1995). Il est actuellement considéré comme l'un des facteurs les plus critiques pour expliquer les différences de bien-être entre des pays relativement égaux. Bien qu'il existe de multiples domaines du capital social, il est sûr de dire que la confiance bilatérale est la plus examinée en raison de sa mesurabilité. Ni les réseaux ni la participation sociale ne sont aussi faciles à calculer que la confiance bilatérale, qui a été étudiée avec des enquêtes depuis les années 1970.

La confiance sociale est à la fois la cause et le résultat du capital social. Dans un pays où les gens sont altruistes et agissent avec réciprocité, il est facile de comprendre pourquoi la confiance est plus élevée que d'habitude. C'est aussi vrai dans le sens inverse ; dans un pays où les gens se font confiance, se remettre des chocs d'inégalité des revenus ou de pauvreté peut être beaucoup plus facile car la solidarité aidera les gens à se remettre de toute crise.

La confiance bilatérale et le capital social sont difficiles à changer en peu de temps. Ces attitudes sont transmises entre les générations, les rendant difficiles à être affectées par la plupart des événements ou des politiques. Par conséquent, le

capital social doit être divisé en ses composantes pour mieux comprendre comment l'influencer à long terme. Étant donné que la confiance héritée augmente la croissance du PIB et diminue les inégalités de revenus, les économistes ont essayé de mieux comprendre ce qui affecte la confiance au cours des deux dernières décennies. L'un des facteurs les plus importants de la confiance bilatérale s'est avéré être le niveau d'éducation de l'individu. La confiance a augmenté de manière significative lorsque le niveau d'éducation a augmenté, ce qui peut être dû à trois raisons : (1) interactions répétées fournies dans les écoles ; (2) une mobilité éducative accrue permettant une vision plus optimiste de la vie ; et (3) la relation entre l'éducation et le revenu.

La Turquie est dans un endroit différent du reste du monde car elle a une confiance considérablement faible par rapport à d'autres pays du même niveau de développement. Cependant, bien que cette méfiance soit connue, ni les raisons ni les résultats n'avaient encore été étudiés. De plus, le manque d'enquêtes intensives impliquant la confiance et le manque de connaissances sur l'attitude de la confiance bilatérale avant les années 1970 rendent difficile l'étude de l'origine de la méfiance.

L'éducation et le revenu étant parmi les éléments les plus importants de la confiance, il est possible qu'une forte méfiance soit due aux difficultés économiques qui se sont produites au cours des derniers siècles en Anatolie. De plus, si la confiance est transmise à travers les générations en tant que partie du capital social et ne change pas de manière significative, cette méfiance acquise pourrait présenter un comportement collant vers la hausse. Dans cette situation, la seule solution pourrait être des politiques à long terme pour résoudre les inégalités de revenus et la privation d'éducation.

Dans cette thèse, nous avons analysé l'attitude de confiance bilatérale des Turcs dans le contexte des ménages. Nous avons décidé d'utiliser une enquête qui inclut des informations sur le ménage au lieu des WVS ou ESS plutôt populaires pour comprendre comment les familles transmettent la méfiance ; ou comment les familles avec méfiance se forment en premier lieu. Si la transmission intergénérationnelle se révélait un facteur essentiel de défiance, il serait possible de créer des politiques de renforcement de la confiance via des politiques ciblant les familles.

Enquête sur le revenu et les conditions de vie (SILC) est une enquête menée avec la ligne directrice fournie par l'Union européenne et collectée par TUIK en 2012 et publiée en 2013. Bien que l'enquête sur les valeurs mondiales, l'enquête sur les valeurs européennes et l'enquête sociale européenne collectent des données en Turquie, la SILC est la première enquête pour mener une enquête auprès des ménages qui comprend une question mesurant l'attitude de confiance bilatérale des personnes. De plus, depuis que l'enquête a été collectée en 2012, elle n'a pas été affectée par la crise des immigrés.

La principale méthode d'analyse est l'estimation des moindres carrés ordinaires, car il s'agit de la méthode la plus courante de la littérature sur la confiance. Nous avons également utilisé l'estimation Probit comme un contrôle de robustesse dans l'annexe B. Comme l'ensemble de données SILC a la question de confiance comme une échelle de Likert à 11 points, OLS donne de meilleurs résultats par rapport aux ensembles de données où la question de confiance est posée avec un format de réponse binaire. Même si la plupart des enquêtes dans le monde (y compris World Values Survey) utilisent une question de confiance avec un système de réponse binaire, la littérature utilise toujours l'estimation MCO utilisant la régression Probit comme un contrôle de robustesse. Par conséquent, cette thèse fait de même.

Dans le premier chapitre, nous avons analysé les composantes de la confiance bilatérale en utilisant la réponse de chaque individu à la question de confiance généralisée, qui a été interrogée avec la question : "De manière générale, diriez-vous qu'on peut faire confiance à la plupart des gens ou que vous devez être très prudent dans Traiter avec des gens?". Nous créons un modèle économétrique dans lequel la variable dépendante est la confiance, et les variables indépendantes sont des variables que l'on pense avoir une influence sur la confiance, par exemple l'éducation, l'âge, le sexe ou le revenu. À titre d'échantillon, seules les personnes de plus de 25 ans ont été choisies car leurs attitudes de confiance sont plus susceptibles de changer. Trois indicateurs différents, (1) le revenu disponible, (2) le décile de revenu et (3) la privation matérielle, ont été utilisés comme variables de revenu, et ils se sont tous avérés très importants pour décider de l'attitude de confiance d'une personne. Une différence significative par rapport au monde est

que la confiance n'augmente pas de manière linéaire avec l'éducation en Turquie comme elle l'était dans le monde. Selon la littérature, la confiance augmente linéairement avec l'éducation, tandis qu'en Turquie, les personnes analphabètes avaient la deuxième confiance la plus élevée après les diplômés universitaires. Cela peut être dû à un biais causé par les personnes analphabètes vivant principalement dans les zones rurales. Comme on sait que les personnes vivant en milieu rural ont une confiance plus élevée que les personnes vivant en milieu urbain, il est nécessaire d'utiliser le fait de vivre en milieu urbain comme variable de contrôle. Nos résultats indiquent que les analphabètes ont plus de confiance que les alphabétisés ou même les diplômés du secondaire, même lorsque la vie en milieu urbain est contrôlée. Enfin, une variable de la confiance moyenne du ménage est incluse pour comprendre à quel point une personne est affectée par sa famille tout en contrôlant également la faible méfiance initiale pour mieux comprendre les autres variables.

Ensuite, nous avons étudié comment la confiance s'est transmise entre les générations dans le deuxième chapitre. Des études sur la transmission intergénérationnelle de la confiance bilatérale ont été menées de deux manières. Dans la première et plus macro manière, les économistes ont examiné les attitudes de confiance des immigrants et ont établi une corrélation avec l'attitude de confiance moyenne dans leur pays d'origine. Il a déjà été démontré que les immigrants sont porteurs de leurs valeurs sociales, même s'ils se sont également semi-adaptés à de nouvelles voies. Dans la seconde et plus micro, les données des ménages ont été utilisées pour comparer l'attitude de confiance bilatérale des enfants avec celle de leurs parents. Dans cet article, la deuxième méthode a été utilisée en créant une méthode similaire à celle de Dohmen et al. (2012). En faisant régresser l'attitude de confiance d'un enfant de la part de ses parents, on constate que la confiance se transmet entre les générations. Même si la mère a un effet plus important que le père, ils affectent l'attitude de confiance de l'enfant dans une marge considérable par rapport aux autres variables. Il est également important de noter que pendant que nous inspectons l'attitude de confiance bilatérale d'un adulte, le revenu et les conditions de vie deviennent significatifs; alors que nous étudions l'attitude de confiance des jeunes, ils sont devenus insignifiants même lorsqu'ils sont contrôlés par les attitudes de confiance des parents.

Dans la dernière section, nous avons étudié l'accouplement assortatif en termes de confiance sociale. Si les gens avaient pris en compte les attitudes de confiance de leurs futurs époux lors du mariage, cela pourrait expliquer comment la méfiance finirait par se stabiliser dans un pays. Cette section crée un modèle où la confiance bilatérale de l'individu est la variable dépendante, et l'attitude de confiance du conjoint est la variable indépendante avec les facteurs d'appariement les plus courants, c'est-à-dire l'âge, le revenu et l'éducation, sont utilisés comme variables de contrôle. De plus, un groupe témoin avec des couples de jeunes mariés a été créé pour éviter les préjugés de personnes qui se ressemblent. Les résultats indiquent que la confiance bilatérale est un facteur important dans l'accouplement assortatif.

Ce mémoire comprend deux annexes. Dans l'annexe A, le mécanisme des données manquantes a été étudié car les données manquantes pourraient fausser l'échantillon. Par exemple, si un groupe spécifique décidait de ne pas répondre à la question sur la confiance sociale, les résultats seraient biaisés en faveur de l'autre groupe. Par conséquent, nous avons régressé la décision de ne pas répondre à la question avec des variables éventuellement corrélées telles que ; l'âge, le revenu ou l'éducation. S'il existe une corrélation, cela signifie que l'élimination par liste des observations manquantes pourrait entraîner des données biaisées. Dans cette situation, il faut imputer les données manquantes avec différentes méthodes. Cependant, les résultats des estimations indiquent que même si certaines corrélations peuvent exister, notre comparaison des différentes méthodes d'imputation NA montre qu'aucune différence significative n'a été trouvée. En conclusion, les observations manquantes sont considérées comme sûres pour être éliminées par liste.

Les estimations OLS peuvent donner des résultats biaisés lorsque la variable dépendante est catégorielle. Dans ces situations, les estimations probit ou logit sont préférées. Comme la question de confiance de SILC est posée avec une échelle de Likert à 11 points, un contrôle de robustesse utilisant la régression probit a été effectué dans l'annexe B. En comparant les résultats MCO aux résultats probit, aucune différence n'a été trouvée ; par conséquent, les résultats peuvent être considérés comme robustes.

Abstract

Generalized trust creates a safe environment for social interactions. When trust is absent from a community, interactions stop to a degree where economic growth is crippled. When people do not trust each other, they decide not to invest in projects or create new partnerships. This distrust also causes people to think their repeated interactions will stop at any moment, which causes them to act selfishly rather than altruistic.

Social capital is the accumulation of networks that tie a community together. These networks allow interpersonal interactions that create added value. It is a substantial part of economics, sociology or any other behavioural field. The reason that social capital is essential is due to the fact that it does not deteriorate when it is used. On the contrary, most interactions increase the trust between parties.

Social capital gained popularity in economics after the famous book "Bowling Alone" (Putnam, 1995). It is currently considered one of the most critical factors in explaining the differences in welfare between relatively equal countries. Although there are multiple areas of social capital, it is safe to say that generalized trust is the most examined one due to its measurability. Neither networks nor social participation is as easy to calculate as generalized trust, which has been studied with surveys since the 1970s.

Social trust is both cause and outcome of social capital. In a country where people are altruistic and act with reciprocity, it is easy to understand why trust is higher than usual. It is also true in the opposite direction; in a country where people trust each other, recovering from shocks of income inequality or poverty can be much easier as solidarity will help people to recover from any crisis.

Social trust and social capital are hard to change in short amounts of time. These attitudes are transmitted between generations, making them difficult to be affected by most events or policies. Therefore, social capital has to be divided into its components to understand better how to influence it in the long term. Since inherited trust increases the GDP growth and decreases income inequality, economists tried to understand better what affects trust in the last two decades. One of the most significant factors of generalized trust was found to be the in-

dividual's education level. Trust had increased significantly when the education level has increased, which may be due to three reasons: (1) repeated interactions provided in schools; (2) increased educational mobility allowing for a more optimistic view of life; and (3) the relationship between education and income.

Turkey is in a different place than the rest of the world because it has a considerably low amount of trust compared to other countries within the same development level. However, although this distrust is known, neither the reasons nor the results had not yet been studied. Moreover, the lack of intensive surveys involving trust and the lack of knowledge about the attitude of generalized trust before the 1970s make it difficult to study the origin of distrust.

As education and income are some of the most prominent components of trust, it is possible that high distrust may be due to economic hardship that occurred in the last centuries in Anatolia. Also, if trust is transmitted through generations as a part of social capital and not changing significantly, this learnt distrust could exhibit a sticky behaviour towards the downside. In that situation, the only solution could be long-term policies to solve income inequality and educational deprivation.

In this dissertation, we have analyzed the generalized trust attitude of Turkish people in the household context. We have decided to use a survey that includes information about the household instead of the relatively popular WVS or ESS to understand how families transmit distrust; or how families with distrust form in the first place. If the intergenerational transmission were to be found an essential factor for distrust, it would be possible to create policies towards increasing trust via policies targeting families.

Survey of Income and Living Conditions (SILC) is a survey conducted with the guideline provided European Union and collected by TUIK in 2012 and published in 2013. Although World Values Survey, European Values Survey and European Social Survey collect data from Turkey, SILC is the first survey to conduct a household survey that includes a question measuring the generalized trust attitude of people. Moreover, since the survey was collected in 2012, it has not been affected by the immigrant crisis.

The primary method for analyses is Ordinary Least Squares estimation, as it is the most common method of trust literature. We have also used Probit estimation as a robustness check in Appendix B. As the SILC dataset has the trust question as an 11-point Likert scale, OLS gives better results compared to datasets where the trust question is asked with a binary response format. Even though most surveys in the world (including World Values Survey) use a trust question with a binary answer system, literature still uses OLS estimation using Probit Regression as a robustness check. Therefore, this dissertation does the same.

In the first chapter, we analyzed the components of generalized trust using every individual's answer to the generalized trust question, which surveyed with the question: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?". We create an econometric model where the dependant variable is trust, and the independent variables are variables that are thought to be influential on trust, e.g., education, age, gender or income. As a sample, only people over 25 years old have been chosen as their trust attitudes are more prone to change. Three different indicators, (1) disposable income, (2) income quintile, and (3) material deprivation, has been used as income variables, and they all found significantly important when deciding one's trust attitude. A significant difference from the world is that trust is not increasing linearly with education in Turkey as it was in the world. According to the literature, trust increases linearly with education, while in Turkey, illiterate people had the second-highest trust after people graduated from University. This may be due to a bias caused by illiterate people living primarily in rural areas. Since it is known that people living in rural areas have higher trust than people living in urban areas, it is necessary to use living in urban as a control variable. Our results indicate that illiterate people have more trust than literate or even high school graduates, even when living in urban areas is controlled. Finally, a variable of the household average of trust is included to understand how much one is affected by their family while also controlling for low initial distrust to understand other variables better.

Next, we studied how did trust transmit between generations in the second chapter. Studies of intergenerational transmission of generalized trust have been

done in two ways. In the first and more macro way, economists had examined the trust attitudes of the immigrants and correlated with the mean trust attitude in their home country. It has previously been shown that immigrants carry their social values, although they also semi-adapted new ways. In the second and more micro way, household data has been used to compare children's generalized trust attitude with their parents'. In this paper, the second method has been used by creating a similar method to Dohmen et al.'s (2012). By regressing a child's trust attitude by their parents, trust is found to be transmitted between generations. Even though the mother has a more substantial effect than the father, they affect the child's trust attitude by a considerable margin compared to other variables. It is also important to note that while we inspect the generalized trust attitude of an adult, income and living conditions become significant; while we study a young's trust attitude, they became insignificant even when controlled with parents' trust attitudes.

In the last section, we studied assortative mating in terms of social trust. If people had considered their future spouses' trust attitudes when marrying, it could explain how distrust would eventually stabilize within a country. This section creates a model where the generalized trust of the individual is the dependant variable, and the trusting attitude of the spouse is the independent variable with most common assortative mating factors, i.e. age, income and education, are used as control variables. In addition, a control group with newly-wed couples has been created to prevent bias from people resembling each other. Results indicate that generalized trust is a significant factor in assortative mating.

This dissertation includes two appendices. In Appendix A, the mechanism of missing data has been studied because missing data could cause the sample to be biased. For example, if a specific group decided not to answer the social trust question, results would be biased towards the other group. Therefore, we have regressed the decision not to answer the question with possibly correlated variables such as; age, income, or education. If a correlation exists, that means listwise eliminating missing observations could cause biased data. In this situation, imputing missing data with different methods is required. However, the results of estimations indicate that even though some correlations may exist, our comparison of different NA imputation methods show that no significant differ-

ence has been found. In conclusion, missing observations are considered safe to be listwise eliminated.

OLS estimations may give biased results when the dependant variable is categorical. In these situations, probit or logit estimations are preferred. As the trust question of SILC is asked with an 11-point Likert scale, a robustness check using probit regression has been made in Appendix B. Comparing OLS results to probit results, no difference has been found; therefore, the results can be considered robust.

Our results are mostly in parallel with literature, with the most significant difference being illiterate people having a high trust than literate people. This difference is thought to be an unknown interaction of living in rural areas while being illiterate. Nevertheless, having a university degree remained significant in both intergenerational transmission and positive assortative mating models.

Social capital is a relatively untouched field, especially in Turkey. This study is the first to explore generalized trust attitude in the context of Turkish family; moreover, it is the first study of generalized trust using an extensive household survey that includes questions about living conditions and income. If further surveys about income and living questions include a question measuring generalized trust attitude, the immigration crisis's effects on trust could be explored.

Özet

İnsanlar arasındaki etkileşimlerin tamamı bir dereceye kadar karşılıklı güvene dayanır. Bu güven, karşı tarafın etkileşimin gerekliliklerini yerine getireceğine olan güvendir. Bir toplulukta güven olmadığında, etkileşimler ekonomiyi etkileyecek kadar duraksar. Birbirine güvenmeyen insanlar; birbirlerine yardım etmeyecekleri gibi yeni ortaklıklar kurmaz, başkalarının projelerine yatırım yapmazlar. Bu güvensizlik, insanların etkileşimlerin duracağına inanmasından dolayı özgeci yerine bencil hareket etmelerine yol açar.

Sosyal sermaye, bir toplumdaki insanlar arasındaki tutumların toplamı olarak açıklanabilir. Ekonominin, sosyolojinin ve diğer davranışa dayalı bilimler için önemli bir yerde olan sosyal sermaye, ahlaklılık veya iyi niyetlilik gibi konuları da kapsamaktadır. Sosyal sermayeye sermaye denmesinin sebebi; bir toplumu bir arada tutan sosyal ağların yığılması veya birikmesi olarak tanımlanmasındandır. Bu birikim, ekonomik getiriye dönüşebilmekte veya gelecek nesillere aktarılabilir. Bu açıdan fiziksel sermayeye benzerlik göstermektedir. Fakat fiziksel sermayenin aksine karşılıklı güven, etkileşimlerle birlikte kullanıldıkça azalmaz ve artar. Bu özelliğiyle eşsizdir.

Sosyal sermaye, Putnam'ın "Bowling Alone" (1995) kitabından sonra ekonomide de önemli bir yer edinmeye başlamıştır. Fiziksel sermayesi ve beşeri sermayesi görece benzer ülkelerin arasındaki ekonomik farklılıkları açıklamada bugün en önemli unsurlardan birisi olarak kabul edilen sosyal sermayenin birçok alanı vardır. Fakat karşılıklı güven, ölçülebilirlik özelliği ve çok sayıda ankette yer alması nedeniyle en çok incelenen sosyal sermaye unsurlarından bir tanesidir. Sosyal ağlar veya sosyal katılım karşılıklı güven kadar ölçülebilir değildir. Sosyal ağların ölçülmesi kontrollü deney ortamlarında sağlanırken sosyal katılımın sorulduğu anket soruları karşılıklı güvenin sorulduğu anket sorusu kadar genelleyici ve doğru kabul edilmediğinden literatürde daha az yer bulmuştur.

Güven, sosyal sermayenin hem sebebi hem de sonucudur. İnsanların daha özgeci olduğu ve karşılıklılık ilkesiyle hareket ettiği toplumlarda, güvenin neden daha yüksek olduğunu anlamak kolaydır. Çünkü karşılıklı güven bu toplumlarda meyvesini verecek ve insanlar karşılıklarını alabilecektir. Yine aynı şekilde insanların birbirine güvendiği bir ülkede gelir eşitsizliği ya da yoksulluk şoklarından

kurtulmak da çok daha kolay olacaktır, çünkü birbirine güvenen bir toplumda insanların dayanışma içerisinde hareket edebilmesi çok daha kolaydır. Fakat insanlar birbirine güvenmediğinde dayanışmaya yanaşılmayacak, insanlar dolandırılmaktan korkacaktır.

Sosyal güven de sosyal sermaye de kısa sürede değişmesi zor olan kavramlardır. Nesiller arası aktarımla gelmiş olmaları toplumda yerleşmiş olmalarına yol açmaktadır. Bu nedenle politikalardan veya olaylardan çok etkilenmezler. Uzun vadede nasıl etkileneceğini anlamak için sosyal sermayeyi bileşenlerine ayırmak gereklidir. Aktarılmış güven, GSYİH büyümesini artırıp gelir eşitsizliğini düşürdüğü için iktisatçılar güveni neyin etkilediğini anlamak için bu konuda çalışmaktadır. Güveni etkileyen en büyük unsurlardan birisinin bireyin eğitim seviyesi olduğu bulunmuştur. Eğitim seviyesi arttıkça güven artmaktadır. Bunun üç nedeni olduğu söylenebilir: (1) okullarda yaşanan tekrarlı etkileşimler; (2) eğitim hareketliliğinin hayat görüşüne olumlu etki etmesi; ve (3) eğitim ve gelir arasındaki pozitif ilişki.

Türkiye, kendisiyle benzer gelişmişlik seviyesine sahip ülkelere göre daha düşük güven oranları göstermesi nedeniyle dünyada görece farklı bir konumda bulunmaktadır. Bu güvensizlik bilinmesine rağmen, ne sebeplere ne de sonuçlara dair kapsamlı bir çalışma yapılmamıştır. Literatürdeki bu eksikliğin birinci nedeni Türkiye’de yapılan ve güven sorusunu içeren kapsamlı anketlerin bulunmaması, ikinci nedeni ise 1970 öncesinde içerisinde güven sorusu bulunan bir anketin yapılmamış oluşudur. 1970’lere dayanan en eski anketlerde bile görece düşük bir güven gözlemlendiği için kontrollü bir deney ortamı yaratılamamaktadır.

Bu tezdeki sonuçlardan da literatürden de görülebileceği üzere eğitim ve gelir güvenin en büyük faktörlerindendir. Dolayısıyla yüksek güvensizliğin nedeninin son yüzyılda Anadolu’da yaşanan zorluklar olduğu düşünebilir. Fakat bu zorluklar atlatıldıktan sonra neden güvenin artmadığı bir inceleme konusudur. Bu tezde öne sürülen görüşlerden birisi; karşılıklı güvenin, Türkiye’de sosyal sermayenin bir parçası olarak nesiller arası aktarılması durumunda, bu aktarımın güvensizliğin neden aktarıldığı konusuna dair de bilgi verebileceğidir. Bu durumda yapılması gerek uzun vadeli politikalarla gelir eşitsizliğini çözmek ve eğitim eksikliğini

gidermek olacaktır. Böylece her nesil bir önceki nesilden daha yüksek bir güven seviyesine sahip olacak ve uzun vadede güven yeniden artacaktır. Güvenin yüksek olduğu toplumlarda, gelecek şoklardan kurtulmak da daha kolay olacaktır.

Bu tezde, Türk halkının karşılıklı güven tutumu hanehalkı konsepti içerisinde incelenmiştir. Literatürde daha sık tercih edilen WVS veya ESS yerine bir hanehalkı anketi kullanılmasının sebebi, aile içerisindeki güven aktarımının nasıl gerçekleştiği veya düşük güvenli ailelerin nasıl bir araya geldiğine dair bir bilgi edinebilmektir. Eğer nesiller arası aktarım güvensizliğin önemli bir nedeniyse, ailelere yönelik oluşturan güven artırma politikaları daha etkili olacaktır.

Gelir ve Yaşam Koşulları Anketi (SILC), Avrupa Birliği tarafından sunulmuş şartlar altında TÜİK tarafından toplanmıştır. Bu tezde, 2012 yılında toplanıp 2013 yılında yayınlanan SILC anketi kullanmıştır çünkü karşılıklı güven sorusunun bulunduğu en güncel anket bu ankettir. Her ne kadar WVS, EVS ve ESS de Türkiye’den veri toplasa da; SILC karşılıklı güven sorusunu da sormuş olan ilk hanehalkı anketidir. 2012 yılında toplandığı için mülteci krizinden etkilenmemiş olması nedeniyle anketin gözlemlerinin yanlı olmadıkları söylenebilir.

Güven literatüründe en sık kullanılan yöntem olması nedeniyle analizlerde en küçük kareler yöntemi (OLS) kullanılacaktır. Ek-B’de sağlamlık testi adına probit tahminler yapılmış ve sonuçlar sağlam bulunmuştur. SILC anketi güven sorusunu 11 puanlık Likert ölçeğinde sorduğu için; bu tezdeki OLS sonuçlarının, güven sorusunu evet/hayır şeklinde iki cevaplı bir sistemde soran WVS anketini kullanan çalışmalara göre daha sağlam olduğu söylenebilir. WVS’deki gibi iki cevaplı güven sorusunu kullanan çalışmalarda da bu çalışmada olduğu gibi probit tahmin sağlamlık testi olarak kullanılmaktadır.

Bu tezin ilk bölümünde, karşılıklı güvenin bileşenleri, ”Genel olarak söylemek gerekirse, çoğu insana güvenilebilir ya da diğer insanlarla olan ilişkilerimizde dikkatli olmak gerekir” sorusuna verilen cevaplar üzerinden incelenmiştir. Bağımlı değişkenin karşılıklı güven, bağımsız değişkenlerin ise yaş, eğitim, gelir veya cinsiyet gibi güven üzerinde etkisi olma ihtimali olan değişkenler olarak seçildiği bu çalışmada örneklem olarak güven kişiliklerinin daha çok oturmuş olması düşünüldüğünden 25 yaş üstü gözlemler seçilmiştir. Geliri yansıtması

açısından; (1) harcanabilir gelir, (2) gelir dilimi, ve (3) maddi yoksunluk olarak 3 farklı indikatör seçilmiş ve üçü de bireyin güveni üzerinde etkili bulunmuştur. Lİteratürden farklı olarak Türkiye’de güven ve eğitim arasındaki ilişkinin doğrusal olmadığı bulunmuştur. Literatüre göre doğrusal olması gerekirken bu ilişki; Türkiye’de okuma yazma bilmeyenler, üniversite okumuş olanlardan sonra en çok güvene sahip olan grup olarak görülmüştür. Okuma yazma bilmeyenlerin kırsal alanlarda yaşaması ve kırsal alanlarda yaşayanların daha çok güvene sahip olması nedeniyle olduğu düşünülen bu yüksek güven, şehirde veya kırsalda yaşamının da bir kontrol değişkeni olarak modele eklenmesinden sonra da yüksek kalmıştır. Dolayısıyla etkinin buradan kaynaklanmadığı görülmektedir. Son olarak, hanehalkının güven ortalaması modele eklenmiştir. Böylece bireylerin güvenleri üzerinde hanenin ne derece etkili olduğu da gözlemlenebilecektir.

İkinci bölümde, nesiller arası güven aktarımının nasıl gerçekleştiği incelenmiştir. Literatürde, mültecilerin güven tutumlarını incelemek ve özgün ülkeleriyle kıyaslamak bunu yapmanın ilk yöntemidir. İkinci yöntemde ise daha mikro boyutta veriler kullanarak doğrudan hanehalkı içerisinde analiz yapılmaktadır. Bu tezde, Dohmen ve diğ. (2012) tarafından yaratılan bu ikinci yöntemi temel alan bir metot kullanılacaktır. Sonuç olarak, çocuğun güven tutumunu anne ve babanın güven tutumuyla regresyona sokarak nesiller arası güven aktarımının varlığı gösterilmiştir. Annenin güveninin çocuğun güvenine olan etkisi babanınkinden daha güçlü olmakla birlikte her ikisi de diğer değişkenlere göre çocuğun güveni üzerinde daha baskın bir etkiye sahiptir. Bu bölümdeki diğer önemli bir sonuç ise gelir ve yaşam koşullarının etkilerinin çocuklar üzerinde görece daha zayıf olmasıdır.

Son bölümde ise, eş seçiminde güvenin etkisinin olup olmadığı incelenmiştir. Bu şu açıdan önemlidir: eğer insanlar evlilik tercihlerini yaparken eş adaylarının güven tutumlarını göz önünde bulunduruyorlarsa bu durum güvensizliğin ülkede neden uzun süreli kaldığını açıklayabilir. Eğitim seviyesinin eş seçiminde etken olduğu bilindiğinde eğitim seviyeleri de kontrol değişkeni olarak kullanılmıştır ve sonuç yine de anlamlı çıkmıştır. Dolayısıyla insanların eş seçimi sırasında potansiyel eşlerinin güven tutumlarını göz önünde bulundurdıkları söylenebilir.

Bu tezde iki ek bölümü bulunmaktadır. Ek-A’da eksik verinin mekanizması

incelenmektedir. Özel bir grubun güven sorusuna cevap vermeyi tercih etmemesinin sonuçları diğer grup lehine yanlı bir şekilde sokabilmesinden dolayı bu analizin yapılması gereklidir. Dolayısıyla güven sorusu, cevap vermeme kararını bu kararlar ilişkili olabilecek yaş, cinsiyet, eğitim veya gelir gibi değişkenlerle regresyona sokulmuştur. Karşılıklı bir ilişkinin bulunması, listesel elimine etme yönteminin sonuçları yanlı bir hâle getirebileceği sonucunu verir. Ek-A'da elde edilen sonuçlar özellikle okuma yazma bilmeyen ve yaşlı insanların güven sorusuna cevap vermemeyi tercih edebileceği sonucunu verdiği için eksik verileri literatürdeki farklı eksik veri atama yöntemine göre simüle edip bu simülasyonlarla eksik verinin elimine edildiği sonuçlar karşılaştırılmış ve aralarında bir fark bulunamamıştır. Sonuç olarak eksik gözlemlerin listesel silinmesi uygun görülmüştür.

OLS tahminleri, kategorik verilerle çalışmak için ideal değildir fakat bu sonuçların her zaman yanlı olacağı anlamına gelmemektedir. Güven sorusu zaman zaman evet/hayır şeklinde ikili cevap sisteminde, zaman zaman 5 puanlı Likert ölçeğinde ve zaman zaman 10 puanlı Likert ölçeğinde sorulmaktadır. Literatürde bu soru çeşitlerinin tamamında gözlem sayısına da bağlı olarak OLS tahminleri kullanılmaktadır. Bu tezde de kullanılmış olan SILC verisetindeki güven sorusunun 11 puanlı Likert ölçeğinde sorulmuş olması OLS tahminlerinin yanlı olma ihtimalini azaltmasına rağmen, ek sağlamlık testlerine ihtiyaç duyulmaktadır. Bu nedenle Ek-B'de sağlamlık testi olarak probit tahmin yapılmış ve bu tahminin sonuçları tezin 4. bölümünde gerçekleştirilmiş olan nesiller arası aktarım modelleriyle karşılaştırılmış. Bu karşılaştırmada sonuçlarda herhangi bir anlamlılık farkı gözlemlenmediği için OLS sonuçları sağlam kabul edilmiştir.

Bu tezdeki sonuçlar literatürle paralellikler gösterde de Türkiye'ye özel önemli farklılıklar bulunmuştur. Bu farklılıkların en önemlisi okuma-yazma bilmeyenlerin bilenlerden anlamlı düzeyde daha yüksek güven göstermesidir. Bu durum, güveni artırdığı bilinen kırsalda yaşamının ve okuma-yazma bilmemenin bilinmeyen bir etkileşiminden kaynaklanmaktadır. Bu çalışmanın ana amacı olan nesiller arası güven aktarımı ve eş seçiminde güvene verilen önem, her eğitim seviyesinde anlamı olarak bulunmuştur.

Sosyal sermaye, özellikle Türkiye'de görece çalışılmamış bir alandır. Bu çalışma, Türkiye'de karşılıklı güveni aile konseptinde inceleyen ilk çalışmadır.

Ayrıca yaşam koşulları ve gelirin güven ile ilişkisini hanehalkı verileriyle birlikte inceleyen ilk çalışma bu tezde gerçekleştirilmiştir. Eğer gelir ve yaşam koşullarının yanısıra güven hakkında bir soruyu da dahil eden yeni çalışmalar yapılırsa son on yılda gerçekleşen olayların güven üzerindeki etkisi gözlemlenebilir.



1 INTRODUCTION

Generalized trust allows interactions to achieve a higher output than interactions with distrust. For example, in an infinitely repeated prisoner's dilemma game design, it is considered that the scenario that maximises total payout is to cooperate for both prisoners. On the contrary, people may sometimes betray each other and ultimately cause the worst outcome possible. One reason for these deviations from the optimum is the lack of trust. People do not trust each other perfectly; therefore, even when both parties are well-behaved, information asymmetry may prevent people from cooperating.

After explaining the reasoning behind distrust, it is necessary to explain why people trust each other. According to Becker (1976), societies have realised how harmful it is to betray in the long term. Even though it is beneficial to betray in the short term, when people trust each other and show reciprocity, overall profit becomes much higher in the long term. Becker also mentions that humanity could not survive long enough if generalized trust and altruism were absent.

Although the subject of the trust itself has been a topic of interest for a century, it became a focus of economists after the famous article of Putnam's *Bowling Alone* (1995); which discovered a relationship between how network formations affected the economic indicators. The generalized trust creates relationships, which return as profit to both individuals and society. It should also be noted that when an individual enters into a network where the average trust is higher, the individual's trust increases (Karlan et al., 2009). This phenomenon is called a trust-generating network. A high trusting person also has more potential to become an entrepreneur, according to Guiso et al. (2006). Thus, an economy originates where people tend to take more initiative.

Although literature explains why it is beneficial to trust others and behave altru-

istically, it does not establish how this behaviour passed onto new generations. A standard method to explain this transmission is the intergenerational transmission model, where children learn both trust and altruism from the family. This behaviour has been explored using immigrant's trust behaviours by Algan and Cahuc (2010). A comparison of how immigrants carried their trust behaviours from their origin countries has been made. However, this study did not use household data, and micro-level estimations did not exist. Dohmen et al. (2012) closed this gap in their study using household data.

Overall, trust has been on the decline in the world over the past decades. According to Putnam (1995), this decline was due to individual entertainment culture prevailing over entertaining in a group. When people spend time together, they have repeated interactions that require a certain degree of trust. These interactions eventually cause the generalized trust to increase even more. However, when people start entertaining individually, fabricating trust fades away gradually, creating a society where distrust prevails.

Even though trust in Turkey has not decreased as sharp as in western countries, it was never too high to start with. According to World Values Survey, European Values Survey and PIACC, Turkey has one of the most distrusting peoples in the world. The household survey used in our research, SILC, is parallel with other surveys in this aspect and shows a generally low trust attitude.

In this dissertation, three models will be created. In the first model, components of generalized trust will be studied. This way, it will be possible to learn the significant factors determining one's trust attitude. This preliminary test also allows us to specify control variables to use in the following estimations. The second model will estimate the relationship between a child's trust attitude and her parents, expecting to reveal the intergenerational transmission of trust in Turkey. Finally, in the last section, assortative mating will be studied. This model will aim to learn about the mating behaviour of Turkish people; whether they care about their potential spouse's trust attitudes or not. If trust is a factor in marriage decision, this means it may also be one of the underlying factors behind educational positive assortative mating.

This study will be the first one in Turkey to explore both the intergenerational

transmission of trust and positive assortative mating in trust. The reason this study is critical is due to two reasons; (1) comparatively complex family structure of Turkey (Senturk et al., 2011) could cause differences from the rest of the world, and (2) low trust could be one of the reasons in economic outcomes which is a possibility never inspected before.



2 LITERATURE REVIEW

Social capital is one of the theories that explain the differences between developed and non-developed nations. Although there are multiple social capital theories, economists tend to use Putnam's (1995) definition of "social connections like trust or networks that facilitate coordinations". Hence, when a country has more social connections than a similar country in terms of human capital and physical capital, more business is available to people, and more transactions are completed.

Putnam explains a decline in the social capital of the U.S. by giving examples of how people stopped doing sports together, how fraternity associations are losing blood and how people are trusting less to each other. Eventually, not only people's wealth and happiness decline, but also the economic growth of a country decreases (Algan and Cahuc, 2010). Social capital, most importantly, creates a network that can benefit most people by creating a safe and optimistic environment for business (Alesina et al., 2018).

One serious aspect of social capital worth mentioning is that it does not depreciate when used as physical capital. On the contrary, it increases as it is being used (Sobel, 2002). This is because every trust-involving transaction creates a more robust network which makes it an intra-capital transaction (i.e. between trust and reciprocity) rather than an inter-capital transaction (that is to say, between social capital and physical capital) (Coleman, 1990).

There are different components of generalized trust. One of the most substantial aspects is education; especially, completing a university degree (Helliwell and Putnam, 2007). Trust attitude of an individual does not grow significantly in other education levels but increase by a considerable margin after completing university.

Social capital can be divided into four traits: cooperation, participation, social interaction” and social trust (Alesina and Giuliano, 2015). There have been many articles about all of these four components, which all had significant impacts in the literature (Helliwell and Putnam, 2007; Glaeser et al., 2000), but this dissertation will primarily focus on trust. The reason for focusing on trust is due to a few reasons. First, Putnam (1995) mentioned that increasing trust is the most convenient way to increase social capital in his ”Bowling Alone” article. One other reason is that the trust questions General Social Survey and World Values Survey included in their surveys made it much easier to analyse the components and outcomes of trust. Even though there are also questions about social participation rates in the same surveys, these questions are not precise as the trust question.

Reciprocity is the act of returning an act of altruism with kindness. It is to give something without expecting a return. Economists believed that it was a long-term strategy rather than just pure altruism, but in the last decades it is considered that this view is not entirely accurate (Sobel, 2005). There is also an intrinsic part of reciprocity, meaning people may not expect to profit in the long term or the short term; and reciprocate with complete altruism.

Berg’s (1995) famous game design allowed behavioural scientists to investigate people’s both reciprocity and trust attitudes in the same game design. In this game design, there were two rounds. In the first round, one of the players (trustor) sends money to the second player. This money is then multiplied by a set amount by the game designer. In the second round, trusted would decide to keep all the money or send an amount back. This design is still one of the most used trust games globally as its versatility allows people to change the game to discover more extensive connections between variables. A modified version of this game has been conducted by Cox et al. where the origin of reciprocity has been studied.

2.1 Trust

Social contracts are built on trust that people will remain trustworthy in their parts. For example, fiat money is valid on the trust that the government will uphold their part on the contract and will accept that money in the future. Almost all of the

economic transactions rely on trust to some degree (Bergh and Bjornskov, 2014). In practically every economic activity, one party delivers its part somewhat earlier than the other party, which requires the trust that the other party will deliver its part in the future.

Economists examine generalized trust to find relations between economic indicators and social capital. After Knack and Keefer's (1997) article showing that trust has an economic payoff, literature focused on the effects of other aspects of social capital like culture on economic indicators (Guiso et al., 2006). There are also articles studying lesser quantitative effects of trust like people's reluctance to leave their homes and immigrate (Helliwell et al., 2016), reluctance to give loans to friends and families (Karlan et al., 2009), or even fertility (Fernandez and Fogli, 2009). The reason trust gained popularity is due to how it can be an instrument for most abstract values like culture (Tabellini, 2008) or altruism (Coleman, 1990).

A necessary separation is between the trust among people who do not know each other; and the trust between friends and families. In this study, we will focus on the first one, which is called generalised trust and usually the most explored one due to the question of GSS, WVS and EVS: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?".

The relationship between trust and inequality is a topic of discussion. On intuition, it makes sense that low equality causing distrust. There are studies explaining how inequality causes severe distrust in a country (Barone and Mocetti, 2016). Leigh (2006) also says that when inequality increases, trust tend to decrease. However, other views question the way of direction, most important of them being Bergh and Bjornskov (2014), where the direction of causality between the two variables have been discussed, and it has been shown that it may be low trust causing an unequal environment. Thus, trust can explain the speed of rebound from inequality shocks.

After the generalized trust is defined, it is necessary to understand why people trust each other. Since there are many well-established theories for the reasons of trust, it is not possible to claim that one explanation is better than the other. Nevertheless, most of the literature focuses on the long-term relationship aspect of communities. For example, Becker explains a community's survival with altruistic behaviours (Becker,

1976). He explains that altruistic actions can benefit both sides (trustor and trustee) in the long term more than egoistic actions. Therefore, people may have developed trusting behaviours in the long run by believing that it will benefit them more.

It is easier to understand how trust originated by looking at small villages. Since the trustee may not quickly get away from defecting, the trustor does not trust the trustee's altruism but instead trusts his reluctance to break society's norms and face potential punishment according to Hardin (1999). To explain this phenomenon, Hardin creates a small village where Bodo lives. In this small village, people can be trustful, because it is not possible to betray easily. However, if a person defects an interaction, that person will be considered non-trustworthy and discriminated against. Therefore, residents will have more incentives to act trustworthy. On the contrary, trusting has fewer incentives in the cities where non-trustworthy people can get away due to the low chance of meeting the trustor again.

In a paper, authors found that being discriminated against prevents people from trusting others (Alesina and La Ferrara, 2002). In the same research, females and immigrants are also found at lower trust levels than white males. Therefore, even in high-income levels, being segregated prevents people from trusting. Especially considering how racial fragmentation is found to be reducing trust in the same article, a values survey with questions related to racial fragmentation and segregation could shed light on low levels of trust in Turkey. It is also important to understand how political events may reduce generalized trust. For example, Akkemik et al. (2019) showed how happiness and trust decreased in Turkey after the failed coup d'état attempt.

Trustworthiness is the primary source of trust. However, even though generalized trust significantly impacts the literature, trustworthiness is not as much as explored. Increasing trust without trustworthiness may harm people more than low trust. Cox et al. (2016) investigate what causes trustworthiness itself in their paper and explains one of the primary reasons: "vulnerability-responsiveness", which means that the trustee does not want to hurt the trustor when they trusted the trustee. It is a crucial distinction and a vital proof of altruism's effects on decisions.

2.2 Inter-generational Studies

Family is where social values are transmitted. For example, Algan and Cahuc explored how social values are transmitted to further generations via families (2010). In a comment on Algan and Cahuc's paper, the most strong criticism was the use of WVS dataset (Müller et al., 2012). Even though WVS has included an enormous amount of observations, the binary trust question was a disputed one (Glaeser et al., 2000). Muller et al. (2012) also notice that this binary answer system has caused an upward bias, as Glaeser et al. (2012) mentioned.

Bisin and Verdier (2000) created a theoretical model of intergenerational transmission ethnic and religious traits, where Dohmen et al. (2012) used in their research using empirical data. It should be noted that these transmissions are not the only component of social values, although being a strong one. The environment also has a severe effect on the behaviour of a child (Dohmen et al., 2012).

Culture is another element that transmits through generations in different forms (Becker et al., 2016). For example, risk preferences (Dohmen et al., 2012) or social values (Algan and Cahuc, 2010) are seen to be similar between the members of different generations in the same household. Therefore, to understand how to increase social values, it is necessary to understand how they are transmitted. Furthermore, an increase in social values could lead to a higher altruism level (Glaeser et al., 2000); the transmission is a vital factor to be studied. A convenient way to explore how the transmission occurs is to find the differences between immigrants and native people (Moschion and Tabasso, 2014). Hence, the transmission of trust and the effects of the environment will be apparent.

In Ljunge's (2014) research, it is shown that when trust is firm in a country, the transmission is also more robust. Therefore, trust tends to be sturdier than distrust. For example, Turkish, Italian and Polish immigrants in Northern Europe are more eager to have the trusts of the welcoming country rather than bringing their parent country's distrust (Dinesen, 2012). In a previous paper, Dinesen and Hooghe (2010) also explored the trust difference between generations of immigrants and realised how the next generation of immigrants had influenced more from the host country.

Trust is not the only value that is transmitted between generations. Civic virtues like helping others or being polite are also investigated and found transmitted inter-generationally (Ljunge, 2012). Brown and Van Der Pol (2015) also shows that time and risk preferences also transfer between generations.

Shaleva (2015) finds a relationship between intergenerational mobility and generalized trust. As in inequality, intuitively, one links mobility as the independent variable while thinking trust is the dependant variable while the opposite may be true. However, even though in Shaleva's study, the correlation is shown, the direction of causality is not; therefore, it is still a topic of discussion.

Studying inter-generational value transmission is relatively complicated considering how few there are household surveys. Furthermore, almost no worldwide household surveys would allow one to eliminate country-specific properties while studying trust transmission. Algan and Cahuc (2010) modelled a comparison between the origin country of immigrants' trust attitudes and their current country's trust attitudes. This specification would permit how much one's trust attitude came from their parents and how much of it from environmental effects.

2.3 Assortative Mating

Marrying is often a multi-criteria decision that is difficult to analyse. Moreover, weights of these criteria may also change for different genders (Qian, 1998). Also, available data can be an issue since most household surveys contain little to no information about the status of spouses prior to marriage. Therefore, assortative mating is a complicated topic to study.

Education and age are easier to investigate in terms of positive assortative mating due to the convenience of measuring, while income requires more sophisticated measurement tools since most popular surveys do not ask questions about pre-marriage wealth. One other difficulty of studying positive assortative mating in education and income is due to the possibility of changes in the country's socio-economic demographics ; for example, an increase in university education could cause educational homogamy, while positive assortative mating attitude stayed the same (Eika et al., 2019). Furthermore, regional differences have to be sorted out as not all communities behave

the same, some showing stronger assortative mating attitudes than others (Lewis and Oppenheimer, 2009).

Social values may also be a factor for assortative mating. Dohmen et al. (2010) explored how people tend to marry their alike in the sense of risk attitudes and generalized trust using SOEP dataset. Social attitudes are relatively difficult to study in terms of assortative mating as there is a possibility of couples resembling each other over time, causing a similarity in attitudes. Positive assortative mating could also be a factor in the intergenerational transmission of social attitudes since it allows for parents to transmit their social attitudes to their children relatively easier (Doepke and Zilibotti, 2017).

Assortative mating may also have unfavourable effects. For example, Greenwood et al. (2014) claim that people marrying their alike in income causes income inequality to stabilise by preventing inter-class mobility in the long term. Otherwise, inter-class marriages would induce income inequality to decrease since the gap between the high-income individual and the low-income individual closes in marriage. Furthermore, educational inequality also increases with educational assortative mating for the same reasons (Mare, 2000).

3 DATA AND DESCRIPTIVE STATISTICS

Most of the studies about trust rely on the data provided by General Social Survey, European Social Survey, European Values Survey or World Values Survey. Although there are also game examples (Cox et al., 2007) or theoretical studies (Becker, 1976), this dissertation will use survey data.

Nevertheless, relying on surveys comes with a price. There have been some studies explaining how doing studies relying on survey data may cause deviations (Glaeser et al., 2000). These deviations are primarily due to how people may answer biased since they may perceive being a trusting person as better than being a non-trusting person, causing a bias towards higher trust levels. Also, Müller et al. (2012) mention that how different surveys bring an extremely volatile result range even when conducted in the same year and the same country, causing it relatively difficult to trust "trust surveys". This volatile range may be due to the binary respond system of GSS, or trinary respond system of WVS.

It is also important to note that sometimes the data may not be available. In these situations, most economists tend to use instruments. For example, in the case of culture, Tabellini (2010) used literacy rate and political institutions. Nevertheless, no such instruments are available in generalized trust as other variables cannot explain generalized trust thoroughly.

Although most trust surveys use the binary answer system of "Most people can be trusted/You can be too careful", OLS estimation is more popular than probit estimation thanks to the vast amount of observations provided by primary surveys. Furthermore, as SILC has a response system of 11-point Likert scale, this dissertation uses OLS in primary models while probit estimation has also been used in appendix B.

Datasets are relatively limited in the trust literature as most surveys do not include a question to measure generalized trust. Most important surveys that ask about generalized trust are WVS, EVS, GSS and ESS. One considerable advantage of these datasets is that these datasets can create a controlled experiment environment by regressing with multiple countries. Trust question in these surveys are asked as: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?". This question is almost always the same in all surveys that involve the question of trust.

Fourth, fifth and sixth sections use SILC dataset conducted by TUIK. This dataset is published in 2013, while it was collected in 2012. SILC 2013 dataset includes 73499 observations where 21813 different households exist.

Our choice of the dataset was due to two reasons:

1. It was a household dataset conducted in Turkey that included a trust question which made it suitable for studies of intergenerational transmission.
2. It being a living conditions survey allowed us to delve deeper into components of generalized trust than most other surveys. Questions such as material deprivation helped us to understand the people who trust less than others.

TUIK-SILC dataset follows the NUTS-1 regional classification system, which is determined by an agreement with Eurostat. This regional classification system includes 12 regions where we considered Istanbul the base region in our regressions.

From 73499 observations in our dataset, 19986 are under 15 years old; therefore, they are not included in the trust question. 19898 household members over 15 years old were not in the household during the survey. Therefore, the trust question was asked to the rest of the 33970 people, of which 33615 of them have answered. So, only 355 observations have not answered the question (around 01%), which is low enough not to create a bias. Nevertheless, different NA imputation methods are used in Appendix A as a robustness check, and no difference has been found; therefore, they have been listwise eliminated from our sample.

3.1 Descriptive Statistics

Table 3.1 shows descriptive statistics for five samples that have been created to analyse: components of generalized trust, intergenerational transmission and positive assortative mating. 25 years old and above observations has been selected as a sample to analyse components of generalized trust. Therefore, we eliminate the bias of young people still being under the effect of their parents. For the intergenerational transmission model, since SILC does not survey family members living in different houses, there exists a bias due to children living in the same household after the age of university. In order to prevent this bias, this dissertation limits the sample to specific ages. In the first sample, 15 to 17 years old children are included, while in the second, 15 to 24 years old children are included to explore if there is a bias due to the extended duration of living with parents. Finally, two positive assortative mating models are created in the last section, where we include all married couples and only married couples where the wife is 21 years old and below. By creating a second sample where the most extended marriage year is 6, we examine if married couples resemble each other over the years. The reason we have selected newly-wed couples this way is due to men generally married women younger than them in our sample, causing another solution impossible. If SILC included marriage year question in the survey, this would not be necessary.

This dissertation uses eurostat's of material deprivation and at-risk-of-poverty descriptions. According to eurostat, severe material deprivation is described as not being able to afford 4 out of these 9 items: a telephone; a television; a washing machine; an automobile; heating; paying bills or rents regularly; being able to go on vacation for a week for all household members; being able to eat meat, fish or chicken 3 days a week; being able to meet unexpected expenses.

Table 3.1 – Descriptive summary - individual level

	Adults		Intergenerational transmission				Positive assortative mating							
	25 and above		15 to 17		15 to 24		All husbands		All wives		N.W. husbands		N.W. wives	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Trust	4.52	2.44	4.71	2.41	4.42	2.46	4.51	2.44	4.56	2.43	4.18	2.38	4.14	2.32
Age	46.4	14.3	16.0	0.82	18.8	2.83	48.4	14.1	44.4	14.0	26.5	3.54	19.4	1.47
Gender (female = 1)	0.54	0.50	0.55	0.50	0.53	0.50	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Active student	0.03	0.16	0.72	0.45	0.51	0.50	0.02	0.15	0.02	0.15	0.06	0.24	0.07	0.25
Education														
Illiterate	0.13	0.34	0.01	0.10	0.01	0.12	0.04	0.19	0.17	0.37	0.03	0.18	0.10	0.30
Literate	0.08	0.27	0.06	0.24	0.07	0.26	0.05	0.22	0.09	0.29	0.09	0.28	0.14	0.35
Elementary	0.44	0.50	0.01	0.11	0.01	0.07	0.45	0.50	0.43	0.50	0.16	0.37	0.00	0.00
Middle	0.09	0.29	0.90	0.30	0.58	0.49	0.12	0.33	0.09	0.29	0.32	0.47	0.61	0.49
High	0.07	0.26	0.01	0.10	0.14	0.35	0.08	0.27	0.07	0.25	0.13	0.34	0.08	0.27
Vocational	0.07	0.26	0.00	0.05	0.11	0.31	0.10	0.30	0.05	0.23	0.18	0.39	0.07	0.25
University	0.12	0.33	0.00	0.00	0.08	0.27	0.16	0.36	0.10	0.30	0.09	0.29	0.01	0.11
Chronic disease	0.28	0.45	0.05	0.21	0.05	0.23	0.24	0.43	0.29	0.45	0.05	0.22	0.04	0.20
Marital situation														
Single	0.05	0.22	0.99	0.06	0.96	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Married	0.87	0.33	0.01	0.06	0.03	0.17	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Divorced	0.02	0.14	0.00	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Widowed	0.05	0.22	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of observations	27182		1371		3399		7404		7404		153		153	

Note: N.W. = Newly-wed. Sample of newly-wed couples refers to couples where women is under the age of 21. Lowest age for marriage is observed as 15 for women and 19 for men. Trust is measured on a 11-point scale with the question of "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people"

Descriptive summary - household level

	Adults		Intergenerational transmission				Positive Assortative Mating			
	25 and above		15 to 17		15 to 24		All couples		New couples	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Household income	29,900	25,600	27,700	23,800	29,800	24,400	29,900	26,500	20,300	11,200
NUTS1 regions										
Istanbul	0.10	0.30	0.10	0.29	0.11	0.31	0.10	0.30	0.08	0.27
West Marmara	0.06	0.25	0.05	0.19	0.03	0.18	0.06	0.24	0.02	0.14
Aegean	0.14	0.35	0.10	0.30	0.10	0.29	0.15	0.36	0.14	0.35
East Marmara	0.10	0.30	0.12	0.33	0.12	0.33	0.12	0.33	0.07	0.25
West Anatolia	0.11	0.31	0.14	0.35	0.13	0.34	0.14	0.34	0.11	0.31
Mediterranean	0.12	0.32	0.11	0.32	0.11	0.31	0.13	0.33	0.15	0.36
Central Anatolia	0.06	0.24	0.05	0.21	0.05	0.22	0.06	0.23	0.09	0.28
Black Sea	0.11	0.31	0.06	0.23	0.06	0.24	0.09	0.29	0.04	0.20
Northeast Anatolia	0.06	0.24	0.08	0.27	0.08	0.27	0.05	0.21	0.72	0.26
Central East Anatolia	0.06	0.24	0.09	0.29	0.09	0.29	0.06	0.24	0.11	0.31
Southeast Anatolia	0.08	0.27	0.13	0.33	0.13	0.33	0.05	0.22	0.14	0.35
Not paying rent	0.64	0.48	0.62	0.48	0.67	0.47	0.63	0.48	0.38	0.49
Living in urban	0.67	0.47	0.70	0.46	0.70	0.46	0.70	0.46	0.67	0.47
Material deprivation	0.41	0.49	0.50	0.50	0.46	0.50	0.38	0.49	0.58	0.50
Being under the poverty line	0.21	0.41	0.37	0.48	0.32	0.47	0.18	0.38	0.28	0.45
Number of observations	27182		1371		3399		7404		153	

Note: East and West Black Sea regions are merged as data was too small on both. As marriage duration data was not available, couples where the wife is not older than 21 are determined as new couples, no matter the husband's age.

At-risk-of-poverty is defined as being under a specific ratio of median equivalised disposable income. Although this ratio vary between different studies (Acar et al., 2017), this dissertation will use 60%. Equivalised disposable income for a household is calculated as dividing disposable income of a household by the sum of weights of each member; which is measured as:

- 1 for the first adult in the household
- 0.5 for each subsequent member who is 14 years old and above
- 0.3 for each child who is under 14 years old.

More than 40% of the Turkish population are materially deprived, while only 20% are at-risk-of-poverty. This gap indicates how income may not be a reliable variable to study the relationship between trust and wealth. On the other hand, the newly-wed sample shows a more significant gap between material deprivation and poverty variables, meaning even higher-income families are materially deprived. Therefore, this dissertation will use different indicators to analyse wealth effects on trust.

4 TRUST IN TURKEY

According to most international datasets like WVS, EVS or PIACC, Turkey has one of the lowest trust means in the world. Although these surveys are going as old as the 1970s, it is impossible to completely know how the generalized trust attitude in Turkey was before that date. Though social capital does not change drastically in a country in a short time, it can be expected to be around the same level as today.

One of the essential studies exploring the generalized trust attitude of Turkish people is done by Kayaoğlu (2017). Kayaoğlu's study focuses heavily on people's political compass, while this dissertation focuses on the transmission aspect of generalized trust. We also use TUIK's SILC dataset rather than KONDA Research and Consulty's Survey; as SILC includes more question about income and living questions, we expect to reveal more information about the determinants of trust. On the other hand, Alat (2004) shows that Turkish children living in rural areas has less trust compared to children from urban areas.

This section will analyze the components of generalized trust, what affects it, and what does not to understand the low trust levels of Turkey. One explanation of shallow trust attitudes could be how illiteracy was prevalent in the past centuries. It is known that low literacy creates a country with low trust levels (Tabellini, 2010). Combining early low literacy in Turkey with how distrust travels between generations, we may understand why trust is still so low today. If education is crucial in maintaining a high trust attitude, a higher trust attitude in the next generations can be expected due to higher education rates. It is also not known if compulsory education affects trust as much as non-compulsory education.

An exciting aspect of Turkish people is that their trust attitudes are increasing

much faster than most other nations when they immigrated into other countries (Dinesen, 2012). Most of the time, immigrants carry their home countries' trust values onto their new countries according to Bjornskov (2007), but when Turkish people start living in a country of a high trust level, their trust attitude also increases much significantly than other nations. One explanation for this can come from Dinesen again (2010). Dinesen explains how low trust people are not cynical by nature; instead, their environment may exhibit high distrust. Therefore, a positive shock in the trust levels may display persistency.

Trust attitude is never entirely separate from altruistic attitudes. People trust other people's possibility of reciprocating during an interaction. Pelek and Polat (2019) mention a decreasing level of altruism which may also be the reason for decreasing level of trust in Turkey.

Table 4.1 creates a comparison of trust attitudes in European countries according to EVS, WVS and ESS. Most countries did not participate in WVS; therefore, only 2007 wave of WVS has been included as more data was available.

Trust mean of Turkish people change drastically between EVS and ESS. This difference shows the bias of the binary answer system mentioned in Glaeser et al. (2000). Since most Turkish people's trust attitudes lay between 3 to 4 on a 11-point scale, a binary answer system caused Turkish people to answer mostly 0. However, when ESS asked the same question on an 11-point scale, a more realistic mean had appeared. Furthermore, while low trust countries like Turkey, Ukraine or Portugal had their trusts decreased in a binary response system, high trust countries such as Sweden or Denmark have a higher trust when trust is measured in a binary answer system.

Table 4.1 – A Europe-wide comparison of trust attitudes

	<i>EVS</i>		<i>WVS</i>	<i>ESS</i>	
	1999	2008	2007	2002	2008
Austria	0.33	0.37	NP	0.51	NP
Belgium	0.29	0.35	NP	0.48	0.51
Bulgaria	0.27	0.18	0.22	NP	0.34
Czech Republic	0.25	0.30	NP	0.42	NP
Denmark	0.66	0.76	NP	0.68	0.69
Estonia	0.23	0.33	NP	0.52	0.54
Finland	0.57	0.65	0.59	0.65	0.65
France	0.21	0.27	0.19	0.45	0.45
Germany	0.38	0.39	0.34	0.48	0.48
Greece	0.24	0.21	NP	0.39	0.39
Hungary	0.22	0.21	0.28	0.40	0.42
Ireland	0.36	0.39	NP	0.59	0.55
Netherlands	0.60	0.62	0.44	0.58	0.59
Norway	NP	0.75	0.74	0.66	0.66
Poland	0.18	0.28	0.19	0.36	0.42
Portugal	0.12	0.17	NP	0.39	0.37
Romania	0.10	0.18	0.20	NP	0.38
Russia	0.24	0.30	0.27	NP	0.39
Slovenia	0.22	0.24	0.18	0.41	0.43
Spain	0.39	0.34	0.20	0.49	0.49
Sweden	0.67	0.71	0.68	0.60	0.64
Switzerland	NP	0.55	0.51	0.57	0.57
Turkey	0.07	0.11	0.05	0.30	0.23
Ukraine	0.27	0.29	0.28	0.43	0.40
United Kingdom	0.29	0.40	0.30	0.51	0.53

Note: NP means Non-Participated. Trust question in EVS and WVS is asked with binary answer while ESS question is 11-point Likert scale. Waves are chosen according to data availability for Turkey.

4.1 Education and Trust

Figure 4.1 shows the education distribution of SILC dataset. Elementary school graduates construct the main sample, while middle school graduates being the second biggest. These percentages will likely change decisively in the next decade due to both new universities and laws of mandatory high school.

Figure 4.1 – Education distribution of sample

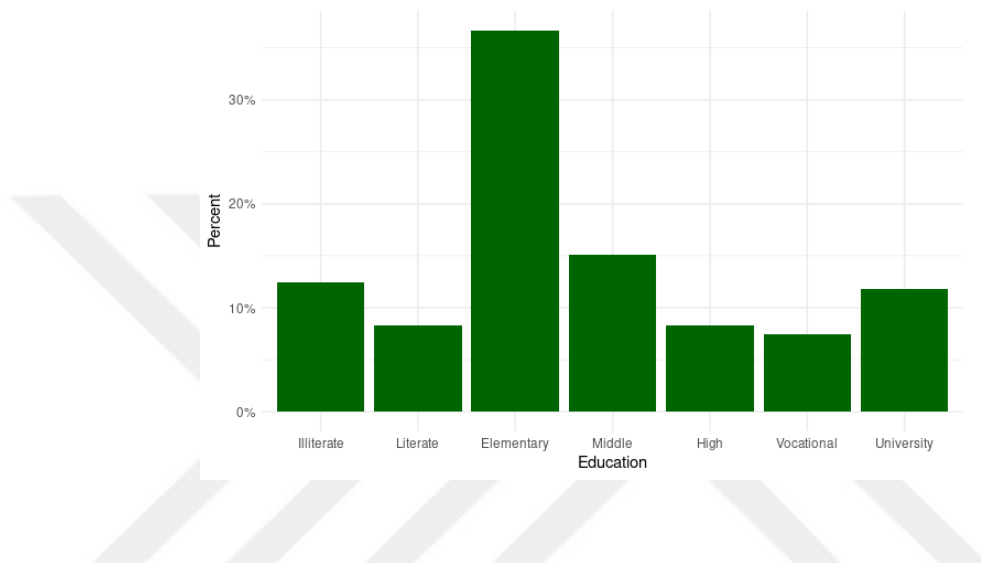
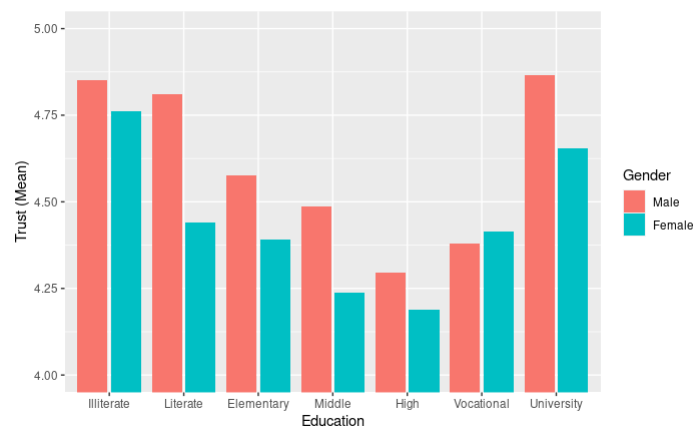


Figure 4.2 – U-Shape relationship of education and trust



Source: For Figures 4.1 and 4.2, 2013 publication of SILC dataset has been used.

Figure 4.2 demonstrates the U-shape relationship of education and trust, which is unique to Turkey. Although the literature claims that generalized trust attitude increases with education, this is only true for university in Turkey. Furthermore, trust attitude decreases until university, which is unexpected and different from the literature. To understand the reason for this phenomenon, we create a cross-table of education and trust.

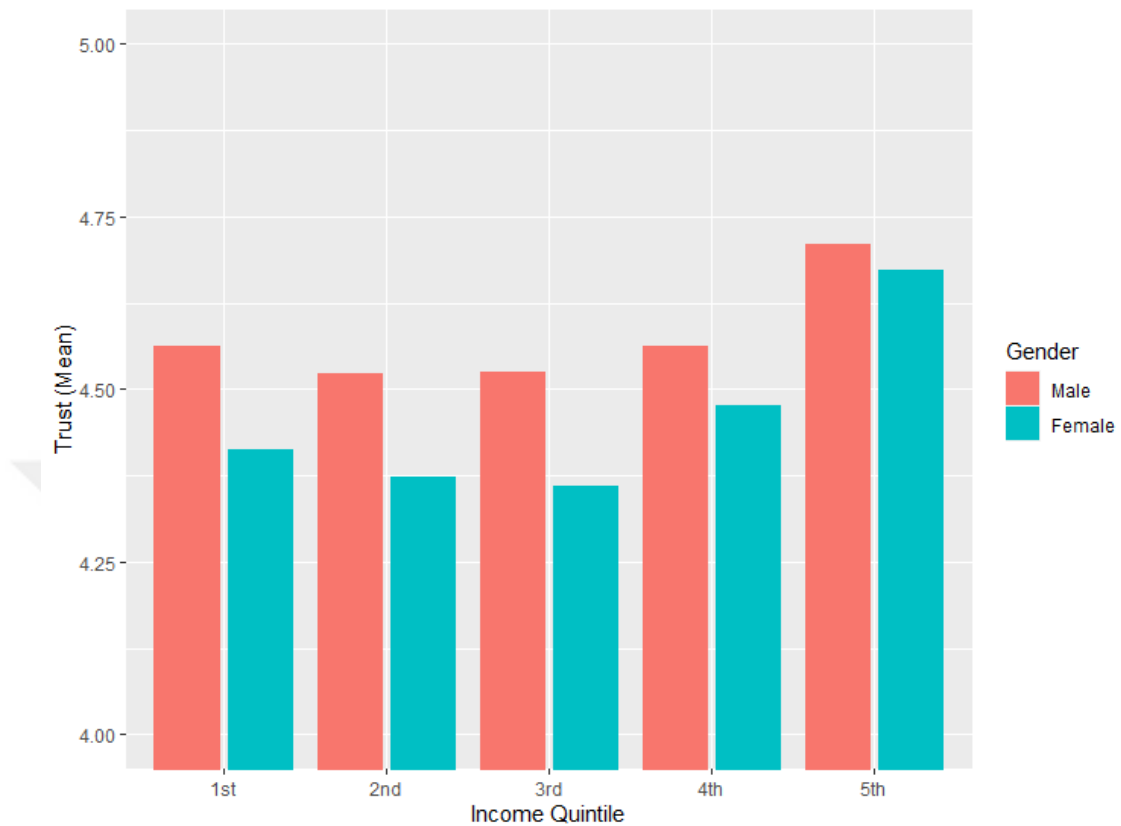
Table 4.2 – Cross table analysis of education and trust

	Illiterate	Literate	Elementary	Middle	High	Vocational	University
0	0.08	0.10	0.10	0.10	0.10	0.09	0.06
1	0.03	0.04	0.04	0.05	0.05	0.05	0.04
2	0.07	0.07	0.08	0.08	0.09	0.09	0.07
3	0.10	0.11	0.12	0.13	0.13	0.11	0.10
4	0.11	0.11	0.11	0.11	0.13	0.11	0.12
5	0.27	0.24	0.25	0.23	0.24	0.24	0.24
6	0.12	0.11	0.10	0.10	0.10	0.11	0.13
7	0.11	0.10	0.09	0.10	0.09	0.10	0.13
8	0.08	0.07	0.08	0.06	0.06	0.07	0.08
9	0.02	0.02	0.02	0.02	0.01	0.01	0.02
10	0.03	0.03	0.03	0.02	0.02	0.02	0.01
Sum	1	1	1	1	1	1	1
Obs.	3510	2093	11857	2468	1998	1918	3338

Table 4.2 shows educational distribution of each trust level in the full sample of SILC dataset. While the trust level of 5 is the most given answer, answers of university graduates have an upward skew. On the contrary, middle and high school graduates are on the lower side. It is surprising to see how illiterate people and university graduates are closer to each other.

4.2 Income and Trust

Figure 4.3 – Relationship between income and trust



Source: Authors' calculations based on 2013 publication of SILC dataset.

Although it is not as strong as education, income also does not have a linear relationship with generalized trust. Instead, the trust attitude demonstrates a substantial jump in the last income quintile while being relatively straight on the last quintiles. Therefore, even though there is a slight decline in the first three income quintiles, it is not possible to say that there is a U-shape as the difference may not be significant. Also, the trust difference between male and female observations being almost zero in the last income quintile shows how being in a poor environment affects genders differently.

Table 4.3 – Cross table analysis of income quintiles and trust

	0	1	2	3	4	5	6	7	8	9	10
1st	0.22	0.20	0.21	0.21	0.21	0.21	0.21	0.19	0.20	0.21	0.22
2nd	0.23	0.22	0.21	0.21	0.20	0.20	0.19	0.19	0.22	0.18	0.23
3rd	0.21	0.20	0.19	0.22	0.20	0.20	0.19	0.19	0.17	0.18	0.19
4th	0.19	0.20	0.19	0.19	0.18	0.19	0.20	0.21	0.20	0.21	0.18
5th	0.16	0.18	0.19	0.18	0.21	0.20	0.22	0.22	0.22	0.23	0.18
Sum	1	1	1	1	1	1	1	1	1	1	1

Note: Rows indicate the income quintiles with 1st being the lowest, while columns indicate the trust level. Authors' calculations based on 2013 publication of SILC dataset.

It is pretty clear from Table 4.3 how high-income quintiles tend to concentrate on high trust levels while low-income quintiles tend to concentrate on low trust levels. Another interesting fact is that low-income quintiles tend to answer with a significant emphasis on 0 and 10 trust levels, while high-income quintiles answer with uncertainty.

4.3 Econometric Model

Independent variables of generalized trust attitude in Turkey are investigated in this section. In order to do that, generalized trust attitude of Turkish people regressed with a set of demographic variables such as; income, age, education, and region to determine which variables affect the trust the most. Therefore, it will be possible to compare the sample's trust behaviour with the world's. The secondary goal is to determine the control variables for the intergenerational transmission and assortative mating models in the subsequent sections.

In the literature, even when the trust question is dichotomous, OLS estimation is widely used. If the dependant variable is asked in a Likert scale, ordered logit or multinomial logit also becomes valid. The reason we have chosen OLS is to be able to compare our coefficients with Dohmen et al. (2012)'s results. Since the trust question is asked in an 11-point Likert scale in SILC, OLS becomes an even more valid option; nevertheless, Appendix B checks the robustness of our model using probit estimation. Column (1) of Table 4.4 uses the following specification:

$$Y_i = \beta_0 + \beta_1 * X_i + \beta_2 * Z_i + \beta_3 * E_i + u_i \quad (1)$$

In Equation 1, the fundamental model is created using variables specific to the individual and variables belonging to the household. Y_i refers to trust attitude of individual i . X_i is a vector of demographic variables that are specific to individuals, i.e., age, age squared, gender, having a chronic disease dummy, and a set of dummies indicating marital status. E_i is the set of education dummies, which has the base level of high school as it shows the contrast of different stages of education. For the marital status, being single has been chosen for the same reason.

Z_i refers to characteristics that come from household, which are; paying rent dummy, living in urban dummy; and finally, the mean trust attitude of household members excluding the individual, which is calculated as:

$$\frac{(\sum_{k=1}^n Trust_{k,h}) - Trust_{i,h}}{n - 1}$$

where k refers to family members of household h consisting of n members. This variable allows us to see how strong is the relationship of trust attitude between the members of a household, where it acts as a substantial control variable. This control variable is quite essential as some families have less trust by nature. And finally, u_i refers to residuals.

$$Y_i = \beta_0 + \beta_1 * X_i + \beta_2 * Z_i + \beta_3 * E_i + \beta_4 * I_i + u_i \quad (2)$$

In the Columns (2), (3) and (4), we will include 3 different variables about income and living conditions in addition to prior models as shown by Equation 2 with the vector I_i , which is:

- Disposable income and disposable income squared in the Column (2). Using these two variables allows us to detect any non-linearity that lies in income. Disposable income is calculated as follows:

$$\text{Disposable Income} = \ln \left(\frac{\text{Household income}}{\text{Equivalent size of household}} \right) \quad (3)$$

- Income quintile in the Column (3): Since going to the second income quintile from the first income quintile will not have the same effect as going to the fifth income quintile from the fourth, an income quintile variable is included.
- A dummy of being under the poverty line and a dummy of material deprivation within the Column (4): Considering material deprivation can happen within the same income group and may affect one's life negatively, these two variables are included together.

And for the Columns (5), (6) and (7), we include the NUTS1 region dummy R_i to Equation 2 as shown below:

$$Y_i = \beta_0 + \beta_1 * X_i + \beta_2 * Z_i + \beta_3 * E_i + \beta_4 * I_i + \beta_5 * R_i + u_i \quad (4)$$

Therefore, Column (5) will be disposable income and disposable income squared with region included, Column (6) will be income quintiles with region included, and Column (7) will be poverty and material deprivation with region included.

4.4 Results

Table 4.4 shows mean trust of household remains significant in all models while its robust standard errors are relatively low. Although this section does not include intergenerational transmission, this variable shows how strong an element family is. Intuitively, people living in the same household can be said to have similar trust levels.

While the gender variable is statistically significant in the first model, its significance fades away with the inclusion of income variables. The literature emphasises low trust levels of women; therefore, a non-significant result is unexpected and studied thoroughly in Section 5.

Age negatively affects generalized trust according to Table 4.4, while age squared variable's coefficient is positive in all models. This result is the exact opposite of

Table 4.4 – Components of trust (1/2) - Effects of different income variables on trust

<i>Dependent variable: Trust</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Mean trust	0.244***	0.244***	0.244***	0.243***	0.243***	0.243***	0.242***
of household	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Gender	0.059**	0.036	0.048	0.037	0.034	0.041	0.033
(female=1)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Age	−0.009	−0.013**	−0.012**	−0.011*	−0.013**	−0.013**	−0.012*
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Age ²	0.0002***	0.0002***	0.0003***	0.0002***	0.0002***	0.0003***	0.0002***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Chronically ill	−0.198***	−0.180***	−0.185***	−0.167***	−0.180***	−0.183***	−0.167***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Not paying	0.071**	0.052*	0.046	0.038	0.064**	0.064**	0.051*
rent	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Urban	−0.370***	−0.407***	−0.391***	−0.390***	−0.443***	−0.430***	−0.433***
	(0.032)	(0.033)	(0.033)	(0.032)	(0.034)	(0.034)	(0.034)
Income variables							
Disp. income		0.206***			0.138**		
		(0.094)			(0.097)		
Disp. income ²		−0.029			−0.006		
		(0.049)			(0.050)		
2nd inc. quintile			0.044			0.026	
			(0.045)			(0.045)	
3rd inc. quintile			0.038			0.009	
			(0.046)			(0.046)	
4th inc. quintile			0.111**			0.074	
			(0.047)			(0.047)	
5th inc. quintile			0.224***			0.182***	
			(0.050)			(0.050)	
Under the				−0.012			0.025
poverty line				(0.039)			(0.040)
Material				−0.319***			−0.311***
deprived				(0.032)			(0.032)
Region	No	No	No	No	Yes	Yes	Yes
Constant	3.310***	2.083***	3.310***	3.547***	2.238***	3.314***	3.520***
	(0.173)	(0.278)	(0.175)	(0.176)	(0.285)	(0.178)	(0.179)
Observations	27,182	27,182	27,182	27,182	27,182	27,182	27,182
Adjusted R ²	0.190	0.191	0.191	0.194	0.193	0.193	0.196
Residual Std. err.	2.197	2.195	2.196	2.192	2.192	2.193	2.189
F Statistic	399.993***	358.376***	321.612***	363.819***	233.478***	217.633***	236.953***

Note: Dependant variable generalized trust is measured on a 11-point Likert scale question. All coefficients are OLS estimates. Robust Standard Errors are in parantheses. 1st income quintile is used as a reference for income quintile variable. Only observations over 25 years old has been used as sample; *p<0.1; **p<0.05; ***p<0.01.

Table 4.5 – Components of trust (2/2) - Effects of education level and marital status on trust

	<i>Dependent variable: Trust</i>						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Education level							
Illiterate	0.033 (0.068)	0.170** (0.073)	0.099 (0.070)	0.180** (0.071)	0.187** (0.073)	0.141** (0.071)	0.202*** (0.072)
Literate	-0.067 (0.074)	0.036 (0.076)	-0.012 (0.075)	0.043 (0.075)	0.052 (0.077)	0.020 (0.076)	0.063 (0.076)
Elementary	-0.010 (0.056)	0.050 (0.057)	0.029 (0.056)	0.051 (0.056)	0.032 (0.057)	0.014 (0.056)	0.037 (0.056)
Middle	-0.020 (0.066)	0.010 (0.067)	0.002 (0.067)	0.008 (0.066)	-0.003 (0.067)	-0.010 (0.067)	-0.002 (0.066)
Vocational	0.123* (0.070)	0.115* (0.069)	0.122* (0.070)	0.109 (0.069)	0.101 (0.069)	0.104 (0.070)	0.097 (0.069)
University	0.495*** (0.061)	0.410*** (0.062)	0.435*** (0.062)	0.431*** (0.061)	0.419*** (0.062)	0.434*** (0.062)	0.431*** (0.061)
Marital status							
Married	0.098 (0.067)	0.110 (0.067)	0.111* (0.067)	0.094 (0.067)	0.127* (0.067)	0.129* (0.067)	0.110* (0.067)
Divorced	-0.528*** (0.117)	-0.517*** (0.117)	-0.505*** (0.117)	-0.492*** (0.116)	-0.503*** (0.117)	-0.498*** (0.117)	-0.482*** (0.116)
Widowed	0.100 (0.093)	0.106 (0.093)	0.100 (0.093)	0.103 (0.093)	0.122 (0.093)	0.122 (0.093)	0.120 (0.093)
Income variable							
		Disp. Income	Income Quintile	Material Deprivation	Disp. Income	Income Quintile	Material Deprivation
Region	No	No	No	No	Yes	Yes	Yes
Observations	27,182	27,182	27,182	27,182	27,182	27,182	27,182
Adjusted R ²	0.190	0.191	0.191	0.194	0.193	0.193	0.196
Residual std. err.	2.197	2.195	2.196	2.192	2.192	2.193	2.189
F Statistic	399.993***	358.376***	321.612***	363.819***	233.478***	217.633***	236.953***

Note: Reference categories are; high school for education level, and being single for marital status. *p<0.1;

p<0.05; *p<0.01

Alesina and La Ferrara's model (2002). Presumably, people tend to lose their trusts over the years in Turkey. This result could be the result of people encountering low altruism as altruism also decreases in Turkey (Pelek and Polat, 2019).

Being chronically ill decreases generalized trust attitude in all models within the significance level of 01%. Although Alesina and La Ferrara (2002) also mentions past traumas having a negative effect on trust, their model does not specifically use chronic diseases as an independent variable. On the other hand, most potent variable is living in urban areas. Although this is expected (Hardin, 1999), the margin of the effect is quite substantial. This effect is because small neighbourhoods allow people to bond stronger while day-to-day interactions are not frequent enough to build trust in urban areas. Furthermore, not paying rent variable also becomes significant with a positive coefficient when region variable is controlled.

Various income variables show different estimators on generalized trust. For example, the income quintiles variable shows a significant jump on the fourth income quintiles, while the first three income quintiles do not change. Although this result can also be derived from income and income squared variables, the exact level where trust is increased will not be observed. When material deprivation and poverty dummies are included, R^2 becomes the highest. Also, material deprivation has a considerably high coefficient. Since the trust difference between materially deprived and non-deprived people is higher than the difference between the first income quintile and the last income quintile, Section 5 and 6 will use these two variables as the income control variable.

The effect of education on generalized trust is also different from the literature, which claims that education has a linear relationship with trust. On the contrary, illiterate people in Turkey tend to trust more than other education levels, except the university. As people living in rural areas tend to have a higher trust and illiterate people heavily live in rural areas, living in urban dummy has been used as a control variable, and the results remained significant. The reason for trust not increasing with education could be due to high school graduates believing that their years of education had gone wasted, and this regret may decrease their trusts. However, the situation changes when an individual graduates from a university, where trust increases significantly with a high coefficient.

Finally, being divorced decreases trust with a considerably high coefficient for all seven models. Being widowed or married does not change the generalized trust attitude of an individual. While being a divorcee decreasing trust could be due to social norms where being divorced is frowned upon, it may also be due to low trust individuals divorcing more than high trust individuals. Nevertheless, being a divorcee has the highest effect in all seven models.

One possible explanation for decreased trusts in chronically ill observations is the possibility of low income and living conditions affecting the quality of life. In order to analyse this possibility, we have included interaction terms of chronically ill dummy and income variables to Table 4.4. These interaction terms would reveal if chronic diseases reduce trust in low income quintiles. Quite the contrary, Table 4.6 shows that high income quintiles tend to trust less when they are chronically diseased. Also, neither being under the poverty line dummy nor materially deprived dummy do not affect the coefficient of being chronically diseased. Therefore, the effect of chronic illnesses seems to be due to another reason.

Table 4.6 – Analysis of chronically ill observations

	<i>Dependent variable: Trust</i>				
	(1)	(2)	(3)	(4)	(5)
Mean trust	0.243***	0.243***	0.242***	0.243***	0.242***
of household	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Chronically ill	−0.192***	−0.183***	−0.167***	−0.058	−0.205***
	(0.034)	(0.034)	(0.034)	(0.067)	(0.045)
2nd inc. quintile		0.026		0.075	
		(0.045)		(0.057)	
3rd inc. quintile		0.009		0.055	
		(0.046)		(0.056)	
4th inc. quintile		0.074		0.137**	
		(0.047)		(0.057)	
5th inc. quintile		0.182***		0.258***	
		(0.050)		(0.059)	
Under the poverty line			0.025		0.031
			(0.040)		(0.048)
Material deprived			−0.311***		−0.338***
			(0.032)		(0.039)
Chronically ill				−0.122	
× 2nd inc. quintile				(0.092)	
Chronically ill				−0.110	
× 3rd inc. quintile				(0.093)	
Chronically ill				−0.172*	
× 4th inc. quintile				(0.096)	
Chronically ill				−0.244**	
× 5th inc. quintile				(0.099)	
Chronically ill					−0.021
× under the poverty line					(0.078)
Chronically ill					0.090
× materially deprived					(0.067)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	27,182	27,182	27,182	27,182	27,182
R ²	0.193	0.194	0.196	0.194	0.196
Adjusted R ²	0.192	0.193	0.196	0.193	0.196
Residual Std. Error	2.193	2.193	2.189	2.193	2.189
F Statistic	250.205***	217.633***	236.953***	192.245***	221.222***

Note: All coefficients are OLS estimates. Robust Standard Errors are in parantheses. 1st income quintile is used as a reference for income quintile variable. Only observations over 25 years old has been used as sample. Control variables are: age, age squared, gender, living in urban dummy, not paying rent dummy, and regional, marital and educational set of dummies; *p<0.1; **p<0.05; ***p<0.01.

5 INTERGENERATIONAL TRANSMISSION

Social capital is transmitted to the next generations via family. Family is itself is an institution based on generalized trust , where members trust each other and reciprocate accordingly. Therefore, low trust learnt from parents will not fade away quickly, which is why it is challenging to increase trust through policies. This section explores how intergenerational transmission of trust happens in Turkey and the most critical factors determining transmission strength.

5.1 Econometric Model

In order to analyse how trust is transmitted between generations, this section creates a model where a child's trust is regressed using parents' trust attitudes. Dohmen et al.'s model used SOEP (2012), where they included family members living outside the household. On the contrary, SILC only surveys family members in the same household. Living in the same household starts to create a bias after a certain age. Thus, this section selects two samples with 15-17 years old children in one and 15-25 years old children in the other one to prevent this bias.

Section 5 uses Ordinary Least Squares estimation to study the relationship between children's and parents' trust attitudes. Final model is constructed as follows:

$$\begin{aligned} Y_i^c = & \alpha + \beta_1 * Y_i^f + \beta_2 * Y_i^m + \beta_3 * X_i + \beta_4 * R_i + \beta_5 * Y_i^f * Urban + \beta_6 * Y_i^f * Gender \\ & + \beta_7 * Y_i^f * Household\ size + \beta_8 * Gender * Student\ dummy + u_i \end{aligned} \quad (5)$$

In the Equation 5, Y_i^c , dependant variable, refers to trust value of the child i . Independent variables Y_i^f and Y_i^m are father's trust attitude and mother's trust attitude,

respectively. R_i denotes the dummy set of NUTS1 regions. Finally, u_i is the residual of observation i .

Denoted by X_i , control variables allow creating a difference in differences environment by creating a treatment and control group for each control variable (Hünemann and Louw, 2020). Control variables for both samples are: gender, age difference between child and parents, being a student dummy, household not paying rents, having a chronic disease, father or mother having a chronic illness, living in urban dummy, income quintile for model 2 and 5, and finally being under the poverty line and materially deprived dummies for model 3 and 6. Age dummy is included for 15-17 sample as a control variable, while age and age squared are included for 15-25 years old sample.

We also included an interaction term between gender and being an active student dummy to understand if being a student effects the trust attitude the same for different genders. Furthermore, three interaction terms are included to understand the relationship between the father's trust and: gender dummy, urban dummy and household size. An interaction term between gender dummy and father's trust would allow us to see if different genders are being affected by their fathers differently or not. On the other hand, the urban dummy is used in the interaction term since children in rural areas may be affected by their fathers more than the children in urban areas. Finally, we explored if the intergenerational transmission was more substantial in more populated families or not, with the interaction term of household size and father's trust.

Since each family member's trust is affected by other family members, it is essential to note that multicollinearity may exist at some level. Grandfather's and grandmother's trust attitudes are sometimes used in the literature to prevent this issue when they live in a different household. As SILC surveys only family members that live in the same household, grandparents' trust attitudes cannot be used as instruments.

5.2 Results

Table 5.1 shows the significance of parents' trust attitudes with almost equal coefficients. This result parallels Dohmen et al.'s (2012) results, while Turkish children are slightly more affected by their parents as coefficients in this dissertation are higher. It is important to note that children aged 15-25 have higher coefficients as expected,

Table 5.1 – Intergenerational transmission of generalized trust attitude

	Dependent variable: Child's Trust					
	Children aged 15-17			Children aged 15-25		
	(1)	(2)	(3)	(4)	(5)	(6)
Mother's trust	0.261*** (0.042)	0.259*** (0.043)	0.256*** (0.043)	0.272*** (0.029)	0.266*** (0.029)	0.265*** (0.029)
Father's trust	0.233*** (0.041)	0.340*** (0.130)	0.350*** (0.128)	0.265*** (0.028)	0.393*** (0.085)	0.391*** (0.085)
Gender (female=1)		-0.966** (0.483)	-1.020** (0.482)		-0.457* (0.271)	-0.503* (0.271)
Living in urban		0.429 (0.424)	0.484 (0.416)		0.275 (0.277)	0.330 (0.275)
Chronically ill		-0.402 (0.379)	-0.403 (0.380)		-0.354 (0.247)	-0.383 (0.248)
2nd inc. quintile		0.126 (0.298)			0.474** (0.211)	
3rd inc. quintile		0.238 (0.265)			0.526*** (0.190)	
4th inc. quintile		0.504* (0.262)			0.474** (0.185)	
5th inc. quintile		0.337 (0.268)			0.583*** (0.192)	
Under the poverty line			-0.117 (0.213)			-0.174 (0.152)
Material deprived			-0.166 (0.179)			-0.184 (0.116)
Father's trust × Gender		0.089 (0.072)	0.093 (0.071)		0.059 (0.046)	0.063 (0.047)
Father's trust × Living in urban		-0.080 (0.077)	-0.083 (0.076)		-0.091* (0.051)	-0.095* (0.052)
Father's trust × Household size		-0.020 (0.019)	-0.022 (0.019)		-0.018 (0.013)	-0.018 (0.013)
Observations	790	790	790	1,788	1,788	1,788
R ²	0.179	0.222	0.219	0.213	0.248	0.246
Adjusted R ²	0.177	0.191	0.191	0.212	0.235	0.234
Residual Std. Error	2.159	2.140	2.141	2.159	2.128	2.130
F Statistic	85.959***	7.219***	7.642***	241.813***	19.271***	20.464***

Note: Robust Standard Errors are in parentheses. Control variables are; age, age squared, age difference between parents and the child, being a student dummy, interaction variable of gender and active education dummy, not paying rent dummy, household size and finally a set of region dummies. Age is included as categorical for 15-17 age group and as numerical for 15-25 age group. *p<0.1; **p<0.05; ***p<0.01

indicating children will be affected by their parents more as they spend more time with their families.

Another contrast between Section 4 and 5 is that while being a female reduces trust by a significant margin in Section 5, this is not true in Section 4. Furthermore, it is possible to see that the size and significance of the gender coefficient reduce in the sample of children aged 15-25. Therefore, it is possible to say that either men also learn not to trust later in life or women build trust over time. Considering trust reduces with age in Turkey, it is natural to assume the first option is correct.

On the other hand, being materially deprived nor being under the poverty line do not reduce trust for children aged 15-17, while it becomes an issue with children aged 15-25. This result could actually be the reason for trust decreasing with age. Presumably, material deprivation starts becoming an issue with experience. The urban variable also being non-significant for children means that people living in cities have their trusts reduced over the years as they do not experience trust-building interactions.

Interaction terms are included to see how independent variables interact with each other. Interaction term of father's trust and urban being significant in 10% significance level indicates that children living in urban areas may be less influenced by their fathers. Furthermore, this coefficient is only significant within the 15-25 age group and not in 15-17 age group, meaning living after high school with parents is a different experience in rural areas.

In conclusion, these results indicate that distrust is learnt as much as it is inherited. Environmental effects such as living in cities where interactions are relatively shallow or material deprivation eventually prevent people from trusting over the years. Children's trust not being affected by either living in urban areas or being materially deprived is new to the literature.

6 POSITIVE ASSORTATIVE MATING

Many factors determine the choice of spouse; therefore, finding a relationship between trust attitudes and spousal choice is relatively tricky. Consequently, it is necessary to control as many variables as possible to prevent an omitted variables bias. On the other hand, since most independent variables affect both the husband and the wife, overcoming multicollinearity is also crucial.

The most common factors for positive assortative mating in the literature are income, age and education. However, since income is calculated on household-level in SILC, it is not possible to know how the income difference had affected spousal choice. Therefore, only age and education differences are included in the model.

Trust attitude may change over the years as living conditions change. Therefore, there is also the possibility of spouses resembling each other over time. Hence, a robustness group where the oldest wife is 21 years old or below has been created to explore if the correlation was due to resemblance over the years or assortative mating. Since the earliest marriage age is 15, the longest marriage in the robustness sample is six years long; thus, it is safe to consider that the robustness group would reveal it.

6.1 Econometric Model

In the Equation 6; $Trust_i$ refers to generalized trust value of individual i ; while $Trust_i^s$ refers to the trust attitude of individual i 's spouse. u_i is the residual of individual i . X_i is the set of age, education and income variables for individual i . These variables are: age, age squared, age and education differences between spouses, being under the poverty line and material deprivation dummies for Columns (2) and (5) and finally income quintiles for Columns (3) and (6). E_i refers to a full set of education dummies for full sample of couples while it refers to being a student dummy for newly-wed

couples sample. Since all women in the small sample are under 21 years old, full set of education dummies would create a biased result; therefore, only being a student dummy has been used.

$$Trust_i = \alpha + \beta_1 * Trust_i^s + \beta_2 * X_i + \beta_3 * Z_i + \beta_4 * E_i + \beta_5 * R_i + u_i \quad (6)$$

Educational difference between spouses are critical control variables since education is a substantial factor to consider when marrying. Without controlling for educational similarity, it would be impossible to understand if the significance of the spouse's trust was due to assortative mating or being at the same educational level. But the problem of multicollinearity becomes apparent when both spouse's trust and spouse's education are included in estimations as they are highly correlated. As mentioned in Akarçay-Gürbüz and Polat, this is a trade-off of bias versus control variables (2017). Contrary to their model, we have decided to include spouse's educational information as the educational year difference, since not controlling education would create an important under-specification bias for our model.

Equation 6 includes other control variables denoted by Z_i . These control variables include: living in urban dummy and paying rent dummy. This equation also includes region dummy as shown with R_i . The main difference between Panel A and B in Table 6.1 is that the dependant variable is the wife's trust in Panel A, where it is the husband's trust in Panel B.

6.2 Results

Table 6.1 shows how strong the relationship between a person's and his/her spouse's trust attitude. The significance remains quite strong when control variables are included. In Columns (1), (2) and (3), the sample consists of 7404 couple of all ages, while in Columns (4), (5) and (6), only women who were born after 1990 are taken into the sample. This distinction is due to explore the possibility of married couples resembling each other over time. As SILC has been collected throughout 2012, the oldest wife in the second sample is 21 years old; therefore, the most prolonged marriage duration is six years. Although has used married couples who were married in the last two years, SILC does not give any information about the marriage date. There-

fore, this method is the best way to minimise any bias that may come through couples' trust attitudes resembling each other over time. Age difference between spouses does not seem to affect the trust attitude of an individual on all 12 models. It is important to note that some of these results could be due to low amount of observations in the newly-weds sample. On the other hand, educational difference between spouses found to be decreasing the trust attitude in men. Indicating that men will trust less if their wives have more education than them.

Results show how strong the correlation is between spouse's trust attitudes in all 12 models. Also, coefficients being stable with relatively low robust standard errors indicate the strength of the model. Therefore, we believe that these results are enough to say that people marry their alike in trust attitude. Nevertheless, even though the whole sample group's coefficients are relatively higher than the newly married group, the increase is not high enough to claim that the correlation is due to people resembling each other and not marrying their alike.

On a final note, the mean trust of the household variable in Section 4 had a coefficient of 0.242, meaning a one-point increase in the mean of household trust would increase an individual's trust by almost a fourth. Coefficients of Section 5 were also around 0.3, relatively similar to Section 4. On the other hand, coefficients in Table 6.1 are approximately 0.5, even for newly-wed couples. Furthermore, adjusted R^2 values are also higher. Hence, the correlation between spouses is higher than any other family member, indicating a stronger correlation. Due to these reasons, the similarity between trust attitudes of spouses may exist prior to marriage, showing positive assortative mating.

Table 6.1 – Positive assortative mating

Panel A: Dependant variable: wife's trust						
	Full sample			Newly-weds		
	(1)	(2)	(3)	(4)	(5)	(6)
Husband's trust	0.535*** (0.012)	0.521*** (0.012)	0.522*** (0.012)	0.460*** (0.081)	0.477*** (0.097)	0.469*** (0.096)
Age difference		−0.010* (0.005)	−0.009* (0.005)		−0.055 (0.052)	−0.038 (0.051)
Educational difference		−0.003 (0.007)	−0.002 (0.007)		−0.008 (0.041)	−0.013 (0.042)
Income variable		Material Deprivation	Income Quintile		Material Deprivation	Income Quintile
Controls		Yes	Yes		Yes	Yes
Observations	7,404	7,404	7,404	153	153	153
Adjusted R ²	0.287	0.296	0.295	0.217	0.204	0.199
Panel B: Dependant variable: husband's trust						
	Full Sample			Newly-weds		
	(1)	(2)	(3)	(4)	(5)	(6)
Wife's trust	0.537*** (0.012)	0.526*** (0.012)	0.526*** (0.012)	0.484*** (0.090)	0.510*** (0.095)	0.492*** (0.095)
Age difference		−0.006 (0.005)	−0.006 (0.005)		−0.085 (0.130)	−0.072 (0.151)
Educational difference		−0.016** (0.007)	−0.016** (0.008)		0.072* (0.041)	0.056 (0.039)
Income variable		Material Deprivation	Income Quintile		Material Deprivation	Income Quintile
Controls		Yes	Yes		Yes	Yes
Observations	7,404	7,404	7,404	153	153	153
Adjusted R ²	0.287	0.291	0.291	0.217	0.227	0.236

Note: Robust Standard Errors are in parentheses. Newly-weds are selected as couples where the wife is not older than the age of 21. Control variables are: living in urban dummy, a set of region dummies, being chronically ill dummy and not paying rents dummy. Education difference between spouses are calculated as education years. Material deprivation income variable also includes being under the poverty line dummy. *p<0.1; **p<0.05; ***p<0.01

7 CONCLUSION

In this dissertation, the generalized trust attitude of Turkish families has been investigated. The obstacles in the intergenerational transmission of social trust and positive assortative mating have been explored for low trust. To our knowledge, this is the first study in Turkey to study trust using household data.

To understand who trusts more than others, observations over 25 years old has been selected as a sample, and their trust attitude has been explored using different control variables. Our estimations show that Turkish people trust less over the years. Being materially deprived or living in an urban area also decreases trust by a significant margin. These issues start becoming apparent after a certain age, while people aged 24 or under are not affected. On the other hand, women trust less in high school age while the gap closes over the years.

A significant difference from the rest of the world in our study is that illiterate people were more trusting than literate or high school graduate people. We thought this might be because illiterate people living in rural areas since people living in the rural areas had shown higher trust attitudes according to literature and this paper. Therefore, we have controlled for living in urban dummy, and the difference remained significant. This phenomena is specific to Turkey and should be further studied.

In the next section, an analysis of the intergenerational transmission of social trust attitude has been delivered. Parents' trust attitudes have shown to be the most decisive factor in determining one's trust. Even when we controlled for the region, income, and education variables, intergenerational transmission remained the most vital variable on trust. We have shown that Turkey is not different from the rest of the world in this aspect. On the other hand, neither gender nor living in rural areas significantly affected

this transmission.

In the last chapter, we explored the mechanism behind positive assortative mating. Similar to Dohmen et al. (2012), we have considered the possibility of people's attitudes resembling each other over time and created a control group of recently married couples. Even when controlled for education and income, which was known as substantial positive assortative mating factors, results remained significant in both groups, indicating people cared about their potential spouse candidate's social trust attitudes when marrying.

In conclusion, we believe that material deprivation can be the key to low levels of trust in Turkey. Not being able to afford basic needs seems to be a severe factor in Turkish families. Our results are enough proof to show that low trust is not a cultural heritage but a temporary scarcity due to living and income conditions.

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A Analysis of Missing Data Mechanism

In order to understand 355 people who decided not to answer the question of trust, it should be understood if there is missing pattern that cause people not to answer the question. This mechanism could be either:

1. Missing Completely at Random (MCAR)
2. Missing at Random (MAR)
3. Missing Not at Random (MNAR)

If there was not a pattern for people who did not answer the question, it would in the first group where could easily eliminate those observations without causing any bias. But if there is a pattern with any of the other variables and not giving answer to trust question, that could mean that NA observations are Missing at Random (MAR). In this case, even though bias would still be relatively low, we could eliminate the potential bias by using imputation methods. If there was a strict pattern where a special trust level causing people not to answer trust question, that would mean that our missing data mechanism was MNAR. In that case, imputation could only lower the bias and not completely remove it.

$$Y_i = \beta_0 + \beta_1 * X_i + \beta_2 * E_i + \beta_3 * R_i + u_i \quad (7)$$

In Equation 7, Y_i is a dummy of not answering the question of trust by the individual i . X_i is the set of independent variables consisting of: age, age squared, gender, chronic disease dummy, urban dummy, not paying rent dummy, marital status, material deprivation dummy and being under the poverty line dummy. E_i and R_i are set of education and region dummies, respectively.

Table A.1 – Analysis of missing observations

	<i>Dependent variable: Not answering trust dummy</i>	
	<i>OLS</i>	<i>probit</i>
Illiterate	0.020*** (0.003)	0.698*** (0.172)
Literate	0.004 (0.003)	0.527*** (0.173)
Elementary	0.001 (0.002)	0.395** (0.166)
Middle	−0.001 (0.002)	0.239 (0.176)
Vocational	0.002 (0.003)	0.196 (0.208)
University	0.003 (0.003)	0.184 (0.195)
Age	−0.001*** (0.0002)	−0.006 (0.008)
Age ²	0.00002*** (0.00000)	0.0002*** (0.0001)
Gender (female=1)	0.005*** (0.001)	0.279*** (0.056)
Chronically ill	0.001 (0.001)	0.031 (0.052)
Urban	−0.004*** (0.001)	−0.128** (0.051)
Not paying rent	−0.001 (0.001)	−0.029 (0.053)
Married	−0.003 (0.002)	−0.320*** (0.097)
Divorced	0.001 (0.004)	−0.178 (0.173)
Widowed	0.007** (0.003)	−0.246** (0.117)
Material	0.005*** (0.001)	0.203*** (0.052)
Poverty	0.005*** (0.002)	0.139** (0.057)
Region	Yes	Yes
Observations	33,970	33,970
R ²	0.026	
Adjusted R ²	0.025	
Log Likelihood		−1,656.805
Akaike Inf. Crit.		3,369.610
F Statistic	33.103***	

Note: Out of 33970 observations, 355 individuals decided not to answer to question of trust. Reference categories are; high school for education level and being single for marital status;

*p<0.1; **p<0.05; ***p<0.01.

According to Table A.1, there might be correlations between some of the variables and the decision of not answering the question of trust. Especially, old and illiterate observations had decided not to answer while being female also may have affected the decision. Even though R^2 is considerably low and there were only 355 missing answers in a dataset of 33970, these results might require another robustness check. Therefore, we have created a comparison of 3 models in which:

1. NA observations are listwise eliminated.
2. NA observations are imputed using the mean of trust.
3. NA observations are imputed using the fitted values from our regression. Using mice library of R, we fitted values from our regressions to impute values for missing data.

The primary reason is to see how different decisions may affect our results. For example, if eliminating NA observations will not create a biased result compared to other imputation methods, we will know that it is safe to eliminate listwisely.

Table A.2 show that none of our explanatory variables had changed after any of the imputation methods, which is the most significant result for our case. Neither the listwise elimination nor the imputation methods were changing estimation results. Therefore, we took the liberty of listwise elimination of missing observations to prevent any bias that the wrong imputation methods may cause.

Table A.2 – Comparison of NA imputation methods

	<i>Dependent variable: Generalized trust attitude</i>		
	Listwise eliminated	Imputation by mean	Imputation by regression
Illiterate	0.300*** (0.069)	0.296*** (0.068)	0.301*** (0.068)
Literate	0.156** (0.069)	0.161** (0.068)	0.154** (0.068)
Elementary	0.102* (0.053)	0.104** (0.053)	0.101* (0.053)
Middle	0.072 (0.058)	0.076 (0.057)	0.073 (0.058)
Vocational	0.092 (0.066)	0.093 (0.066)	0.097 (0.066)
University	0.446*** (0.060)	0.445*** (0.059)	0.443*** (0.060)
Age	−0.027*** (0.005)	−0.025*** (0.005)	−0.027*** (0.005)
Age ²	0.0004*** (0.0001)	0.0004*** (0.00005)	0.0004*** (0.00005)
Gender (female=1)	−0.048* (0.029)	−0.050* (0.029)	−0.048* (0.029)
Chronically ill	−0.212*** (0.034)	−0.208*** (0.033)	−0.216*** (0.034)
Urban	−0.557*** (0.032)	−0.550*** (0.031)	−0.548*** (0.031)
Not paying rent	0.091*** (0.029)	0.092*** (0.029)	0.093*** (0.029)
Married	0.023 (0.049)	0.018 (0.049)	0.016 (0.049)
Divorced	−0.664*** (0.098)	−0.662*** (0.097)	−0.677*** (0.097)
Widowed	0.013 (0.076)	0.003 (0.075)	−0.007 (0.075)
Material	−0.382*** (0.031)	−0.380*** (0.030)	−0.373*** (0.031)
Poverty	0.003 (0.039)	0.001 (0.038)	0.002 (0.038)
Region	Yes	Yes	Yes
Constant	5.111*** (0.118)	5.072*** (0.116)	5.105*** (0.117)
Observations	33,615	33,970	33,970
R ²	0.037	0.036	0.036
Adjusted R ²	0.036	0.035	0.036
Residual Std. Error	2.400	2.388	2.399
F Statistic	47.183***	46.731***	47.491***

Note: Reference categories are; high school for education level and being single for marital status; *p<0.1; **p<0.05; ***p<0.01.

B Probit Estimation as a Robustness Check

To measure generalized trust, another method is to separate people into two groups as trusting people and distrusting people. When the dependant variable is in the dichotomous state of 0, 1, probit estimation is also used. We have mentioned that using a dichotomous trust variable creates a serious upward bias; therefore, our primary model uses OLS estimation with a response scale of 11-point. Nevertheless, we created a probit model to see how robust is our model.

B.1 Econometric Model

$$Pr(Tr_i^c = 1) = \phi(\alpha + \beta_1 * Tr_i^f + \beta_2 * Tr_i^m) \quad (8)$$

In the Equation 8, $Pr(Tr_i^c = 1)$ refers to the probability of the child i 's generalized trust attitude being 1. Cumulative distribution is denoted by ϕ . Tr_i^f and Tr_i^m show the increase in the probability of child's trust being 1 for each increase in father's trust and mother's trust, respectively.

$$Pr(Tr_i^c = 1) = \phi(\alpha + \beta_1 * Tr_i^f + \beta_2 * Tr_i^m + \beta_3 * X_i) \quad (9)$$

In the Equation 9, X_i is the set of control variables which are: gender, age, age squared, being a student dummy, having a chronic disease dummy, not paying rent dummy, living in urban dummy, household size, being under the poverty line dummy and material deprivation dummy. These variables are decided using the results of Section 4, where we divided generalized trust into its components.

$$Pr(Tr_i^c = 1) = \phi(\alpha + \beta_1 * Tr_i^f + \beta_2 * Tr_i^m + \beta_3 * X_i + \beta_4 * R_i) \quad (10)$$

In the Equation 10, finally we include the region dummy with R_i . This way, it becomes possible to eliminate region-specific effects as our point of interest is the intergenerational transmission of generalized trust attitude.

B.2 Results

In the Table B.1, first 3 columns shows OLS estimations while the last 3 columns are probit estimation results. It is clear that intergenerational transmission is can be visible in both OLS and probit estimations. In the Column (4), basic model within Equation 8 is estimated; while within Columns (5) and (6) control and region variables are included, respectively. Results are clearly have not changed when estimated with probit model. Although this was expected, a robustness check was necessary to see these results. Therefore, we can consider that our results are robust.

Table B.1 – Robustness check with probit estimation

	<i>Dependent variable: Trust Attitude</i>					
	<i>OLS</i>			<i>Probit</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
Father's Trust	0.233*** (0.041)	0.225*** (0.041)	0.229*** (0.041)	0.768*** (0.109)	0.762*** (0.110)	0.781*** (0.112)
Mother's Trust	0.261*** (0.042)	0.261*** (0.042)	0.253*** (0.043)	0.664*** (0.108)	0.710*** (0.111)	0.703*** (0.112)
Control Variables	No	Yes	Yes	No	Yes	Yes
Region	No	No	Yes	No	No	Yes
Observations	790	790	790	790	790	790
R ²	0.179	0.201	0.212			
Adjusted R ²	0.177	0.189	0.189			
Log Likelihood				−451.615	−438.912	−431.647
Akaike Inf. Crit.				909.230	903.824	909.295
Residual Std. Error	2.159	2.144	2.143			
F Statistic	85.959***	16.309***	9.374***			

Note: Robust standard errors are in parantheses. Sample is constructed from children between the ages of 15 to 17. Control variables are; age, age², gender, active education dummy, chronic disease dummy, living in urban dummy, material deprivation dummy, being under the poverty line dummy, not paying rent dummy and household size. Significance levels are; *p<0.1; **p<0.05; ***p<0.01.