HACETTEPE UNIVERSITY

INSTITUTE OF POPULATION STUDIES

THE CONTRIBUTION OF RAPPORT BETWEEN INTERVIEWER AND RESPONDENT ON INTERVIEW QUALITY FROM NON-SAMPLING ERROR PERSPECTIVE:

Evidence from 2014 Research on Domestic Violence against Women in Turkey

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APPROVAL PAGE

The Contribution of Rapport between Interviewer and Respondent on Interview Quality
from Non-Sampling Error Perspective:
Evidence from 2014 Research on Domestic Violence against Women in Turkey

Melike Saraç

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THE CONTRIBUTION OF RAPPORT BETWEEN INTERVIEWER AND RESPONDENT ON INTERVIEW QUALITY FROM NON-SAMPLING ERROR PERSPECTIVE

by Melike Saraç

THE CONTRIBUTION OF RAPPORT BETWEEN INTERVIEWER AND RESPONDENT ON INTERVIEW QUALITY FROM NON-SAMPLING ERROR PERSPECTIVE

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ABSTRACT

The dissertation aims to introduce two latent constructs in surveys which are rapport between interviewer and respondent, and interview quality. The third main objective is to investigate rapport impact on interview quality. Furthermore, secondary objectives are to determine levels of rapport and interview quality, to reveal differences among women whose interviews were completed with high rapport according to selected characteristics, and to investigate effect of interviewer characteristics on interview quality. From quantitative perspective, sophisticated measurement models are utilized to achieve thesis objectives.

Data set of Research on Domestic Violence against Women in Turkey, which is a household survey conducted in 2014, is used for statistical analyses within the dissertation. The nationwide, cross-sectional, face-to-face survey was carried out by Hacettepe University Institute of Population Studies (HUIPS) in collaboration with Turkish Republic Ministry of Family and Social Policies, the General Directorate on the Status of Women (GDSW). The Field Staff data set was constructed separately and merged with women data set. In the first stage of the thesis, rapport and interview quality operationalization were given with several models. Afterwards, all phases to reach final measurement models for latent constructs were discussed and, finally, rapport impact on interview quality was investigated on the basis of structural equation model. In the second stage of the results section, differences among women interviews in terms of high rapport according to selected characteristics were revealed based on significance levels. Lastly, interviewer characteristics' impact on interview quality was investigated under the control of covariates, and influential interviewer characteristics on the likelihood of high interview quality were given.

Operationalization of rapport and interview quality are found useful to make interpretations on survey related constructs which we cannot measure directly. Findings showed that timing and frequency of visits, socio-demographic and socio-economic similarity between interviewer and respondent, and dynamic interview factors contribute to measurement of rapport. Interviewer workload, respondent burden and response quality are detrimental factors on interview quality in a negative way. Not only factors behind rapport and interview quality, but also the impact of rapport on interview quality showed importance of interviewer recruitment, workload allocation, interviewer training, field management, and motivation.

Key words: rapport, interviewer, respondent, interview quality, violence against women, Turkey.

ÖZET

Bu tez, görüşmeci ve cevaplayıcı arasındaki uyum ile görüşme kalitesini tanımlamayı amaçlamaktadır. Ayrıca, görüşmeci ve cevaplayıcı arasındaki uyumun görüşme kalitesine olan etkisinin incelenmesi de tezin temel amaçları arasındadır. Alt amaçlar ise görüşmeci ve cevaplayıcı arasındaki uyum ve görüşme kalitesinin düzeylerini belirlemek, yüksek görüşme uyumu ile tamamlanan kadın görüşmeleri arasındaki farklılıkları ortaya çıkarmak ve görüşmeci özelliklerinin görüşme kalitesi üzerindeki etkisini incelemektir. Nicel bir bakış açısı benimsenerek, karmaşık yapılı ölçüm modelleri tez kapsamında kullanılmıştır.

Bu tezde veri kaynağı olarak 2014 yılında gerçekleştirilen ve bir hanehalkı örneklem araştırması olan Türkiye'de Kadına Yönelik Aile İçi Şiddet Araştırması'nın veri seti kullanılmıştır. Ülke temsiliyeti olan ve yüz yüze görüşmelerle tamamlanan hane halkı araştırması, Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü ve Türkiye Cumhuriyeti Aile ve Sosyal Politikalar Bakanlığı-Kadının Statüsü Genel Müdürlüğü işbirliğiyle yürütülmüştür.Araştırmanın kadın veri seti ile ayrıca oluşturulan Saha Personeli veri seti birleştirilerek istatistiksel analizlerde kullanılmıştır. Tezin ilk aşamasında, görüşmeci ve cevaplayıcı arasındaki uyum ve görüşme kalitesi kavramları çeşitli modeller yardımıyla ölçülmüştür. Bu yapıları ölçmek için kurulan tüm alt modellerin sonuçları incelenmiş, ayrıca uyumun görüşme kalitesi üzerine etkisi yapısal eşitlik modellemesi tekniğiyle araştırılmıştır. Sonuç bölümünün ikinci aşamasında ise seçilen bazı özelliklere göre yüksek uyumla tamamlanan kadın görüşmeleri arasındaki farklılıklar, anlamlılık düzeyleri temel alınarak ortaya çıkarılmıştır. Son olarak, görüşmeci özelliklerinin görüşme kalitesine üzerine etkisi diğer değişkenlerin kontrolü altında incelenerek, yüksek kaliteli görüşme olasılığı üzerinde etkili olan görüşmeci özellikleri bulunmuştur.

Görüşmeci ve cevaplayıcı arasındaki uyum ile görüşme kalitesinin tanımlanması, sosyal araştırmalarda doğrudan ölçülmesi mümkün olmayan kavramların ölçülmesi açısından yararlı olmuştur. Çalışmanın bulguları, görüşmelerin sıklığı ve zamanlaması, görüşmeci ve cevaplayıcı arasındaki benzerlik ve dinamik görüşme faktörlerinin uyum üzerinde etkili olduğunu göstermektedir. Ayrıca, görüşmeci iş yükü, cevaplayıcı yükü ve cevap kalitesi de görüşme kalitesi üzerinde olumsuz yönde etkili faktörler olarak bulunmuştur. Uyum ve görüşme kalitesini tanımlayan faktörler ile uyumun görüşme kalitesine etkisi görüşmeci seçimi, iş yükü dağılımı, eğitim ve saha yönetimi ile motivasyonunun önemini ortaya çıkarmıştır.

Anahtar kelimeler: uyum, görüşmeci, cevaplayıcı, görüşme kalitesi, kadına yönelik şiddet, Türkiye.

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ABBREVATIONS

AAPOR	American Association for Public Opinion Research
ABPRS	Address Based Population Registration System
AMOS	Analysis of Moment Structures
ASA	American Statistical Organization
CAPI	Computer Assisted Personal Interview
CATI	Computer Assisted Telephone Interview
CFA	Confirmatory Factor Analysis
CSGLM	Complex Samples Generalized Linear Model
CSLOGISTIC	Complex Samples Logistic Regression
DHS	Demographic and Health Survey
EFA	Exploratory Factor Analysis
FAO	Food and Agricultural Organization
HUIPS	Hacettepe University Institute of Population Studies
IASS	International Association of Survey Statisticians
ILO	International Labour Force
IMF	International Monetary Fund
ISI	International Statistical Institute
KMO	Kaiser-Meyer-Olkin
M.I.	Modification Indices
MICS	Multiple Indicator Cluster Surveys
MSE	Mean Square Error
MLE	Maximum Likelihood Estimation
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organization for Economic Cooperation and Development
PAPI	Paper and Pencil Interview
SEM	Structural Equation Modeling
SHARE	Survey of Health, Ageing, and Retirement in Europe
SPSS	Statistical Package for the Social Sciences
SRM	Survey Research Methods
TDHS	Turkey Demographic and Health Survey
TSE	Total Survey Error
UN	United Nations

UNICEF	United Nations International Children's Emergency Fund
VAW	Violence against Women
WAPOR	World Association for Public Opinion Research
WHO	World Health Organization

CHAPTER 1. INTRODUCTION

There is a growing need for high quality statistics across the world to understand social events as well as mechanisms behind these events. High quality statistics regardless of the data source, i.e. censuses, registrations or surveys, are essential especially for decision makers in order to make future plans. Making evidence based policies in applied areas is possible with accurate interpretation of high quality survey statistics.

Although quality issues are among main interests of researchers from various fields, this dissertation focuses on quality for survey data on Violence against Women, the case of Turkey. The data come from the 2014 Research on Domestic Violence against Women in Turkey, which was conducted by Hacettepe University Institute of Population Studies (HUIPS) in collaboration with Ministry of Family and Social Policies General Directorate on the Status of Women (GDSW). The 2014 VAW Study could be assessed as a follow-up study of the 2008 Research on Domestic Violence against Women in Turkey (GDSW and HUIPS, 2009). Main objectives of 2014 VAW Study are to get data that will be utilized in policies developed to struggle with domestic violence, to follow change in violence prevalence between 2008 and 2014, and to refer gaps associated with legal regulations on domestic violence, include ideas of women who experienced violence as well as professionals from policy side and lastly, to evaluate relevant policies (GDSW and HUIPS, 2015). To achieve these objectives, both quantitative and qualitative researches were conducted within the scope of 2014 VAW Study. From theoretical view, findings produced from this dissertation and relevant suggestions could be supported by feminist approach in addition to various theories in survey methodology field.

From a quantitative perspective, this thesis aims to contribute a limited number of studies that discuss ensuring quality for cross-national designed Violence against Women Studies (Martín-Fernández et al., 2020; Walby and Towers, 2017). This contribution could be assessed as worthwhile, especially when violence against

women is considered among sensitive topics on the agenda at a global level. Historically, most of the violence against women based studies appeared at the end of the 20th century with the aim of coping with gender-based violence. The quantitative data about prevalence, reasons and results of violence were collected over the years. In the course of time, standardisation ensured on designs and methodologies of violence based studies allowed to make comparisons over the years and different countries. One of the example is "Multi-country Study on Women's Health and Domestic Violence against Women" conducted by World Health Organization (WHO) that collected rich information about violence against women paying attention to women's safety as well as ethical concerns (WHO, 2001). Another example is European Union (EU) Agency for Fundamental Rights (FRA) Survey that is a precious work that covers 28 EU member countries and the information about intimate partner violence against women (EU FRA, 2014). Underlining measurement equivalence, Martín-Fernández et al. (2019, 2020) showed the comparability of FRA survey data across countries by the virtue of standardized sets of questions to measure different types of violence.

Looking at these limited number of studies which handle quality aspect of the gender based violence surveys, current dissertation could be evaluated as a new quantitative study focusing on response quality and interview quality, for the 2014 VAW Study in Turkey. So far, the issues regarding violence against women and its outcomes are usually handled with qualitative techniques. However, particularly in recent years, quantitative approaches are also adopted when examining violence against women as well as its outcomes. For instance, Sustainable Development Goals cover gender equality and empowerment of women and girls as a separate goal and thus, quantitative data are used to explain poverty and violence against women across the world (UN Women, 2016). Considering all of these, quantitative data that measure violence against women as well as its outcomes could be utilized not only to observe current situation but also make evidence-based policy implications.

In more statistical manner, many statistical organizations across the world established quality dimensions of survey data that reflects survey quality to some extent. For instance, EUROSTAT, Statistics Canada, Statistics Sweden, and United Kingdom Office for National Statistics, United Nations (UN), International Labour Force (ILO), International Monetary Fund (IMF), Food and Agricultural Organization (FAO) and Organization for Economic Cooperation and Development (OECD) have suggested quality frameworks with common quality dimensions (Brackstone, 1999; EUROSTAT, 2009; International Monetary Fund, 2003; Office for National Statistics, 2016; Organisation for Economic Cooperation and Development, 2011; Rosen et al., 1994). The quality aspects of these organizations meet on main points: relevance, accuracy, timeliness and punctuality in disseminating results, accessibility and clarity, comparability, coherence and completeness (EUROSTAT, 2017; Laiho and Hietaniemi, 2002; Berghdal et al., 2007; Biemer et al., 2014; EUROSTAT, 2009). Apart from these organizations, section on Survey Research Methods (SRM) of the American Statistical Organization (ASA), American Association for Public Opinion Research (AAPOR), World Association for Public Opinion Research (WAPOR), and the International Association of Survey Statisticians (IASS) of the International Statistical Institute (ISI) are among the widely known organizations which conduct researches on various interests, study on survey quality components, and establish methodological documents on quality in surveys.

Surveys, which are able to provide data on a large range of matters in detail come across as main sources of information for researchers with realization, randomization, and representativeness features. Surveys are such useful information sources that quality assessments of censuses could be made with survey operation. For instance, U.S. Census Bureau conducted a survey, 2010 Census Quality Survey, in order to develop effective census questionnaire (Bentley et al., 2003). It should be noted that making inferences about the population based on survey estimates is possible with selecting a survey sample properly and managing survey process effectively.

Starting from early literature, survey quality is often mentioned together with data quality due to the strong association established between survey quality and data quality (Biemer, 2014). Early studies on sampling theory and studies from total survey error perspective at later times put forward this relation directly or indirectly (Brown, 1967; Cannell et al., 1977; Ferber, 1955; Neter and Waksberg, 1964).

Quality of survey data and its reflections on survey estimates are getting more attention especially for last decades by survey statisticians and survey organizations. When quality assessments of widely known survey organizations are considered, Demographic and Health Surveys (DHS) Program under the ICF International presents methodological reports including quality assessments on health estimations such as eligibility and age, age at certain events such as first sexual intercourse, marriage, first birth, birth history, infant and child mortality, maternity care, child immunization and breastfeeding for their projects in over ninety countries around the world (Institute for Resource Development, 1990; Macro International Inc., 1993). Similarly, Multiple Indicator Cluster Surveys (MICS) which are conducted by United Nations International Children's Emergency Fund (UNICEF) presents data quality assessments based on quality indicators such as incompleteness, heaping and displacement on age, date of birth and anthropometric measures for children and women (JSI, 2009).

In the light of the knowledge in the literature, most of the studies focus on the data quality indicators such as rate of consistency on same information from different sources, missing information, rounding, heaping, imputed and flagged cases etc. Apart from quantitative quality indicators, DHS have published methodological reports on fieldwork related factors and interviewer characteristics on data quality recently (Johnson et al., 2009; Pullum et al., 2018). These efforts refer to importance of fieldwork, respondent and interviewer related factors on data quality even though findings are interpreted indirectly. As another novelty for DHS surveys, DHS collect information about interviewer characteristics through the "Fieldworker Questionnaire" that is ranked among the standard questionnaires. The implementation of self-administered questionnaire was started in one of the

DHS countries, Zimbabwe, after a pilot study conducted in Cambodia in 2015. Using the fieldworker questionnaire as a tool when conducting data quality analyses started by Nepal DHS conducted in 2016. A panel survey, SHARE (Survey of Health, Ageing, and Retirement in Europe) collect more detailed interviewer information compared to DHS prior to fieldwork operation (Blom and Korbmacher, 2013).

Focusing on the close relation between data quality and survey quality, main objective of a good survey design is to maximize survey quality under survey resource constraints such as time and money. The assessments on survey quality from the Total Survey Error (TSE) perspective has been an attractive field especially for the last decades. Both measurement and management of survey quality are essential issues in order to understand survey process by examining TSE, which is a useful tool to measure error and gain insights on survey quality. Hence, survey quality assessments are usually made from TSE perspective in order to investigate contribution of errors that may occur in each survey steps to total survey error. Investigating sources and effects of errors on survey quality within the context of variance and bias will be remarkable efforts to contribute related literature. These efforts are also valuable given the fact that those bring light and provide useful strategies for each stage of the survey process.

The TSE can be described as a combination of both sampling and non-sampling errors and adopted as a statistical tool when evaluating survey process and making methodological assesments (Biemer, 2010). Furthermore, TSE could be utilized to select best design under the comparison of alternative survey designs. Although initial attempts to reduce survey error were mostly focused on minimising sampling error, reducing all error types was emphasized especially when the term TSE was coined after the 1960s (Kish, 1965; Dalenius et al., 1966; Hansen et al., 1967). Various guidelines have been published by statistical organizations with the aim of spreading the idea of reducing variation through error types in surveys (EUROSTAT, 2017; Gonzalez et al., 1975; U.S. Office of Management and Budget, 2002).

Sampling error is stemmed from nature of sampling design whilst non-sampling errors are originated from planning, collecting, processing, and analysing stages. In other words, any stage of the survey process is prone to types of errors and contribute to total survey error. Non-sampling errors could be controlled in a limited way compared to sampling errors. However, Biemer and Lyberg (2003) underlined that reducing non-sampling errors is still possible through appropriate survey design, researcher experience, and combination of theory and practice in various disciplines such as sociology, statistics, and psychology.

Comprehensive studies that focus on TSE components are widely placed in survey methodology literature (Biemer et al., 2011; Dalenius et al., 1966; Groves, 1987; Groves and Lyberg, 2010; Hox, 1994; Smith, 2011). Error types within TSE, their sources as well as the possible outcomes have been investigated by many survey methodologists so far (Groves, 2004; Biemer and Lyberg, 2003; Kreuter, 2013). Particularly, examination of non-sampling error types and investigating their sources have been among the interests by survey methodologists. This is most probably stemmed from manageability of non-sampling errors compared to sampling errors. Indeed, non-sampling errors are considered as out-of-control compared to sampling errors. Investigation of non-sampling error sources and their impact on survey estimates are also worthwhile efforts to adopt useful strategies following high quality.

Specifically, measurement error which is a type of non-sampling errors, is usually discussed around information systems, settings, modes of data collection, respondents, interviewers, and data collection instruments (Anderson et al., 1979; Groves, 2004; Biemer and Trewin, 1997; Lesser and Kalsbeek, 1992). For instance, data collection mode effect in surveys has been studied widely under the examination of response validity, nonresponse, measurement and coverage error (Voogt and Saris, 2005; Gribble et al., 2000, Tourangeau and Smith, 1998). Similarly, Tourangeau et al. (2000) reported certain aspects such as reporting, accuracy, reliability, and missing data to explain impact of data collection modes on data quality. It should be noted that quality of survey estimates, as an indicator

of survey quality, should be kept on a high level in order to provide accurate estimates to statisticians and policy makers in a country.

Interviewers and respondents, who are the main actors of interview have been examined in survey methodology literature. There is a vast literature about interviewers who are responsible for pivotal tasks during the data collection process in interviewer-assisted social surveys. In this regard, interviewer is considered among potential error sources in literature especially within measurement and nonresponse error types. Interviewers have an influence especially on survey cooperation, item non-response and survey estimates. Interviewer's major role on data collection process reveals with cooperation in terms of both finding a sample unit and getting cooperation, recording, motivating respondent during interview and nonresponse. Furthermore, the respondent recruitment process has been discussed extensively with the scope of interviewer impact (Carton and Loosveldt, 1998; Blom et al., 2010; Von Sanden and Steel, 2008).

Biemer and Lyberg (2003) reported that interviewer-assisted modes are more prone to bias compared to others due to direct contact with respondents although reduced variance with interviewer assistance. The main reason behind this concern is high heterogeneity among interviewers in face-to-face interviews rather than other modes. Among the interviewer's major roles, providing respondents' acquiescence to participate survey is a substantial issue especially in countries where response rates continue to decline (Groves and Peytcheva, 2008). Once first contact with respondent is provided, persuading respondent to answer survey questions may be developed with door step interaction strategies (Campanelli et al., 1997; Morton-Williams, 1993). Looking at these concerns on cooperation, as Korbmacher (2014) emphasized, interviewer impact on respondent motivation to participate survey is inevitable.

When quality dimensions are considered, accuracy and timeliness aspects are more likely affected by interviewer error. Interviewer impact might also be observed

during data collection process in terms of understanding questions, providing appropriate probing and clarifying techniques, and recording answers accurately in addition to cooperation. Furthermore, maintaining respondent motivation during interview is essential in terms of obtaining high quality data (Blom and Korbmacher, 2013; Groves et al., 2011; Schaeffer et al., 2010). The fixed effect of interviewers because of interviewer's socio-demographic and other characteristics is also well-documented.

Recruitment process of interviewers, decisions on sample unit assignment (workload), payment, methods and length of training, and field work length might be ranked as manageable factors compared to other field activities. Recruitment process has been discussed around interviewer errors (Blom et al., 2010; Carton and Loosveldt, 1998; Von Sanden and Steel, 2008). Workload and payment have an influence on interviewers' motivation and performance. Biemer and Lyberg (2003) put forward that different response rates and means of interests coming from different interviewers may be associated to interviewer performance. Interviewer training which cover methods to gain cooperation with respondents is also among interests of quality based studies (Groves and McGonagle, 2001). Fowler and Mangione (1990) reported that optimal training length may have an impact on obtaining high quality on surveys. From the light of all these issues, it can be concluded that interviewer impact should be taken into consideration when assessing survey quality.

Apart from the respondent and interviewer separately, the environment created by interviewer and respondent during the interview has an impact on survey estimates, accordingly survey quality. The interaction between interviewers and respondent, namely rapport, play a considerable role especially for disclosure of sensitive questions. The rapport has been focused in rare studies due to unobservable nature as well as unclear definition in the literature. In this sense, the rapport could be assessed as an unobservable function of interviewing. Further, this social concept comes with various definitions in literature. However, there are valuable studies in the literature that try to understand rapport through non-verbal behaviors of

respondents and interviewers such as smiling, nodding, laughter, eye contact, digression, and unneutral feedbacks (Foucault, 2010; Belli et al., 2013; Lavin and Maynard, 2001; Gubrium et al., 2012). In general manner, rapport can be described as the social distance and interactive environment established between interviewer and respondent.

Studies that try to conceptualize rapport mostly have an emphasis on the demographic similarity between respondent and interviewer, whether interviewing technique is personal or not, and certain interview environment characteristics (Sheatsley, 1951). Moreover, interviewer and respondent interaction studies reported the close relation between rapport and socially desirable answered questions. In that sense, rapport could go both ways when the answers are affected from social desirability bias. The rapport comes to mind especially for questions which tend to be answered with social desirability (Biemer and Lyberg, 2003). In other words, there is an evidence that social desirability bias (or called as prestige bias) is mostly observed on sensitive questions asked any time during face to face interviews. This situation can be explained with dynamic interaction between interviewer and respondent especially for in-person interviews. Thus, strategies that help to improve rapport between interviewer and respondent gain an importance at the data collection process. This is crucial to get accurate answers for highly sensitive questions. From TSE perspective, any efforts to establish and improve rapport become substantial in terms of reducing non-response and measurement errors and thus, increasing quality. From a few studies in the literature, Olson and Bilgen (2011) defined rapport as the positive conversational interaction created by interviewer and respondent. The authors also underlined the importance of rapport on better quality.

It is obvious that examination of survey quality is crucial in order to understand survey process extensively. Furthermore, the efforts on that issue will help to reduce survey error with the implementation of appropriate planning and design strategies. Additionally, there is a need for investigations to reveal affecting factors on survey quality as well as other quality factors at each stage of the survey

process. This is also required for accurate survey evaluation and data interpretation at the end of the survey. Therefore, determining non-sampling error sources and avoiding behaviors that contribute to those errors should be among the main objectives to increase quality of survey.

Detailed methodological studies are required to make accurate interpretations on survey estimates and use those statistics properly for the areas where evidence based policies are employed. These studies have lack of information on non-sampling errors that should be investigated in terms of their contribution to the level of quality. Hence, there is a need to unveil social and dynamic factors that may have an impact on quality during the data collection process. The quality assessments utilizing constructed statistical models would be helpful in order to understand survey process comprehensively. Looking at the main focus of this thesis, the examination of rapport between interviewer and respondent, and interview quality is crucial in terms of both understanding survey process and employing strategies to reduce TSE.

Based on theory and previous literature, studies which try to produce quality indicators in surveys mostly focused on data quality. The consistency rates (consistency of same information from different data sources), rate of missing information, rate of rounded, heaped, and flagged cases etc are among the data quality indicators. Surely, these are very useful indicators in order to make accurate and complete interpretations on survey estimates. For instance, starting from 1993, Turkey is one of the country under the supervision of Demographic and Health Surveys (DHS) although demographic surveys in Turkey date back to the year 1968. Survey quality assessments of Turkey Demographic and Health Surveys cover information on non-response rates, sampling errors for certain variables, completeness of reporting for missing information, and percentage of target population eligibility.

Similarly, Research on Domestic Violence against Women in Turkey (VAW Study) have been conducted in 2008 and 2014, with the complex sampling design strategy. As in TDHSs, response rates, sample coverage and calculation of

sampling weights are given within the main reports of the VAW Studies in Turkey. However, social and dynamic factors which are occurred during the interview are not presented when questioning quality during interview process. As recent improvements, certain international surveys such as DHS and SHARE published methodological reports which touch on fieldwork and interviewer related factors when assessing quality of survey data. These studies consider various fieldwork factors such as language of interviewer, respondent and number of visits to household made to complete interview, and socio-demographic characteristics of interviewers such as age, gender, marital status, educational level, and number of kids, rather than social interaction between interviewer and respondent. Moreover, these methodological studies examine well-known data quality associations such as age displacement rate, age heaping, inconsistence response rate, and nonresponse (Pullum et al., 2018; Johnson et al., 2009).

Social and dynamic factors that are occurred any time during the interview might have a huge impact on quality from the TSE view. Thus, the need for studies which investigate social factors such as rapport established by respondent and interview quality is clear. Furthermore, social and dynamic determinants behind rapport and interview quality and the relations between these social factors have not been much considered and handled in detail on the basis of Turkey. Due to all of these reasons, concepts of rapport and interview quality need to be well-defined, and inclusion of these concepts within survey quality assessments would be useful. Lastly, investigating impact of rapport on interview quality is required in order to follow accurate way of survey design for further surveys.

From the quantitative perspective, constructing powerful statistical models in order to explain relation between unobservable concepts with the help of observable ones will bring new and different views to the area. Methodological studies are required to make accurate interpretations on the field work that are mostly based on field experiences and observations. The models that takes measurement error into account will help to understand the mechanisms behind rapport and interview quality as well as relations between those mechanisms. Furthermore, construction of any statistical models which investigate rapport and

interview quality as well as reflection of rapport on interview quality still constitute a gap in the literature especially on the basis of Turkey.

Statistically, the determinants of rapport and interview quality in 2014 VAW Study in Turkey will be explored with model based estimation techniques considering all relations between covariates. Further, the impact of rapport on interview quality will be discussed comprehensively. Accordingly, recommendations to achieve high level rapport between interviewers and respondents will be presented for upcoming surveys considering women characteristics in Turkey. Furthermore, impact of interviewer characteristics on interview quality will be revealed within the scope of thesis. The investigations on rapport and interview quality, and relation between those constructs will allow to uncover interviewing process and provide information about its consequences at the end. Furthermore, determining subgroups of women and rapport levels of those women interviews will bring different views in terms of understanding rapport by women characteristics in Turkey. Moreover, investigating interviewer characteristics that have an influence on interview quality will provide useful strategies for certain stages of the survey, such as interviewer recruitment, training, workload assignment and field work.

From quantitative view, this dissertation research will provide a new evidence on the contribution of interview rapport to achieve high quality in interviews on the basis of Turkey. Thus, this thesis lights the way for future methodological studies handled from the TSE perspective utilizing quantitative data on interviewer, respondent, interviewing and other field work related factors. Ongoing efforts to understand interview process and survey quality in survey methodology area around the world confirms this concern explicitly. The untouched methodological concerns for Turkey will be studied through statistical structured models. To understand this social interaction between those main actors of interview and its impact on interview quality, as a newly introduced concept, will bring a new evidence in survey methodology literature. The model framework will be drawn according to theoretical background. Furthermore, seeking the impact of rapport

on quality will contribute to the literature by constructing and employing different versions of structural equation models.

As it is mentioned previously, the thesis utilizes the data from the 2014 Research on Domestic Violence against Women in Turkey (2014 VAW study). The recent Research on Domestic Violence against Women in Turkey (2014 VAW Study) is a nationwide, cross-sectional, face-to-face household survey conducted by Hacettepe University Institute of Population Studies (HUIPS) in collaboration with the Turkish Republic Ministry of Family and Social Policies, the General Directorate on the Status of Women (GDSW). The survey has complex sample design that refers to weighted, multi-staged, stratified cluster sampling approach. The sensitive survey provides an information about violence against women, consequences of violence, coping strategies for violence as well as background characteristics of households and women in Turkey. The data were collected from households and women who are between 15 and 59 years of age. The required ethical concerns such as taking an informed consent, interviewing only one eligible woman in a household, providing private settings and using safe survey name, that is "Turkey Women and Family Survey", were taken during the research, as WHO suggested (GDSW and HUIPS, 2015).

In sum, interview quality under the impact of rapport, which could be described as a joint product of interviewer and respondent, is an untouched issue especially for surveys conducted in Turkey. Moreover, statistically structured and causal models to explore interview rapport and quality and explain the relation between each other quantitatively still continues a gap in survey methodology literature in Turkey. To define the social interaction between respondent and interviewer, namely rapport, and interview quality at the data collection stage, will give insights and provide methodological contributions to survey methodology literature. Furthermore, examinations to investigate rapport impact on the interview quality will discover previously unknown relationships.

Moreover, according to selected characteristics, revealing differences among women interviews that achieved high rapport on the basis of pre-specified levels

of rapport will provide an evidence to the current literature. The main motivation behind the selection of a sub-group, which is women interviews completed with high rapport, comes from an interest in high rapport which is documented leading to more disclosure of answers as well as high quality data (Green and Krosnick, 2001; Sun, 2014). Similarly, investigating effect of interviewer characteristics on interview quality will provide practical implications for field work. These findings could be utilized for certain stages of the survey process such as interviewer recruitment, field execution, sample unit assignment to interviewers in terms of number of interviews, training, and post-survey assessments. Lastly, the thesis findings will bring light to discuss unobservable constructs, rapport and interview quality, with an empirical evidence. It should be note that those concepts were usually formulated on researchers' observations or experiences during the survey process.

Operationalization process for concepts of rapport and quality (unobservable latent constructs) based on the theoretical background and seeking the rapport impact on interview quality will be employed with a powerful statistical technique, which is the Structural Equation Modelling (SEM). This technique covers measurement models, confirmatory factor analysis (CFA-1st and 2nd orders), path analysis, and structural equation analysis in addition to correlation and variance analyses.

Given the detailed motivation section and background information, this dissertation has three main objectives:

(1) to introduce the concept of rapport between interviewers and respondents

(2) to introduce the concept of interview quality

(with several model versions including measurement models,
1st and 2nd order confirmatory factor analysis (CFA), and path analysis)

(3) to investigate the impact of rapport on interview quality

(with final structural equation model, under the control of variables)

In particular, sub-objectives are as the following:

i.   to determine levels of rapport and interview quality

ii.   to reveal differences among subgroups of women whose interviews were completed with high rapport according to selected characteristics

iii.   to investigate the impact of interviewer characteristics on interview quality

As understood from background information and previous research on rapport and quality, this thesis adopts a quantitative approach according to thesis objectives. Hence, quantitative methods are presented in "methodology" chapter and quantitative approach is also adopted when interpreting the study findings. "Literature review" chapter covers mostly studies conducted from quantitative perspective although a few qualitative studies are also mentioned with the aim of lighting interviewing process.

This thesis consists of five chapters as a whole (Figure 1.1.). The first chapter is devoted to introduction that provides background information about key concepts of the thesis: rapport and quality. The background information covers the survey stages, total survey quality, measurement and non-response errors, interviewer effects and data quality. This chapter also presents the thesis motivation under the lack of methodological studies, especially for Turkey. The need for studying on the interests of the thesis through powerful statistical techniques is reported clearly. This chapter also gives thesis objectives as well as organisation of the thesis. The second chapter reviews the current body of literature on quality issues in surveys, non-sampling errors, data quality, interviewer effects as well as interviewer and respondent roles in surveys, and particularly, interviewer workload, respondent burden, and response quality. Moreover, related theories on the issue and theoretical framework regarding thesis interests are included in that chapter.

The third chapter provides information about data sources, women data set of 2014 VAW Study and field staff data set, as well as study variables which was constructed to use in statistical analyses. This chapter also introduces statistical methods utilized within the thesis. The chapter also establishes relevant links

between statistical techniques and thesis objectives. Thus, the chapter aims to make a ground for the readers' interpretations on study findings.

The fourth chapter is devoted to the findings of the thesis which are produced on the basis of main objectives as well as results coming from sub-objectives. This chapter includes findings on operationalization of rapport and interview quality concepts through exploratory and confirmatory factor analyses, and path analysis, respectively. Afterwards, findings on rapport impact on interview quality are given according to outputs of structural equation models. Thanks to the rapport conceptualization through exploratory factor analysis, two independent samples comparisons among women interviews completed with high rapport were made according to selected characteristics, and presented in this chapter. This part was published as an article entitled "*Exploring Factors to Build Rapport Between Interviewer and Respondent: Insights from the National Research on Domestic Violence against Women in Turkey*" in the last quarter of 2020, in the Journal of Sociological Research[1] (Appendix E). Further, investigation of interviewer impact on the interview quality, that was a newly introduced concept formulated through exploratory factor analysis, was included in this chapter. In other words, affecting factors on the likelihood of high quality interview occurrence are presented with the emphasis on interviewer characteristics. This part covers both descriptive and multivariate results coming from third sub-objective of the dissertation.

In the last chapter, all of the study findings are discussed linked to current literature and relevant theories in the area. The results were discussed within the scope of specifications and expectations of the study to some extent. Finally, practical suggestions to implement in certain stages of face-to-face household surveys including 2014 VAW Study, such as field management, interviewer recruitment, assignment of sample units, effective interviewing techniques, and interviewer training sessions.

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[1]Saraç, M. & Türkyılmaz, A. S. (2020). Exploring Factors to Build Rapport Between Interviewer and Respondent: Insights from the National Research on Domestic Violence against Women in Turkey. Journal of Sociological Research [Sosyoloji Araştırmaları Dergisi], 23(2): 284-319.

Figure 1.1. Organisation of the Thesis

Chapter 1

Introduction

Chapter 2

Literature Review
and Theoretical
Framework

Chapter 3

Methodology

Chapter 4

Results

General Findings of Factor Analysis and Structural Equation Modeling

Measurements of rapport and interview quality

Impact of rapport between interviewer and respondent on interview quality

Differences among Women Interviews Completed with High Rapport,
according to selected characteristics

Impact of Interviewer Characteristics on Interview Quality

Chapter 5

Conclusion and
Discussion

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Literature Review

2.1.1. Literature on Survey Quality and Data Quality

Survey quality assessments usually cover the methodological issues on non-sampling errors, which are frame error, nonresponse error, processing error, and measurement error, as well as sampling errors (Biemer et al., 2011; Groves et al., 2011; Holbrook et al., 2003). The impact of data collection modes, the role of interviewers and interviewer effect on survey estimates, data collection instruments, interviewing techniques, and response behaviors of respondents have been discussed extensively in literature (Anderson et al., 1979; Groves, 1990; Lesser and Kalsbeek, 1992; Biemer and Trewin, 1997). The concept of survey data quality was mostly handled with the validity and reliability aspects under the consideration of measurement error and non-response error (Crosby, 1980; Tourangeau et al. 2000; Groves, 2004; Biemer and Lyberg, 2003). The quality term in surveys is mainly discussed around whole survey process and survey statistics.

Total survey error (TSE) is used as a main tool when evaluating survey quality. It reflects the quality in survey process through the observable, unobservable, and processing errors (Voogt and Saris, 2005; Gribble et al., 2000, Tourangeau and Smith, 1998). It should be noted that, the TSE reflects the uncertainty during the survey process rather than mistake. Inconsistency between survey concepts and research questions, too long questions for a telephone-based survey, low-level privacy for a highly sensitive survey interest; inconsistency between mode of data collection and sample frame, degree of interviewer involvement for a selected mode, inappropriate probing and clarifying techniques, and many additional circumstances may lead to error in different survey stages.

The desire for better data and how to improve data quality have been among the main interests of researchers starting from early periods of literature (Juran and

Gryna, 1980; Crosby, 1980). As Juran and Gryna (1980) defined in their study, the term "quality" implies the fitness for use within general manner. Afterwards, Biemer and Lyberg (2003) and Groves (2004) started to use term of quality within the context of survey data. Furthermore, there was an interest on data quality in survey methodology with control charts developed by early survey methodologists (Juran and Gryna, 1980). Biemer et al. (2014) reported that early studies on survey quality focused on the data quality in terms of accuracy and validity aspects as well as mean square error (MSE). Afterwards, the methodological studies mostly concentrated on the identification of the quality with various indicators as well as behaviors that should be avoided due to their negative impact on data quality (Crosby, 1980). From the TSE framework, all forms of quality are widely discussed within the scope of survey quality.

There has been usually need for standard definition of quality even though it is well-documented as a vague concept (Biemer et al., 2014). Furthermore, definition of quality has evolved over the years with increasing complex structure (Lyberg, 2012). Thus, the necessity of well-defined description of the quality has led to the use of common dimensions to accept the data with high quality. The international statistical organizations across the world have underlined certain aspects which could be accepted as the quality indicators of data within international standards. For instance, EUROSTAT, Statistics Sweden, and Statistics Canada have emphasized the common properties such as content, accuracy, timeliness, accessibility, clarity, and completeness (Brackstone, 1999; EUROSTAT, 2000; 2009; International Monetary Fund, 2003; Office for National Statistics, 2016; Organisation for Economic Cooperation and Development, 2011; Rosen et al., 1994).

When data quality assessments in methodological reports are reviewed, international surveys conducted in countries under the supervision of international survey programs produce and present quality indicators. These indicators are mainly produced utilizing specific survey interests.

Looking at the main data source of this dissertation, data quality of violence based surveys was rarely handled by researchers so far. Cross-national comparability of EU (European Union) FRA (Agency for Fundamental Rights) survey data across 28 countries was investigated particularly for physical and sexual intimate partner violence against women by questioning measurement invariance (Martín-Fernández et al., 2020). The authors showed the FRA survey data comparability under the assessments of quality indicators such as reliability, validity, internal consistency and confirmatory factor analysis on latent structures of violence types. In other words, a set of violence questions in FRA survey was interpreted in a similar way by each respondents in EU countries (Martín-Fernández et al., 2020).

Walby and Towers (2017), mainly focused formulation of 'gender' and 'violence' concepts used in violence surveys and quality evaluations under the comparison of two different surveys: EU (European Union) FRA (Fundamental Rights Agency) survey and CSEW (Crime Survey for England and Wales). In the study, quality criteria were determined with different but also interrelated aspects including gender, violence, measurement unit, survey instrument, and specific indicators. Recommendations include event based data collection, providing confidentiality of respondent, importance of sample frame, sample size, and high response, producing gender and violence indicators as well as repetition of surveys in a specific time periods (Walby and Towers, 2017).

Measurement of violence against women using survey data was also discussed around choosing appropriate word when asking survey questions, validity of estimates, and underreporting due to recall bias (Schwartz, 2000). The author suggested that measurement of violence in current surveys has close associations with various methodological factors such as question screening, context, order, rapport build with respondent, sex and ethnicity of interviewer, and mode of administration.

Walby (2006) underlined the coverage of sample frame and choosing of appropriate data collection mode that achieve high response rate as well as

confidentiality from other household members and interviewers to improve quantitative indicators for violence against women surveys. For instance, increased rate of violence reporting was found for audio-CASI (audio-Computer Assisted Self Interview) mode that provides more confidentiality compared to other ones (Turner et al., 1998). In this experimental study, prevalence of an interpersonal violence behavior, threatening to hurt by someone in the past year, was estimated about 26 percent for paper based self-administered questionnaire while it increased to approximately 34 percent when audio-CASI method is used. Looking at the coverage of sample frame, it is important in terms of whether it includes marginalized population or not (Walby and Myhill, 2001).

De Keseredy (1995) also underlined the importance of question items to measure psychological abuse with the example of National Canadian Study. Furthermore, Walby and Myhill (2001) suggested to ask a set of items with rich content instead of a limited number of screening questions with the aim of capturing sexual violence completely. From a feminist approach, Smith (1994) believes that violence definition may be produced from thoughts and ideas that come from women's own experiences. The author also warned that a great deal of violence experience may be missed because of different approaches taken to measure lifetime violence prevalence, such as whole lifetime or at ages during lifetime.

Widespread DHS surveys, conducted in over 90 countries, aim to provide high quality survey data so that policy makers can use the data to make evidence based policies in applied areas. For instance, countries where Demographic and Health Survey (DHS) is conducted present not only survey results but also quality indicators in the main reports. Moreover, DHS program publishes comparative quality indicators for DHS countries based on common variables obtained from Demographic and Health Surveys (Institute for Resource Development, 1990; Macro International Inc., 1993). Quality assessments of the DHS program are based on the issues which are related to eligibility for interview according to eligibility criteria, age at first events of women such as marriage, sexual intercourse, and first birth, infant and child mortality, maternity care, child

immunization, breastfeeding, child morbidity and treatment, contraceptive use, welfare, and anthropometric measures of children (IRD, 1993; MII, 1990). Similarly, Multiple Indicator Cluster Surveys (MICS) under the supervision of UNICEF present quality indicators of survey data. These are mainly based on internal consistency check tables and external comparisons of statistics for several countries (JSI, 2009). Sex ratio at birth by age, rate of missing data on some core survey variables, digit preference in age reporting, age displacement, and rate of completeness are among quality indicators of MICSs. As another example, Labour Force Survey conducted by Statistics Sweden produces monthly unemployment rates together with error components of TSE (Biemer et al., 2014).

From the methodological point of view, field monitoring, ensuring quality of collected data, assessing validity and reliability of key statistics are the efforts to achieve high quality surveys. In recent years, a great effort was attached to examination of sampling and non-sampling errors to improve survey quality (Groves et al., 2004; Groves and Lyberg, 2010). International sample surveys such as DHS and SHARE have published methodological reports and articles on which factors have an influence on survey specific quality indicators. These efforts confirm the increasing demand for methodology issues within the context of quality and error. For instance, Johnson et al. (2009) have examined the relation between DHS data quality and certain field work related factors such as time of day in the field, number of days worked in the cluster, and translator used during interview. Focusing on interviewers who are responsible for many tasks, Pullum et al. (2018) have investigated the linkage between interviewer characteristics and data quality indicators for DHS surveys conducted in several countries. In another study, interviewer effect was measured under the examination of relation between interviewer characteristics and survey results of SHARE (Blom and Korbmacher, 2013). Authors have used an interviewer-based framework with the classification of attitudes, behaviors, expectations and experiences on measures. However, interview quality is a scarcely used concept in survey research as opposed to data quality or survey quality. In a unique study, it is associated to interviewer performance (Lavrakas, 2008).

2.1.2. Literature on Interviewer Effects

Main roles and tasks of interviewers are mainly appeared in data collection stage of surveys. Contacting and gaining cooperation with sample unit, asking survey questions, using probing and clarifying techniques, recording answers and measures of respondents, and maintaining motivation of respondents during the interview are among the main tasks of interviewers (Schaeffer et al., 2010). Moreover, creating sample frame may be under the control of interviewers for surveys that adopted listing operation in the field. Furthermore, maintaining respondent motivation during the interview is essential to receive better quality data (Blom and Korbmacher, 2013; Schaeffer et al., 2010, Groves et al., 2004). Especially in face-to-face surveys, these main tasks of interviewers are likely to suffer from decrease in quality.

Describing interviewer characteristics and explaining the interviewer impact on survey responses are usually overlooked despite pivotal roles of interviewers in surveys. This is most probably due to the lack of rich interviewer information (Koch et al., 2009; Blom and Korbmacher, 2013). However, evaluation of interviewer errors should be among post-survey quality assessment measures. Interviewer variance evaluations are such needed that U.S. Census Bureau altered main data collection method, from face-to-face to mail as a result of interviewer-based methodological evaluations (Hansen et al., 1961). The leading roles of interviewers might induce an increase of measurement and non-response errors (Davis et al., 2010). The interviewers are also account for coverage and processing errors (West and Blom, 2017).

Blom and Korbmacher (2013) have clearly reported that there is a gap in the literature to identify and explain interviewer effect due to the lack of interviewer data. Similarly, Bell et al. (2016) have stated that interviewer impact on survey responses is usually overlooked even though survey data is affected from interviewer characteristics or behaviours remarkably. Nonetheless, not only socio-demographics and background characteristics of interviewers such as age, gender, race, and experience but at the same time their attitudes, personalities, skills and

behaviors may affect response and survey measurements. A few studies which aimed to understand the impact of interviewer on survey data have put emphasis on personal characteristics of interviewers as well as their expectations, attitudes and perceptions (Olson and Peytchev, 2007; Schaeffer et al., 2010). The interviewer impact has also been handled with respondents' willingness to participate survey (Korbmacher, 2014; Durrant et al., 2010; Olson and Peytchev, 2007; Sakshaug et al., 2012; Hox and de Leeuw, 2002). High interviewer variability due to gender and age of interviewers might affect survey responses (Flores-Macias and Lawson, 2008; Wilson and Olesen, 2002; Berk and Bernstein, 1988). Further, experience of interviewers may have an influence on cooperation as well as response quality (Hansen, 2007; Pickery et al., 2001; Sala et al., 2012; Groves and McGonagle, 2001).

Additionally, Van der Zouwen et al. (2004) conducted a different study, including a new visit of respondent after the field work and asking about the personally behaviours of interviewers. This study also aimed to understand interaction between respondent and interviewer during the interview. In the light of previous research on interviewer impact, mode of administration, respondent recruitment methods, training methods and training length, interviewing approaches, interaction between respondent and interviewer, and interview environment are among the main titles that should be studied comprehensively. Therefore, interviewer impact on surveys will be understood and effective strategies will be implemented to reduce error. The common approach of empirical studies that devote to investigate interviewer impact is to improve surveys.

Biemer and Lyberg (2003) stressed that more bias can occur in interviewer-administered surveys in spite of reduced variance. This implies heterogeneity between interviewers in terms of their physical, background, behavioral and attitudinal characteristics. Recently, the para-data to give information about interviewers are more popular among rare studies that focus on interviewer impact (Kreuter et al., 2010). Apart from the para-data, however, there is a clear picture on the need of auxiliary data that should be collected through pre-designed interviewer surveys. Hence, explaining interviewer impact in surveys will be

possible and useful strategies will be adopted to reach high quality. In line with this, Blom and Korbmacher (2013) stated that the appropriate interviewer profile might be explored with a new interviewer questionnaire, referring to the auxiliary data. In this regard, most of the studies emphasize the need for auxiliary data to explain interviewer impact accurately. They underlined the need for separate interviewer survey in order to explain differential impact of interviewers on survey data. Interviewer surveys can gather information about interviewers' socio-demographic and background characteristics, attitudes and behaviors, skills, travel preferences, usage of social networks as well as expectations on response rates (Durrant et al., 2010; Hox and de Leeuw, 2002). Although this obvious requirement, significance level of variables collected through interviewer questionnaires to explain interviewer effect on non-response was found at low levels (Blom et al., 2010; Durrant et al., 2010).

When interview settings are considered, variability due to interviewers is also discussed towards interviewer workload in addition to question nature and interview order (Couper and Groves, 1992; Loosveldt and Beullens, 2013). Kish (1965) developed *interviewer design effect* that implies interviewer variability with an increasing function of inerviewer workload. The sample units worked or assigned for each interviewer, or number of segments visited on a day are considered to quantify workload (Blom, 2012; Beullens et al., 2016; Nicoletti and Buck, 2004; Wagner and Olson, 2018). The time spent for interviews could be included to measurements of interviewer workload (Pullum et al., 2018). Total counts to measure such constructs may create reverse causality. Different time points over the field work could therefore be selected to overcome it (Wuyts and Loosveldt, 2020). The workload of interviewer is mainly discussed towards motivation and performance of interviewers as well as its outcomes. Loosveldt et al. (2004) and Japec (2008) discussed the workload impact on the scope of non-response and cooperation. Japec (2008) also reported that interviewers with heavy workloads may spent less exertion to cooperate with the sample unit Accordingly, Wuyts and Loosveldt (2020) paid an attention to reduced motivation and performance of interviewers assigned heavy workloads. West and Blom (2017)

incorporate interviewer workload into their organizing model that aims to reveal interview effect.

The workload concept is also argued for respondent in the literature. Actual and perceived burden are the types of respondent burden resulting from survey interviews. The respondent burden mostly quantified with interview length, number of contact attempts, frequency of visits, size of respondent's task burden of retrieving required information to respond, and perceived stress of respondent are the measurements of respondent burden (Groves et al., 2004; Hoogendoorn and Sikkel, 1998; Griffin and Hughes, 2013; Tortora, 2014). Ampt (2001) drew a conceptual framework including past experience, appropriate moment, relevance, external pressure, physical, intellectual, and emotional difficulties, and willingness to answer to operationalize respondent burden. As it can be inferred from the measurements, respondent burden is associated to negative aspects such as interview difficulty, time consuming, and feeling stressed (Graf, 2008). Amos (2018) reported small biased responses arising from reduced burden of respondents. Introducing skips and filters in the questionnaire and retrieving answers from the previous waves have been suggested to reduce burden in spite of survey errors (Jackle, 2008; Beaujouan, 2013).

In the light of the current literature, interviewer involvement during the interview may be discussed within methodological contexts of nonresponse, data accuracy, interviewing methods, social desirability, building rapport, gaining cooperation etc. Blom and Korbmacher (2013) explained the interviewer effect on the basis of three components: unit non-response in both contact and cooperation manners, item non-response and measurement.

There is also an evidence that the non-response originated from non-completion of survey questions by respondents is affected from interviewer behaviours (Lipps and Pollien, 2011). Interviewer attributes, experience, skills, interviewer-respondent interaction, interviewer burden and payment are among the factors which have been discussed when explaining interviewer impact on non-response (Couper and Groves, 1992; Olson and Peytchev, 2007; Lipps and Pollien, 2011;

Groves and Couper, 2012; Japec, 2008; Durrant et al., 2010). At the same time, there is an evidence that response rates might be affected from interviewer attitudes and their motivation associated to their roles, interviewer behaviours, and interviewer-respondent interaction (Groves and Couper, 2012; Durrant et al., 2010; Hox et al., 2002). Morton-Williams (1993) stressed the importance of door-step interaction between interviewer and respondent focusing on interviewers' professional and social skills to gain interview acceptance. Looking at the item-level non-response, studies mainly investigated the demographic characteristics and expectations of interviewers to explain their impact on non-response (Singer et al., 1983).

2.1.3. Literature on Interviewing Techniques

As another body of literature, any interviewing technique (standardized or conversational, flexible) that are adopted by interviewers during the interview has also an influence on survey data. The general view on this concern is that standardized interviewing by asking all questions exactly as written is most appropriate way in order to avoid loss of quality by gaining control (Bell et al., 2016; Fowler and Mangione, 1990). Especially in the recent years, however, there is a growing approach on conversational interviewing technique in terms of standardization of meaning with the rapport between interviewer and respondent than standardization of words. Additionally, an experimental study suggested that conversational interviewing technique is more effective in terms of clarifying respondent confusion and easing to respond (Mittereder et al., 2018). Furthermore, standardized interviewing approach is criticised by the researchers because of the reduced quality given the fact that it allows to lose interactional conversation and higher response accuracy (Bilgen and Belli, 2010; Suchman and Jordan, 1990; Schober et al., 2004; Dykema et al., 1997). West et al. (2018) have suggested that using conversational method comes with high response accuracy without any interviewer variance. There is also an evidence that conversational interviewing might bring additional cost in terms of high length of administration although it allows to obtain accurate responses (Mittereder et al., 2018, Conrad and Schober, 2000; Schober and Conrad, 1997; Schober et al., 2004).

Adaptation of standardized way of interviewing may have an influence on building rapport between interviewer and respondent. Because gaining high rapport is possible with the need for conversational interaction during the interview (Fowler and Mangione, 1990). Still, the deviations from standardized wording is inevitable even if the standardized technique is adopted during the interviews (Cannell et al., 1981; Bell et al., 2016). Conversely, most of the interviewers who use conversational interviewing technique adopt neutral probing and clarifying techniques which are highly dominated in standardized interviews (Mittereder et al., 2018). On the other hand, Schober and Conrad (1997) reported that the meaning of questions may vary in practice when interviewers adhere to standardized interviewing approach. Belli et al. (2004) have warned that deviations from scripted questions might have an impact on the quality regardless of the interviewing technique. Bell et al. (2016) suggested that interviewer experience may lead to any deviation from the scripted questionnaire. Mittereder et al. (2018) asserted that discussions about benefits and costs of interviewing techniques should be employed based on detailed interviewer-respondent interactions.

2.1.4. Literature on Rapport between Interviewer and Respondent

Looking at the literature related to key concept of this thesis, the term "rapport" is known as unclear term because of its ambiguous and unobservable nature. There are a few studies that focus on operationalize and conceptualize rapport with different measures. The description of rapport varies with the meanings of feeling of connection, mutual comfort, being 'in tune', feeling comfortable, respondent cooperation, sense of connection, ease of conversational connection and interest, developing harmonious relationship etc. (Cappella, 1990; Gremler and Gwinner, 2000; Goudy and Potter, 1975; Davis et al., 2010; Foucault, 2010). Some of the researchers defined rapport as spontaneous relation between respondent and interviewer while others described rapport as interviewing conditions to meet research objectives (Goudy and Potter, 1975). To introduce rapport, Weiss (1968) suggested interviewers' opinions regarding their relations with respondents during

the interview. Sun et al. (2021) suggested that respondents' ratings may be more relevant to measure rapport compared to interviewers' evaluations at the end of the interview. They warned about the interviewers' rapport evaluations which may be affected from interviewers' thoughts regarding previous respondents.

Moreover, Cappella (1990) and DePaulo and Bell (1990) emphasized the feeling positivity and coordination with the respondent when defining rapport. Similarly, Sun (2014) and Tickle-Dengen and Rosenthal (1990) stated that rapport is an interactive and dynamic phenomenon which is originated from each of the individuals during the interaction. Bell et al. (2016) reported that the meaning of rapport may vary from person to person, and it ranges from professional neutrality to over-friendliness. There is a common view that rapport is required for effective interviewing process regardless of its meaning (Hill and Hall, 1963). The authors reported that the successful interaction between interviewers and respondents is mainly shaped by interviewers' ability and skills.

Looking at the sensitivity level of questions, little is known about influence of rapport on disclosure of sensitive questions especially in face-to-face interviews (Sun, 2014; Van der Zouwen et al., 2004). In contrast to face-to-face interviews, telephone surveys may not allow to build rapport between interviewer and respondent. Green and Krosnick (2001) reported that the rapport established in face-to-face surveys stimulate respondents' interest to provide high quality data through increased motivation. Sun (2014) evaluated the rapport and disclosure of sensitive questions together with different modes of data collection, and found that respondents whose first module was completed with high rapport are more likely to give disclosure of answers for the following ACASI based module. Findings of a laboratory experiment study showed that increasing rapport between interviewer and respondent results in disclosure of highly sensitive questions (Sun et al., 2021). The authors also found that there is no relation between rapport from respondents' side and number of item nonresponse. Holbrook et al. (2003) found that less socially desirable answers are given by respondents when the interviews were conducted with face-to-face mode compared to telephone interviews. As a result, the authors argued that face-to-face surveys allow creating rapport thanks

to more interview length that triggers respondents to spend much effort in terms of high quality survey data.

The impact of rapport on the quality of survey data is also unclear in the literature due to the unobservable nature of rapport concept. Although this complexity, there is a literature and consensus on rapport impact over quality of information which comes through social surveys (Belli et al., 2001; Sun, 2014; Cassell and Miller, 2007). Belli et al. (2001) suggested that level of rapport may be more important compared to occurrence of rapport, when rapport is considered within the scope of data quality. Rapport may lead to reduce response bias with the increased motivation of respondents and environment created by interviewers and respondents. Respondents may state thoughtful and honest answers thanks to friendly environment. Moreover, socio-demographic matching between interviewer and respondent is well-established within the context of response quality (West and Blom, 2017). However, rapport might also lead to response bias especially for socially sensitive topics (Weiss, 1968; Holbrook et al., 2003). Similarly, Belli et al. (2001) emphasized priority of studying conversational rapport rather than cognitive response processing. The authors mentioned about the respondent tendency to give accurate answers due to the fact that those sometimes more willing to respond accurately. Dijkstra (1987) found that rapport lead to high response quality whereas Hyman (1954) discussed on biased answers due to over-friendly behaviours. Therefore, flexibility under conversational interviewing and developing skills to establish effective rapport can be evaluated as helpful to achieve high quality. In this sense, deviations from the formal interaction should be productive (Bell et al., 2016).

Looking at the rapport levels, Dijkstra (1987) and Williams Jr (1968) have concluded that extreme points of rapport level are main determinants of response quality. Furthermore, there are studies that adopted model based data quality estimation techniques. These studies aimed to understand unobservable determinants of rapport, i.e. interviewer behaviors, when explaining response quality (Moonie et al., 2009; Belli et al., 2004, Keller et al., 1998). Contrary to expectations, the validity of responses might decrease with the increased level of

rapport (Weiss, 1968). Goudy and Potter (1975) reported that there may be no association between interviewer performance and interview rapport. The association between sensitivity level of the questions and interview rapport put forward that higher interview rapport results in disclosure of sensitive questions (Sun, 2014).

Foucault et al. (2013) suggested that responses match more likely to options when rapport is defined as the non-verbal behaviors of interviewers and respondents such as relaxed, cooperative, unfriendly, and cold categories defined by the same author. Similarly, Brüderl et al. (2013) explained impact of interviewers' unobservable behaviors on the quality of social network data through specific assumptions on quality. Briefly, it could be concluded that the literature about interview rapport is inconclusive. This mainly originated from varying characteristics of the study designs as well as meaning of the interview rapport.

Looking at the qualitative studies which focus on rapport, in depth case studies appear as a main method to identify, describe and explain the interaction between interviewer and respondent. These studies mainly use information obtained from talking, facial expressions and gesture (Maddox, 2018). Maddox (2018) emphasized not only observations about interaction but also household settings to investigate impact of interaction on data quality. He found that interviewers provide information about signal empathy in order to maintain respondent motivation and engagement during the interview. Belli et al. (2001) adopted coding technique for verbal behaviors of interviewers and respondents to describe rapport, using a sample of audiotaped face-to-face interviews. The authors used question-asking, probing, feedback, and conversational codes for interviewers, and answering and conversational codes for respondents. The analyses pointed out that there is not any relation between conversational rapport and response accuracy. However, respondent's cognitive difficulty resulted in poorer quality of data especially for retrospective results.

2.2. Review of Related Theories and Theoretical Framework

There are some theories that could be associated to study interests within the thesis. Liking theory and the concept of social distance could be related to rapport between interviewers and respondents. According to liking theory, respondents would like to interact respondents who have similar characteristics (Vercruyssen et al., 2017). Therefore, matching characteristics between respondents and interviewers may be evaluated under rapport construction. Not only socio-demographic characteristics but also attitudes, religiousness and background could also improve liking among individuals (Byrne, 1971; Stotland and Patchen, 1961; Drachman et al., 1978). Groves et al. (1992) reported the contribution of similarity between interviewers and respondents on their harmonious social interaction constructed during the interview. According to the authors, liking is among psychological concepts affecting survey participation, and could refer different things such as attitude, background, and physical appearance in survey settings.

The other concept that could be associated to rapport construction within thesis is the social distance. Social distance implies the differences between individuals in terms of social class, ethnicity, age and gender (Katz, 1942; Lipman-Blumen, 1976; Weeks and Moore, 1981). The social distance is also called with individuals who have different religious and occupational groups, although it mainly refers to race and social class differences (Hodgetts and Stolte, 2014; Williams Jr, 1964). When the social distance is considered within surveys, interviewers and respondents can differ in terms of age, gender, social class, and educational levels. Therefore, according to liking theory and social distance concept, similarity or dissimilarity between interviewers and respondents may have considerable effects on building rapport for interviews.

Social exchange theory, that is discussed widely in survey methodology literature, could also be associated to focus points of the thesis especially from the respondents' view. This theory asserts that there are many influential factors that may affect survey participation because of respondents' motivation and

willingness. The certain motivation factors could be ranked as pre-paid or promised incentives, survey institution (sponsorship), and having social awareness with the survey participation (Dillman, 2000). When one of the key concept of the thesis is taken, rapport built between respondents and interviewers may increase respondents' motivation to proceed respond and complete survey. Furthermore, rapport established between interviewers and respondents at the door step may allow to gain social awareness for respondents to participate survey. From respondent's view, willingness to share personal experiences with other person could be discussed in the light of social exchange theory.

Looking at the findings on data quality within scope of interview quality, and rapport based differences among women according to whether they subjected to violence or not, feminist approach could be explanatory for those findings. Furthermore, methodological recommendations on questionnaire design and interviewer training could be supported with feminist theory.

Smith (2014) underlined that underreporting of violence due to various reasons such as fear, embarrassing and misunderstanding not only affects representation of victims but also hinders social policy implications. In the study, the linkage between quality of violence against women data and feminist approach was discussed comprehensively. Particularly, deriving from feminist theory, keeping definition of violence broadly, attaching importance to lifetime prevalence of violence, measuring violence with multiple questions and multiple items, using open-ended questions, and working with effective trained female interviewers are the strategies to use in surveys about violence against women (Smith, 1994). Particularly, violence is measured with act-based behaviours rather than direct questions. Smith (1994) also adopted these strategies in a Toronto survey executed in 1987, resulting 40 percent violence prevalence by any husband or partner (Smith, 1987). In the light of feminist approach, all strategies aim to capture all kinds of violence experiences and get accurate data. Therefore, as a result of adopting feminist theory during data collection in such a sensitive survey on violence against women would be useful for policy implications.

Survey satisficing theory described by Krosnick (1991) asserts that there are different satisficing behaviors of respondents during the data collection such as question difficulty, respondent ability, respondent motivation and question sensitivity. As a result of that situation, validity of responses decreases by repeating same response for questions with multiple items or selecting the middle options (Krosnick and Alwin, 1988; Krosnick, 1991; Narayan and Krosnick, 1996). This theory could be associated to thesis arguments, especially considering from respondent side. The rapport which was constructed by respondent and interviewer might be a trigger factor for respondent's satisficing behavior and thus, it may affect interview quality that includes response quality. On the other hand, rapport which is assumed as a contributing factor to respondent satisficing is operationalized using interviewer characteristics. Thus, both rapport impact on interview quality and effect of interviewer characteristics on interview quality may be evaluated within the survey satisficing theory.

Interview rapport could be also defined as a joint social product established by interviewer and respondent. However, looking from respondent side, the cognitive response theory behind this unobservable social construct would be helpful to interpret study findings. It is also useful for rapport construction as well as its reflection on data quality, especially when the considerable contribution of respondent is taken into account. The cognitive response theory refers to response cycle with the dimensions of interpretation, retrieval of information, judgement, response selection, and responding (Schwarz and Sudman, 1996; Schwarz, 2007; Tourangeau et al., 2000). This theory can be discussed within the thesis findings on interview quality which includes answers coming from respondents.

CHAPTER 3. METHODOLOGY

The data for this study comes from the most recent Research on Domestic Violence against Women in Turkey (VAW Study). The household survey is a nationwide, large scale and cross-sectional that was conducted by Hacettepe University Institute of Population Studies (HUIPS) in collaboration with Turkish Republic Ministry of Family and Social Policies, the General Directorate on the Status of Women (GDSW) in 2014. In this dissertation, analyses were conducted over women data set from quantitative perspective. In this chapter, information about 2014 VAW Study including interviewer recruitment, training and field work is given. Afterwards, construction of field staff data and merged data for statistical analyses, construction of variables and lastly, statistical methods are presented, respectively.

Main objectives of the 2014 VAW Study are to provide data that will be utilized in policies and programs that focus on preventing from domestic violence against women in Turkey, to make comparisons between 2008 and 2014 to follow any change on the prevalence of violence, to detect any areas that refer to struggle against domestic violence, to give opinions of women who have been subjected to violence, individuals who committed violence, and professionals in applied areas regarding violence, and finally to review current policies (GDSW and HUIPS, 2015). In line with these objectives, 2014 VAW Study builds upon both quantitative and qualitative researches.

The estimation domains are at national level, five conventional regions in Turkey, type of settlement (urban-rural) and 12 NUTS1 statistical regions in Turkey for certain variables. The 2014 VAW Study adopted complex sampling design strategy which refers to weighted, multi-staged, stratified, cluster sampling approach. The list of households located in Turkey, that is provided by Address Based Population Registration System (ABPRS), constitutes main sample frame of the survey. The VAW Study targeted 15,084 households in Turkey while interviews were completed in 11,247 households out of 13,403 eligible

households. In the survey, only one woman who is between 15 and 59 years old was selected to interview in a household through implementation of Kish selection once household interview was completed. This method allows to select a woman according to unbiased and proportionate way. Interviewing only one woman aged between 15 and 59 years of age is also in line with the sensitive nature of the survey. Finally, 11,247 households and 7,462 women responded questionnaires. At the end, household response rate was found to be 83.9 percent while women response rate was estimated as 83.3 percent, out of 13,403 contacted and eligible households, and 8,960 selected women in those households. The main activities to achieve high response rates were re-visiting the households located in metropolitan cities and following the response rates regularly (GDSW and HUIPS 2015).

3.1. Data Source

3.1.1. 2014 Research on Domestic Violence against Women in Turkey

The women data set includes information about women's socio-demographic and socio-economic characteristics, general health, reproductive health, domestic violence against women with physical, sexual, emotional, and economic violence types, its outcomes, consequences of violence against women, coping strategies for violence against women, and level of information on the legislation on combating violence against women. The data set also provides certain field characteristics such as field work period, interview length, interview date, and types of settlement.

3.1.1.1. Questionnaires

Questionnaires were adapted to World Health Organization's study, namely Multi-Country Study on Women's Health and Domestic Violence against Women (Garcia et al., 2005), prioritising women's safety as well as ethical concerns. As recommended by WHO Department of Gender and Women's Health (2001)'s Ethical and Safety Guidelines and according to sensitivity of the issue, several ethical and safety practices were implemented during the research. Taking an

informed consent, using safe name "Turkey Women and Family Survey", interviewing only one woman per household in private setting, signing an informed consent form by interviewer to indicate respondent approval, conducting the interview in a private setting and ensuring confidentiality of the interviews, not sharing any information about the study topic with third parties, ending interviews positively were implemented over the course of field work (GDSW and HUIPS, 2015).

The survey gathered information about households' and women's background characteristics, violence against women, outcomes of violence against women, strategies to struggle with violence and information level of relevant legislation. Marriage, general health and reproductive health, children, husband's/partner's characteristics, women attitudes about gender roles, relationship with husband and other people are among questionnaire modules. Furthermore, at the end of the interviews, comments and feelings of women, information about whether interview was interrupted or not, reliability of responses, translator use, and interview language were collected. Interviewer-administered and PAPI based household survey gathered relevant information about households and women between 15 and 59 years of age in Turkey.

3.1.1.2. Recruitment of Interviewers

First criteria to include in the field work of 2014 VAW Study were to be in between 20 and 30 years of age, to have at least university student degree of education, and to be free during the course of field work. Candidates who met these criteria were interviewed at the Institute, and an interview form for each candidate was filled by academic staff simultaneously. According to interview results, candidates participated two-week intensive training sessions both in class and pilot study. The candidates who successfully completed training program were selected for the field work of 2014 VAW Study. Lastly, fifteen field teams including 1 supervisor, 1-2 field editors and, 4-5 female interviewers started to work in the sampled areas.

3.1.1.3. Training of Interviewers

Training sessions in class covered various issues about domestic violence against women, providing acquiescence of respondents, interviewing techniques, woman selection, asking questions, recording answers, and ending interviews. Apart from those activities, not disturbing women during the interview was emphasized in accordance with the sensitive nature of the research. HUIPS faculty, project assistants, and experts who came from different institutions also responsible for giving sessions. Several materials such as manuals for interviewers, supervisors, and editors were used during the training program. The last three days of the interviewer training were devoted to a pilot study conducted in Ankara that aim to observe interviewers' performance.

3.1.1.4. Fieldwork

The field work of the 2014 VAW Study was carried out between April 8 and July 11, 2014. Fifteen teams including 1 supervisor, 1-2 field editors, and 4-5 female interviewers in each team were assigned to specific clusters for the field work. In this regard, fifteen routes that cover 79 provinces in Turkey were determined mostly based on logistic concerns, number of clusters in each province and team compositions. In total, 104 field staff worked for the field. Almost in each team, at least one interviewer who know Kurdish or Arabic was tried to include taking Kurdish or Arabic interviews into consideration. Otherwise, an interpreter was used to carry out interviews.

Interviews were conducted on both weekdays and weekends even though one day of the week was free for field teams. Frequency of visits were tried to keep at a high level (at least three visits) so that information about women in selected households was gathered through interviews. Therefore, an importance was attached to re-visits especially planned on the evenings and weekends in case field teams did not found respondent at home due to various reasons. During the field work, field teams were supported by research teams and psychologists.

3.1.2. Field Staff Data

Apart from the women data set, a separate Field Staff data set was utilized to achieve study objectives. The data set was constructed through recruitment forms of field staff worked in the 2014 VAW Study. It was constructed in order to use for analyses within the scope of thesis. Field staff candidates for several positions such as supervisor, editor, interviewer, and staff for data entry filled *Fieldwork Application Form* for the first application. The candidates who met the requirements to work in the field were invited to personal interview by HUIPS. Afterwards, members from HUIPS academic staff conducted personal interviews by filling the *Fieldwork Interview Form* simultaneously. These two forms collect main background and socio-demographic characteristics of the field staff, rather than behaviours, skills, personal experiences, views, beliefs and attitudes. These data were edited according to study variables that are used in statistical analyses. New variables were computed from existing ones and some categories were merged under "other" category. Field staff data sets include a few basic socio-demographic characteristics of interviewers such as age, educational level, place of birth, date of birth, and some background information such a known languages and previous survey experiences of 104 interviewers worked in the 2014 VAW Study. Therefore, the data set have lack of information about fieldwork practices and satisfaction, attitudes and views towards fieldwork, field experiences and assessments. As emphasized in the literature chapter, fieldwork practices and attitude based information are valuable to construct rapport and investigate its consequences.

3.1.3. Merged Data

Interviewer-level variables in the Field Staff data set were disaggregated into women data set by means of interviewer identification number. Most of the analyses were carried out using the merged data set coming from women data set and field staff data set of 2014 VAW Study. The women data set includes interviewer identification number whereas field staff data set does not include this information at the beginning. Therefore, other field work documents that report

members of the field teams were considered to integrate their identification numbers into Field Staff data set. Still, some missing cases emerged due to following reasons.

i)   There were some changes on identification numbers of team members while fieldwork was still continuing.

ii)   Some of the team members who worked as supervisor, editor or data entry staff did not conduct any women interview although they have been assigned to a specific number.

iii)   HUIPS research assistants or project assistants who worked as a supervisor or interviewer in the field work have not any recruitment form.

Thus, certain identification numbers could not be able to matched at the merging step of two data sets. In this way, a woman-level data set including interviewers' socio-demographic and background characteristics, was utilized to conduct statistical analyses. At the end, most of the analyses were conducted over merged data file in which each case includes characteristics of interviewer who conducted that interview in addition to woman characteristics. The unit of analysis is women interviews for all stages of the statistical analyses within dissertation.

The statistical analyses were performed over 6,921 women (6,967 weighted) due to the missing information on interviewer identification number in the Field Staff data set. The missingness on interviewer identification number corresponds to 541 women interviews.

3.2. Construction of Variables

The variables to operationalize rapport and interview quality are mainly selected according to current literature, e.g. methodological articles and DHS reports, as well as our field observations and experiences. Almost all variables are related to associations of interviewer, respondent, field and interview features, and response with quality (Johnson et al., 2009). Selected variables in the final data set were recoded, i.e. categorized variables, binary variables, to construct study variables.

During the variable construction process, cut-off values were specified according to mean of the variables. Afterwards, those variables were evaluated under specific titles according to common features of the variables. This approach is in line with the purposes of the SEM technique.

A set of variables to estimate rapport between interviewers and respondents includes field and interview settings, interviewer related variables, and interviewer-respondent matching variables. The main variables in the merged data set and newly constructed variables for the analyses are shown in Table 3.1.

In the process of rapport index construction, which is the first stage of the analyses, variables which describe interview environment and field staff were used. Furthermore, basic characteristics of respondents were used to measure variables that denote similarity between interviewer and respondent. Interviewer related variables include interviewer characteristics, opinions and feelings, performance indicators, and similarity with the respondent. The variables which refer to similarity were only constructed based on `age' (up to 5 years), `educational level', and `region' differences due to the limited information. Regional matching was also considered with place of birth of interviewers and respondents' place of residence up to 12 years due to the data availability. Considering performance indicators, 'cooperation rate' denotes the proportion of completed women interviews over all women interviews per interviewer. 'Mean duration' denotes mean length of interview per interviewer and calculated with the information of interview's start and end times. The cut-off values were specified based on mean values. Interview related variables comprise timing of visits, field and visits, length of interviews and other interview related variables. 'Field stage' was constructed based on first month of the fieldwork (April) and later (May, June, July). 'Language matching' refers to similarity between interview language and respondent's mother tongue.

In the first stage of the study, most of the variables were selected based on the previous literature on establishing rapport and survey quality assessments. Furthermore, fieldwork experiences were considered when selecting variables

regarding interviewer performance, field and visits. All variables in the process of rapport index construction are presented in Table 3.1.

A set of variables to estimate interview quality covers interviewers and respondents' load variables as well as certain response quality indicators selected for questions with multiple items. The basic variables in the merged data set and newly constructed variables are shown in Table 3.2. Among interviewer-basis variables, the 'cooperation rate' denotes the proportion of successfully completed interviews per interviewer over all interviews. The 'number of interviews on a day' refers to mean number of interviews completed on a day per interviewer, while the 'field work length' stands for the number of days worked in the field per interviewer. These two variables were constructed using the information about day and month of interviews. The 'proportion of urban clusters' refers to number of urban clusters worked in the field per interviewer over urban clusters sampled in the 2014 VAW Study. The variable was constructed based on type of settlement as well as cluster number of interviews. The selection of this variable is motivated by much effort spent for urban interviews; e.g. late working hours, high security concerns, less trust and low response stemmed from being no competent respondent at home (Stoop et al., 2010; Saraç and Adalı, 2019).

Among respondent-basis variables, the 'proportion of filled items' represents number of questions responded by women. It was constructed with the exclusion of system-missing values in the data set. The 'interview duration' stands for the mean interview length, and it was calculated using start and end times of interviews. The 'perceived health status' denotes the general health status of woman. This variable was included into the model given that it reflects respondent's difficulty to respond.

Finally, response-basis variables were selected looking at a few number of attitude questions with 'agree/disagree/no idea' options in the 2014 VAW Study. Therefore, only two sets of question about justifications towards violence and refusing sex were selected. The variables that imply 'no idea' responses were

constructed depending on question natures. Moreover, interviewer's opinion about 'response reliability' was included into the set of variables (Table 3.2.).

Table 3.1. The Selected Variables to Measure Rapport between Interviewer and Respondent

Variable	Label	Value	Categories	Constructed variables	Values	Categories
Field and interview settings						
W100SH	Start hour of interview	9-21	9-21	Start hour of interview	0 1	9-10 AM, 6-9 PM 11-12 AM, 1-5 PM
W100SH	Start hour of interview	9-21	9-21	Time of the interview	0 1	Morning Afternoon/evening
WINTM WINTD	Month of the interview Day of the interview	4-7 1-31	April, May, June, July Sunday,…, Saturday	Field stage	0 1	Beginning Middle or end
WINTY WINTM WINTD	Year of int. Month of interview Day of interview	2014 4-7 1-31	 April, May, June, July Sunday,…, Saturday	Interview day	0 1	Weekdays Weekends
W100SH W100SM W1005SH W1005SM W1006N	Start hour of interview Start minute of interview End hour of interview End minute of interview Break duration	9-21 0-59 9-21 0-59 1-90	9-21 0-59 9-21 0-59	Interview duration	0 1	>90 minutes or <20 minutes >19 minutes and <91 minutes
W1006U	Any break during the interview	0 1	No Yes	Any break during the interview	0 1	No break or <11 minutes >10 minutes
W1009	Interpreter use during the interview	1 2	No Yes	Interpreter use	0 1	Yes No
from household data	Presence of mother in law in household			Mother-in-law presence during the interview	0 1	Yes No
Interviewer related variables						
WINTNUM duration_ min	Interviewer id Interview duration	109-532	109-532	Interview duration	0 1	<33.5 minutes >33.4 minutes
	Number of interviews per interviewer Total number of completed interviews			Cooperation rate	0 1	>1.15 interviews <1.16 interviews

Table 3.1 (continued). The Selected Variables to Measure Rapport between

Interviewer and Respondent

Interviewer related variables						
W1003	Feelings after interview	1 2 3	Bad/worse Good/better Same/no difference	Feelings after interview	0 1	Good/better/same/ no difference Bad/worse
W1007	Reliability of answers	1 2 3 4	Poor Medium Good Very good	Reliability of answers	0 1	Poor/medium Good/very good
numberofexperience	Number of experience	0-5		Survey experience	0 1	None At least one
student	Status of being student	1 2	Yes No	Student	0 1	No Yes
generaldept	Background of interviewer	1 2 3	Natural sci. Educational sci. Social sci.	Back-ground of interviewer	0 1	Natural sciences Educational or social sciences
Interviewer-respondent matching variables						
W102 completedage	Respondent age Interviewer age	15-59 20-30	15-60 20-31	Age matching	0 1	Unmatched Matched up to 5 years
educ5 educationalstat	Respondent educational level Interviewer educational level	0 1 2 3 4 1 2 3 4	No education Primary Secondary High University and higher Master/PhD Graduate University 3-4 University 1-2-prep	Educational level matching	0 1	Unmatched Matched
mother_tong W1008	Respondent mother tongue Interview language	1 2 3 4 1 2 3	Turkish Kurdish Arabic Other Turkish Kurdish Arabic	Language matching	0 1	Not matched Matched
place_of_birth place_of_birth _r	Place of birth (I'wer) Place of birth (R)	1-81 1-81	West South Central North East	Regional matching	0 1	Regions are not matched Regions are matched

All cut-off values were determined based on the mean of variables.

Table 3.2. The Selected Variables to Measure Interview Quality

Variable	Label	Value	Categories	Constructed variables	Values	Categories
Interviewers' load variables						
	Number of interviews per i'wer			Cooperation rate	1 0	>1.15 interviews <1.16 interviews
WINTD WINTNUM	Interview day Interviewer id	1-31 109-532	Sunday,…, Saturday	Number of interview on a day	1 0	>2.43 interviews <2.44 interviews
WINTM WINTD	Month of interview Day of interview	4-7 1-31	April, May, June, July Sunday,…, Saturday	Field work length	1 0	>45 days <46 days
HCLUST WTYPER	Cluster number Residence	0101-3010 1 2	0101-3010 Urban Rural	Proportion of urban clusters	1 0	>6 clusters <7 clusters
WINTNUM duration_min	Interviewer id Interview duration	109-532	109-532	Mean interview duration per interviewer	0 1	<33.5 minutes >33.4 minutes
Respondents' load variables						
	Total number of items System missing items			Proportion of filled items	1 0	>68.4 items <68.5 items
W100SH W100SM W1005SH W1005SM W1006N	Start hour of interview Start minute End hour End minute Break duration	9-21 0-59 9-21 0-59 1-90	9-21 0-59 9-21 0-59	Interview duration	1 0	>35 minutes <36 minutes
W301	Health status	1,2 3 4,5	Perfect, Good Fair Poor/Very Poor	Perceived health status	1 0	Bad or very bad Not bad

Table 3.2 (continued). The Selected Variables to Measure Interview Quality

Quality variables						
W425A	Justifies domestic violence: neclects housework	1,2,8	agree/disagree/ noidea	'No idea' responses attitudes towards violence	1	All responses are 'no idea'
W425B	Responds to her husband	1,2,8	agree/disagree/ noidea		0	At least one response is agree/disagree
W425C	Refuses sex	1,2,8	agree/disagree/ noidea			
W425D	Asks husband's affairs	1,2,8	agree/disagree /noidea			
W425E	Husband's suspicion of woman's faithfulness	1,2,8	agree/disagree/ noidea			
W425F	Husband learns woman being unfaithful	1,2,8	agree/disagree/ noidea			
W426A	Refuse to have sex if: woman does not want	1,2,8	yes/no/no idea	'No idea' responses on attitudes about refusing sex	1	All responses are no idea
W426B	Husband is drunk	1,2,8	yes/no/no idea		0	At least one is agree or disagree
W426C	Woman has health problems	1,2,8	yes/no/no idea			
W426D	Husband behaves badly	1,2,8	yes/no/no idea			
W1007	Reliability of answers	1 2 3 4	Poor Medium Good Very good	Reliability of answers	0 1	Poor/medium Good/very good

All cut-off values were determined based on the mean of variables.

After the introducing rapport between interviewers and respondents as well as interview quality, those were used in subsequent analyses to answer secondary research questions within the dissertation. The rapport index was used to reveal differences among women interviews completed with high rapport, according to selected characteristics. Therefore, socio-demographic and socio-economic characteristics of women, variables that refer to violence experience, and some attitudes of women were selected for the two independent samples comparisons. Moreover, the variables excluded from Exploratory Factor Analysis were used to compare women interviews in terms of high rapport. All of the variables used in Complex Samples Generalized Linear Model (CSGLM) could be found in Table 3.4.

Similarly, interview quality index was used as a product of quality for a second subsequent analysis. It was utilized in order to investigate impact of interviewer characteristics on interview quality. Thus, statistical models were constructed on the basis of interviewers' socio-demographic and background characteristics. Furthermore, variables that stand for field and interview settings as well as women characteristics were selected as control variables. All of the variables used in the Complex Samples Logistic Regression (CSLOGISTIC) could be found in Table 3.6.

3.3. Statistical Methods

3.3.1. Exploratory Factor Analysis

The Exploratory Factor Analysis technique is an appropriate statistical way to combine a set of variables based on their correlation among each other and extract dimensions of latent constructs (Tabachnick and Fidell, 2014; DiStefano et al., 2009). In this dissertation, this statistical tool was utilized to reveal dimensions related to rapport and interview quality. This technique is widely used in many disciplines to measure unobservable social constructs such as satisfaction, social status and social and physical activity (Fernandez-Ballesteros et al., 2001; Wang et al., 2010).

The main aim of the Exploratory Factor Analysis is to reduce large number of variables by integrating them into a few number of factors. Each factor represents a set of variables that are correlated to each other. In other words, a statistical equation of integrated form involving a set of measured covariates obtained through the correlation patterns of observed variables. Therefore, it could be concluded that strengths of relationships between variables decide number of extracted factors. Utilizing from a few number of factors, instead of large number of variables, help to reveal underlying factors behind latent constructs. The exploratory factor analysis has steps to reach best model to explain study interest with extracted factors (Figure 3.1.).

Figure 3.1. Steps in Exploratory Factor Analysis
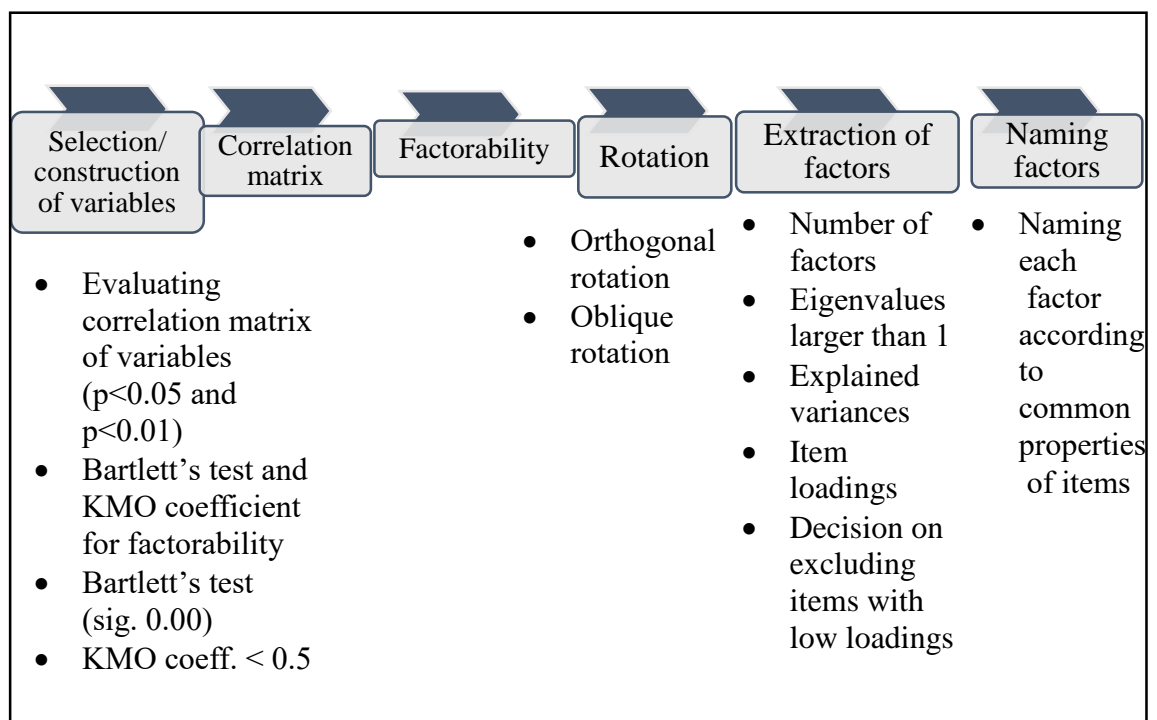
Correlation and Factorability: The correlation matrix, that is needed to understand whether the problem is convenient for factor analysis or not, shows all relations between observable variables. After detecting correlations of variables among each other, factorability of selected variables given sample size is tested. The main objective of the technique is to explain a construct through strength of relationship between selected covariates as well as common variance shared by those items. The Bartlett's sphericity test and Kaiser-Meyer-Olkin (KMO)

coefficients are used to evaluate factorability of covariates. The minimum criterion of KMO coefficient is accepted to be 0.5 for the factorability (Kaiser, 1974). Moreover, the significant result of the Bartlett's test shows that items included into factor analysis are factorable, and sample size to extract factors from those items is adequate. In this thesis, the exploratory factor analysis was performed using the licensed statistical analysis software package, IBM SPSS 23. Principal components technique was used to extract relevant factors to introduce interview quality. The factor correlation matrix was also examined to understand factor structure.

Rotation: The application of any rotation technique helps to interpretation of findings based on their factor loadings. The rotation does not change any statistical procedure to extract relevant factors under latent construct. The orthogonal rotation technique assumes that the factors are independent from each other whereas the oblique rotation implies that extracted factors are correlated. The factor correlation matrix produced from the analysis shows relationships between extracted factors and helps to understand factor structure. When formulating interview quality, oblique rotation technique (direct oblimin with Kaiser normalization in SPSS) was employed to obtain interpretable solution taking correlated components into account (Tabachnick and Fidell, 2013).

Extraction of factors: Extracted factors whose Eigenvalues are larger than 1 measure the latent construct. The number of factors could also be pre-specified according to study specifications as well as study hypotheses. In that stage, the explained variances of each factors and total explained variance are determined. This shows the strength of factors to estimate latent constructs. The loading matrix indicates all loadings of items that contribute to same factor. Therefore, the items with the high loadings are accepted as the most contributing items to that factor. In that stage, exclusion of items with low loadings (specifically lower than 0.30) was recommended to reach best representation of latent construct, depending on the researcher (DiStefano et al., 2009). In this dissertation, final models with the highest variance was reached by three different factors that correlate with the covariates on the same factor, for both rapport and interview quality.

Naming factors: As a last step, the extracted factors are assigned to labels according to common properties of covariates. All of the interpretations to operationalize study interest are made based on those named factors.

3.3.2. Structural Equation Modeling

There are several quantitative model construction approaches to measure unobservable concepts (latent constructs) and reveal their determinants. However, most of these methods ignore possible relations between covariates of interests as well as random or systematic measurement errors. Borgatta and Bohrnsted (1980) defined measurement error as a consistence between measurements and latent constructs in the study. Measurements refer to indicators coming from observed variables (manifest variables) whereas latent constructs represent unobservable theoretical concepts that are main study interests. For instance, quality indicators could be assumed as measurements given the fact that they are produced through observable variables. However, the concept of quality in general, could be evaluated as latent construct since it has a theoretical aspect and cannot be measured through a variable.

As Carrol et al. (2006) and Vermunt (2010) have suggested, the existence of measurement error is inevitable when studying with social data. The measurement errors could lead to impairment on statistical estimates creating bias. The measurement error is known as a widespread error type occurred in social surveys (Hansen et al., 1961; Alwin, 2007; Biemer, 2011). Random measurement error in surveys usually develops due to unintended behaviors of respondents, interviewers or coders. On the other hand, systematic measurement errors might occur because of the respondents' reaction regarding modes of data collection (DeCastellarnau and Revilla, 2017), in addition to information systems, settings, and data collection instruments. To cope with this error, Saris and Revilla (2016) have asserted the measurement error correction to avoid misleading conclusions and gain better results. When all of these concerns are considered, determination of quality indicators and estimation of random measurement errors are essential when making methodological assessments on survey and data quality. This

approach could also be adopted for other latent construct that we observe and experience during the survey process.

The longitudinal latent Markov models and linear factor analyses are the techniques in order to estimate extent of measurement errors using large-scale survey data or registration data (Bakker, 2012; Scholtus et al., 2015). Furthermore, the generalized multitrait-multi method adopting Structural Equation Modelling (SEM) approach is suggested with the use of confirmatory and ordinal factor analyses as well as generalized linear regression analysis. Oberski and Satorra (2013) have discussed the flexible structure of the SEM framework and brought powerful aspects of SEM framework into the forefront under the comparison of earlier estimation techniques. Examining the whole structure of the SEM technique, it could be considered as complex synthesis of regression and factor analyses (Bollen, 1989).

Since it's born in the first half of the 20th century, there is a growing demand for the use of SEM technique in many disciplines. The SEM technique, that is also called as analysis of covariance structures or causal modelling, is widely used in social, behavioural, marketing, information, health and biostatistics sciences. It is an appropriate statistical way to operationalize latent constructs that could be predicted from social survey data. Adopting the SEM approach, the ability of latent class analysis on Total Survey Error was utilized in new methodological studies that are mainly concentrated on reliability and validity aspects (Biemer, 2009; Saris et al., 1991). In other words, the SEM technique allows to examine measurement quality, which is a joint product of validity and reliability, and reveal the possible relationships between the latent variables of study interests.

DeCastellarnau and Revilla (2017) have adopted the SEM technique in order to investigate measurement quality of questions asked in web surveys. Moonie et al. (2009) also employed the SEM modelling technique to estimate quality of life among school aged children with asthma. This statistical method was also utilized to measure impact of data collection method which is among measurement error sources. De Leeuw et al. (1996) focused on mode impact with the implementation

of SEM technique for the latent constructs such as loneliness and wellbeing. Awang (2012) has ranked some examples of latent constructs such as quality, satisfaction, loyalty, behaviour and intention that could be measured through the SEM technique.

The ability and power of this technique in terms of dealing with measurement errors and bringing a light to unobservable concepts was also underlined by survey statisticians (Groves, 2004). Bollen (1989) reported that researchers could be able to estimate the relationship between the different latent variables and the observed variables with the construction and implementation of SEM models. Moreover, Awang (2012) ranked advantages of the SEM technique as follows:

▪ Implementation of Confirmatory Factor Analysis (CFA) to minimise measurement error

▪ Examination of multi-collinearity checks between observed variables

▪ Statistical evaluations of constructed measurement models and structural equation models

▪ Models that are able to treat independent and dependent variables simultaneously

▪ Analyses on correlated error terms of observed covariates under latent constructs

▪ Evaluations about models that cover both observed variables and latent constructs in the structural model

The SEM technique also allows to provide conceptual framework, that is supported by theory and main concepts, and evaluate errors related to study variables. Therefore, the method has several advantages compared to conventional estimation techniques (Biemer and Stokes, 2004). Brancato and Simeoni (2008) reported that SEM approach is built on observed variables determined by the latent construct and takes the random measurement error into account. The specification and drawing of the structural model is as important as model running and findings interpretation. Current literature and theory, study hypotheses, and potential observed variables behind social constructs should be considered at the stage of

model specification. Path analysis conducted adopting the SEM approach uses visual diagrams to represent associations between variables and errors. At the stage of framework construction, circles or ellipses represent latent constructs while rectangles or squares represent observed variables. Further, specified directions are demonstrated with single-headed arrows. The double-headed arrows are mainly used to illustrate unknown relationships between covariates.

Figure 3.2. illustrates the main body of structural equation model that includes two different measurement models to operationalize latent constructs. The relation between unobservable latent constructs, independent and dependent latent constructs $\{X_1, Y\}$ and measured items $\{X_1, \dots, X_{15}, Y_1, \dots, Y_5\}$ are demonstrated in the Figure 3.2. The latent variable X_1 is called as exogenous construct, and observed variables that constitutes a set of five items $\{X_{11}, \dots, X_{15}\}$ measures the latent construct X_1. The Y denotes endogenous construct, and observed variables that constitutes a set of five items $\{Y_1, \dots, Y_5\}$ estimates the latent construct Y. Furthermore, a set of five error terms $\{e_1, \dots, e_5\}$ belongs to items $\{X_{11}, \dots, X_{15}\}$ while a set of five error terms $\{e_6, \dots, e_{10}\}$ belongs to items $\{Y_1, \dots, Y_5\}$. In the figure, e_{11} is an error term in the structural equation or the residual term of the SEM framework.

Figure 3.2. The Main Framework of Structural Equation Model (SEM)
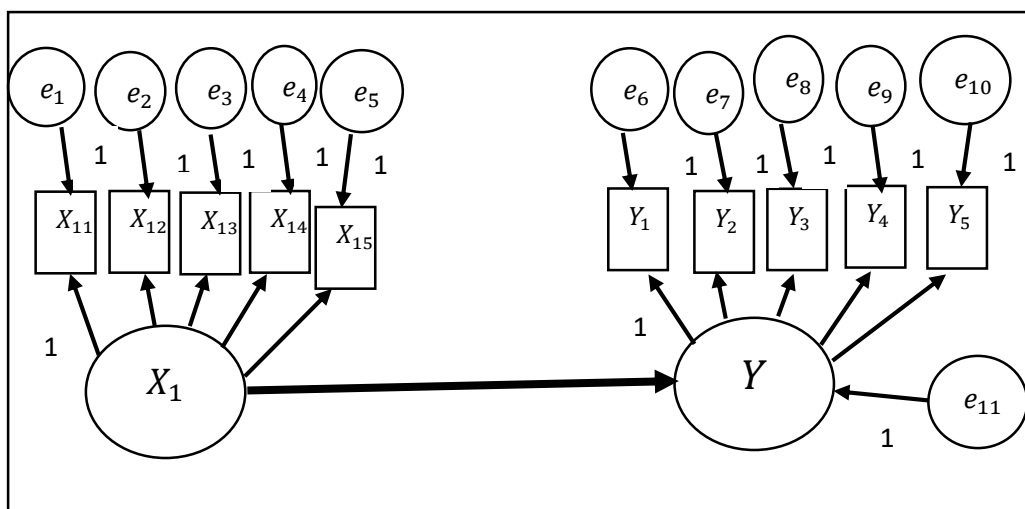
Source: Research Methodology and Data Analysis, 2nd edition by Awang, 2012.

There are many steps before the running Structural Equation Model to reach study aims (Figure 3.3.). First of all, the study variables were constructed according to interests. Therefore, observed variables that estimate latent constructs are prepared. Afterwards, drawing model diagram on the basis of relevant assumptions as well as current literature and theory come into process. This step is substantial given the fact that the diagram determines all relations and directions between variables and model outputs. After the model running, fit indices should be evaluated and required model modifications should be employed to reach the best fitting model.

Figure 3.3. The Main Steps of the SEM Analysis
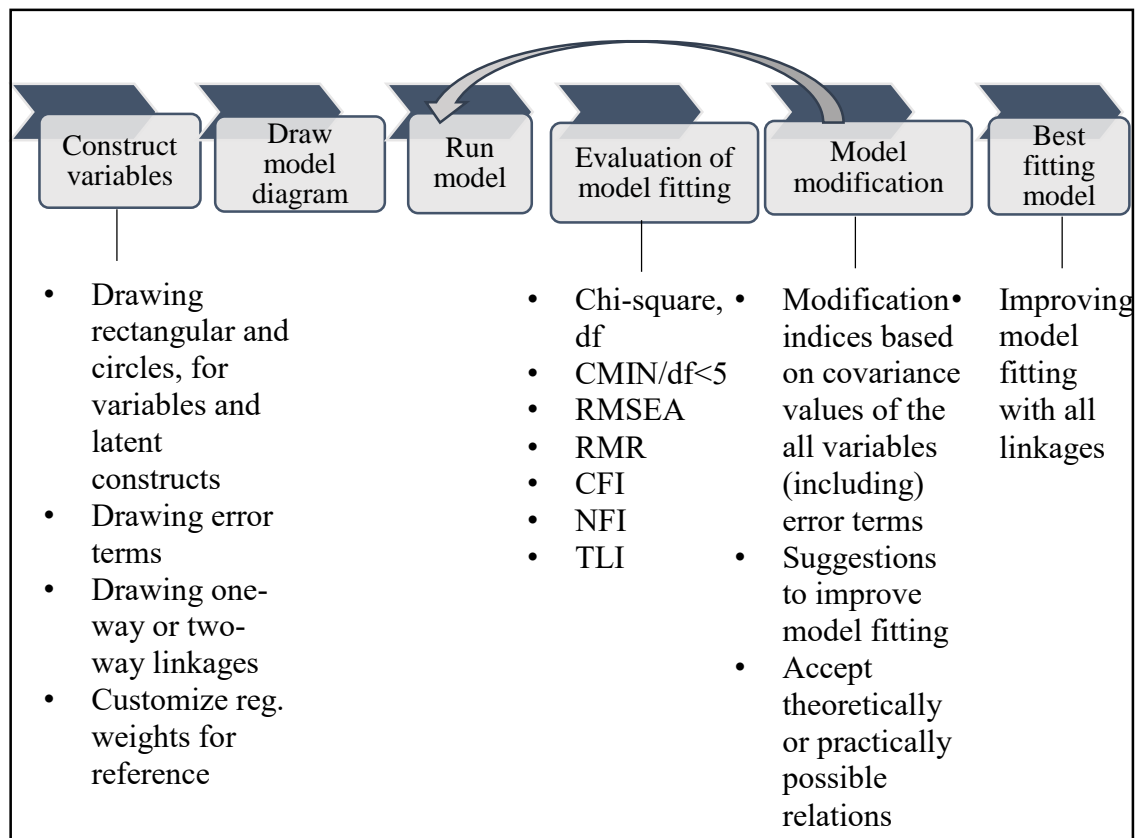
Drawing the model diagram: The first step is to draw a model diagram that cover each constructs, variables, ways and residual terms. The circle shapes in the model frameworks represent latent constructs and residuals; while rectangular shapes represent observable variables included in the data set. Moreover, assigning the

value "1" to one of the regression weight for each latent factor is required to estimate path coefficients (regression weights) according to that specified reference. This is also required for residual terms that are integrated into observed variables.

Evaluation and interpretation of regression weights: According to maximum likelihood estimation procedure, (un)standardized regression weights (path coefficients) and the significance levels are evaluated. The coefficients help to understand power of the observed variables to measure sub-constructs as well as the latent social construct. Moreover, covariance, correlation and variances of all residuals are presented in the tables.

Goodness of fit indices: The AMOS program provides number of distinct sample moments, number of distinct parameters to be estimated, and degrees of freedom that refers to difference between sample moments and distinct parameters. Furthermore, model fit summary indices produced by the AMOS program gives an idea about the model fitting. The main indicators are p value, CMIN/DF (chi-square/degrees of freedom), RMR, GFI, baseline comparisons-CFI, parsimony-adjusted measures-PRATIO, PNFI, PCFI, NCP, FMIN, RMSEA, AIC, ECVI, HOELTER, PCFI. The widely used indicators for the structural equation model-fitting are presented in the Table 3.3. In this dissertation, CMIN/DF indicator was considered as a goodness of fit index.

Table 3.3. Model-fitting Indicators Used in Structural Equation Models

Fit Index	Threshold
P value	Models with more than 250 data points are likely to have significant p-value. Thus, other model-fitting indices should be taken into account for the complex models.
CMIN/DF	<5 (acceptable), <3 (excellent)
CFI	>0.9 (acceptable), >0.95 (excellent)
RMSEA	<0.07 (good), <0.05 (excellent)

The literature on the SEM analysis technique suggest that researchers should make theoretical and conceptual modifications rather than all modifications provided by the program. Therefore, logically, theoretically and practically possible modifications should be employed in that stage. Lastly, improvements on model fitting indices should be documented step by step according to employed modifications.

The SEM outputs in the AMOS Program, provides information about model identification, result (Chi-square and degrees of freedom), maximum likelihood estimates (unstandardized and standardized regression weights, variances-unstandardized regression weights with significance of the variables-p values), modification indices based on covariances, model fit summary (CMIN, RMR, GFI, Baseline comparisons, Parsimony-Adjusted Measures, NCP, FMIN, RMSEA, AIC, ECVI, HOELTER), total effects, direct effects, indirect effects (unstandardized and standardized).

3.4. Empirical Specifications and Statistical Methods
3.4.1. Specifications for Structural Equation Modeling

This dissertation mainly adopts the SEM technique under the consideration of its powerful capacity to deal with measurement error as well as thesis objectives. The SEM technique is an appropriate way in order to implement confirmatory factor analysis, path analysis and structural equation analysis. The key concepts of the thesis which are the rapport between interviewers and respondents as well as interview quality could be estimated by two separate measurement models. These concepts are the latent constructs.

Prior to confirmatory factor analysis, the exploratory factor analysis to introduce rapport and quality would be insightful. This approach is also in accordance with the objectives of exploratory factor analysis, given that those constructs were not explored before. Furthermore, the CFA is mainly conducted based on the information provided from current studies in the literature, previous findings, theory, or exploration process of predictors behind latent constructs. As emphasized in the literature, rapport concept and its consequences are among

untouched methodological issues. Thus, implementation of exploratory factor analyses prior to the CFA was employed in order to understand rapport and factors that have an influence on rapport, firstly. Therefore, exploratory factor analyses were carried out to operationalize rapport and interview quality at the beginning of the analyses. In other words, rapport and interview quality concepts could be tried to conceptualize on the basis of both previous studies and findings obtained from exploratory factor analysis. This analysis stage gave insight to understand rapport and interview quality concepts wholly and contributing factors to those concepts. Moreover, the preparation effort prior to actual SEM model implementation is also in line with the need for solid ground to full structural model construction.

The measurement models on rapport and interview quality were constructed and confirmed through Confirmatory Factor Analysis (CFA) technique. The rapport and interview quality indices were created again using the CFA that is a condition to implement SEM modelling on latent constructs. These concepts are considered as the continuous latent constructs. Lastly, path analysis within the SEM technique was performed to determine regression coefficients of sub-constructs when estimating rapport and interview quality.

Afterwards, the linkage between rapport and interview quality was drawn in the path diagram and structural equation analysis was conducted. Hence, the power and direction of the relation between rapport and interview quality were estimated under the control variables as well as residual terms. The TSE perspective was adopted in both creating rapport and quality indices through measurement models and implementing path analysis as well as structural equation models. Constructing a latent factor, rapport, and measuring its impact on another latent factor, interview quality, were employed simultaneously at the final model. The analysis stages and corresponding activities according to dissertation objectives were presented in the Figure 3.4.

The final model construction process also corresponds to arguments reported in methodological studies, as SEM modelling approach suggested. Olson and Bilgen (2011) have put forward that establishment of rapport between interviewers and respondents leads to better survey estimates in terms of quality. Therefore, making assessments on complex measurement models and evaluations about direct and indirect relations between variables would be possible. At the final model, predictive power of latent constructs built with certain covariates and each relation between these covariates were specified. The SEM technique is used to explore relationship between rapport established during the interview and resulting interview quality at the end of the interview under the impact of several covariates. For the statistical interpretations and practical suggestions to implement in the field work, circumstances that provide maximum unit of rapport and interview quality were described.

The basic drawing of the final structural equation model is illustrated in Figure 3.5.

Figure 3.4. Analysis Stages, Thesis Objectives and Relevant Interests for Both
Rapport and Interview Quality within the Thesis

Measurement Model	1st order Confirmatory Factor Analysis	2nd order Confirmatory Factor Analysis	Path Analysis	Structural Equation Analysis
For six sub-concepts	For the joint production of three sub-concepts	To operationalize rapport and interview quality	To create rapport and interview quality indices	To investigate rapport impact on interview quality
Timing and frequency of visits	-Timing and frequency of visits -Interviewer characteristics and similarity between interviewer and respondent -Dynamic interview factors	Rapport between interviewers and respondents	Rapport index	RAPPORT
Interviewer characteristics and similarity				
Dynamic interview factors				
Interviewer workload	-Interviewer workload -Respondent burden -Response quality	Interview quality	Interview quality index	INTERVIEW QUALITY
Respondent burden				
Response quality				

Figure 3.5. A Basic Structural Equation Model for Analysing Latent Constructs in a Model
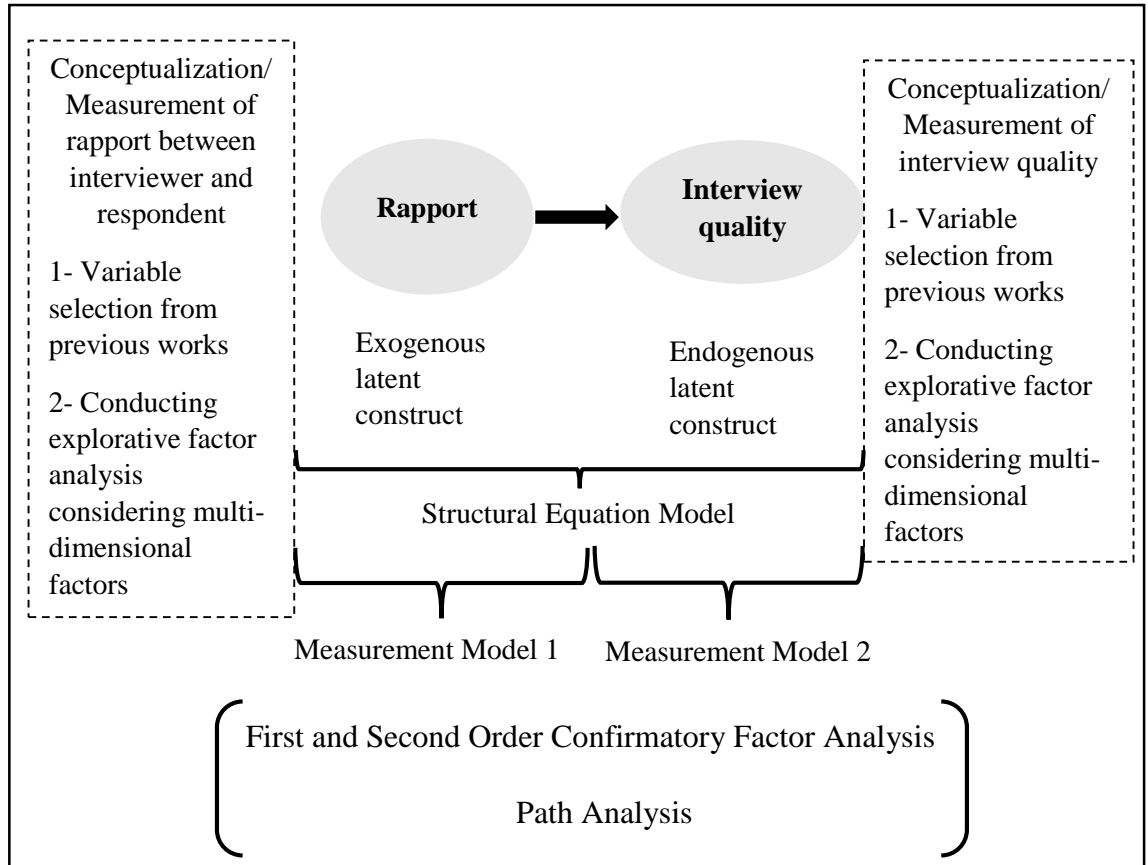
Exploratory Factor Analysis (EFA) models were conducted using a licenced software statistical program IBM SPSS 23.0 (Statistical Package for the Social Sciences). The SEM analyses, that cover first and second order Confirmatory Factor Analysis (CFA), Path Analysis, and Structural Equation Analysis were carried out using licenced software program IBM SPSS AMOS 23.0.0 (Analysis of Moment Structure). Both drawing conceptual frameworks for study interests and conducting analyses on latent constructs as well as observed variables was implemented using the SEM technique in AMOS Program. The AMOS Program provides several methods such as maximum likelihood, unweighted least squares, generalized least squares, Browne's asymptotically distribution-free criterion, scale-free least squares and Bayesian estimation, for the construction and estimation process of structural equation models (Arbuckle, 2013).

In this dissertation, model construction, modified model construction according to M.I. values (rather than table for all modifications), and CMIN/DF (most used fit index for the SEM models) will be presented.

3.4.1.1. Determining the Levels of Rapport and Interview Quality

The indices that were created to represent rapport between interviewer and respondent, and interview quality are used in subsequent analyses within the thesis. Using factor scores obtained from exploratory factor analysis in subsequent analyses is a common practice to achieve study goals (Bell et al., 2003; Kawashima and Shiomi, 2007). The indices are the factor scores that determine each woman interviews' placement in terms of rapport and interview quality. This approach is widely used in studies that focus on measurement of latent constructs and using the factor scores as independent or dependent variables. These subsequent analyses usually cover comparisons of subgroups in terms of latent constructs as well as utilizing factor scores in multiple linear regression analysis (DiStefano et al., 2009). The factor scores were calculated to represent interview placements on rapport and interview quality. This approach was also supported by remarkable variances explained by extracted factors. In this dissertation, the levels of rapport and interview quality were determined to use in subsequent analyses. The sum scores method above 0.30 cut-off value was implemented to create interview quality score (DiStefano et al., 2009; Tabachnick and Fidell, 2003). The sum score technique is also reasonable for most of exploratory research interests (Tabachnick and Fidell, 2003).

The rapport levels were determined by aggregating women interviews into three equal groups. The equal allocation of rapport scores was made to ensure objectivity on rapport levels. The highest 33 percent of scores are assigned to "interviews with high rapport" whereas the lowest 33 percent of scores are assigned to "interviews with low rapport". Remaining scores of interviews were classified with "middle" category. The women interviews assigned to high rapport were selected for two independent samples comparisons to reveal variations between women interviews. Rapport index construction was conducted for 6,967

women due to missing information on interviewer identification number and certain selected variables to build rapport.

$$f = \begin{cases} 1; low\ rapport, & the\ first\ 33\%\ of\ scores \\ 2; moderate\ rapport, & the\ second\ 33\%\ of\ scores \\ 3; high\ rapport, & the\ third\ 33\%\ of\ scores \end{cases}$$

The interview quality levels were determined by aggregating interview scores into two equal groups. The decision is mainly based on need for low and high quality levels to use in subsequent analyses. The first 50 percent of the interviews was classified under "low quality interviews" while remaining ones were assigned to "high quality interviews". The dependent variable for the logistic regression analysis as follows:

$$g = \begin{cases} 1; low\ quality\ interview, & the\ first\ half\ of\ the\ scores \\ 2; high\ quality\ interview, & the\ second\ half\ of\ the\ scores \end{cases}$$

Both levels of rapport and quality were examined according to background characteristics of interviewers and respondents, and field and interview settings (Table A.3 in Appendix A, and Table B.1 in Appendix B).

3.4.2. Specifications for the Complex Samples Generalized Linear Modeling (CSGLM)

The generalized linear modelling was used as a statistical tool to make comparisons between women interviews. The women interviews completed with high rapport were selected to analyse. The null hypothesis is that there is not any difference among women interviews completed with high rapport according to selected characteristics of women interviews. Thus, proportions of women interviews with high rapport were compared to each other. Two independent samples comparisons were conducted over 2,323 women because of the high rapport restriction.

The p-value for the two-sided test is given based on the Formula 1.

$$P(|T|) > |t(B_i)|, \qquad |t(B_i)| = \frac{B_i}{SE(B_i)} \qquad (1)$$

where T is a random variable from the t distribution and $H_{0_i}: B_i = 0$.

According to selected characteristics,

$H_{0_i}: There\ is\ no\ difference\ between\ women\ interviews\ completed\ with\ high\ rapport.$

$H_{a_i}: At\ least\ one\ group\ of\ women\ interviews\ is\ different\ from\ others.$

At the end of the two independent samples comparisons, according to selected characteristics, significant differences among women interviews completed with high rapport were revealed. The significant variables were determined according to 5% and 1% significance levels. The generalized linear modeling procedure was implemented under Complex Sample procedure given that 2014 VAW Study has complex sampling design. In that stage, a plan file that involves stratum and cluster information used in sampling design was introduced to relevant analyses. The Complex Sample General Linear Model (CSGLM) technique was employed using IBM SPSS 23 statistical software program. Table 3.4. shows all selected variables used for the two independent samples comparisons.

Table 3.4. Variables used in the Complex Samples Generalized Linear Model

Demographic/ basic characteristics	Socio- economic characteristics	Violence- related characteristics	Attitudes	Other variables*
Region	Educational level	Emotional violence[a]	Opinions towards gender roles[e]	Presence of mother-in-law
Type of residence	Working status	Sexual violence[b]	Justifications towards violence[f]	Translator use
Age	Wealth index	Physical violence[c]	Refusals to have sex[g]	Day of the interview
Mother tongue	Income status	Severity of violence		Break duration
Marital status	Spending earnings	Controlling behaviors[d]		Regional similarity
Living children		Suicidal thoughts		Cooperation rate
Use of contraception		Physical injuries		
Children under five years of age		Violence and health		
General health status				

*refers to variables that were excluded from final model of the principal component analysis

that's why those were used in two independent samples comparisons.

The categories of the variables will be presented with the study results.

3.4.3. Specifications for the Complex Samples Logistic Regression Analysis (CSLOGISTIC)

Binary logistic regression analysis is adopted to investigate effect of interviewer characteristics on interview quality. The Complex Samples Logistic Regression (CSLOGISTIC) procedure in SPSS 23 was conducted in accordance with complex design of the 2014 VAW Study. For this reason, factor scores of interview quality were distributed into two equal categories (low and high) and constructed a dichotomous variable. The distribution of interviews according to interviewer characteristics was also given in order to make a ground for logistic regression analysis. The likelihood of high quality interview occurrence is determined taking low quality interviews as reference category. The binary dependent variable as the following:

$$h = \begin{cases} 0, low\ quality\ interview \\ 1, high\ quality\ interview \end{cases}$$

The logistic regression models were constructed by adopting a stepwise approach. The main reason behind this approach is to follow persistence of interview impact on the probability of high quality interview. Therefore, interviewer characteristics (Model 1) were involved by three different models. Additionally, control variables that may have possible impact on interview quality decided. Field and interview settings (Model 2) as well as demographic and socio-economic characteristics of women (Model 3) were added into the models in an additive way (Table 3.5.).

Table 3.5. Logistic Regression Models

Model 1	Model 2	Model 3
Interviewer characteristics	Interviewer characteristics	Interviewer characteristics
	Field and interview settings	Field and interview settings
		Women characteristics

Among interviewer characteristics, the 'background' was recoded into two main disciplines. The variable was constructed using the information about departments graduated from or currently studied in. The 'experience' quantifies total number of worked surveys prior to the 2014 VAW Study.

Among predictors in Model 2, 'time of the interview' was constructed based on the start hour of interview while the 'interview day' was constructed using the date of interview. The 'field stage' denotes the field period according to interview month. Interviews performed in first month of the field work were integrated in 'beginning' category, interviews in the second month were included in 'middle' category, and lastly, interviews in third and fourth months were included in 'end' category (Table 3.6.).

Table 3.6. Variables Used in Logistic Regression Models

Model 1 Interviewer characteristics	Model 2 Field and interview settings	Model 3 Women characteristics
Age	**Time of the interview**	**Age**
20-24	Morning	15-24
25-30	Afternoon	25-39
Education	Evening	40-59
University student	**Interview day**	**Mother tongue**
University graduated/higher	Weekday	Turkish
Background	Weekend	Kurdish
Natural sciences	**Field stage**	Arabic and other
Social/educational sci.	Beginning	**Marital status**
Experience	Middle	Currently married
None	End	Formerly married
1		Never married
2 and more		**Education**
		No education
		Primary
		Secondary and higher
		Working status
		No
		Yes

The covariates for Model 2 and Model 3 were included in models to ensure persistence of interviewer impact on the likelihood of high quality interview occurrence.

The odds ratios, that are the exponential functions of the β coefficients (e^β), were estimated according to Maximum Likelihood Estimation (MLE) technique. The probabilities were calculated according to Formula 2.

$$Y_i = \frac{e^u}{1 + e^u} \qquad (2)$$

where $i = 1, 2, \dots, n$, and

$$u = A + B_1 X_1 + B_2 X_2 + \cdots + B_k X_k$$

where A is the constant, $B_j, j = 1, \dots, k$ are the coefficients, and $X_j, j = 1, \dots, k$ are the covariates.

The logit of the odds is formulated in Formula 3.

$$In \left(\frac{Y}{1-Y} \right) = A + \sum_{i,j=1}^{n,k} B_J X_{ij} \qquad (3)$$

In addition to probabilities of the high quality interviews, confidence intervals (CI) and standard errors (se) are presented in tables (Section 4.3.2., Table 4.16.). Statistically significant variables were determined at both 5% and 1% significance levels. Furthermore, the total variances explained by the logistic models are presented by the Nagelkerke R square (R^2). Similar to Generalized Linear Model, Logistic Regression was also employed taking complex sampling design into account. The Complex Samples Logistic Regression (CSLOGISTIC) procedure in IBM SPSS 23.

During the model trials, five different logistic regression models were constructed and results were reviewed (Table B.2. in Appendix B) prior to construction of final logit models.

To create a binary variable for the analysis, the levels were determined by aggregating the factor scores of interview quality into two equal groups. The first half of the scores were labelled as 'low quality' whilst second half of the values were labelled as 'high quality'. The dependent variable for the logistic regression analysis as the following:

$$f = \begin{cases} 0, & low\ quality\ interview \\ 1, & high\ quality\ interview \end{cases}$$

The percentage distribution of quality levels by interviewer characteristics was provided within descriptive analysis. This also provides a basis for the logistic regression models' outputs.

Within the multivariate analysis, the probabilities of high quality interviews (odds ratios) were estimated based on the maximum likelihood estimation technique. All model effects were evaluated compared to low quality interviews. Significant predictors of high quality interview occurrence were determined based on 5% and 1% significance levels. Furthermore, parameter estimates were evaluated with likelihoods (odds ratios, e^{β}), confidence intervals as well as reference categories of the predictors. The stepwise approach was adopted to follow the persistence of interviewer impact on the high quality interview occurrence. Thus, three different models were constructed to investigate possible relations between high quality interviews and a set of predictors. The Model 1 only comprises interviewer characteristics to understand core impact of interviewer. The field and interview settings were added into the Model 2, and women characteristics were added into the Model 3.

3.5. Conceptual Framework

Conceptual frameworks and organizing models to study on interviewer effects and relevant issues usually cover almost all dimensions that might have an influence on interviewer effects. For example, Blom and Korbmacher (2013) focus on development of well-organized international interviewer questionnaire to fill the gap on auxiliary data about interviewers. The conceptual dimensions on the questionnaire were ranked as interviewer attitudes, interviewers' own behaviour and interviewer's experience with measurements as well as interviewers' expectations. Jäckle et al. (2013) have proposed a conceptualization including psychological predisposition, interviewer attributes and behaviours for use within respondents' likelihood for cooperation. West and Blom (2017) suggested an organizing model taking background characteristics, interviewer, respondent and

question related mediators to examine interviewer effect from the TSE perspective.

In this dissertation, conceptualization of study interests, namely rapport and quality, started with the determining places of latent constructs within the whole survey life-cycle. We mainly focused on cornerstones of interviewing in face-to-face surveys to measure interview quality. This would be helpful to understand what we focus on and where we are in the survey process. Afterwards, sub-constructs of the latent constructs were shaped on the basis of observable variables as well as current literature. The main latent constructs of the dissertation which are rapport and interview quality meet in interviews in the data collection process. We believe that a set of variables related to interviewer, respondent and response will introduce the interview quality whereas interviewer and respondents will be main dimensions of rapport. This approach is also supported by the current literature that concentrates on interviewer and respondent effects as well as question and response features. West and Blom (2017) proposed an organizing model to explain interviewer effects combining several drivers with respect to interviewer, respondent and question.

Looking at modified version of the whole survey lifecycle model (Groves et al., 2004), the present study focuses on aspects of interviewer, respondent and survey response (Figure 3.6.). The places of latent constructs within the whole survey life-cycle are also presented in the Figure 3.6. There are indirect linkages between remaining components in survey process and interviewing, that's why we have not included those concepts into rapport and interview quality construction. The data availability was also considered when conceptualizing those constructs. For instance, we preferred to include interviewer that is also covered by measurement in the cycle.

The conceptual approach to combine several components into one construct to operationalize study interest is well-documented in the current literature. For instance, Cernat and Vandenplas (2020) attempted to measure social desirability

bias on the basis of certain indicators such as presence of third person, respondent willingness to respond, and personality traits. Amaya and Harring (2017) identified the measures of routes to social integration with the aim of investigating its impact on response probability. Subjective and objective respondent burden was also conceptualized utilizing seven different indicators (Read, 2019).

Figure 3.6. Place of Interview Quality and Rapport over the Survey Life-cycle Developed by Groves et al. (2004)
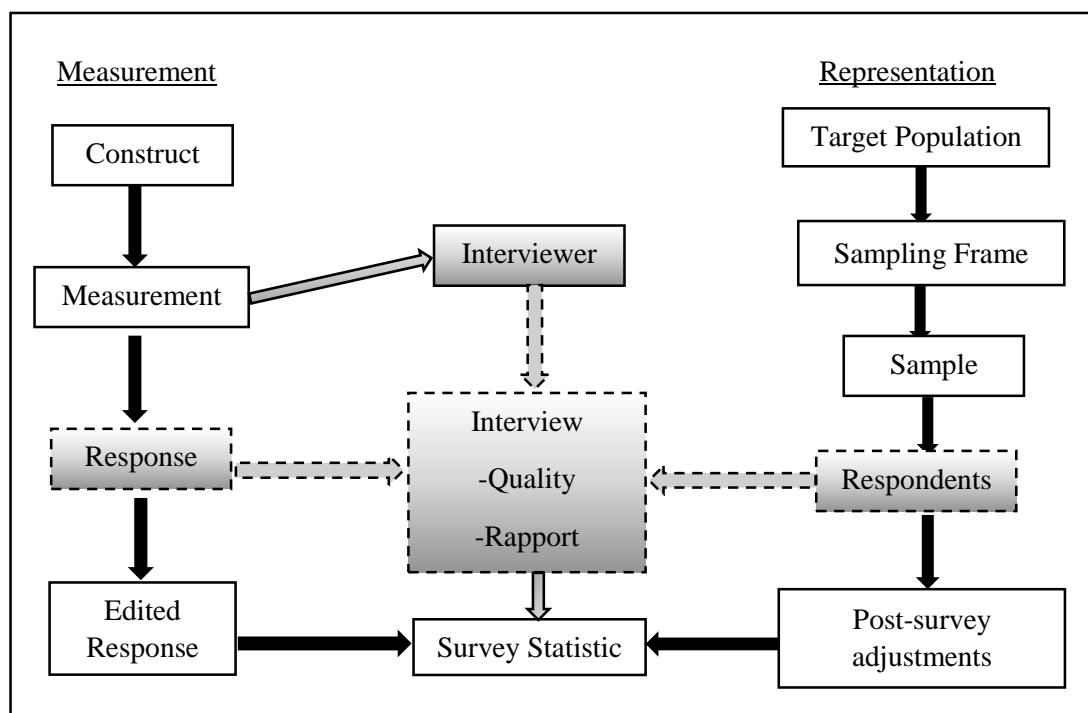
A two-stage approach was adopted during the conceptualization phase of the latent constructs that are the key concepts of the thesis. In other words, different sub-constructs were considered to explain rapport between interviewer and respondent as well as interview quality in the study. Afterwards, sub-constructs that are responsible for rapport and interview quality were measured on the basis of observable variables (Figure 3.7.).

Different sets of variables that stands for performance and workload of interviewer, respondent burden, matching characteristics between interviewers and respondents, field and interview settings, and data quality indicators were selected to conceptualize sub-constructs explaining rapport and interview quality

(Figure 3.7.). Although the sub-constructs to measure rapport and interview quality were nearly shaped at the conceptualization stage, those were determined and named properly at the end of the Exploratory Factor Analysis. The main aim of this technique is to find out relevant factors and assign names according to common features of variables on the same factor.

Lastly, the full conceptualization with the scope of thesis and corresponding statistical techniques were given in the Table D.1. in Appendix D.

Figure 3.7. Conceptualization Phases of the Rapport between Interviewer and Respondent, and Interview Quality
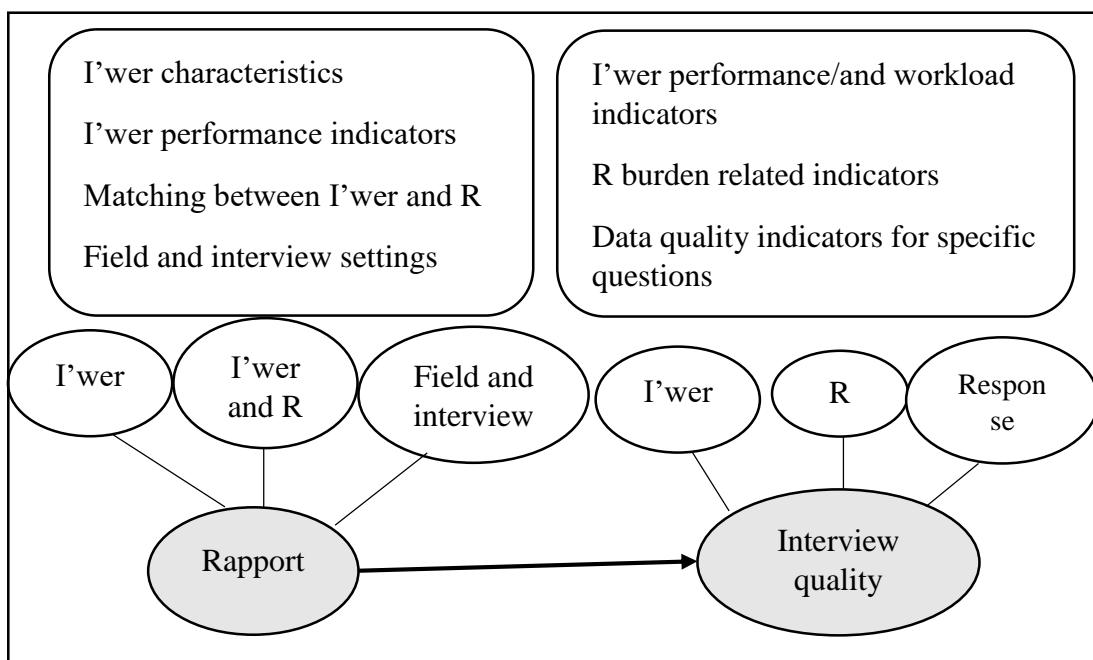
CHAPTER 4. RESULTS

4.1. General Findings of Factor Analysis and Structural Equation Modeling

In this chapter, main findings to operationalize rapport between interviewer and respondent as well as interview quality are presented, respectively. Each analysis step and its outcomes will be given before the final models of both latent construct.

4.1.1. Results for Rapport between Interviewer and Respondent

4.1.1.1. Exploring Rapport

A set of variables that stands for interviewer characteristics, matching between interviewer and respondent as well as field and interview settings was utilized to explore "rapport built between interviewer and respondent". The variables regarding interview time, interviewers' educational characteristics, socio-demographic and socio-economic matching between interviewer and respondent, and interview specific covariates such as interview length, feelings after the interview, answers' reliability and other settings were focused prior to variable construction process. The constructed binary items were included into several exploratory factor models (Table A.1. in Appendix A), prior to final exploratory factor analysis.

EFA models were performed according to the Principal Components Technique. Preliminary results of factor analyses to measure rapport was presented in Table A.2. and Figure A.1. in Appendix A. At the end of the factor structure and item loading examinations, certain variables were excluded from the final model (Table A.4. and Table A.5. in Appendix A). The main reason behind that is relatively low loadings of the excluded items. Furthermore, a restriction was brought to number of extracted factors to measure rapport between interviewer and respondent. When study expectations and factor structure are considered, three factors were extracted with their remarkable variances to conceptualize such a latent construct. Afterwards, the rapport index was calculated on the basis of extracted factors with the aim of using in subsequent analyses. In this section, statistical findings produced from the final model are presented.

The results of the final exploratory factor analysis showed that the variables to introduce rapport between interviewer and respondent are factorable according to KMO coefficient (KMO=0.5) as well as significant result of the Bartlett's test (sig.=0.000). The total variance to explain rapport was estimated as about 33 percent through the three extracted factors. The most indicative factor, first factor, is accounted for 12.5 percent of the total variance. Moreover, the second and third factor explain the 10.8 percent and 9.9 percent of the total variance to identify rapport built between interviewer and respondent. These factors were assigned to labels that are "timing and frequency of visits", "interviewer characteristics and similarity between interviewer and respondent", and lastly, "dynamic interview factors" (Table 4.1.).

Looking at the loadings of items on the "timing and frequency of visits", start hour of interview (0.82) and time of the interview in a day (0.78) have strong associations with the first factor. Educational characteristics of interviewer, which are student (0.73) and background (0.57) as well as the matching characteristics between interviewer and respondent, that are educational matching (0.30) and age matching (0.19) have the highest loadings on the same factor. Furthermore, field stage (0.49) that may have an influence on interviewers' ability and productivity have a considerable relation with the second factor. Lastly, the interview duration per interviewer (0.74) and per respondent (0.63) could be evaluated on the last factor named "dynamic interview factors" (Table 4.1.).

Table 4.1. Results of the Exploratory Factor Analysis to Measure Rapport

	Total Variance Explained						Component Matrix			
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Variables	Components		
COMPONENT	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %		1-Timing and frequency of visits	2-Interviewer characteristics and similarity	3-Dynamic interview factors
1	1.62	12.45	12.45	1.6	**12.5**	12.5	Start hour of interview	**0.82**	0.19	0.17
2	1.40	10.75	23.20	1.4	**10.8**	23.2	Time of the interview	**0.78**	0.26	0.17
3	1.29	9.93	33.13	1.3	**9.9**	**33.1**	Number of visits	**0.27**	0.08	-0.04
4	1.13	8.72	41.84				Student	-0.14	**0.73**	-0.06
5	1.09	8.36	50.21				Background	-0.23	**0.57**	0.37
6	1.00	7.72	57.92				Field stage	-0.13	**0.49**	-0.11
7	0.99	7.58	65.51				Educ. matching	-0.27	**0.30**	-0.07
8	0.95	7.31	72.81				Age matching	-0.01	**0.19**	-0.11
9	0.89	6.83	79.64				Reliability of answers	-0.06	**0.15**	0.13
10	0.83	6.40	86.04				Interview duration per int.	-0.16	0.04	**0.74**
11	0.78	6.00	92.04				Interview length	-0.03	-0.21	**0.63**
12	0.58	4.44	96.49				Language matching	-0.23	0.02	**0.26**
13	0.46	3.51	100.0				Feelings after the interview	-0.12	-0.05	**0.15**
Extraction Method: Principal Component Analysis. **KMO: 0.498** **SIG. : 0.000**							Extraction Method: Principal Component Analysis. 3 components extracted			

4.1.1.2. Measuring Rapport

The preparatory stages of analysis were conducted to reach final model structural model to measure rapport between interviewer and respondent. These analyses include uncorrelated measurement models for timing and frequency of visits, interviewer characteristics and similarity between interviewer and respondent, and dynamic interview factors (Step 1), and 1st order CFA (Step 2), 2nd order CFA (Step 3), Path Analysis (Step 4). The measurement of rapport between interviewer

and respondent starts with the 2nd order CFA (Step 3). Thus, the interpretations on regression coefficients were mainly concentrated on models in 2nd order CFA, and finally Path Analysis.

4.1.1.2.1. Uncorrelated Model for Rapport

Figure 4.1. presents the measurement models for factors introducing rapport built between interviewer and respondent.

Figure 4.1. Measurement Models for Timing and Frequency of Visits, Interviewer Characteristics and Similarity between Interviewer and Respondent, and Dynamic Interview Factors
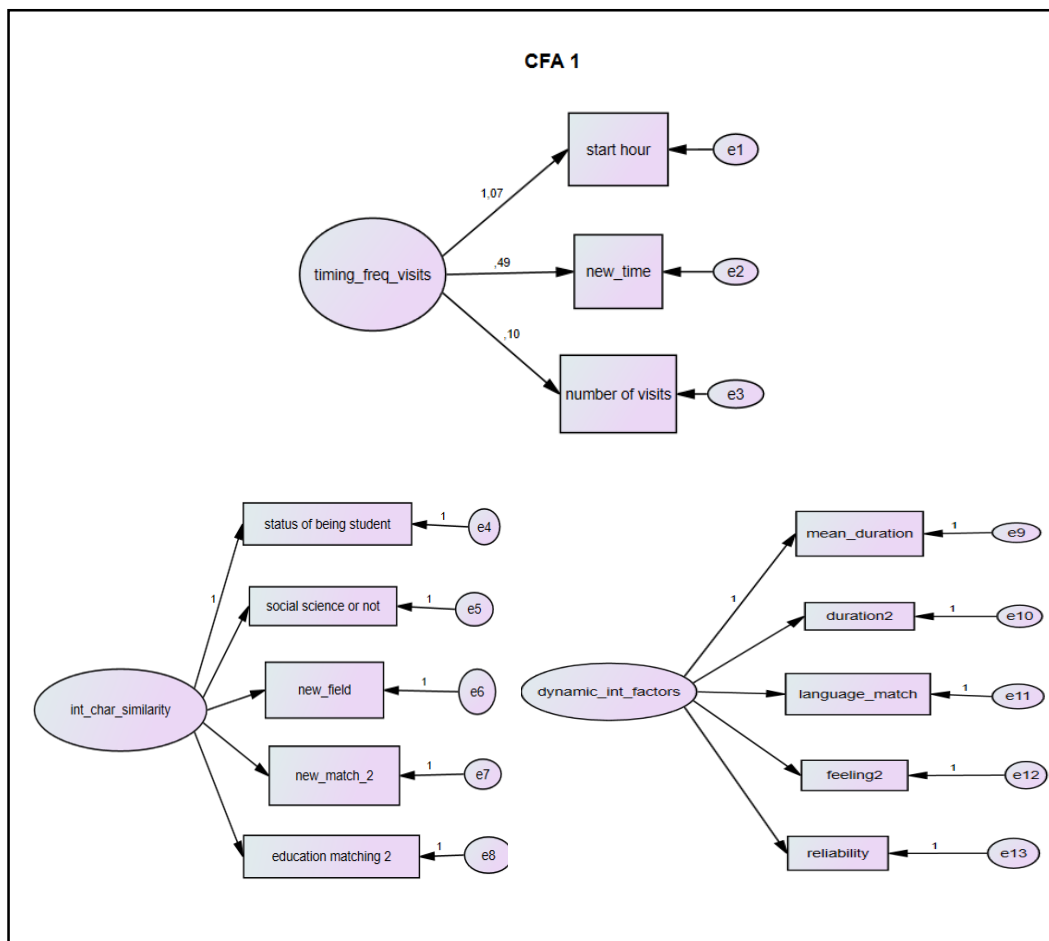
The uncorrelated model was found to be insignificant based on the most commonly used fitting index (CMIN/DF=13.2). The modifications suggested by the model refer to two-way linkages between interviewer characteristics/similarity and dynamic interview factors as well as timing and frequency of visits and

dynamic interview factors (Table 4.2.). These modifications suggested by uncorrelated model means construction of 1ˢᵗ order CFA model.

Table 4.2. Uncorrelated Model Fit Results and Regression Weights

Model fit					
Model	**NPAR**	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	26	855,870	65	0,000	13,167
Regression weights					
Factors	**Items**			**Estimate**	
Timing and frequency of visits	Start hour of interview			1.07	
	Time of the interview			0.49	
	Number of visits			0.10	
Interviewer characteristics and similarity between interviewer and respondent	Student			3.69	
	Background			0.08	
	Field period			0.03	
	Age matching			0.02	
	Educational level matching			0.02	
Dynamic interview factors	Mean duration per interviewer			0.40	
	Interview length			0.39	
	Language matching			0.13	
	Feelings after the interview			0.08	
	Response reliability			0.09	
Modification Indices					
	MI			**Par change**	
I'wer characteristics and similarity <--> Dynamic interview factors	66.670			0.017	
Timing and freq of visits <--> Dynamic interview factors	4.823			0.004	

4.1.1.2.2. First Order Confirmatory Factor Analysis for Rapport

The first order CFA model results suggested the construction of 2nd order CFA model given that it warns about the undefined model. Therefore, 2nd order CFA was conducted to interpret findings more appropriately rather than 1st order CFA.

Figure 4.2. First Order CFA for Timing and Frequency of Visits, Interviewer Characteristics and Similarity between Interviewer and Respondent, and Dynamic Interview Factors
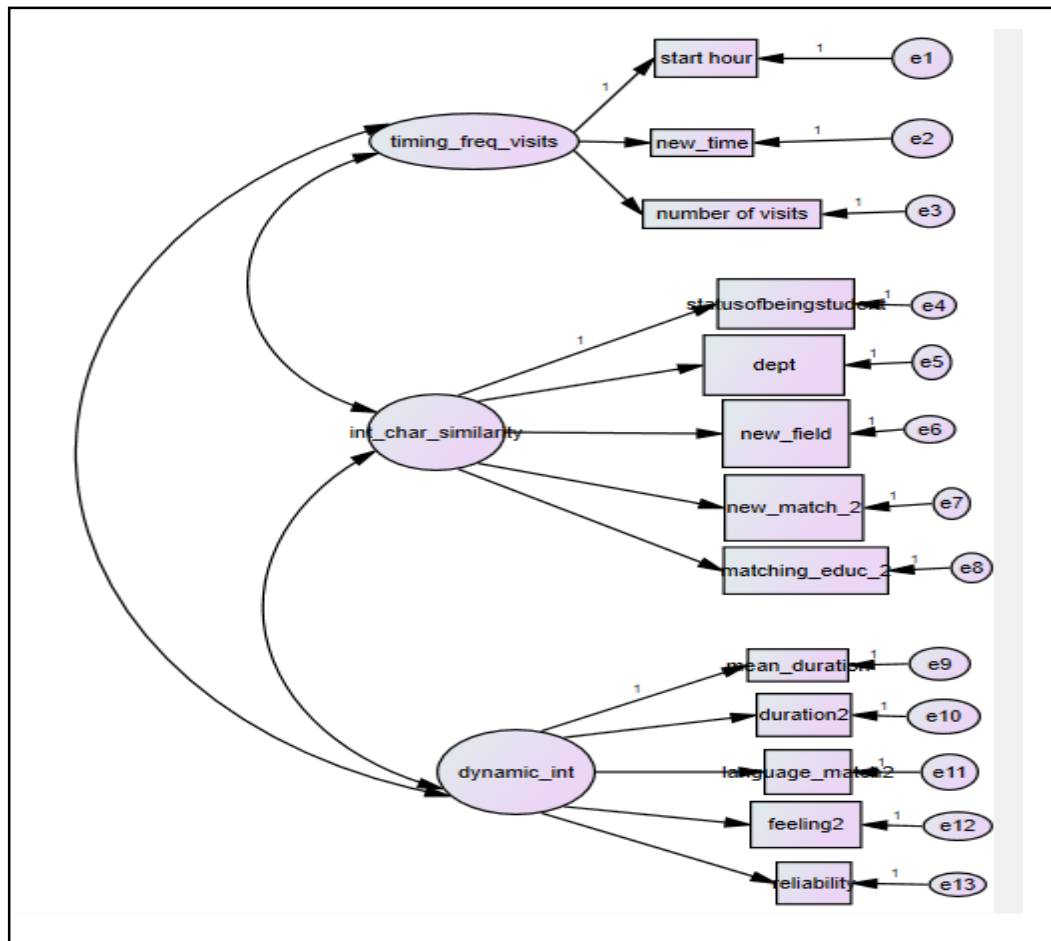
4.1.1.2.3. Second Order Confirmatory Factor Analysis for Rapport

Second order CFA to measure rapport between interviewer and respondent was carried out based on the extracted factors through EFA model. Therefore, the sub-factors to conceptualize rapport between interviewer and respondent was involved in the 2nd order CFA. In that model, those unobservable factors play role as if they are observable within the model. Thus, the error terms were also added into the model for the sub-factors (Figure 4.3.).

The value of CMIN/DF=2.87<3 is perfect for the second order CFA model constructed to estimate rapport between interviewer and respondent. The factor named 'timing and frequency of visits' is the most indicative factor to estimate rapport according to 2nd order CFA model.

The model results indicated that especially start hour of interview (1.03), time of the interview (0.51), mean interview duration per interviewer (0.47), interview length (0.34) contribute to relevant factors as well as rapport between interviewer and respondent. For example, a minute increase in interview duration per interviewer leads to 0.47-unit increase dynamic interview factors (Table 4.3.).

The modified model of the second order CFA could be evaluated as the best fitting model to measure rapport. However, path analysis is required to calculate rapport index and use it for subsequent analysis.

Figure 4.3. Second Order CFA to Build Rapport between Interviewer and Respondent

*The constructed model has not a good fit index and suggests certain modifications. At this stage, theoretically or practically possible modifications were taken into the account.
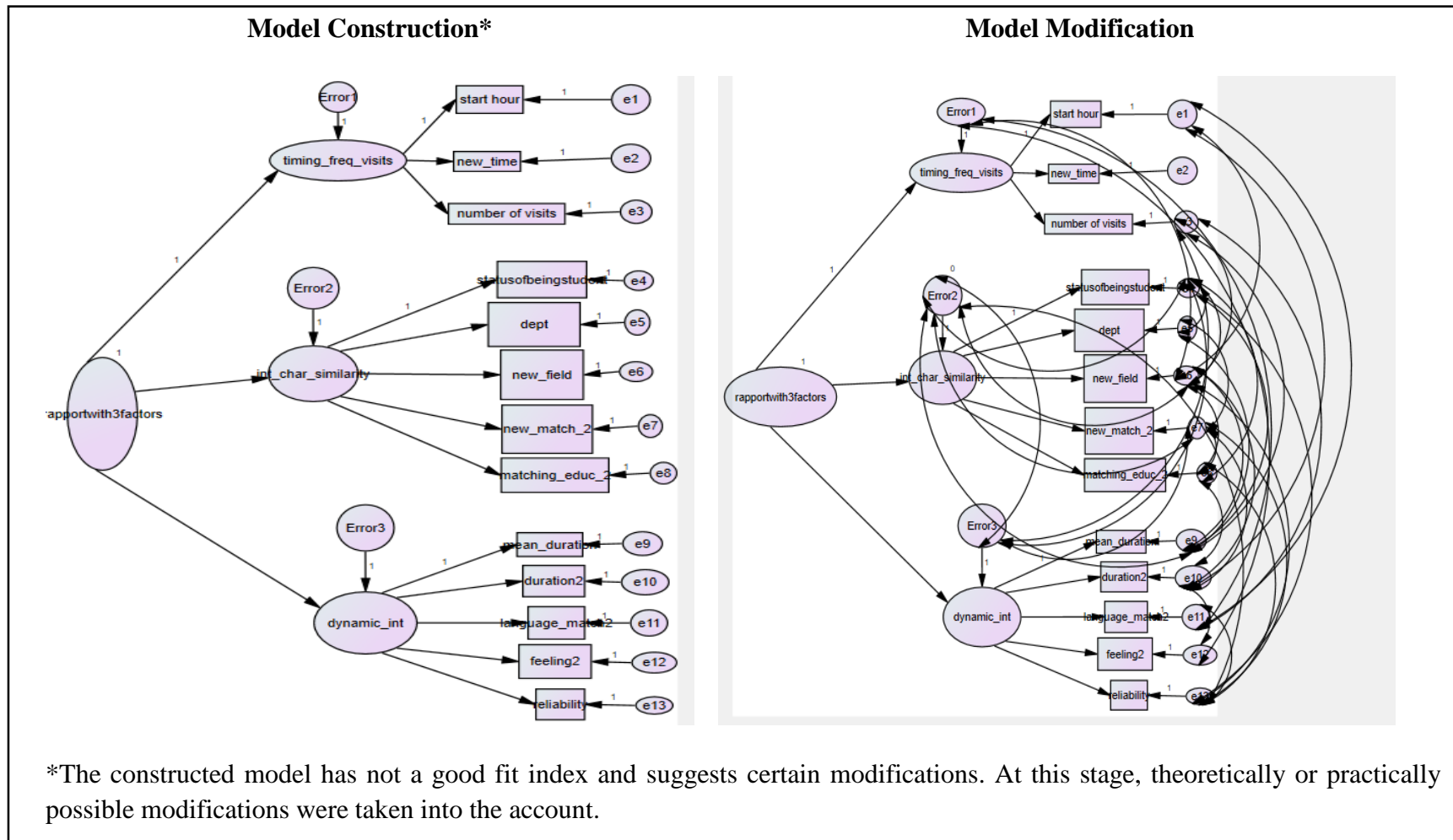
Table 4.3. Second Order CFA Model Fit Results and Regression Weights

Model fit					
Model	**NPAR**	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	63	80.484	28	0.000	2.874

Regression weights		
Factor (2nd order)	**Items**	**Estimate**
Rapport between interviewer and respondent	Timing and frequency of visits	2.43
	Interviewer char. and similarity	1.00
	Dynamic interview factors	0.02
Factors (1st order)	**Items**	**Estimate**
Timing and frequency of visits	Start hour of interview (.ref)	1.03
	Time of the interview	0.51
	Number of visits	0.11
Interviewer characteristics and similarity between interviewer and respondent	Student (.ref)	0.00
	Background	0.00
	Field period	0.01
	Age matching	0.02
	Educational level matching	0.02
Dynamic interview factors	Mean duration per interviewer (.ref)	0.47
	Interview length	0.34
	Language matching	0.12
	Feelings after the interview	0.02
	Response reliability	0.07

*The reference variables were determined as the first variables of each latent factor.

4.1.1.2.4. Path Analysis for Rapport (Final Model)

Path analysis for rapport between interviewer and respondent includes second order CFA, all possible two way relations among latent factors as well as the factor value of rapport in the data set. The variable 'rapport_total' was created to represent rapport built between respondent and interviewer. When the preparatory models constructed with the SEM technique (measurement models for timing and frequency of visits, interviewer characteristics and similarity, 1st order CFA, 2nd

order CFA), Path Analysis is the complete confirmation process of "rapport". The error terms and regression weights "1" were added according to model construction procedures in path analysis (Figure 4.4.).

The final model to operationalize rapport between interviewer and respondent is relatively acceptable due to the fact that the fitting index is found to be CMIN/DF=5.4. The findings put forward that timing and frequency of visits (0.79), interviewer characteristics and similarity (0.77) and dynamic interview factors (0.84) are contributing factors of rapport between interviewer and respondent.

The path analysis results showed that all items to conceptualize timing and frequency of visits have significant impact on that factor. A change in time of the interview, i.e. afternoon interviews instead of evening interviews, leads to 0.74 unit change in the same factor. Similarly, a change in the background of interviewer, i.e. interviewers from social/educational sciences instead of interviewers from natural sciences, leads to 0.61 unit change in the second factor, that was labelled as interviewer characteristics and similarity between interviewer and respondent. Being currently student at the survey date was also found to be contributing item to that factor. Looking at the third factor, a minute increase in interview length leads to 0.30 unit change in the dynamic interview factors, when other predictors are held constant. Respondents' feelings after the interview and reliability of responses according to interviewers' view have relatively low contribution to introduce rapport (0.16 and 0.14, respectively) (Table 4.4.).

Figure 4.4. Path Analysis to Measure Rapport between Interviewer and Respondent

Model Construction*

Model Modification

*The constructed model has not a good fit index and suggests certain modifications. At this stage, theoretically or practically possible modifications were taken into the account.
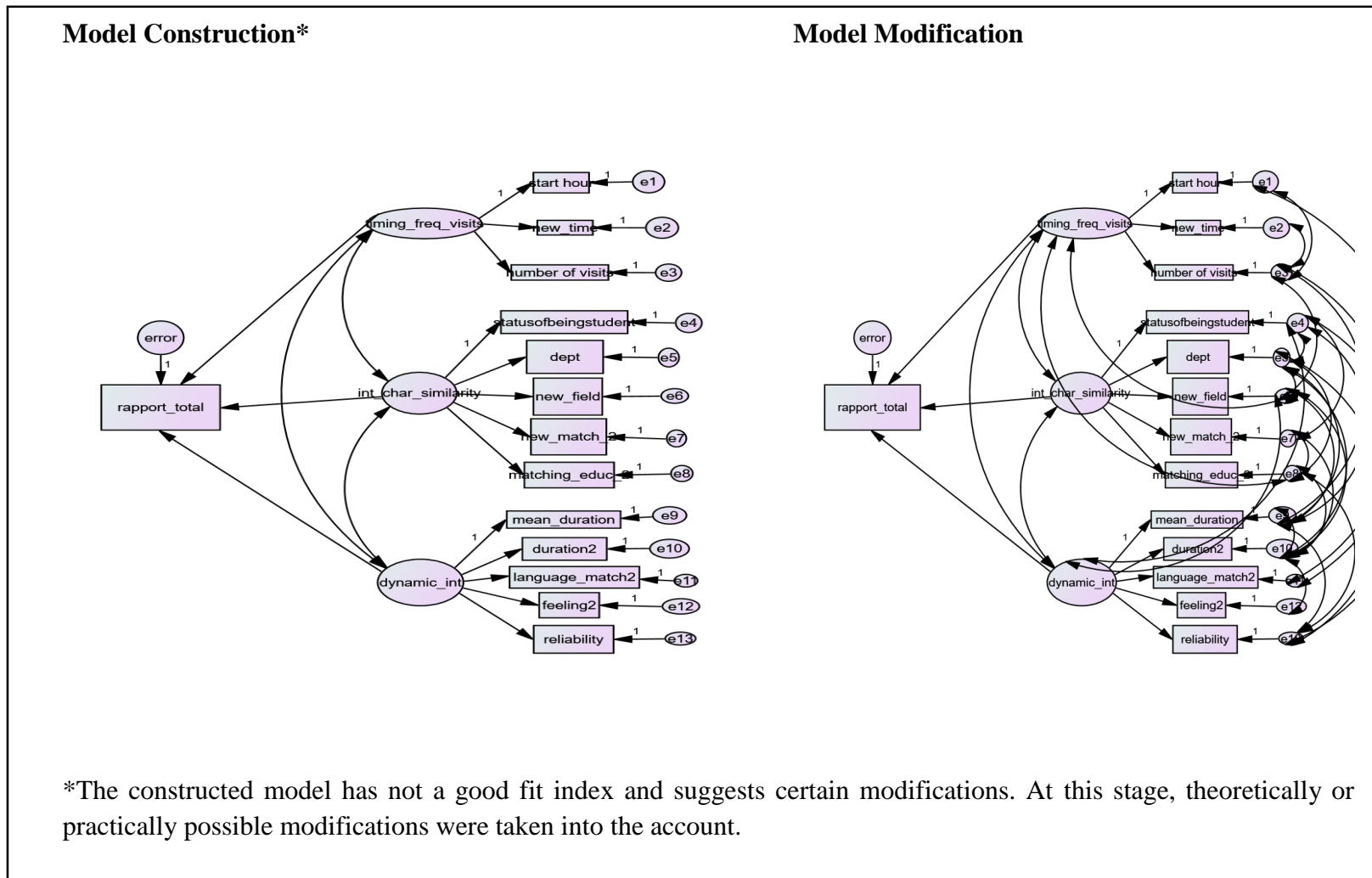
Table 4.4. Path Model Fit Results and Regression Weights

Model fit					
Model	**NPAR**	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	61	238.132	44	0.000	5.412

Regression weights		
Factor (2nd order)-Path	**Items**	**Estimate**
Rapport between interviewer	Timing and frequency of visits	0.79*
and respondent	Interviewer char. and similarity	0.77*
	Dynamic interview factors	0.84*
Factors (1st order)	**Items**	**Estimate**
Timing and frequency of visits	Start hour of interview (.ref)	0.70
	Time of the interview	0.74*
	Number of visits	0.11*
Interviewer characteristics and	Student (.ref)	0.52
similarity between interviewer	Background	0.61*
and respondent	Field period	0.17*
	Age matching	0.07*
	Educational level matching	0.13*
Dynamic interview factors	Mean duration per interviewer (.ref)	0.44
	Interview length	0.30*
	Language matching	0.05*
	Feelings after the interview	0.16*
	Response reliability	0.14*

*The significant variables compared to reference variables determined as the first variables of each latent factor.

4.1.2. Results for Interview Quality

4.1.2.1. Exploring Interview Quality

The study variables to explore "interview quality" were integrated into variable groups that refer to interviewers' load, respondents' load and quality indicators. All possible variables related to interviewer cooperation, working in the field, working in the urban clusters, interview length, question burden, health status of respondents, and data quality indicators for a set of multiple items included questions were considered and then, new study variables were constructed. Most of the mean and proportion of variables were converted into binary variables for the exploratory factor analysis. Similarly, the variables related to data quality indicators were included as binary variables into the models.

To understand whether selected variables are appropriate to factor structure, the interrelationships among items were assessed in accordance with the factor analysis objectives. Most of the relations were found to be significant, and the correlations between items ranged from -0.18 to 0.79 (Table 4.5.). This means that selected variables to operationalize interview quality is appropriate for factor analysis.

Table 4.5. Correlation matrix of items included in exploratory factor analysis

	Cooperation rate	Proportion of urban clusters	Field work length	Number of interviews on a day	Interview duration	Proportion of filled items	Perceived health status	'No idea' responses on attitudes about refusing sex	'No idea' responses on attitudes towards violence	Response reliability
Cooperation rate	1.00	0.79**	0.37**	0.23**	-0.08**	0.00	-0.01	-0.03*	-0.01	-0.04**
Proportion of urban clusters	0.79**	1.00	0.40**	0.04**	-0.03*	0.03**	-0.02*	-0.06**	-0.02*	-0.03**
Field work length	0.37**	0.40**	1.00	0.11**	-0.11**	0.02	-0.01	-0.02*	0.00	0.00
Number of interviews on a day	0.23**	0.04**	0.11**	1.00	-0.18**	-0.03**	0.07**	0.01	-0.01	0.00
Interview duration	-0.08**	-0.03*	-0.11**	-0.18**	1.00	0.31**	0.14**	-0.04**	-0.01	0.06**
Proportion of filled items	0.00	0.03**	0.02	-0.03**	0.31**	1.00	0.09**	-0.10**	-0.03**	0.11**
Perceived health status	-0.01	-0.02*	-0.01	0.07**	0.14**	0.09**	1.00	-0.01	0.01	0.02
'No idea' responses on attitudes about refusing sex	-0.03*	-0.06**	-0.02*	0.01	-0.04**	-0.10**	-0.01	1.00	0.23**	-0.09**
'No idea' responses on attitudes towards violence	-0.01	-0.02*	0.00	-0.01	-0.01	-0.03*	0.01	0.23**	1.00	-0.04**
Response reliability	-0.04**	-0.03**	0.00	0.00	0.06**	0.11**	-0.02	-0.09**	-0.04**	1.00

** $p<0.01$; *$p<0.05$ significance levels.

Several EFA models were employed, and extracted factors and factor structures were examined through Principal Components Technique. Analyses were made with and without rotation, and the restriction on number of factors was needed considering the output tables. Finally, three factors were taken into account due to their considerable variances as well as item loadings on the factors. At this point, conceptual framework of the dissertation was also considered. Lastly, sum score technique was employed to create an index for interview quality through sum scores. In this section, statistical findings produced from the final model are presented.

The final model of the exploratory factor analysis suggested that the variables to measure interview quality are factorable based on the KMO coefficient as well as Barlett's test result. The KMO coefficient was found to be 0.6 according to final model of the exploratory factor analysis. This means that the factorability of variables is at the acceptable level according to Kaiser's work (1974). The factorability of items was also confirmed by the Bartlett's test (sig. 0.00). The total explained variance was found to be about 46 percent with three exploratory factors. The extracted factors accounted for 20.6, 14.6 and 11.3 percent of the total variance, respectively. The component matrix of final exploratory factor analysis showed that 'interview workload', 'respondent burden' and 'response quality' are able to explain "interview quality" (Table 4.6.).

The most indicative factor to measure interview quality was labelled as "interviewer workload". Looking at the highest item loadings on each factor, 'cooperation rate' (0.81), 'proportion of urban clusters' (0.76), 'field work length' (0.70) and 'number of interviews on a day' (0.42) are mostly associated with Factor 1. These indicators were evaluated within 'interviewer workload' since they denote the effort spent for the interviews. The 'number of interviews' is a relatively weak measurement of interviewer workload compared to other items. Still, 'interviewer workload' is the most indicative factor that explains approximately 21 percent of the total variance.

The variables 'interview duration' (0.64), 'proportion of filled items' (0.53) and 'perceived health status' (0.17) have the highest loadings on Factor 2 that was labelled as 'respondent burden'. The 'proportion of filled items' for respondents is at least as considerable as their 'interview duration'. The 'perceived health status' is an indicator of woman's difficulty to respond.

Lastly, 'no idea responses on attitudes about refusing sex' (0.48), and 'straight lining on health questions' (0.26) have the highest loadings on Factor 3 that was named as 'response quality'. These results are consistent with our study specifications at the beginning of the study (Table 4.6.).

Table 4.6. Results of the Exploratory Factor Analysis to Measure Interview Quality

	Total Variance Explained						**Component Matrix**			
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Variables	Components		
COMPONENT	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %		1-Interviewer workload	2-Respondent burden	3-Response quality
1	2.27	20.64	20.64	2.27	**20.6**	20.6	Cooperation rate	**0.81**	0.35	0.22
2	1.60	14.55	35.19	1.6	**14.6**	35.2	Proportion of urban clusters	**0.76**	0.47	0.29
3	1.24	11.25	46.44	1.24	**11.3**	**46.4**	Fieldwork length per interviewer	**0.70**	0.04	-0.09
4	1.19	10.78	57.22				Interview duration per interviewer	**0.51**	-0.51	-0.41
5	0.99	9.02	66.25				Number of completed interviews per day	**0.42**	-0.34	-0.40
6	0.91	8.24	74.49				Interview length per women	-0.33	**0.64**	-0.04
7	0.82	7.49	81.98				Proportion of filled items	-0.08	**0.53**	-0.36
8	0.76	6.94	88.92				Straigthlining on refusals to have sex	-0.03	0.32	**0.48**
9	0.62	5.64	94.56				Health status of women	-0.05	**0.17**	-0.35
10	0.41	3.72	98.29				Straightlining on health questions	0.01	-0.14	**0.26**
11	0.19	1.71	100.0							

Extraction Method: Principal Component Analysis.
KMO: 0.559
SIG. : 0.000

Extraction Method: Principal Component Analysis.
3 components extracted

4.1.2.2. Measuring Interview Quality

First stages of the analyses are needed to reach final structural model of the interview quality. These analyses include uncorrelated measurement models for interviewer workload, respondent burden, and response quality (Step 1), and 1st order CFA (Step 2), 2nd order CFA (Step 3), Path Analysis (Step 4). The measurement of interview quality starts with the 2nd order CFA (Step 3). Therefore, the interpretations on path coefficients were mainly concentrated on models in 2nd order CFA, and finally Path Analysis.

4.1.2.2.1. Uncorrelated Model for Interview Quality

Figure 4.5. illustrates the uncorrelated model for extracted factors to measure interview quality that are interviewer workload, respondent burden and response quality.

Figure 4.5. Measurement Models for Interviewer Workload, Respondent Burden and Response Quality
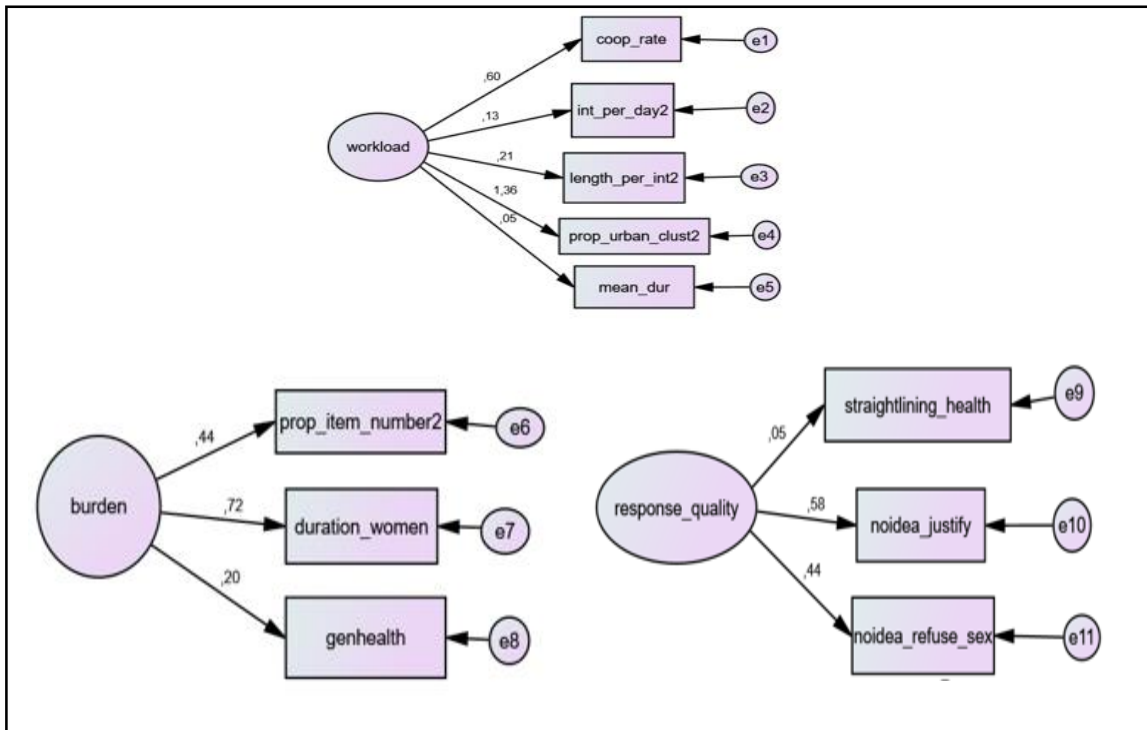
The initial uncorrelated model was not found significant according to fitting index (CMIN/DF=62.6). The modifications suggested by the model referred to first order confirmatory factor analysis. The modifications suggested a two-way linkage between interviewer workload and response quality as well as interviewer workload and respondent burden. Therefore, the second stage is to construct 1st order CFA model for those extracted factors (Table 4.7.).

Table 4.7. Uncorrelated Model Fit Results and Regression Weights

Model fit					
Model	**NPAR**	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	22	2756.044	44	0.000	62.637
Regression weights					
Factors	**Items**		**Estimate**		
Interviewer workload	Cooperation rate		0.61		
	Number of interviews (day)		0.13		
	Field length		0.21		
	Proportion of urban clusters		1.36		
	Mean interview duration		0.05		
Respondent burden	Proportion of filled items		0.44		
	Interview duration		0.72		
	General health status		0.20		
Response quality	Straightlining on health questions		0.05		
	'No idea' responses on attitudes towards violence		0.58		
	'No idea' responses on refusing to have sex		0.44		
Modification Indices					
		MI		**Par change**	
burden	<-->	Response quality	19.848	0.000	
workload	<-->	Response quality	9.339	0.000	
workload	<-->	R burden	10.516	0.002	

4.1.2.2.2. First Order Confirmatory Factor Analysis for Interview Quality

According to modifications suggested by uncorrelated model, each two way linkages were constructed for theoretically or practically acceptable situations. For instance, the residual term e7 was linked to e9 and e11 due to the fact that interview duration per woman may be affected from straight-lining issues. In other words, interview length probably would be shorter if there was any straight-lining on questions about women's health, attitudes towards violence and responses on refusing to have sex. Similar logical and practical circumstances were considered behind the all model modifications extensively. All justifications which are considered behind model modifications to reach final path model are presented in Table C.2. in Appendix C. Furthermore, SEM technique says that error terms which are associated with the same latent factor can be linked with each other (Figure 4.6.).

Figure 4.6. First Order CFA for Interviewer Workload, Respondent Burden and Response Quality

Model Construction*

Model Modification

*The constructed model has not a good fit index and suggests certain modifications. At this stage, theoretically or practically possible modifications were taken into the account.
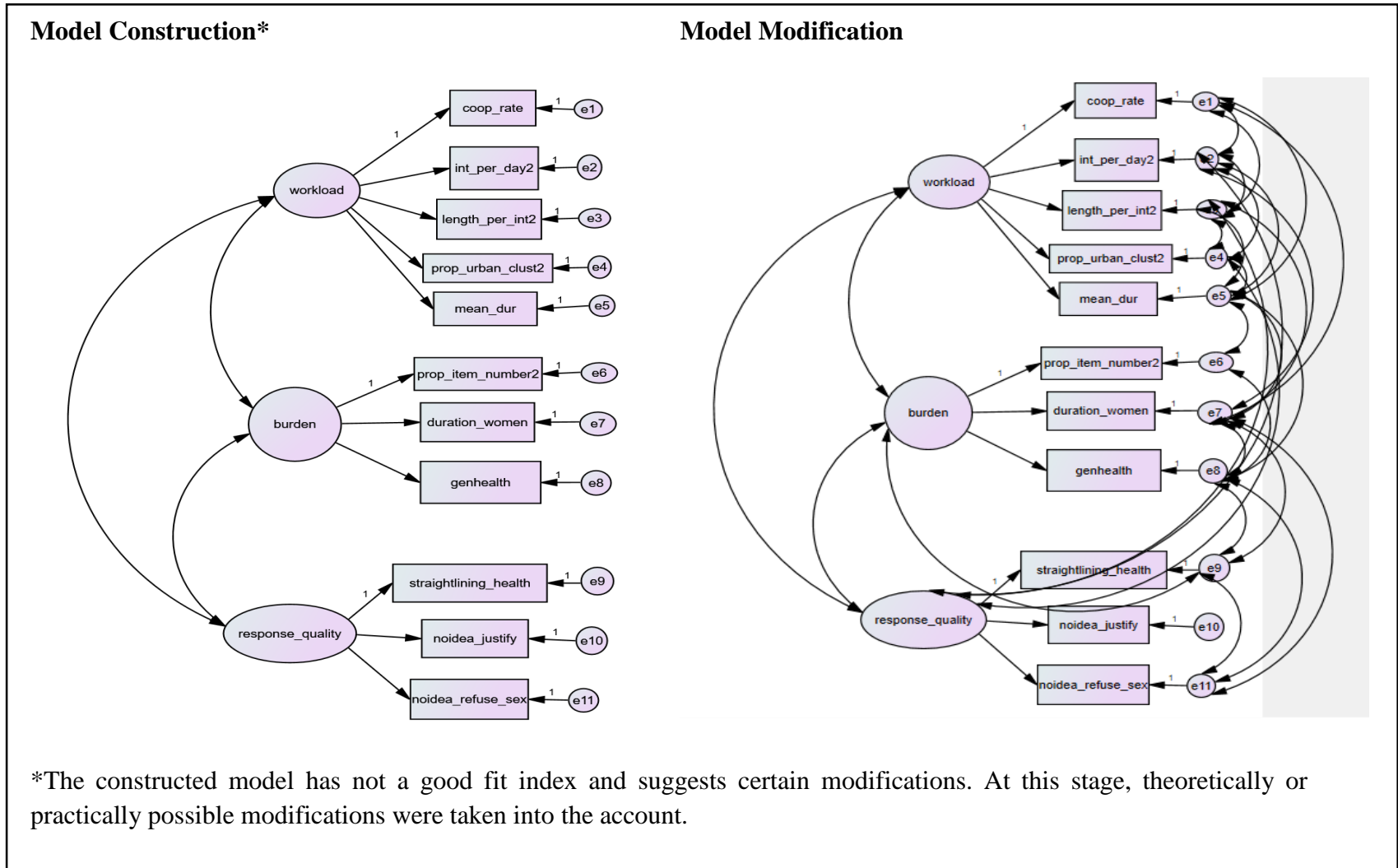
Table 4.8. presents that the modified model has acceptable fit index given that the value of CMIN/DF is less than 5. (CMIN/DF=3.86<5).

The table also shows the path coefficients of the study variables which are related to interviewer workload, respondent burden and response quality. The table of unstandardized regression weights also provide significance of each variables. The cooperation rate, that was found the most indicative factor to measure interviewer workload, have the highest coefficient. An interview increase on a day leads to an increase of 0.76 units in interviewer workload. Moreover, field length (0.90), proportion of urban clusters (0.63), mean interview duration (0.64) are the contributing factors on interviewer workload. General health status (0.64) is found as a contributing factor to burden of respondents. Moreover, 'no idea' responses on attitudes towards violence and refusing to have sex are found to be significant in terms of contributing the response quality factor (Table 4.8.).

Still, the model suggests other modifications although the modified model fitted to the data. In line with the SEM technique only, theoretically or practically possible modifications were made. Therefore, these modifications were not employed, and previous modified model was accepted as the best for first order confirmatory factor analysis.

Table 4.8. First Order CFA Model Fit Results and Regression Weights

Model fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	51	57.825	15	0.000	3.855

Regression weights

Factors	Items	Estimate
Interviewer workload	Cooperation rate (.ref)	1.32
	Number of interviews (day)	1.76*
	Field length	0.90
	Proportion of urban clusters	0.63*
	Mean interview duration	0.64
Respondent burden	Proportion of filled items(.ref)	0.63
	Interview duration	0.50
	General health status	-0.64*
Response quality	Straightlining on health questions (.ref)	0.20
	'No idea' responses on attitudes towards violence	0.21*
	'No idea' responses on refusing to have sex	1.17*

Modification Indices

	MI	Par change
e4 <--> burden	4.907	0.002
e4 <--> e6	8.049	0.004
e2 <--> e8	9.700	0.006

*The significant variables compared to reference variables determined as the first variables of each latent factor.

4.1.2.2.3. Second Order Confirmatory Factor Analysis for Interview Quality

Second order CFA to measure interview quality was performed under the consideration of sub-concepts explored through exploratory factor analysis. According to this technique, three unobservable factors were included in the model. In addition to observable measures, these factors play role as though they are observable. Therefore, the residual terms for those factors were also added into the model (Figure 4.7.).

The value of CMIN/DF=3.73<5 is acceptable for the second order CFA model fitting. Furthermore, interviewer workload is found as the most indicative factor to introduce interview quality.

The second order CFA model suggested that field length (3.38), number of interviews on a day (2.66), mean interview duration (1.55) are also contribute to interviewer workload, although the proportion of urban clusters (0.83) are found to be significant. A minute increase in interview duration of women leads to 0.76-unit significant increase in respondent burden. Lastly, 'no idea' responses on attitudes towards violence (0.41) and refusing to have sex (0.62) contribute to measurement of response quality (Table 4.9.).

The modified model of the second order CFA was accepted as the best model. However, second order CFA is not a complete model and needs interview quality index to make accurate interpretations on the quality.

Figure 4.7. Second Order CFA to Measure Interview Quality

*The constructed model has not a good fit index and suggests certain modifications. At this stage, theoretically or practically possible modifications were taken into the account.
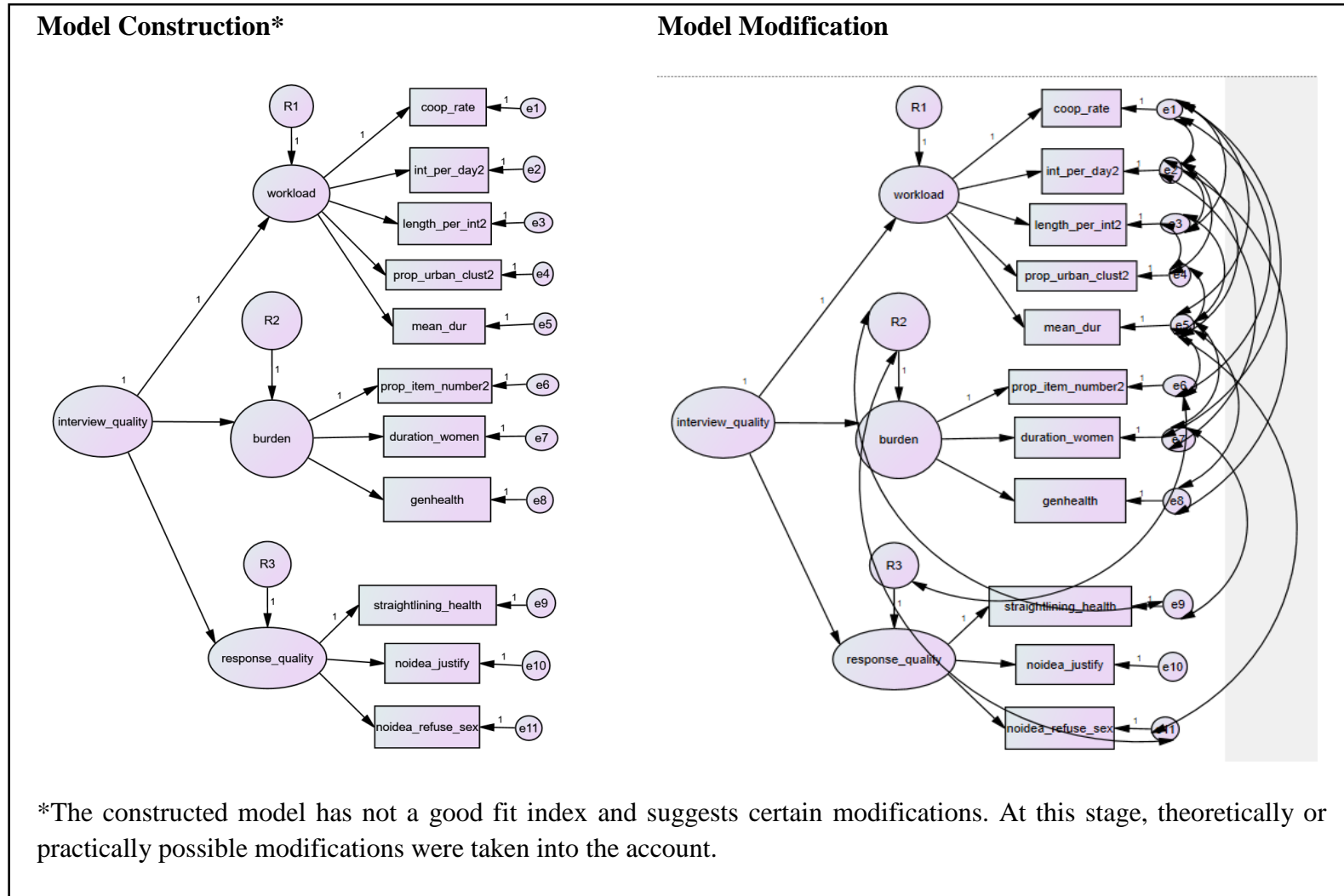
Table 4.9. Second Order CFA Model Fit Results and Regression Weights

Model fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	44	82.112	22	0.000	3.732

Regression weights

Factor (2nd order)	Items	Estimate
Interview quality	Interviewer workload (.ref)	2.07
	Respondent burden	0.01
	Response quality	0.00

Factors (1st order)	Items	Estimate
Interviewer workload	Cooperation rate (.ref)	0.99
	Number of interviews (day)	2.66
	Field length	3.38
	Proportion of urban clusters	0.83*
	Mean interview duration	1.55
Respondent burden	Proportion of filled items(.ref)	0.41
	Interview duration	0.76*
	General health status	0.19*
Response quality	Straightlining on health questions (.ref)	0.04
	'No idea' responses on attitudes towards violence	0.41*
	'No idea' responses on refusing to have sex	0.62

*The significant variables compared to reference variables determined as the first variables of each latent factor.

4.1.2.2.4. Path Analysis for Interview Quality (Final Model)

The path analysis covers the second order CFA model as well as the possible two way relations between latent factors and the factor value of main construct in the data set. The variable named 'QUA3' was constructed as an index to measure interview quality. When all stages of the SEM technique are considered (EFA, measurement models, 1st order CFA and 2nd order CFA), Path Analysis is complete confirmation process of "interview quality". The error terms and regression weights "1" were added according to model construction procedures in path analysis (Figure 4.8.).

The fitting index of the final path model is found to be CMIN/DF=5.7 and thus, the model has relatively acceptable to operationalize interview quality.

Path analysis provided coefficients for the contribution of three different factors on interview quality. Based on the results, interviewer workload (0.84), respondent burden (0.24), and response quality (0.15) have considerable impact on interview quality. The main results of the path model also confirmed the findings produced through exploratory factor analysis (Table 4.10.).

The path analysis put forward that a unit change in an increase in interviewer workload results in 0.84 unit change in the interview quality when other predictors are held constant. Similarly, a unit change in an increase in respondent burden leads to 0.24 unit change in the interview quality while a unit change in an increase in response quality leads to 0.15 change in the interview quality, when other predictors are held constant. The last path model also suggested that all of the items that measure interviewer workload, respondent burden and response quality significantly contribute to relevant factors. Furthermore, the highest estimates refer to proportion of urban clusters (0.95), cooperation rate (0.87), interview duration (0.81) as well as 'no idea' responses on refusing sex (0.52) (Table 4.10.).

All justifications behind modifications in the models could be found in Table C.2. in Appendix C.

Figure 4.8. Path Analysis to Measure Interview Quality

Model Construction*   **Model Modification**

*The constructed model has not a good fit index and suggests certain modifications. At this stage, theoretically or practically possible modifications were taken into the account.
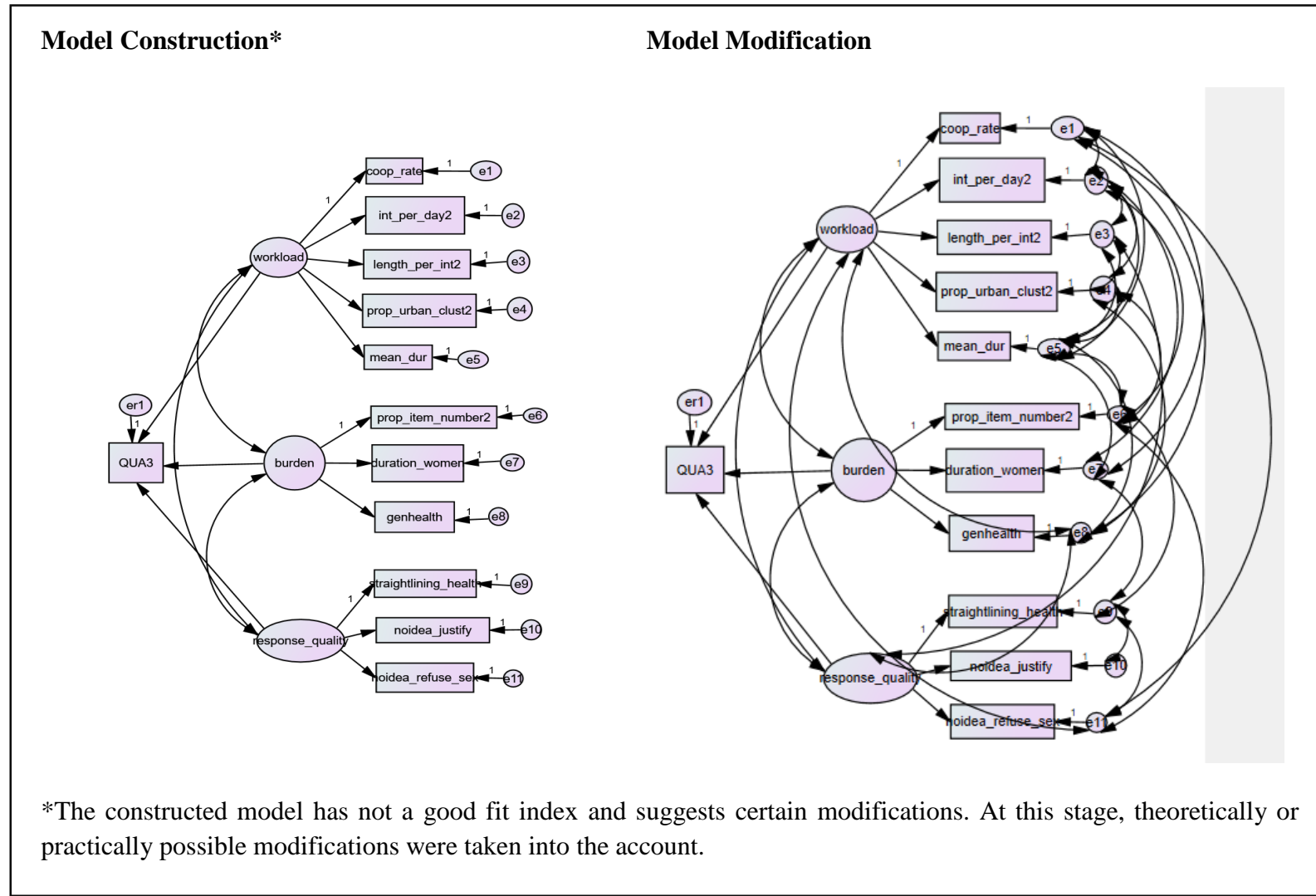
Table 4.10. Path Model Fit Results and Regression Weights

Model fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	56	124.645	22	0.000	5.666

Regression weights

Factor (2nd order)-Path	Items	Estimate
Interview quality	Interviewer workload	0.84*
	Respondent burden	0.24*
	Response quality	0.15*

Factors (1st order)	Items	Estimate
Interviewer workload	Cooperation rate (.ref)	0.87
	Number of interviews (day)	0.32*
	Field length	0.33*
	Proportion of urban clusters	0.95*
	Mean interview duration	0.25*
Respondent burden	Proportion of filled items (.ref)	0.39
	Interview duration	0.81*
	General health status	0.17*
Response quality	Straight lining on health questions (.ref)	0.41
	'No idea' responses on attitudes towards violence	0.48*
	'No idea' responses on refusing to have sex	0.52*

*The significant variables compared to reference variables determined as the first variables of each latent factor.

4.1.3. Results for Rapport Impact on Interview Quality

In this section, the impact of rapport built between interviewer and respondent on interview quality is investigated and relevant findings are reported. In the previous sections (Section 4.1.1. and 4.1.2.), the rapport between interviewer and respondent, and interview quality were explored and confirmed through structured measurement and confirmation models in exploratory and confirmatory factor analyses (EFA and CFA). The first latent factor, rapport between interviewer and respondent (33.1%), was introduced with 'timing and frequency of visits (12.5%)', 'interviewer characteristics and similarity (10.7%)' and 'dynamic interview factors (9.9%)'. The second latent factor, interview quality (46.4%), was operationalized with 'interviewer workload (20.6%)', 'respondent burden (14.6%)', and 'response quality (11.3%)'. It should be noted that, until now, statistical models of rapport and interview quality were constructed and employed separately, and findings were interpreted according to outputs of separate models.

Structural equation modeling was used to investigate the effect of interview rapport between interviewer and respondent on interview quality. The structural equation model is the most complex model compared to previous measurement and confirmation models. Therefore, it includes all possible relations between sub-constructs of rapport and interview quality as well as their predictors. That being said, the effort on deciding relations between multi-dimensional factors was the main activity to reach final model and complete the study framework within the scope of thesis. After the model diagram drawing and model running steps, modification indices suggested by the AMOS Program were examined in detail and appropriate ones were employed step by step on the basis of the covariance values (M.I.). In other words, modifications were made based on variables' strength of relationships between each other. The restriction on the number of modifications was needed according to whether they are logically, theoretically or practically possible or not.

Finally, best fitting model was decided to investigate the rapport impact on interview quality.

The standardized regression weights, namely path coefficients, were taken into account that refer to amount of change in the interview quality originated from a single standard deviational unit change in the rapport between interviewer and respondent.

4.1.3.1. Structural Equation Model for Rapport Impact on Interview Quality

The confirmation models for rapport between interviewer and respondent and interview quality were moved to the final model. As in previous models, one of the regression weights of both rapport and interview quality was taken as "1" to estimate path coefficients with sufficient number of restrictions. The common variables to explore and confirm both rapport and interview quality, which are the mean length of interview per interviewer and per respondent, were included into the final model as an only one variable. These common variables were selected to confirm 'dynamic interview factors' for rapport and, 'interviewer workload' and 'respondent burden' for interview quality. Lastly, the one-way from rapport construct to quality construct was drawn into the model to investigate rapport impact on interview quality. A set of $\{e_1, \dots e_{12}\}$ includes error terms of observable variables whilst a set of $\{R_1, \dots R_6\}$ includes residuals of sub-constructs of main latent constructs that are rapport and interview quality. Finally, R_7 represents the error term of interview quality that are the dependent latent construct of the study (Figure 4.9.).

Figure 4.9. Structural Equation Model for Rapport Impact on Interview Quality
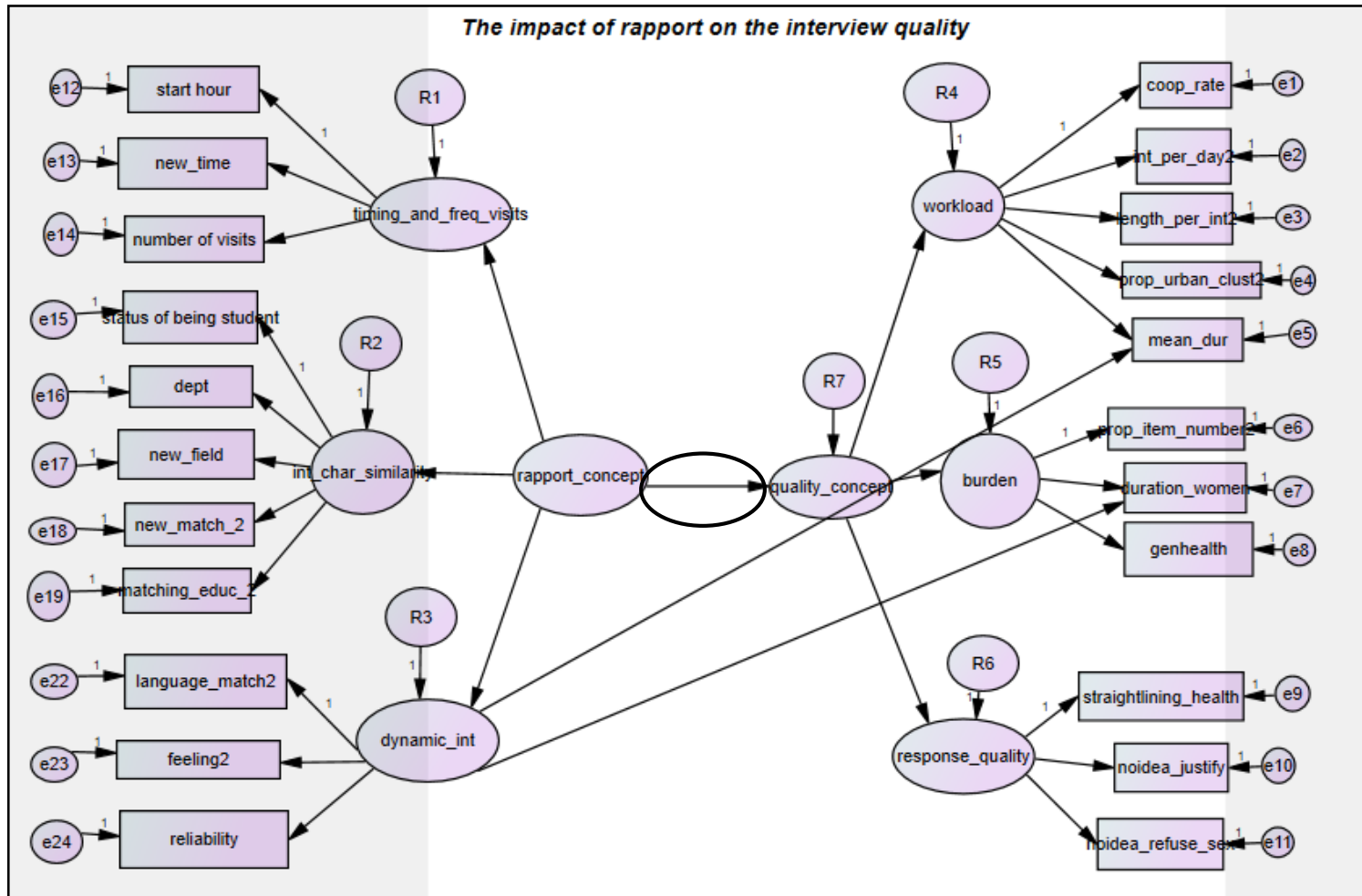
4.1.3.2. Structural Equation Model Modifications

The non-modified model has not a good fit index (CMIN/DF=23.029) and thus, the SEM Program recommended many modifications based on the strengths of relationship between exogenous and endogenous variables (two-way linkages) included in two main parts of the model. The M.I. values were grouped according to their numerical changes and, appropriate modifications were employed step by step. In that stage, as the SEM analysis technique suggested, only theoretically or practically modifications were performed rather than all modifications. During the analyses, eight different models were constructed and performed according to strength of relationships between constructs and measures, measures and measures as well as constructs and constructs. The models' goodness of fit index was followed until reaching the best fitting model (Table 4.11.).

Table 4.11. The Model Modification Steps and Improvements on Goodness of Fit

Steps	M.I.	CMIN/DF
1st step	601<M.I.<=700	18.59
2nd step	501<M.I<=600	
3rd step	301<M.I<=400	14.53
4th step	201<M.I<=300	
5th step	101<M.I.<=200	12.88
6th step	51<M.I<=100	7.49
7th step	25<M.I<=50	6.36
8th step	0<M.I<=25	**4.97**

The long list of modification indices by colorising par changes was presented in Table C.1. in Appendix C. The structural model drawing steps to reach final model are given in the Figure 4.10.-4.15.

Figure 4.10. Modified structural equation model – 1ˢᵗ step

The impact of rapport on the interview quality
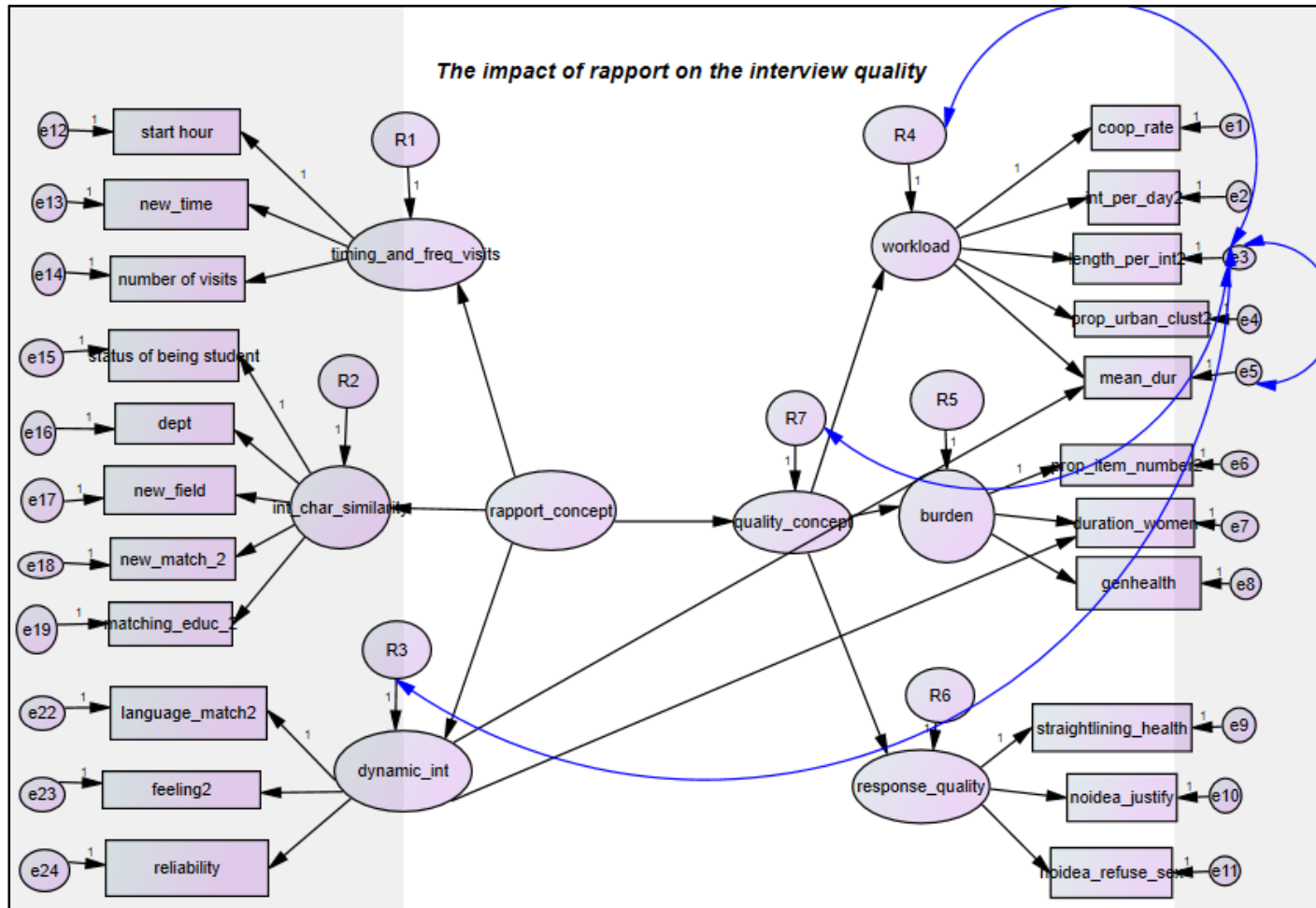
Figure 4.11. Modified structural equation model – 2nd, 3rd and 4th steps
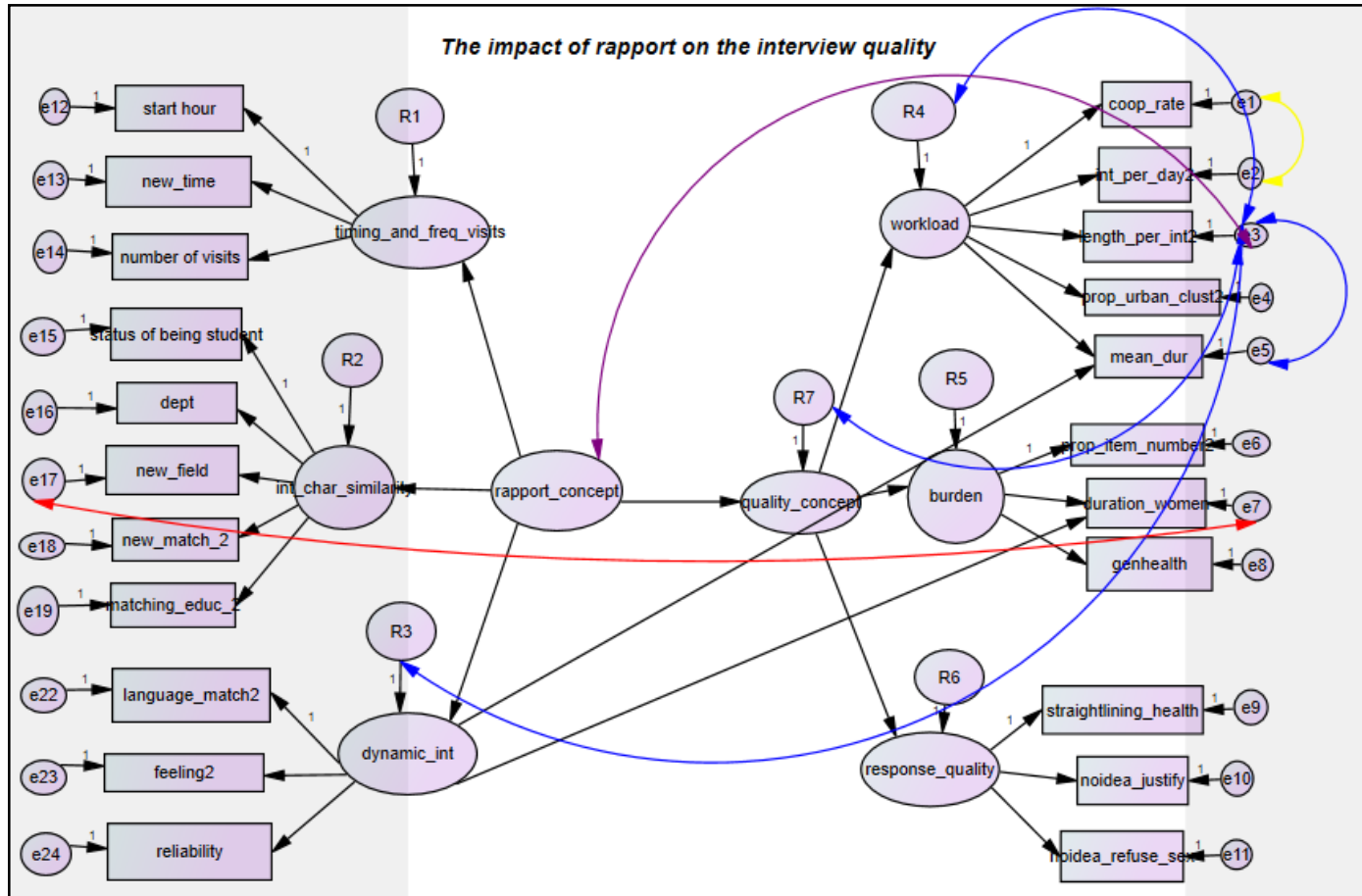
Figure 4.12. Modified structural equation model – 5th step

The impact of rapport on the interview quality
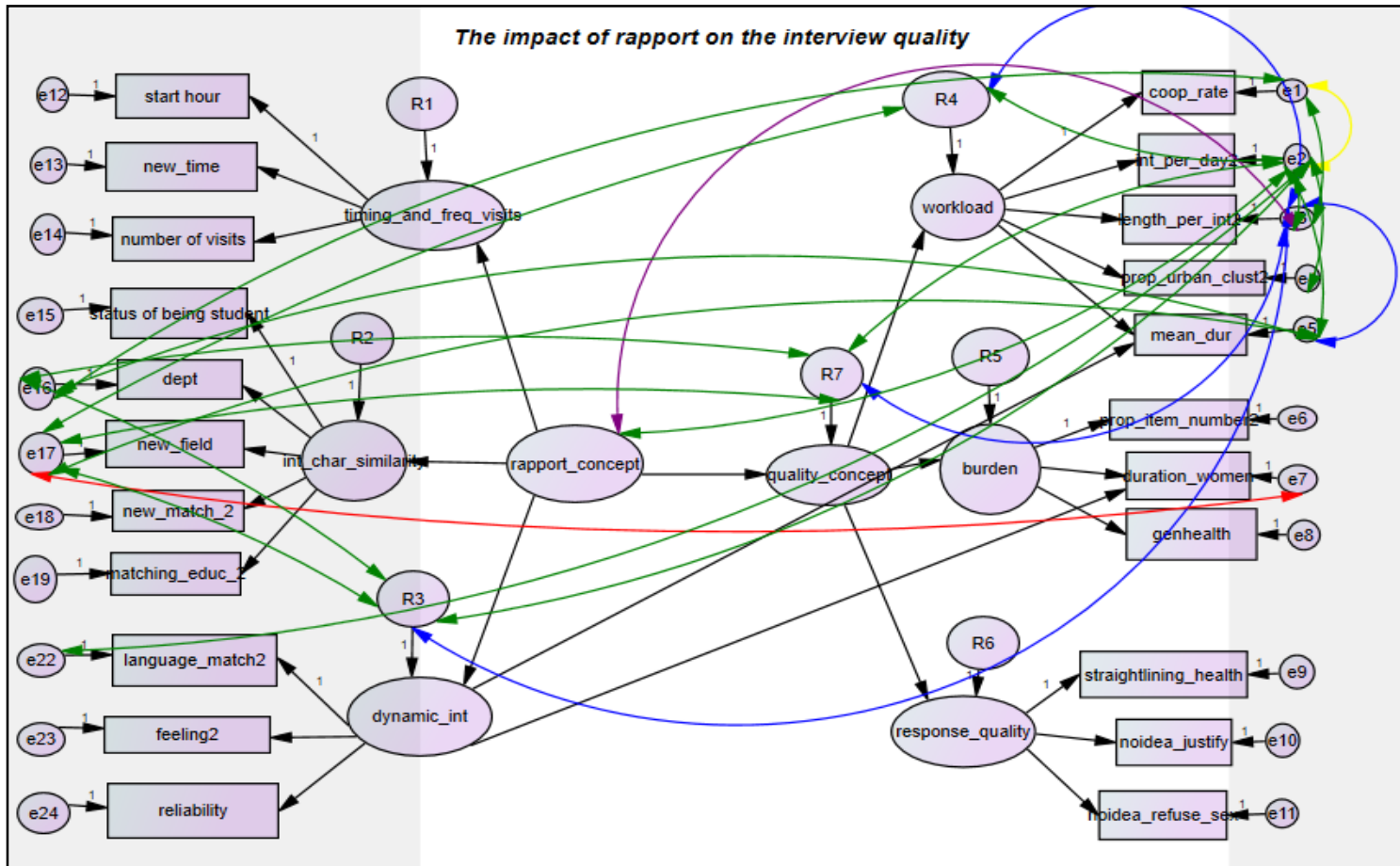
Figure 4.13. Modified structural equation model – 6th step

The impact of rapport on the interview quality
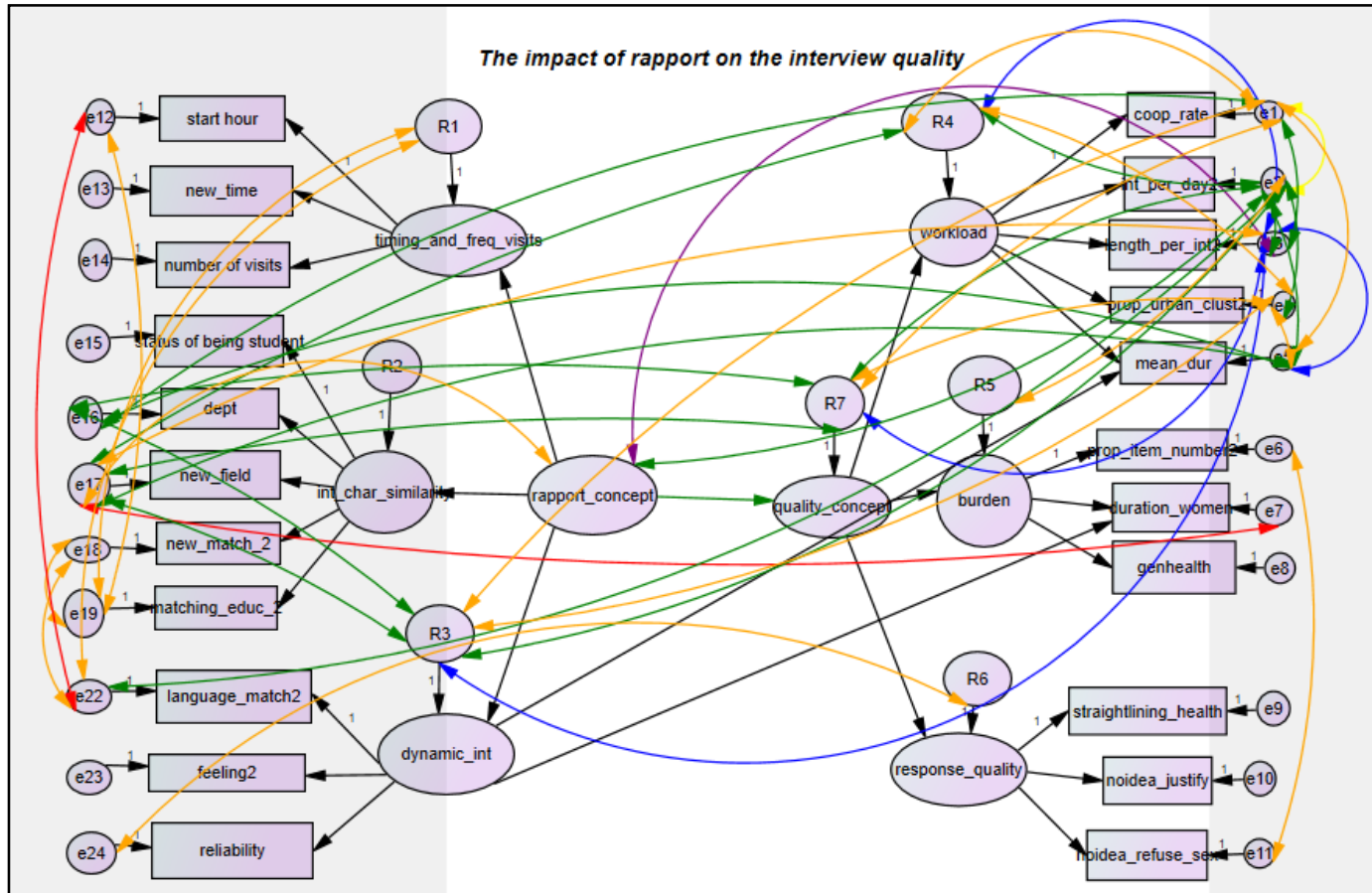
Figure 4.14. Modified structural equation model – 7th step
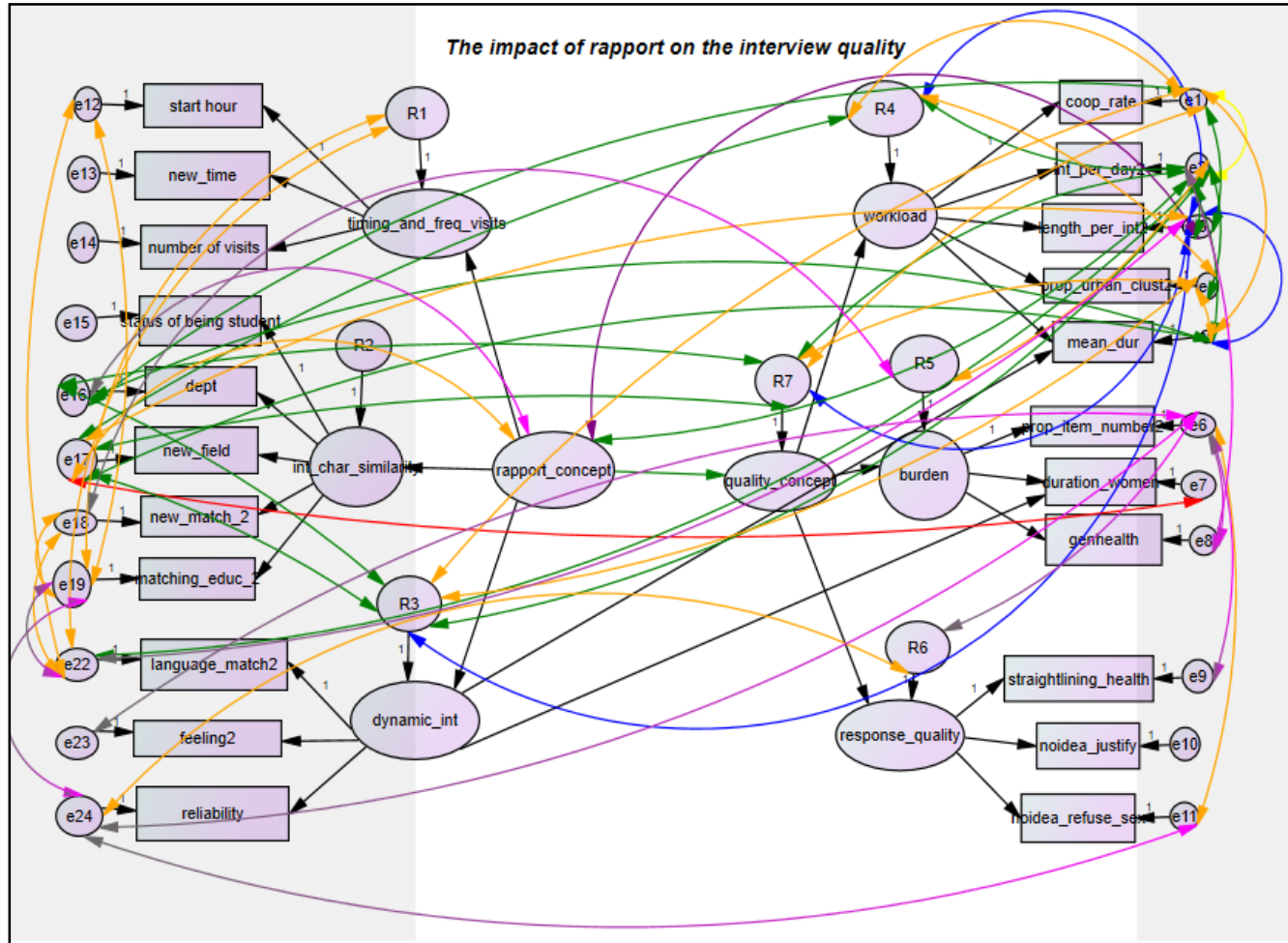
Figure 4.15. Final structural equation model – 8th step
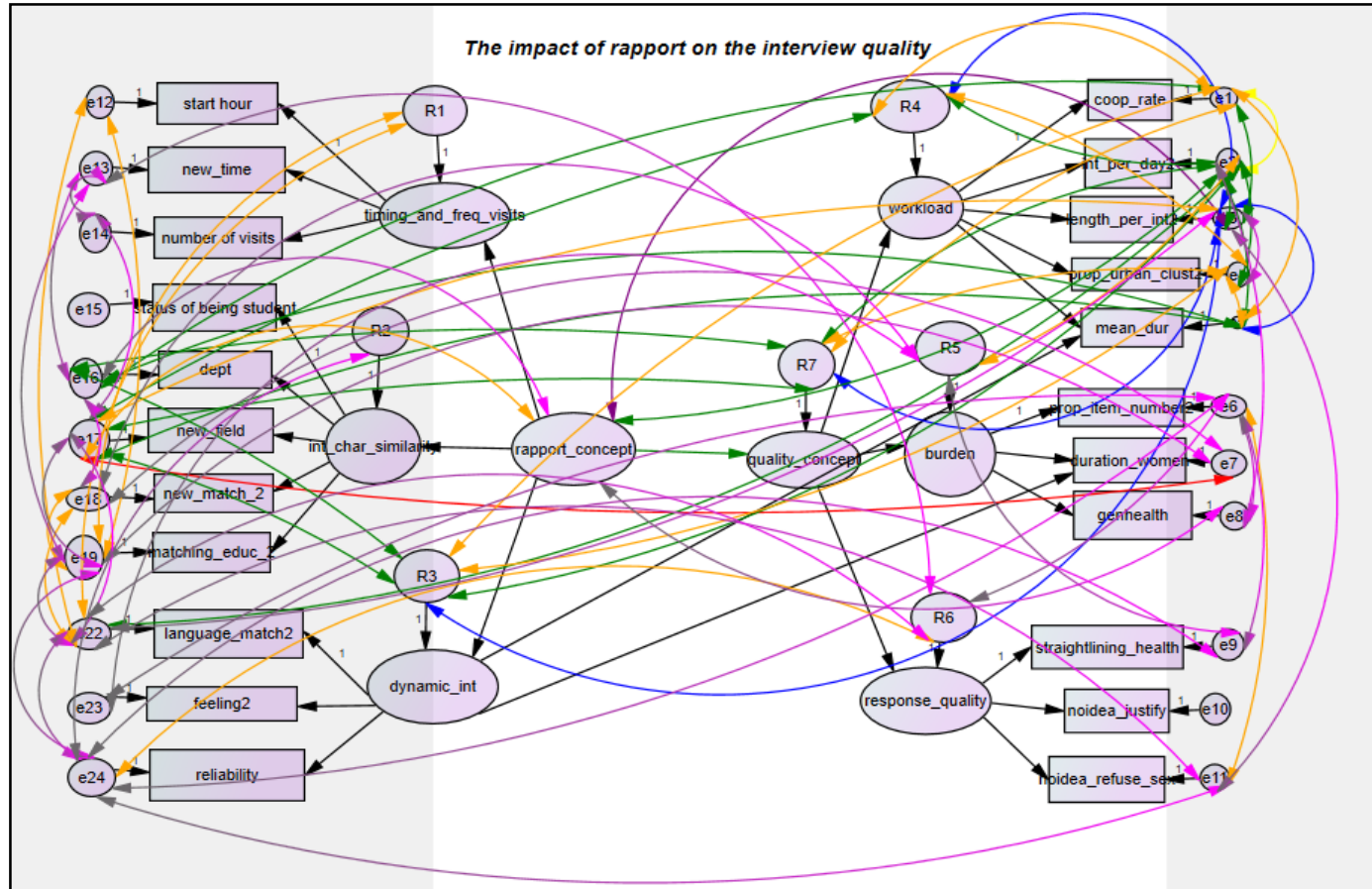
4.1.3.3. Final Structural Equation Model Results

The selected modifications were performed to reach best fitting structural equation model. The fit index is found to be CMIN/DF=4.98 for the accepted final model that estimates rapport impact on interview quality. The final model provides path coefficients for both parts of the full model (rapport and interview quality) (Table 4.12.).

The final model suggested that a unit increase in the rapport index leads to an increase of 0.46 unit in the interview quality index. When standardized coefficient between two constructs is considered, the model pointed out that a single increase in the standard deviation' unit of rapport leads to an increase of 0.21 unit in the interview quality index (Table 4.12.).

Table 4.12. Structural Equation Model Fit Results and Path Coefficients

Model fit					
Model	**NPAR**	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	130	641.913	129	0.000	4.976

Regression weights		
Structural Equation		**Estimate**
Rapport between i'wer and R	Interview quality	1.47 (unstandardized)
		1.12 (standardized)

Latent construct	**Sub-constructs**	**Estimate (st)**
Rapport between interviewer and respondent	Timing and frequency of visits	0.01
	Interviewer char. and similarity	0.01
	Dynamic interview factors	0.85
Interview quality	Interviewer workload	1.04
	Respondent burden	0.19
	Response quality	0.03

Factors (Rapport)	**Items**	**Estimate (st)**
Timing and frequency of visits	Start hour of interview	0.65
	Time of the interview	0.30
	Number of visits	0.28
Interviewer characteristics and similarity between interviewer and respondent	Student	2.80
	Background	0.12
	Field period	0.03
	Age matching	0.00
	Educational level matching	0.02
Dynamic interview factors	Mean duration per interviewer	13.51
	Interview length	0.23
	Language matching	1.21
	Feelings after the interview	0.00
	Response reliability	0.16

Factors (Interview quality)	**Items**	**Estimate (st)**
Interviewer workload	Cooperation rate (.ref)	2.32
	Number of interviews (day)	0.26
	Field length	0.49
	Proportion of urban clusters	0.03
	Mean interview duration	13.59
Respondent burden	Proportion of filled items (.ref)	0.26
	Interview duration	1.21
	General health status	0.12
Response quality	Straightlining on health questions (.ref)	0.05
	'NI' responses on attitudes towards violence	0.49
	'NI' responses on refusing to have sex	0.52

4.1.3.4. Model Interpretations for the Highest Interview Quality

The interpretations on SEM outputs is similar to multiple linear regression model output assessments. In other words, SEM could be accepted as a multiple linear causal modeling technique (a set of regression equations simultaneously) constructed with the latent variables. In the final model, all measures come from the merged data set and those are the binary variables which were constructed at the beginning of the analysis.

When unstandardized coefficient between two latent constructs is considered;

$$interview\ quality = \alpha + 1.46 * (rapport)$$

When standardized coefficient between two constructs is considered;

$$interview\ quality = \alpha + 1.21 * (rapport)$$

The final SEM model shows that a unit increase in the rapport index leads to an increase of 0.46 unit in the interview quality index. The model also shows that a single increase in the standard deviation' unit of rapport leads to an increase of 0.21 unit in the interview quality index. Standardized parameter estimates were preferred when making interpretations given that they allow to evaluate relative contribution of rapport on the interview quality.

The illustration was given according to coefficients for the operationalization of rapport between interviewer and respondent as well as the relation between rapport and interview quality (Figure 4.16.). This is mainly because of the one-way relation between two study interests in the dissertation according to the thesis objectives. In sum, the impact of rapport on interview quality comes through the first part of the full structural model. Furthermore, structural equations were examined gradually to reach the highest level of interview quality. The full conceptualization on the basis of study interests is presented in Figure 4.17.
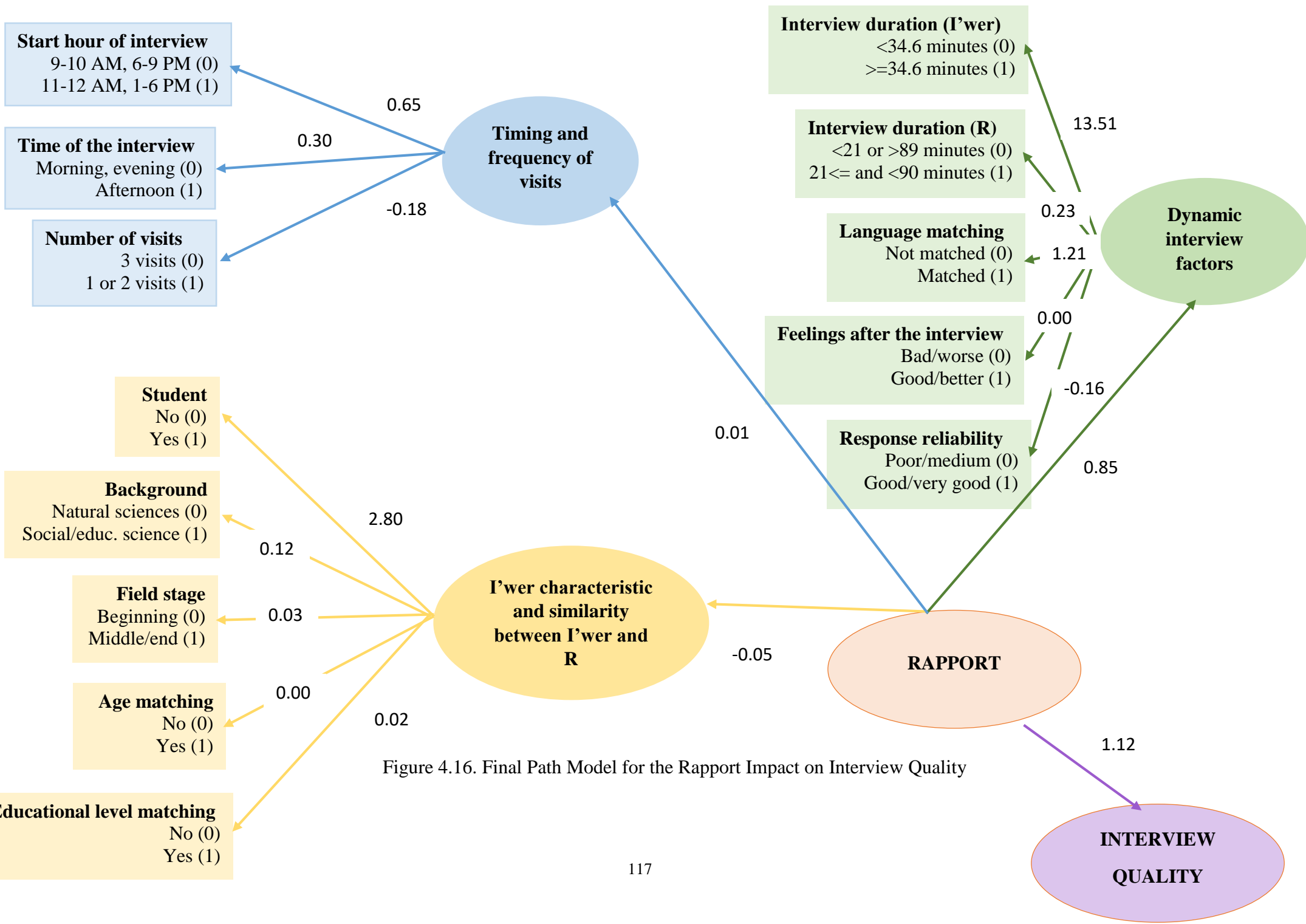
Figure 4.16. Final Path Model for the Rapport Impact on Interview Quality

Figure 4.17. Conceptual Drawing of Full Structural Equation Model
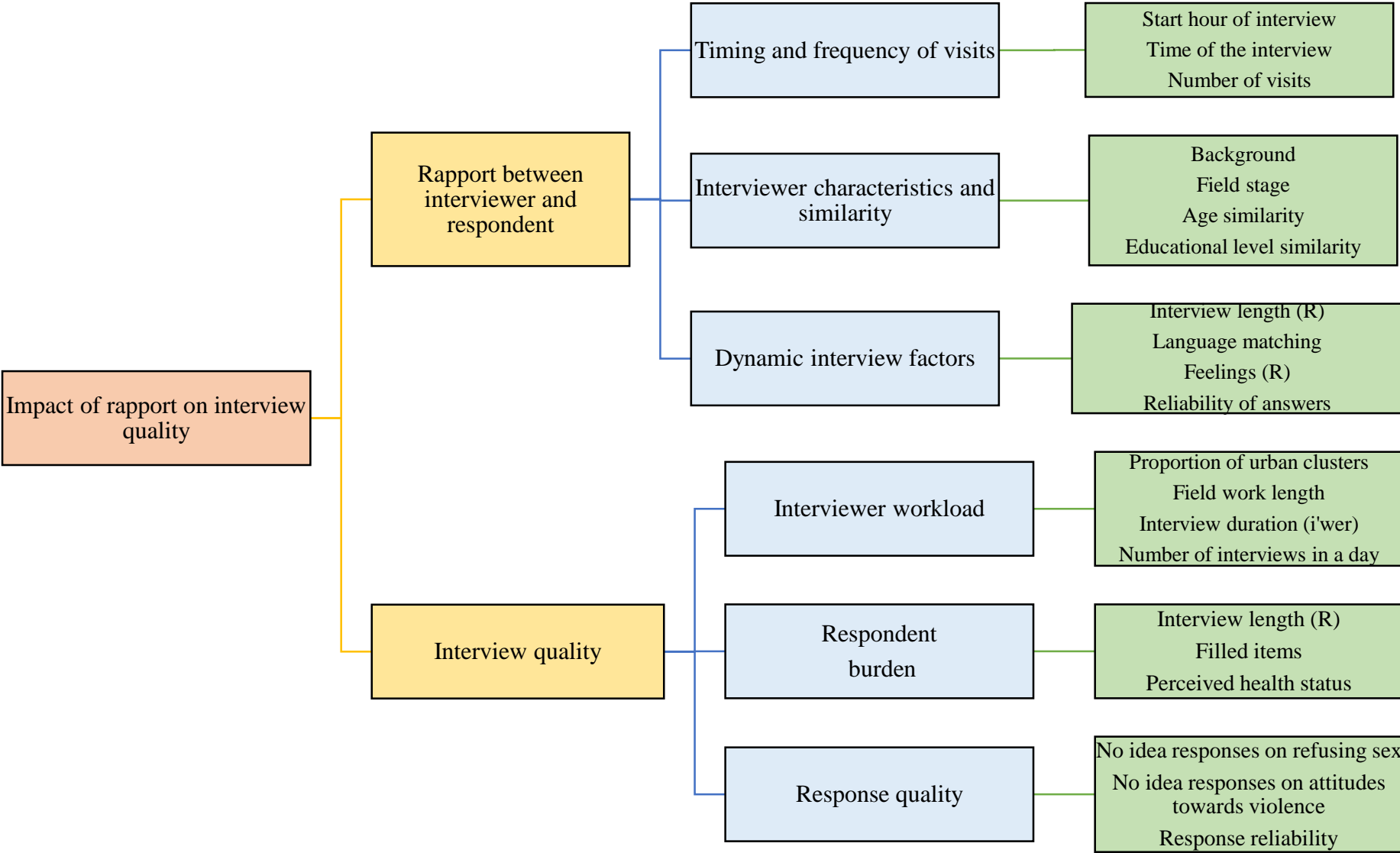
Structural equations for the sub-constructs and main latent constructs

1st sub-construct: Timing and frequency of visits

$$y_1 = 0.65 * (start\ hour\ of\ interview) + 0.30 * (timing\ of\ interview)$$
$$-0.18 * (number\ of\ visits)$$
$$= 0.65 * (11 - 12\ pm, 1 - 6\ pm) + 0.30 * (afternoon)$$
$$-0.18 * (3\ or\ more\ visits)$$
$$y_1 = 0.65 * (1) + 0.30 * (1) - 0.18 * (0) = 0.95$$

2nd sub-construct: Interviewer characteristics and, similarity between interviewer and respondent

$$y_2 = 2.80 * (student) + 0.12 * (department) + 0.03 * (field\ stage)$$
$$+0.00 * (age\ matching) + 0.02 * (educational\ level\ matching)$$
$$y_2 = 2.80 * (student) + 0.12 * (soc.educ.sci.) + 0.03 * (middle\ or\ end)$$
$$+0.00\ (age\ matching) + 0.02 * (educational\ level\ matched)$$
$$y_2 = 2.80 * (1) + 0.12 * (1) + 0.03 * (1) + 0.00 * (age\ matching) + 0.02 * 1$$
$$= 2.97$$

3rd sub-construct: Dynamic interview factors

$$y_3 = 13.51 * (interview\ duration - I'wer)$$
$$+0.23 * (interview\ duration - R) + 1.21 * (language\ matching)$$
$$+ 0.00 * (feelings) - 0.16 * (response\ reliability)$$
$$y_3 = 13.51 * (interview\ duration - I'wer, \geq 34.6\ minutes)$$
$$+0.23 * (interview\ duration - R, between\ 21\ and\ 89\ minutes)$$
$$+1.21 * (matched) + 0.00 * (feelings) - 0.16 * (poor\ or\ medium)$$
$$y_3 = 13.51 * (1) + 0.23 * (1) + 1.21 * (1) + 0.00 * (feelings) - 0.16 * (0)$$
$$= 14.95$$

Total effect on rapport between interviewer and respondent (maximum)

$$= 0.95 * 0.01 + 2.97 * (-0.05) + 14.95 * (0.85)$$
$$= 12.57$$

Total effect on interview quality (maximum)

$$= 12.57 * 1.12 = 14.08$$

Regression coefficients showed that interviews started at 11 am-12 pm, and 1-6 pm, afternoon interviews, and interviews which were completed with 3 or more household visits lead to the most score increase in "timing and frequency of visits". In a similar way, currently student interviewers, interviewers who come from social or educational sciences, interviews which were conducted in middle and end of the field period, and interviews in which interviewers and respondents are matched in terms of age and educational level result in the highest increase in "interviewer characteristics/similarity between interviewer and respondent". Lastly, interviewers whose main interview duration is more than 34.6 minutes, respondents whose length of interview is between 20 minutes and 90 minutes, interviews in which mother tongue of respondent and interview language are matched, and interviews with medium or poor response reliability according to interviewers' view lead to the highest increase in the factor "dynamic interview factors".

Finally, a unit increase in each sub-constructs to introduce rapport leads to 12.6 units increase in the "rapport built between interviewer and respondent" as well as 14.1 units in "interview quality".

4.2. Results of Two Independent Samples Comparisons among Women Interviews Completed with High Rapport

In this section, results of two independent samples comparisons among women interviews completed with high rapport are presented according to selected characteristics. Operationalization of rapport between interviewer and respondent was given previously in Section 4.1.1. on the basis of three different factors, '*timing and frequency of visits*', '*interviewer characteristics and similarity between interviewer and respondent*', and '*dynamic interview factors*'. Afterwards, rapport levels were determined and significant differences among women interviews completed with high rapport were presented according to socio-demographic and socio-economic characteristics, violence related variables, attitudes and certain selected variables. This part of the dissertation was published as an article entitled "*Exploring Factors to Build Rapport Between Interviewer and Respondent: Insights from the National Research on Domestic Violence against Women in Turkey*" entitled journal in in October, 2020, in the Journal of Sociological Research[2]. The original article can be found in Appendix E. Hence, this section corresponds to a part of secondary objectives of the thesis.

4.2.1. Descriptive Results of Rapport Levels by Selected Characteristics

In the descriptive analysis stage, percentage distribution of women whose interviews completed with high and low/middle rapport, and total number of women interviews were presented according to selected women characteristics. Interviews carried out with low and middle rapport levels were presented in a one category due to specific interest on interviews completed with high rapport.

In total, 6,967 women interviews were split into two separate groups: 1) 4,644 (66.6%) women interviews completed with low or middle rapport, and 2) 2,323 (33.3%) women interviews completed with high rapport.

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[2] Saraç, M. & Türkyılmaz, A. S. (2020). Exploring Factors to Build Rapport Between Interviewer and Respondent: Insights from the National Research on Domestic Violence against Women in Turkey. Journal of Sociological Research [Sosyoloji Araştırmaları Dergisi], 23(2): 284-319.

The percentage of interviews completed with high rapport is higher in South and Central regions (48% and 45%, respectively) compared to other regions in Turkey. Developing high rapport and engagement is more frequent in rural areas than urban areas (40% and 31%, respectively). Interviews completed with high rapport is more common among women who are older than 25 years of age, compared to women who are between 15 and 24 years of age. When the mother tongue of women is considered, women whose mother tongue is Turkish seems more advantageous in terms of establishing high rapport (36%) as opposed to women whose mother tongue is Kurdish, and Arabic or other (21% and 25%, respectively) (Table 4.13.).

Looking at the marital status of women, percentage of interviews completed with high rapport is more common among ever married women compared to never married women (35% and 25%, respectively). The percentage of interviews completed with high rapport is also higher among women who have at least one living children (35%), and women who have at least one child under 5 (36%), compared to women who have not any living children (27%), and women who have not children under 5 (32%). On the other hand, number of children does not make any considerable variation for women interviews completed with high rapport. The percentage of interviews conducted with high rapport is slightly higher among women who have used any contraception (35%) than women who have never used method (31%). Furthermore, in terms of high rapport, the percentage of women who have stated that their general health status is bad/very bad in the last 4 weeks is estimated more than the percentage of women whose health status is not bad (35% and 31%, respectively) (Table 4.13.)

Examining the socio-economic characteristics of women, in terms of high rapport, the proportion of uneducated women is found to be 27.5 percent while it is estimated as 34.5 percent for educated women. Developing high rapport is a little more often among women who are not working compared to working women (34% and 31%, respectively). Similarly, looking at the interviews completed with high rapport, women who have not any income have a slightly higher percentage compared to women who have any income (34% and 31%, respectively). Looking

at the wealth index, interviews completed with high rapport is more frequent among women who are in the lowest wealth quintile compared to women who are in the highest wealth quintile (35% and 32%, respectively) (Table 4.13.).

Developing high rapport seems more frequently among women who were exposed to emotional, sexual or physical violence during their life compared to reference groups (37%, 39% and 38%, respectively). The percentage of interviews completed with high rapport is higher among women whose controlling behavior index is high (37%) compared to women interviews with middle or low levels of rapport (34% and 29%, respectively). Establishing high rapport is a little more frequent among women who shared the suicidal thoughts compared to reference group (Table 4.13.).

When attitudes towards gender roles is focused, there is not much variation among subgroups except for some items regarding refusal to have sex. Developing high rapport and engagement seem to be more frequent in interviews if women stated at least one items on refusals to have sex. In terms of high rapport, percentage of interviews conducted with an interviewer whose cooperation rate is less than 1.16 is higher than interviews conducted with an interviewer whose cooperation rate is higher than 1.15 (38% and 32%, respectively) (Table 4.13.). The distribution of women interviews with low, middle, and high rapport levels by selected characteristics is presented in Table A.3. in Appendix A.

Table 4.13. Distribution of women interviews with rapport levels according to selected characteristics

Variables	Low/Middle Rapport	High Rapport	Total	Number of women interviews
Rapport Levels				
Demographic/basic variables				
Region				
West	74.3	25.7	100.0	2,203
South	52.1	47.9	100.0	583
Central	55.2	44.8	100.0	1,372
North	66.8	33.2	100.0	986
East	71.2	28.8	100.0	1,777
Residence				
Urban	68.7	31.3	100.0	4,720
Rural	59.5	40.5	100.0	2,201
Age				
15-24	71.7	28.3	100.0	1,261
25-39	65.1	34.9	100.0	2,907
40-59	66.1	33.9	100.0	2,753
Mother tongue				
Turkish	64.2	35.8	100.0	5,581
Kurdish	78.8	21.2	100.0	1,127
Arabic	75.1	24.9	100.0	213
Marital status				
Never married	75.5	24.5	100.0	1,088
Ever married	65.1	34.9	100.0	5,833
Living children				
0	72.6	27.4	100.0	1,505
1	65.7	34.3	100.0	964
2	64.9	35.1	100.0	2,081
3+	64.9	35.1	100.0	2,371
Use of contraception				
Never used	68.9	31.1	100.0	2,546
Ever used	65.5	34.5	100.0	4,369
Children under 5				
No	67.8	32.2	100.0	4,843
Yes	63.9	36.1	100.0	2,078

Table 4.13 (continued). Distribution of women interviews with rapport levels according to selected characteristics

	Rapport levels			
Variables	**Low/Middle Rapport**	**High Rapport**	**Total**	**Number of women interviews**
General health status				
Bad/very bad	63.6	36.4	100.0	1,981
Not bad	67.8	32.2	100.0	4,936
Socio-economic variables				
Educational level				
No education	72.5	27.5	100.0	1,271
Primary and higher	65.6	34.5	100.0	5,650
Working status				
No	65.7	34.3	100.0	4,857
Yes	68.8	31.2	100.0	2,061
Wealth index				
Low	65.0	35.0	100.0	2,990
Middle	66.0	34.0	100.0	1,405
High	68.4	31.6	100.0	2,526
Income status				
No	65.5	34.5	100.0	5,293
Yes	69.9	30.1	100.0	1,627
Spending earnings				
No	66.1	33.9	100.0	5,579
Yes	68.9	31.1	100.0	1,342
Violence related variables				
Emotional violence				
No	69.2	30.8	100.0	4,272
Yes	62.7	37.3	100.0	2,643
Sexual violence				
No	67.3	32.7	100.0	6,212
Yes	60.9	39.1	100.0	701
Physical violence				
No	68.8	31.2	100.0	4,857
Yes	61.8	38.2	100.0	2,057
Severity of violence				
No violence	68.8	31.2	100.0	4,865
Moderate	63.2	36.8	100.0	1,144
Severe	60.0	40.0	100.0	912

Table 4.13 (continued). Distribution of women interviews with rapport levels according to selected characteristics

	Rapport levels			
Variables	Low/Middle Rapport	High Rapport	Total	Number of women interviews
Controlling behaviours				
Low	70.9	29.1	100.0	2,258
Middle	65.7	34.3	100.0	2,288
High	63.3	36.7	100.0	2,375
Suicidal thoughts				
No	67.3	32.7	100.0	5,649
Yes	63.8	36.2	100.0	1,251
Injuries				
None	67.3	32.7	100.0	6,385
At least one	60.1	39.9	100.0	533
Violence and health status				
Else	67.0	33.0	100.0	6,493
Violence exposure and bad health	61.1	38.9	100.0	428
Attitudes*				
Refusals to have sex				
None	83.4	16.6	100.0	167
At least one	66.3	33.7	100.0	6,116
Refusals to have sex if: woman has health problems				
No	75.2	24.8	100.0	294
Yes	66.1	33.9	100.0	6,472
Other variables*				
Cooperation rate				
More than 1.15	68.3	31.7	100.0	4,234
Less than 1.16	61.6	38.4	100.0	2,687
Total	66.7	33.3	100.0	6,967

*The items for other attitudes and variables do not differ significantly according to rapport levels.

4.2.2. Results of Interview Comparisons

Table 4.13. shows the two independent samples comparisons between women interviews completed with high rapport according to selected characteristics. Significance values show that women interviews carried out in West, North and East regions are significantly different from other regions *(p<0.01)*. Rural interviews are also significantly different from urban interviews *(p<0.01)*. Interviews that were conducted with women who are between 15 and 24 years of age significantly differ from interviews conducted with women who are older than 24 *(p<0.01)*. High rapport achieved interviews with women whose mother tongue is Turkish are significantly different from interviews with women whose mother tongue is Kurdish or, Arabic and other *(p<0.01)*. Women who have stated that their general health status is bad/very bad in the last 4 weeks differ significantly compared to the reference category *(p<0.01)*.

Looking at the interviews according to violence related variables, women who exposed to emotional, sexual or physical violence indicate significant variation compared to reference groups *(p<0.01, p<0.05, p<0.01*, respectively). In line with this finding, women who have at least one physical injury are significantly different from women who have not any physical injury *(p<0.01)*. Severity of physical violence does not make any variation in terms of building high rapport. Women who exposed to physical or sexual violence during their life and stated that their general health status is bad/very bad differ significantly from the other women groups *(p<0.05)*. In terms of high rapport, interviews with women who have at least primary level education is significantly different from interviews with uneducated women (Table 4.14.).

Table 4.14. Significance values in independent samples comparisons of women interviews completed with high rapport, according to selected characteristics

Demographic/basic

Region	West	South	Central	North	East
West	-	0.00**	0.00**	0.00**	0.04*
South	0.00**	-	0.31	0.00**	0.00**
Central	0.00**	0.31	-	0.00**	0.00**
North	0.00**	0.00**	0.00**	-	0.03*
East	0.00**	0.00**	0.00**	0.03*	-

Residence	Urban	Rural
Urban	-	0.00**
Rural	0.00**	-

Age	15-24	25-39	40-59
15-24	-	0.00**	0.00**
25-39	0.00**	-	0.49
40-59	0.00**	0.49	-

Mother tongue	Turkish	Kurdish	Arabic/other
Turkish	-	0.00**	0.00**
Kurdish	0.00**	-	0.27
Arabic/other	0.00**	0.27	-

Marital status	Never m.	Ever m.
Never m.	-	0.00**
Ever m.	0.00**	-

Violence related variables

Emotional violence	No	Yes
No	-	0.00**
Yes	0.00**	-

Sexual violence	No	Yes
No	-	0.01**
Yes	0.01**	-

Physical violence	No	Yes
No	-	0.00**
Yes	0.00**	-

Severity of violence	None	Moderate	Severe
None	-	0.00**	0.00**
Moderate	0.00**	-	0.22
Severe	0.00**	0.22	-

Controlling behaviors	Low	Middle	High
Low	-	0.00**	0.00**
Middle	0.00**	-	0.15
High	0.00**	0.15	-

Suicidal thoughts	No	Yes
No	-	0.02*
Yes	0.02*	-

Socio-economic variables

Educational level	No educ.	Primary and higher
No educ.	-	0.00**
Primary and higher	0.00**	-

Working status	No	Yes
No	-	0.04*
Yes	0.04*	-

Wealth index	Low	Middle	High
Low	-	0.57	0.04*
Middle	0.57	-	0.22
High	0.04*	0.22	-

Income status	No	Yes
No	-	0.01**
Yes	0.01**	-

Spending earnings	No	Yes
No	-	0.12
Yes	0.12	-

Attitude variables

Refusals to have sex	None	At least one
None	-	0.00*
At least one	0.00*	-

Table 4.14 (continued). Significance values in Independent samples comparisons of women interviews completed with high rapport, according to selected characteristics

Living children	0	1	2	3+		Physical injuries	No	At least one		If woman has health problems		No	Yes
0	-	0.00**	0.00**	0.00**		No	-	0.00**		No		-	0.00*
1	0.00**	-	0.73	0.72		At least one	0.00**	-		Yes		0.00*	-
2	0.00**	0.73	-	1		**Violence and health**	Else	Violence-bad health		**Other variables**			
3+	0.00**	0.72	1	-		Else	-	0.04		**Cooperation rate**	More than 1.15		Less than 1.16
Contraception	Never	Ever				Violence-bad health	0.04	-		More than 1.15	-		0.00*
Never	-	0.02*								Less than 1.16	0.00*		-
Ever	0.02*	-											
Children under 5	No	Yes											
No	-	0.01*											
Yes	0.01*	-											
Health status	Bad/very bad	Not bad											
Bad/very bad	-	0.01*											
Not bad	0.01*	-											

** refers significance at the 0.01 level, and ** refers significance at the 0.05 level of t-tests comparing to reference category on the raw.

4.3. Results of Interviewer Characteristics' Impact on Interview Quality

This section covers the results of impact of interviewer characteristics on the likelihood of conducting high quality interviews. Formulation of interview quality was presented previously in the Section 4.1.2. on the basis of three different factors, which are *'interviewer workload'*, *'respondent burden'* and *'response quality'*. After the determination of interview quality levels, percent distribution of interviews with quality levels according to interviewer characteristics was presented with the aim of making a ground for interpreting multivariate results. Three different stepwise logistic regression models were constructed including interviewer characteristics in all models. The variables that refer to interview and field settings and women characteristics were used as control variables. Briefly, this section corresponds to results on a part of secondary objectives of the thesis.

4.3.1. Descriptive Results of Quality Levels by Interviewer Characteristics

In the descriptive analysis stage, percentage distribution of women were given by interviews by interviewer characteristics. Interviews were split into two equal groups according to quality scores in the data set. In total, 6,967 women interviews were evaluated under two groups: 1) 3,483 (50.0%) low quality women interviews, and 2) 3,484 (50.0%) high quality women interviews.

Table 4.14. indicates the percentage distribution of interviews by interviewer characteristics. More than half of the interviews (53 percent) were conducted by interviewers between 25 and 30 years of age, while remaining ones were conducted by interviewers aged between 20 and 24 years. When educational level and background are considered, most of the interviews were performed by university graduated interviewers (78 percent) and interviewers interested in social or educational sciences (87 percent). The percentage of interviews conducted by inexperienced interviewers (61 percent) is higher as opposed to interviews conducted by experienced interviewers (39 percent) (Table 4.15.).

Looking at the quality levels of interviews, high quality was achieved much more by interviewers who are between 25 and 30 years of age (59 percent). The percentage of high quality interviews was estimated as 40 percent among interviewers aged between 20 and 24. The percentage of high quality interviews among university graduated interviewers is found to be 53 percent while it reduced to 39 percent among university students. The high quality interviews are much more frequent among interviewers interested in social or educational sciences (53 percent) as opposed to interviewers from natural sciences (33 percent). The percentage of high quality interviews is almost same among experienced and inexperienced interviewers (50 percent). These results provided a ground for logistic regression analysis (Table 4.15.). Distribution of interviews with quality levels according to respondent characteristics could be found in Table B.1. in Appendix B.

Table 4.15. The distribution of interviews by interviewer characteristics

Interviewer characteristics	Low quality interviews	High quality interviews	All interviews	Number of women interviews (weighted)
Age*				
20-24	60.5	39.5	47.1	3,284
25-30	40.6	59.4	52.9	3,683
Education**				
University stud.	60.8	39.2	21.9	1,526
University grad.	46.9	53.1	78.1	5,441
Background				
Natural sciences	67.0	33.0	13.1	911
Social/educational sciences	47.4	52.6	86.9	6,056
Experience				
None	49.8	50.2	61.3	4,268
1 and more	50.3	49.7	38.7	1,358
Total	50.0	50.0	100.0	6,967

*Interviewer candidates who are between 20 and 30 years of age were preferred for the field work.
**Interviewer candidates who are at least university students were preferred for the field work.

4.3.2. Multivariate Results of Interviewer Characteristics' Impact on Interview Quality

Table 4.16. presents the estimations of stepwise logistic regression models. All models suggested that likelihood of high quality interview occurrence is significantly higher among university graduated interviewers, interviewers from social sciences, and inexperienced interviewers. Furthermore, the probability of high quality interviews significantly increases with the age of interviewers. The persistence of interviewer impact is maintained after adding field and interview settings (Model 2) as well as women characteristics (Model 3). Based on our study findings, we can infer that some socio-demographic and background characteristics of interviewers affect the quality of interviews.

The results of the final model put forward that the likelihood of high quality interview occurrence increases 1.25 times $(p<0.01)$ with the interviewer's age. We have expected that older interviewers may establish better interaction with respondents. Because the women aged between 30 and 34 years (17 percent) consist of the major part of the interviewed women in the 2014 VAW Study (GDSW and HUIPS, 2015). The socio-demographic matching may improve the rapport between interviewers and respondents, and lead to higher cooperation (Lord et al., 2005). The likelihood of high quality interviews is 1.6 times $(p<0.01)$ much higher among university graduated interviewers as opposed to university students. Our experiences on field monitoring showed us that university graduate students have adopted the field work more strongly. The probability is also 1.9 times $(p<0.01)$ much higher among interviewers interested in social or educational sciences compared to interviewers from natural sciences (Table 4.16.).

The last model finds also a significant effect $(p<0.01)$ of interviewers' experience on the probability of high quality interview occurrence. Inexperienced interviewers are about 1.6 times more likely to conduct high quality interviews as opposed to experienced interviewers. We have also expected this result because

of possible bias that could be originated from previous experiences of interviewers. Our field observations showed us that experienced interviewers may have more tendency to complete interviews quickly, skip questions and make mistakes.

When looking at the field and interview settings, the likelihood of high quality for interviews performed in the morning or afternoon is 1.6 times *(p<0.01)* higher as opposed to evening interviews. This is expected, given that the late working hours may lead to reduce on performance of interviewers. Further, especially working women may be reluctant to answer questions in the evening. The Model 3 also found significant effect of beginning and middle stages of the field on the high quality interviews compared with end of the field work. We would expect that interviewers are less motivated to interviews at the end of the field work. This may be associated to both physical and psychological burden of interviewers, particularly for sensitive surveys. The regression models did not find any significant difference on the probability of high quality interviews according to interview day as well as certain women characteristics (Table 4.16.).

The multivariate results of the study are consistent with the descriptive findings in Table 4.15. When all model results are assessed in the aggregate, constants in the equations are statistically significant. Moreover, explanatory power of the models was increased from 11 percent (Model 1) to 15 percent (Model 3) with the inclusion of control variables into the models. This can be evaluated at the acceptable level especially under the lack of rich interviewer data, i.e. other socio-demographic characteristics, attitudes, behaviors, expectations and skills.

Table 4.16. Logistic regression results of high quality interviews (ref. low)

	Interviewer char.			Field and interview char.			Women char.		
	Model 1	CI		Model 2	CI		Model 3	CI	
	Odds R.	L	U	Odds R.	L	U	Odds R.	L	U
Age	1.23**	1.19	1.28	1.24**	1.20	1.29	1.25**	1.20	1.30
Education									
University graduated	1.50**	1.28	1.76	1.58**	1.36	1.85	1.60**	1.37	1.86
(ref. University student)									
Background									
Social/educational sci.	1.87**	1.43	2.45	1.92**	1.45	2.54	1.94**	1.46	2.58
(ref. Natural sciences)									
Experience									
None	1.58**	1.38	1.79	1.56**	1.36	1.78	1.57**	1.38	1.80
(ref. 1 and more)									
Time of the interview									
Morning				1.66**	1.34	2.05	1.60**	1.29	1.97
Afternoon				1.66**	1.40	1.97	1.61**	1.35	1.91
(ref. Evening)									
Field stage									
Beginning				1.46**	1.16	1.85	1.42**	1.11	1.80
Middle				1.95**	1.53	2.49	1.92**	1.50	2.45
(ref. End)									
Interview day									
Weekend				1.16	0.90	1.49	1.20	0.93	1.55
(ref. Weekday)									
Age							1.00	0.99	1.01
Mother tongue									
Turkish							2.09	1.11	3.92
Kurdish							2.32	1.19	4.52
(ref. Arabic and other)									
Marital status									
Never married							0.86**	0.72	1.02
Formerly married							1.50**	1.22	1.84
(ref. Currently married)									
Education									
No education							1.12*	0.88	1.42
Primary							1.24*	1.06	1.45
(ref. Sec. and higher)									
Working status									
No (ref. Yes)							1.12	0.98	1.27
Constant	0.005**	0.002	0.01	0.002**	0.001	0.006	0.001**	0.00	0.00
Nagelkerke R^2	0.11			0.14			0.15		
Number of women interviews	6,967			6,967			6,967		

** p<0.01; *p<0.05 significance levels

CHAPTER 5. CONCLUSION AND DISCUSSION

This dissertation has attempted to identify rapport between interviewers and respondents as well as interview quality within the scope of face-to-face interviews. This thesis goes further, and reveals rapport impact on interview quality. These efforts appear to be remarkable due to the fact that those are unobservable social constructs. Those concepts were usually mentioned when monitoring field work without any definition. In this sense, it could be concluded that the dissertation provides a conceptual contribution. The quantitative approach adopted during the thesis allowed to use measures of "rapport" and "interview quality" for sub-sequent analyses. The subsequent analyses covered estimation of rapport impact on interview quality, determination of rapport and quality levels, investigation of differences between interviews completed with high rapport according to selected characteristics, as well as prediction of interviewer characteristics' impact on the likelihood of interview quality.

The women and field staff data of "Research on Domestic Violence against Women in Turkey, 2014" which was conducted according to WHO (2001)'s Ethical and Safety Guidelines were utilized for all of the statistical analyses. This dissertation uses women data set from quantitative view, although the 2014 VAW Study covers quantitative and qualitative research parts. Interviewer-administered and PAPI based household survey gathered information from both households and women who are between 15 and 59 years of age. Furthermore, field staff data was utilized to achieve study goals.

A great emphasis was attached to not only study findings and related implications but also statistical methodology followed to reach study objectives. This is crucial given that key concepts of the dissertation, namely rapport and quality, are unobservable and difficult to measure. Although there are valuable studies that adopt verbal coding approach (i.e. laughter, smiling, nodding, eye contact) to formulate rapport between interviewer and respondent (Foucault, 2010; Lavin and Maynard, 2001; Gubrium et al., 2012), the interview quality was not

operationalized taking multi-factors into account, so far. It is rarely used in a typical way evoking interviewer performance rather than a special term. Thus, the quality for interviews need to be well-defined in terms of making methodological assessments. A little attention was also paid to describe rapport between interviewer and respondents especially in a quantitative way, even though not as much as an interview quality. Therefore, exploratory factor analysis (EFA) was adopted as a statistical technique to introduce rapport as well as interview quality, as a first stage. Afterwards, confirmatory factor analysis (1st order and 2nd order CFA) was adopted to confirm previously explored concepts, rapport and quality, in accordance with the CFA specifications. The most powerful technique, the path analysis within structural equation modelling (SEM) was used to measure those concepts through indexes, as a third analysis stage. Overall, for both rapport and interview quality, we have adopted an approach to integrate three different components into one construct rather than addressing those separately. This motivation is supported by other studies that measure constructs such as social desirability bias, respondent burden and social integration (Cernat and Vandenplas, 2020; Amaya and Harring, 2017; Read, 2019). Interviewer, respondent and response features were suggested within a model to investigate interviewer effect (West and Blom, 2017).

Furthermore, the efforts were spent to discover previously unknown relationships such as rapport impact on interview quality. Therefore, the structural equation analysis within structural equation modelling (SEM) was performed to investigate prediction of rapport impact on interview quality. This is different from simple linear regression analysis due to the complex relations between observed variables, latent constructs as well as residual terms in the model. The SEM technique is a quite powerful technique that takes possible linkages between constructs and manifest variables, and widely used in many areas. The technique is also quite appropriate in order to estimate violence types such as physical violence, sexual violence and economic violence under the consideration of various items (Martín-Fernández et al., 2020). Confirmation of latent constructs through one-factor or multi-factor confirmatory factor analysis models stay

popularity when dealing with measurement variance of study interests. Furthermore, principal component analysis technique is essential to extract factors underlying concepts in survey settings. When all of these are considered, the thesis also contributes to measurement of unobservable constructs with appropriate statistical techniques within a given order and a set of variables. In this sense, this dissertation also provides methodological contribution to the field.

First of all, explorative results pointed out that '*timing and frequency of visits*', '*interviewer characteristics and, similarity between interviewers and respondents*', '*dynamic interview factors*' contributed to build rapport between interviewers and respondents significantly. In sum, about 33 percent of variance to introduce rapport could be explained by those extracted factors. The variances accounted for each factor are close to each other even though the '*timing and frequency of visits*' was found to be the most indicative factor. The explained variances could be evaluated as acceptable for such a hard to measure concept.

When items on the factors are examined, 'start hour of interview' and 'time of the interview' are mainly associated to '*timing and frequency of visits*'. The results confirm the availability of respondents as well as motivation of interviewers in a day to interview. Furthermore, among interviewer characteristics, 'student status' and 'background' were found as detrimental items to estimate second factor named '*interviewer characteristics and, similarity between interviewers and respondents*'. These results bring an evidence about interviewer characteristics that could be manipulated in recruitment process in surveys. The high contribution of 'field stage' also shows the significance of adaptation period of interviewers in the field. The matching characteristics between interviewer and respondents have relatively lower load on establishing rapport between interviewer and respondent. Still, the 'educational level matching' and 'age matching up to 5 years' appears to be notable to build rapport. These variables stand for harmony stemmed from similarity in terms of educational level and age. The last but not least, '*dynamic interview factors*', represents interview-specific features that we encounter in the field. The 'length of interview' for per interviewer and per respondent were found

to be most influential items when building rapport. The result revealed the pivotal role of interview duration on establishing rapport between interviewer and respondent. The result also refers to willingness of women to share their experiences with interviewers. That is said, the duration may ease building rapport with interviewers who are unfamiliar to respondents.

The best fitting 2nd order CFA model results to identify rapport between interviewer and respondent confirmed the EFA results. Similar to EFA results, *'timing and frequency of visits'* was found to be most determinant factor on building rapport. The path analysis results also put forward that those factors significantly help to identify rapport. Similar findings in the same and different contexts were reported in other studies (Foucault et al., 2013; Goudy and Potter, 1975; Sheatsley, 1951; Weiss, 1968; Williams Jr, 1968). For instance, the interactive structure of rapport that is affected from both respondent and interviewer was underlined by Sun (2014), and Tickle-Degnen and Rosenthal (1990).

Furthermore, items that mostly correlated with the same factor were found to be significant. The items refer to importance of decisions about best time of the interview, suitable interviewer profile, optimal field work duration, similarity between interviewer and respondent, and interview-specific features. For instance, a change in 'time of the interview in a day (morning-afternoon-evening)' leads to a considerable change in the relevant factor. Moreover, a unit change in *'timing and frequency of visits'* results in a remarkable unit change in the rapport index. A change in 'educational level matching (yes-no)' leads to a relatively lower unit change in the second factor. Besides, a unit change in '*interviewer characteristics and, similarity between interviewers and respondents*' leads to a substantial change in the rapport built between interviewers and respondents.

Looking at the positive influence of similarity between interviewers and respondents in terms of age and educational level, *liking theory* and *social distance concept* seem to be enlightening to build rapport. According to the theory and concept, respondents who have the same level of education and close age with

interviewers may be more likely to gain cooperation and interaction. In other words, the familiarity may ease occurrence of friendly interview environment. This is also in line with the specifications at the beginning of the thesis, when selecting variables to introduce rapport. In a different context, whether educational level matching between interviewers and respondent lead to providing accurate answers for knowledge questions (Yang and Yu, 2008). Durrant et al. (2010) discussed the similarity between respondents and interviewers as well as its outcomes on responses, and found that similarity of interviewers and respondents leads to higher cooperation.

The *social exchange theory* may be associated to interaction between interviewers and respondents to some extent, although it is mainly related to respondents' motivation factors to participate survey (Dillman, 2000). The establishing comfortable rapport with the interviewer at the door-step might increase respondents' motivation and willingness to participate and proceed survey. It also may help to increase social awareness supported in the *social exchange theory* when social awareness is considered as a motivating factor for respondents to participate survey. Therefore, the harmonious relationship between interviewer and respondent could be placed among the factors on acquiescence at the door-step interaction as well as motivation during the interview. The rapport is more social compared to incentives and sponsorship that are featured by *social exchange theory.*

The second key concept of the thesis is 'interview quality' was constructed with the influential factors named '*interviewer workload', 'respondent burden',* and *'response quality'.* The study takes the cornerstones of interviewing into account to introduce interview quality (Figure 3.6.). In this sense, interviewer, respondent and response consist of the study framework within survey lifecycle. The '*interviewer workload'* is found as the most discriminant factor explaining a major part of the variability in 'interview quality'. The second factor, *'respondent burden',* and the third factor, *'response quality'* account for the considerable parts of the uncertainty. The total explained variance is estimated as 46.4 percent that

is higher than variance to explain rapport. These results allowed to introduce interview quality with *'interviewer workload', 'respondent burden',* and *'response quality'.* In other words, interview quality is mainly characterized by load of interviewers and respondents as well as quality of answers. In accordance with the thesis specifications, 'interview quality' has different and more extensive meaning as opposed to response quality. These attempts provides an empirical evidence to introduce interview quality by integrating those factors. Commonly, aforementioned concepts are handled separately although they meet over the survey process (Groves et al., 2004; Japec, 2008; Johnson et al., 2009; Wuyts and Loosveldt, 2020).

The extracted factors were assigned to labels on the basis of items with high loadings on the same factor. The loadings on the factors indicate the most discriminant items to identify relevant factors. The findings suggested that 'cooperation rate', 'proportion of urban clusters', 'field work length per interviewer', and 'number of completed interviews per day' have considerable contributions to describe *'interviewer workload'.* Similar measurements to quantify interviewer workload were seen in the studies (Kish, 1965; Loosveldt and Beullens, 2013; Blom, 2012; Wuyts and Loosveldt, 2018; Pullum et al., 2018). The remarkable contribution of interviewer workload on interview quality may be explained with pivotal roles of interviewers during the field work. Not only physical efforts such as finding home and travelling a lot, but at the same time emotional burden resulted from sensitive nature of the survey may affect interview quality.

The results stand out the importance of increasing number of completed interviews as well as field work length. Further, working in urban clusters appears to be mostly associated to *'interviewer workload'.* This positive impact also supports arguments at the variable selection to formulate interviewer workload. The load of urban clusters which are mostly located in metropolitans or other provinces in Turkey may attributable to increasing non-response. The main reasons can be mistrust of people who are living in the cities, high security

measures in tower blocks as well as being no competent respondent at home due to working or education (Saraç and Adalı, 2019; Stoop et al., 2010). As expected, the interview duration per interviewer positively contributed to interviewer workload. The higher contribution of interviewer workload to interview quality might be associated to interviewer satisfaction. The 'cooperation rate', 'proportion of urban clusters' and 'field work length' were found to be strong measurements of interviewer workload in the study. Johnson et al. (2009) examined these indicators within the scope of data quality for 39 DHS (Demographic and Health Survey) countries.

The factor analysis results also indicated that 'interview length per woman' and 'proportion of filled items' are mostly associated to second factor that is called with '*respondent burden*'. The length and frequency of interviewers are among the indicators to measure actual burden of respondents rather than their perceived burden (Tortora, 2014). The high contribution of *'respondent burden'* to introduce interview quality reminds the interactive role of respondents in interviews. The time spent to complete survey and giving answers by retrieving required information will bring a considerable load to respondents, inevitably. Especially, when the sensitive nature of the survey is considered, physical and emotional difficulties experienced by respondents should be taken to measure '*respondent burden'* (Ampt, 2001). The 'interview duration' as a strong measurement of respondent burden in the study, was also discussed within its affecting factors as well as survey responses (Loosveldt and Beullens, 2013; Hansen, 2007). The 'perceived health status of woman' was correlated with the respondent burden. This may be explained with high stress level of respondents in addition to their physical difficulties to respond (Tortora, 2014; Ampt, 2001).

The relatively high influence of *'response quality'* when defining interview quality are mainly originated from correlation between 'no idea responses about refusing sex' and 'straight lining on health questions'. These two variables have been selected at the beginning stage due to the limited number of variables that reflect data quality. When the factor analysis results are considered in conjunction

with the efforts to introduce a newly developed term, 'interview quality' might be used in various survey assessments.

The best fitting 2nd order CFA and path model results to conceptualize interview quality confirmed the previous EFA results. The *'interviewer workload'* (0.84), *'respondent burden'* (0.24), and *'response quality'* (0.15) significantly contribute to operationalize interview quality. The interviewer workload was also discussed within several survey contexts such as non-response, cooperation and interviewer effect (Loosveldt et al., 2004; Japec, 2008; West and Blom, 2017). Amos (2018) drew an attention to more accurate estimates thanks to reduced respondent burden.

Path analysis results implies the sound judgements during the field execution as well as daily assessments about interviewer performance. The items which correlate to same factor reveal the importance of the close relation between interview quality and interviewers' and respondents' load within the field. The decisions on number of interviews in a day, optimum field work length, urban clusters assigned to each team and certain uncontrollable features such as interview duration. For instance, working in more than 6 clusters instead of working in less than 7 clusters, leads to a significant effect on *'interviewer workload'*. Additively, a unit change in *'interviewer workload'* leads to substantial change in the interview quality index. In a second factor, a change in 'interview duration' leads to a considerable unit change in *'respondent burden'*. The results regarding *'respondent burden'* indicate the importance of keeping motivation of respondent at a certain level to provide willingness to respond. Moreover, significant items considered under *'response quality'* showed that data quality assessments should be made in conjunction with the interview quality.

The close association between rapport and interview quality was proved with the structural equation analysis that includes the more complex relations than path models. The multi-dimensional factors, their discriminants and residuals were evaluated within a model examining all possible relations. The final model was reached at the 8th step. The results pointed out that a unit increase in the rapport

index leads to an 0.47-unit increase (0.12 standardized) in the interview quality index. This confirms the initial hypothesis that stands for the positive impact of rapport between interviewer and respondent on interview quality.

When the all items and latent constructs within the scope of present dissertation were evaluated, the regression coefficients allow to determine circumstances carrying with the high interview quality. The afternoon interviews performed at 11 a.m.-6 p.m. and interviews with three or more visits lead to highest index for *'timing and frequency of visits'*. The currently student interviewers who are interested in social or educational sciences, interviews conducted in the middle of the field work, interviewers and respondents who have at the same level of education reach to highest index for *'interviewer characteristics and, similarity between interviewer and respondent'*. The interviewers whose mean interview duration is higher than 34.6 minutes, interviews completed between 21 and 89 minutes, interviews conducted with respondent's mother tongue result in the highest index for *'dynamic interview factors'*. Therefore, these circumstances provide the highest level of rapport, and consequently the highest interview quality. The unexplained variances of rapport and quality concepts might be explained by relatively social factors such as interviewers' and respondent's attitudes and beliefs that could be gathered though a separate questionnaire as well as qualitative research techniques.

The present work goes further and deals with two specific problems that correspond to sub-objectives of the thesis. The first one was to reveal differences between women interviews completed with the high rapport, according to selected characteristics. The results showed that there are significant residential and regional differences in interviews conducted with the high rapport level. The comparisons indicated warm relations established with the respondents in rural areas and rural migrant receiving regions such as South and Central as well as high response (GDSW and HUIPS, 2015). The significantly higher percentages for interviews conducted with currently or formerly married women and women with at least one child might be associated to increased interview length. The

interview length was found as an influential factor to improve rapport between interviewer and respondent. The significant differences were also observed between interviews conducted with women have exposed to violence and have not exposed to violence during their life. These results indicated that willingness to share violence experience requires high level of rapport to some extent. For a domestic violence survey, this result might be interpreted that comfortable rapport established between interviewer and respondent may ease disclosing answers regarding violence experience of women. Therefore, it can be stated that violence related findings refer to substantial role of rapport between interviewer and respondent.

The second interest was to investigate effects of interviewer characteristics on interview quality that is newly developed concept in the present dissertation. Multivariate findings suggested that interviewer characteristics have a persistent impact on the likelihood of high quality interview occurrence, even after adding field and interview settings as well as women characteristics into the equation. Multivariate findings are in line with descriptive findings as well as previous research in that area. The final model (Model 3) implied that the likelihood of high quality interview occurrence is significantly affected from interviewers' age, educational level, background, and previous experience. Since most of the interviewed women in the 2014 VAW Study are between 30 and 34 years of age in the VAW Study (GDSW and HUIPS, 2015), and all interviewers are between 20 and 30 years of age, a year increase in the interviewer's age might be explained with the increased probability of age matching between interviewers and respondents. A year increase in age of interviewers may ease the rapport building with the respondent and it may affect interview quality. Lord et al. (2005) also documented the positive effect of age matching on cooperation and interaction. The positive effect on the probability of high quality interviews was also found for inexperienced interviewers compared with experienced interviewers. From a different point of view, Johnson and Parson (1994) asserted that older interviewers may be seen as authority figures especially for sensitive questions. This finding also supported expectations at the initial stage of the work.

The present study also found that inexperienced interviewers more likely to conduct high quality interviews as opposed to experienced interviewers. Experience here stands for total number of worked surveys prior to the 2014 VAW Study, suggested in a study (Brunton-Smith et al., 2017). Contrary to what is widely believed, the significant finding supports our field observations. We believe that interviewers may be affected from their previous experiences. The previous survey experience might affect interviews in a negative way in terms of skipping questions, reading questions inexactly, and maybe cheating., and thus, it may leads to loss of quality. Various studies have found a negative relationship between experience and gaining cooperation (Loosveldt, 1997; Mierzwa et al., 2002; Bottman and Thornberry, 1992) . The effective training process without any experience will lead to better learning process about how to conduct interviews. The findings about interviewer's experience impact on various survey interests are still inconsistent (O'Muircheartaigh and Campanelli, 1998; Hughes et al., 2002; Jackle et al., 2013; West and Blom, 2017). The impact of age and experience of interviewer is well-documented especially for response behaviors, cooperation, survey outcomes and data quality (Pickery et al., 2001; O'Muircheartaigh and Campanelli, 1998; Jackle et al., 2013; Brunton-Smith et al., 2017).

It was also found that university graduates more likely to carry out high quality women interviews as opposed to currently university students. The educational level of interviewer was not focused so much, except for "liking" between respondent and interviewer (Durrant et al., 2010). When the high proportion of interviewers graduated from social or educational sciences is taken into account in the 2014 VAW Study, university graduated interviewers may have more motivation dedicated to field work compared to university students and, those may evaluate the field work as a step for making a career/future plans out of interviewing. In other words, sense of belonging may be much dominant among university graduates rather than currently student ones. The university students may have considered field work as a temporary job prior to graduation.

Looking at the finding about background of interviewer, it may be attributed to interviewers' skills on providing acquiescence and establishing comfortable rapport with respondent (Saraç and Türkyılmaz, 2020). Note that, the result might be a result of the high proportion of interviews carried out by interviewers from social or educational sciences (about 78 percent).

The study also found significant effects of 'time of the interview' and 'field stage' although the focus of the paper is on the impact of interviewer characteristics. The result on time of the interview could be explained with more suitable time of respondents in the mornings and afternoons. At the same time, the result could be related to reduced performance of interviewers at the end of the day. The higher probabilities of interviews conducted at the beginning and middle of the field work period may be attributed to interviewers' adaptation period at the beginning and productivity at the middle of the field work. Moreover, interviewers may have much more physical and psychological burden at the end of the field work, especially for sensitive surveys. The effects of field related factors on data quality could be found in a comparative study (Johnson et al., 2009).

The empirical results revealed the pivotal impact of interviewer characteristics on the interview quality, that was constructed against various predictors. The results of the second part of the study, introducing interview quality with exploratory factors and revealing the impact of interviewer characteristics on interview quality, may be supported by the claims of *survey satisficing theory* (Krosnick, 1991). When response quality is considered as part of the interview quality, affecting factors such as *'interviewer workload'* and *'respondent burden'* on interview quality were explored. From respondents' view, rapport might be a trigger factor for respondents' satisficing behavior and that may affect respondent answers' quality which is formulated within the scope of interview quality. On the other hand, interviewer characteristics can be accepted as a contributing factor of rapport built between interviewer and respondent (Saraç and Türkyılmaz, 2020). Although there is not strong relationship, when these linkages are considered

together, impact of interviewer characteristics on interview quality may be discussed around claims of survey satisficing theory.

The dissertation has also certain limitations especially for the conceptualization phases of the rapport and interview quality. The thesis attempted to measure unobservable social constructs that we often experience at the data collection phase. These measurements were produced from selected variables which are available in the women and field staff data sets of the 2014 VAW Study in Turkey. Therefore, we have mainly focused on interviewer, respondent and response to formulate rapport and interview quality that has no direct measure. For example, "measurement" dimension in the survey life cycle could not be included in the interview quality operationalization process despite the fact that it is associated to interviewer. However, starting point to introduce interview quality comes from the cornerstones of that cycle defined by Groves et al. (2004). Moreover, the findings of this thesis are limited to PAPI (Pen and Paper Interviewing) that was adopted as a data collection mode in the 2014 VAW Study. Hence, the need for methodological studies that will focus on situational factors such as interviewing technique (standardized vs conversational) and mode of data collection (PAPI, CAPI, CATI and other forms of those modes) within the scope of rapport and quality will light future surveys.

The items used to identify factors labelled *'respondent burden'* and *'response quality'* can be evaluated as weak measurements. This is mainly originated from weak strength of relationships between those a few number of items on the same factor. In particular, measurement of respondent burden might be mostly explained with the correlation between 'interview duration' and 'proportion of filled items'. Similarly, response quality may be extracted due to correlation between 'no idea responses on attitudes towards violence' and 'no idea responses on attitudes about refusing sex'. Therefore, more variables may be required to measure *'respondent burden'* and *'response quality'*, and ultimately interview quality. Still, the findings are reasonable when the lack of rich information is considered.

The another limitation could be associated to lack of more interviewer characteristics that might influence interview quality and thus, increase explanatory power of the regression models. previous research and theory on interview quality is taken into account. Apart from the situational factors, different variables to measure respondent attitudes and beliefs as well as interviewer skills and behaviors would help to introduce rapport and interview quality concepts. The lack of rich interviewer information collected in the form of auxiliary data also reveals when investigating impact of interviewer characteristics on interview quality. Moreover, age and educational level of interviewers could be able to controlled in a constricted way. The main reason behind that is the pre-determined interviewer profile in the 2014 VAW Study. all of the interviewers worked in the 2014 VAW Study are between 20 and 30 years of age and at least university students. Furthermore, gender of interviewers which is mostly controlled and mostly found significantly associated with cooperation and data quality in similar studies (Blohm et al., 2007; Liu and Stainback, 2013), could not be examined in the thesis given that all interviewers worked for the survey were female.

Lastly, interviewer variances could be estimated as long as interpenetrated sample design approach is adopted when assigning sample units to the interviewers (Mahalanobis, 1946). Hence, random assignment of interviewers to sample units in different regions is provided and errors due to interviewers could be estimated (Groves, 2004; O'Muircheartaigh and Campanelli, 1999). In the 2014 VAW Study, assignment of interviewers was not made according to interpenetrated sample design. Fifteen teams including 1 supervisor, 1-2 field editors, and 4-5 female interviewers were assigned to specific clusters for the field work. For instance, an interviewer who worked for the clusters in the North region was not assigned to another region to conduct interviews. Therefore, study results which focus on interviewer effects might be affected from this limitation, that does not allow to measure complete impact especially in face-to-face surveys.

5.1. Practical Implications and Suggestions

The findings of the dissertation also point out certain field implications for social surveys. Similar designed future surveys, including the VAW Studies, can utilize study findings especially for data collection, interviewer recruitment and assignments, interviewer training as well as field monitoring/management. First of all, the thesis gives an insight and awareness on the usage of methodological concepts. In this sense, it brings a statistical evidence that the rapport between interviewer and respondent, and interview quality have much wider meanings than we would think about. Because, these concepts were operationalized with multi-dimensional sub-constructs which refer to field and interview settings, interviewers, respondents, and survey responses. The results showed that the methodological concepts have complex structure and affected from a great number of linkages. From this point of view, the usage of powerful statistical techniques likewise the SEM technique should be more prevalent especially when studying on such a difficult to measure social concepts.

Secondly, when the positive impact of rapport on interview quality is considered, the main aim should be keep rapport between respondent and interviewer at a certain level. Starting from this point of view, decisions on suitable time of the interview, recruiting interviewers based on their characteristics, executing field work taking interviewer workload and respondent burden into account, training interviewers with effective techniques to increase response quality are among the suggestions to implement in surveys.

Thirdly, the priority might be given to interviewers who are between 25 and 30 years of age, inexperienced interviewers, and at least university graduated candidates at the field staff recruitment stage. This recommendation comes from the study findings which refer to likelihood of performing high quality interviews conducted by such interviewers. In this sense, previous survey experience may lead to bias on survey results because of interviewer satisficing behaviour. Experienced interviewers may tend to complete interviews as soon as possible

with loss of quality. Thus, training inexperienced interviewers starting from contacting respondent to recording answers could be accepted as the most appropriate method to get high quality interviews.

At the interviewer recruitment stage, a separate form including questions that aim to measure interviewers' attitudes, behaviors, beliefs, and expectations may be prepared to ask candidates. This would be useful for both interviewer selection process and, it allows to make methodological comparisons between pre and post field period in terms of interviewers' expectations as well as their performance. Therefore, a different questionnaire that could be designed to ask interviewers at the end of the field work would be required to gather information about relations between field staff in each team as well as their experiences.

Fourthly, field work should be executed being aware of interviewer workload contribution to the interview quality. Thus, optimal assignment of sample units or urban clusters should be made within other constraints, i.e. field work length, budget and logistics in practice. Furthermore, a great effort should be attached to optimal field work length per interviewer, from field management side. In this sense, not allowing an interviewer to work with the same team for a long time of period can be a strategy, particularly for interviewers who worked in numerous urban clusters. In other words, proceeding with a specific interviewer who worked in many urban clusters for a long time might be avoided to keep quality at a high level although survey resource constraints such as time, financial sources and logistics will affect these field work decisions. Moreover, suitable time of the interview with respondent is such an important issue that it has an impact on both respondent and interviewer as well as their interaction. Conducting interviews in the morning and afternoon in a day may be preferred to evening interviews, within the survey resource constraints such as cost and time. Keeping in mind that limiting the field work length to some extent may be preferred to avoid any loss of interview quality.

Most probably, unwillingness of respondent to answer and reduced motivation of interviewers to perform a new interview might be come up at the end of the day. Moreover, the optimal field work length per interviewer should be followed by field manager constantly. Inclusion of new interviewers to field teams rather than working with a specific interviewer for a long time may be preferred to keep quality at a high level. Another option can be assigning field teams whose work ended to the areas that require more effort to complete interviews, although most teams have similar field durations in a VAW Study. In other saying, working with interviewers who worked for shorter time period may be preferred especially at the end of the field work.

Fifthly, another field implication can be related with interviewer training sessions. The sessions should be well-organized with effective training techniques that will be utilized in the field work. When the finding about respondent burdens' contribution to interview quality is evaluated, giving emphasis on training sessions that cover skipping filter questions, avoiding repetition of questions if they were asked previously, guiding respondents if they face with any difficulties to respond (i.e. recall, interpretation and judgement) would be useful. Such efforts to reduce respondent burden would be will provide quality interviews. Not only appropriate interviewing techniques but at the same time their roles on building rapport may be emphasized to raise awareness of interviewers. Especially for the VAW Studies, data quality could be able to assessed through a few indicators such as missing rates and straight-lining. Furthermore, for quality evaluations, importance of questions which are replied by interviewers at the end of the interviews such as response reliability and interviewer evaluations about the interview, should be underlined during the training sessions. In this regard, remarkable importance of interviewers' evaluations about the interview should be emphasized clearly.

Sixthly, another implication may be discussed on the scope of interviewing technique (i.e. standardized vs conversational). Especially considering the relation between interviewing technique and rapport from the literature (Bell et al., 2016),

tendency to follow unscripted form of questions may be argued within the scope of standardization of meaning, validity of responses, and ethical considerations. Open-ended questions that aim to gather respondents' thoughts about the interview and interviewers' evaluations after the field work would give cues regarding interview environment. Furthermore, in accordance with the sensitive nature of violence against women, psychological support should be provided during the field work. This strategy may also be extended to other surveys considering the contribution of interviewer workload (i.e. physical, psychological) to interview quality.

As the seventh point, in accordance with the feminist approach to get reliable and valid data, open-ended questions could be preferred as an alternative to closed questions (Smith, 1994). This will allow to getting responses as exactly understood by respondents and thus, increasing accurate response behaviour. Moreover, open-ended questions remove barriers that might be resulted from hierarchy between interviewer and respondent, and improve their interaction (Hoff, 1990). As suggested by Smith (1994), capturing all details of violent experience is possible with open questions. Considering questionnaire design stage of the VAW Study, same information about selected violence types may be gathered through both open and closed questions. This would allow to make internal consistency checks to obtain more accurate and reliable data on such a sensitive topic. For instance, Hanmer and Saunders (1984) detected a part of women who have stated their violence experience for later relevant questions about violent experience.

Lastly, as feminist approach suggested, female interviewers should be included in field works for such sensitive surveys. Oakley (1981) underlined that "inside the culture" of women could be understood by another woman during the interview process. When training process is considered within feminist approach, female interviewers should be informed about the women organizations and institutions to combat violence as well as their services, as supported by Smith (1994).

Surely, the implication of certain significant factors depends on the survey designs. For instance, the matching characteristics between interviewers and respondents to increase rapport is only possible with the known information about respondents prior to interviews. The design of household surveys such as 2014 VAW Study does not allow to know respondent characteristics until door-step interaction. Similarly, items within dynamic interview factors such as interview length per interviewer and respondent, and respondent feelings after the interview are usually out of our control.

5.2. Contributions and Further Studies

To the best of one's knowledge, the methodological thesis is the first that consider number of factors to measure rapport and interview quality as well as their relation on the basis of Turkey. Furthermore, according to selected characteristics, efforts on revealing differences between women interviews with the high rapport and impact of interviewer characteristics on interview quality can be added to first statement. Selecting a subgroup of interviews, namely women interviews completed with high rapport, and investigating variation according to selected characteristics, is remarkable due to high rapport impact especially on getting more disclosure of answers for sensitive questions and potential high quality data (Green and Krosnick, 2001; Sun et al., 2021). . Further, identifying interviewer level factors on interview quality using a limited information about interviewers is also substantial. Briefly, the main contributions are to bring a statistical evidence on rapport between interviewer and respondent as well as interview quality, to follow survey implications stated in detail above and, to adopt complicated statistical techniques when studying on methodological concepts that are not well-defined previously. Having all these in mind, the efforts spent for the dissertation seem to be remarkable in terms of suggesting practical implications for future surveys.

Last but not least, the idea behind the introducing interview quality for such a sensitive and complex survey in Turkey, and efforts to achieve study goals could be evaluated as noteworthy in that area. In this regard, thesis findings fill the gap

particularly on quality of violence against women data under the consideration of interview quality. So far, less attention has paid to quality assessments on violence against women data compared to other survey statistics in different fields. The findings contributes to limited number of studies that mainly focus on comparability and validity of violence data generated in EU FRA survey of Violence against Women and ONS (Office for National Statistics) Crime Survey for England and Wales (Martín-Fernández et al., 2020; Walby and Towers, 2017). This contribution is based on a wider concept, namely interview quality, under the examination of 2014 Research on Domestic Violence against Women in Turkey data.

The thesis calls for further quantitative studies to measure similar methodological concepts in addition to rapport and interview quality handled with different approaches. Studies that aim to extend measurements of interview quality by integrating different dimensions of data collection stage would be insightful. Moreover, investigating effects of interviewers' attitudinal and behavioral characteristics, skills, beliefs, expectations, and other socio-demographics of interviewers on the likelihood of high quality interviews will be remarkable for future studies. Another study suggestion may be investigation of interview quality impact on rapport between interviewer and respondent. This dissertation focused on one-way relation between rapport and interview quality.

Additionally, comparable studies that use data come from surveys with different sensitivity levels will insight the roles of rapport at the data collection and interview quality as a product in surveys. For instance, using large scale survey data such as DHS, MICS and SHARE, and making comparisons with VAW Study would be valuable to present recommendations about rapport and interview quality taking survey topic into account. Moreover, in accordance with the arguments of CFA, explored factors contributing rapport and interview quality might be confirmed using different data sets to use in different survey settings.

Another study interest can be order of interview between specific hours in a day to detect successful interviews in terms of data quality or acceptance to interview. Findings of such studies will refer to best interview time which may inform field coordinator to lead field teams. When all practical implication strategies at each research step are taken into account, guidelines that are designed to improve interview quality and rapport between interviewer and respondent would be insightful for further researches on violence against women as well as similar designed researches. These guidelines can be used during interviewer training sessions to adopt effective field work strategies and, it may help to field coordinator when deciding about field organisation within survey resource constraints. Moreover, field coordinator may follow any problems within field teams in conjunction with their performance over specific time periods.

Surely, qualitative approaches will be useful to understand social dynamics that may have an impact on the interaction between interviewer and respondent. At the end of the field work, in-depth interviews with both interviewers and respondents separately would be useful to understand mechanisms behind building rapport. In-depth interviews with the aim of gathering information about interviewers' and respondents' experiences will help to understand social factors affecting interview quality. Further, at the end of the field work, focus group interviews which are conducted with both respondents and interviewers would be worthwhile given that it allows data generation on the basis of interviewer-respondent interaction.

CHAPTER 6. REFERENCES

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Appendix A. Additional Analyses to Introduce Rapport Between Interviewer and Respondent

Table A.1. Descriptive Statistics of Items to Measure Rapport

	Percentage	Number of women interviews
Age matching		
Matched	26.4	1,838
Unmatched	73.6	5,129
Educational level matching		
Matched	11.6	809
Unmatched	88.4	6,158
Interviewer experience		
At least one experience	38.7	2,700
Inexperienced	61.3	4,268
Student		
No	50.6	3,523
Yes	49.4	3,444
Background		
Natural sciences	13.1	911
Social/educational sciences	86.9	6,056
Cooperation rate of interviewer		
<1.16 interviews	75.1	5,236
>1.15 interviews	24.9	1,732
Feelings after the interview		
Good/better/same/no difference	97.0	6,757
Bad/worse	3.0	211
Any break during the interview		
No break or <11 minutes	96.9	6,752
>10 minutes	2.8	198
Reliability of answers		
Poor/medium	19.5	1,357
Good/very good	80.5	5,611
Interpreter use		
Yes	0.5	32
No	99.5	6,935
Time of the interview		
Morning or evening	50.1	3,494
Afternoon	49.9	3,474
Field stage		
Beginning	24.7	1,718
Middle or end	75.3	5,249
Interview day		
Weekday	82.7	5,764
Weekend	17.3	1,203
Interview length		
<20 minutes or >90 minutes	12.9	897
>19 minutes and <91 minutes	87.1	6,071
Mother-in-law presence in a household		
No	92.4	6,441
Yes	7.6	526
Language matching		
Matched	84.0	5,855
Unmatched	16.0	1,113
Total	100.0	6,967

Table A.2. Preliminary Results of Exploratory Factor Analysis to Measure Rapport

Compo-nent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Variables	Components						
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %		1	2	3	4	5	6	7
1	1.45	9.05	9.05	1.45	9.05	9.05	Background	0.69	-0.18	-0.35	-0.11	-0.01	-0.09	0.15
2	1.24	7.72	16.77	1.24	7.72	16.77	Student	0.58	0.20	-0.27	-0.27	-0.27	0.04	0.16
3	1.19	7.42	24.19	1.19	7.42	24.19	Interview length	0.04	-0.54	0.17	-0.30	0.14	0.37	-0.11
4	1.15	7.20	31.39	1.15	7.21	31.39	Field period	0.21	0.47	0.10	-0.38	0.07	0.11	-0.05
5	1.06	6.60	37.99	1.06	6.60	37.99	Cooperation rate	-0.43	0.45	-0.10	0.04	0.14	-0.21	0.17
6	1.05	6.53	44.52	1.05	6.53	44.52	Any break	0.10	0.35	0.07	-0.07	0.12	0.00	-0.02
7	1.02	6.35	50.88	1.02	6.35	50.88	Language matching	0.24	-0.02	0.63	-0.10	-0.13	-0.21	-0.29
8	1.00	6.24	57.12				Age matching	0.14	0.20	-0.36	0.41	0.23	0.41	-0.28
9	0.99	6.19	63.31				Educational level matching	0.33	0.33	0.21	0.39	-0.28	0.18	-0.22
10	0.96	6.02	69.33				Reliability	0.20	-0.03	0.28	0.28	0.12	0.07	-0.07
11	0.93	5.83	75.15				Interview day	0.10	0.14	0.03	-0.40	0.62	-0.03	0.05
12	0.90	5.60	80.76				Time of the interview	0.23	0.17	0.19	0.09	0.37	-0.32	-0.24
13	0.89	5.57	86.33				Feelings	0.06	-0.02	0.33	-0.02	0.20	0.53	0.22
14	0.82	5.12	91.45				Experience	0.29	-0.36	-0.07	0.31	0.30	-0.43	0.01
15	0.74	4.63	96.07				Mother-in-law in a hh	0.12	0.08	0.37	0.11	-0.15	-0.12	0.64
16	0.63	3.93	100.0				Interpreter use	0.11	0.00	0.05	0.37	0.29	0.15	0.44

KMO: 0.497
SIG. : 0.000

Extraction Method: Principal Component Analysis.
components extracted

Figure A.1. Component Plot and Scree Plot of First Analysis to Measure Rapport
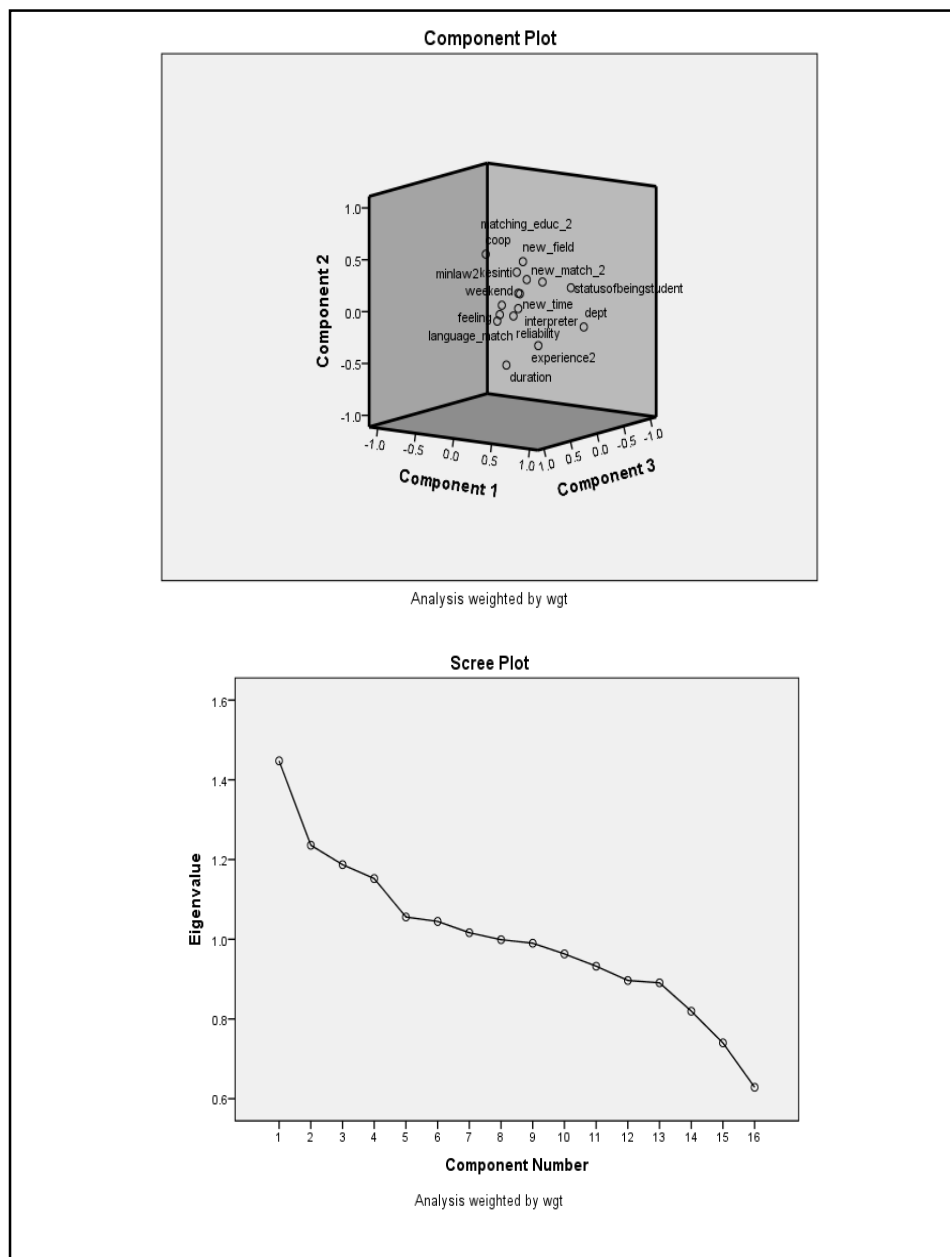
Table A.3. Percent Distribution of Interviews with Rapport Levels by Background Characteristics

		Rapport Levels						
		Low		Middle		High		
Variables		Unweighted N	Raw %	Unweighted N	Raw %	Unweighted N	Raw %	Total
Region (5)-*respondent*	West	854	37.6	765	31.5	734	31.0	100.0
	South	84	13.8	223	36.9	297	49.4	100.0
	Central	456	27.2	429	27.4	696	45.4	100.0
	North	327	34.0	492	45.9	226	20.2	100.0
	East	852	44.3	683	37.1	344	18.6	100.0
Type of place of residence-*respondent*	Urban	1,653	32.3	1,710	32.2	1,710	35.5	100.0
	Rural	920	37.0	882	37.2	587	25.8	100.0
number of visits-*fieldwork*	3	52	28.2	64	33.2	79	38.5	100.0
	1-2	2,521	33.5	2,528	33.3	2,218	33.2	100.0
mother tongue-*respondent*	Turkish	1,757	28.7	2,075	32.7	2,200	38.7	100.0
	Kurdish	691	54.9	439	37.2	75	7.9	100.0
	Arabic	88	59.9	49	35.0	7	5.1	100.0
	other	33	50.1	27	30.9	15	19.0	100.0
at least one ownership-*respondent*	No	2,189	34.5	2,130	33.8	1,793	31.7	100.0
	Yes	384	28.3	462	31.3	504	40.4	100.0
Wealth index - 3 categories-*respondent*	Low	1,223	35.9	1,194	37.4	801	26.7	100.0
	Middle	485	32.5	564	36.1	460	31.4	100.0
	High	865	31.5	834	28.5	1,036	40.1	100.0
currently married-*respondent*	No	520	30.6	553	33.5	561	35.8	100.0
	Yes	2,052	34.0	2,039	33.3	1,736	32.7	100.0
place of birth-5 regions-*interviewer*	West	547	18.9	987	37.8	962	43.3	100.0
	South	396	40.5	318	37.9	213	21.6	100.0
	Central	1,069	38.6	837	30.0	794	31.4	100.0
	North	199	28.5	379	39.1	275	37.4	100.0
	East	294	76.4	71	7.0	53	16.6	100.0
general health status-*respondent*	Bad/Very bad	363	39.4	335	33.7	227	26.9	100.0
	Not bad	2,208	32.5	2,256	33.3	2,069	34.2	100.0
general health status in the last 4 weeks-*respondent*	Bad/Very Bad	804	36.6	783	34.0	567	29.4	100.0
	Not bad	1,767	32.1	1,808	33.1	1,727	34.8	100.0
thought end her life-*respondent*	No	2,113	33.4	2,143	34.1	1,837	32.5	100.0
	Yes	458	33.5	442	30.3	447	36.2	100.0
at least one agree on gender roles-*respondent*	None	57	39.0	40	30.1	41	30.9	100.0
	At least one	2,516	33.2	2,552	33.4	2,256	33.4	100.0
at least one justification on domestic violence-*respondent*	None	1,471	30.6	1,566	32.6	1,564	36.8	100.0
	At least one	1,102	38.3	1,026	34.7	733	27.0	100.0
Emotional violence-*respondent*	No	1,460	35.7	1,326	31.7	1,190	32.6	100.0
	Yes	870	29.7	1,030	35.1	918	35.2	100.0
Physical violence-*respondent*	No	1,587	34.0	1,561	32.3	1,414	33.8	100.0
	Yes	743	31.5	794	34.9	694	33.5	100.0
Sexual violence-*respondent*	No	2,086	33.2	2,107	33.4	1,850	33.3	100.0
	Yes	243	32.6	247	30.7	257	36.7	100.0
	Total	2,329	33.1	2,354	33.1	2,107	33.7	100.0

Table A.4. First Results of Exploratory Factor Analysis to Measure Rapport-Total Variances Explained with Three Factors

	All variables						**5 variables excluded**						**7 variables excluded**					
	Total Variance Explained						Total Variance Explained						Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Initial Eigenvalues			Extraction Sums of Squared Loadings			Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.69	8.34	8.34	1.69	8.34	8.34	1.64	10.95	10.95	1.64	10.95	10.95	1.62	12.45	12.45	1.62	12.45	12.45
2	1.43	7.17	15.51	1.43	7.17	15.51	1.41	9.39	20.34	1.41	9.39	20.34	1.39	10.75	23.20	1.39	10.75	23.20
3	1.37	6.84	22.35	1.37	6.84	22.35	1.35	8.99	29.33	1.35	8.99	29.33	1.29	9.93	33.13	1.29	9.93	33.13
4	1.20	6.01	28.36				1.18	7.84	37.17				1.13	8.72	41.85			
5	1.15	5.76	34.12				1.10	7.33	44.50				1.09	8.36	50.21			
6	1.12	5.57	39.69				1.07	7.10	51.60				1.01	7.72	57.92			
7	1.05	5.27	44.96				1.01	6.72	58.32				0.99	7.58	65.51			
8	1.04	5.18	50.14				0.98	6.56	64.88				0.95	7.31	72.81			
9	1.00	4.99	55.14				0.95	6.34	71.22				0.89	6.83	79.64			
10	0.99	4.95	60.09				0.92	6.11	77.33				0.83	6.40	86.04			
11	0.98	4.90	64.99				0.85	5.69	83.02				0.78	5.99	92.04			
12	0.96	4.81	69.81				0.80	5.33	88.34				0.58	4.44	96.49			
13	0.94	4.71	74.51				0.76	5.05	93.39				0.46	3.51	100.0			
14	0.92	4.57	79.09				0.54	3.57	96.96				KMO	0.498				
15	0.87	4.37	83.45				0.46	3.04	100.0				SIG.	0.000				
16	0.80	4.01	87.46				KMO	0.492										
17	0.78	3.92	91.39				SIG.	0.000										
18	0.74	3.68	95.07															
19	0.53	2.66	97.7															
20	0.46	2.28	100.0															
KMO	0.498																	
SIG.	0.000																	

Table A.5. First Results of Exploratory Factor Analysis to Measure Rapport-Component Matrices with Three Factors

Component Matrix[a] all variables (22,4%)				Component Matrix[a] 5 variables excluded (29,4%)				Component Matrix[a] 7 variables excluded (33,1%)			
	Component					Component				Component	
	1	2	3		1	2	3		1	2	3
Start hour of interview	0.81	0.18	0.16	Start hour of interview	0.82	0.21	0.09	Start hour of interview	0.82	0.19	0.17
Time of the interview	0.75	0.25	0.17	Time of the interview	0.77	0.29	0.07	Time of the interview	0.78	0.26	0.17
Number of visits	0.25	0.08	-0.04	Educational level matching	-0.26	0.25	-0.18	Number of visits	0.27	0.08	-0.04
Language matching	-0.25	-0.02	0.24	Number of visits	0.26	0.05	-0.06	Student	-0.14	0.73	-0.06
Presence of mother-in-law in hh	-0.20	0.01	-0.02	Language matching	-0.23	0.07	0.19	Background	-0.23	0.57	0.37
Feelings	-0.12	-0.05	0.10	Cooperation rate	0.22	0.14	0.17	Field stage	-0.13	0.49	-0.01
Interview day	0.12	-0.08	-0.04	Student	-0.12	0.66	-0.32	Educational level matching	-0.27	0.30	-0.07
Interpreter	-0.08	0.02	-0.03	Background	-0.26	0.66	0.18	Age matching	-0.01	0.19	-0.11
Student	-0.12	0.70	-0.08	Field stage	-0.09	0.42	-0.30	Reliability	-0.06	0.15	0.13
Background	-0.26	0.59	0.35	Reliability	-0.05	0.19	0.09	Interview duration per interviewer	-0.16	-0.04	0.74
Field stage	-0.11	0.47	-0.13	Age matching	-0.01	0.16	-0.12	Interview duration	-0.03	-0.21	0.63
Educational level matching	-0.26	0.27	-0.08	Interview duration per interviewer	-0.13	0.20	0.71	Language matching	-0.23	0.02	0.26
Regional matching	-0.07	-0.24	0.20	Interview duration	-0.02	-0.04	0.59	Feelings	-0.12	-0.05	0.15
Age matching	-0.00	0.20	-0.08	Experience	-0.13	0.21	0.35				
Any break	-0.05	0.17	-0.08	Feelings	-0.11	-0.02	0.12				
Interview duration per interviewer	-0.13	-0.02	0.72								
Interview duration	-0.02	-0.19	0.53								
Experience	-0.14	0.07	0.40								
Cooperation rate	0.23	0.04	0.23								
Reliability	-0.06	0.15	0.15								

Appendix B. Additional Analyses to Introduce Interview Quality

Table B.1. Percent Distribution Interviews with Quality Levels by Background
Characteristics of Interviewers and Respondents, and Field and Interview Settings

Variables	Quality Levels			Number of women interviews
	Low	High	Total	
Age of interviewer				
20-24	40.0	60.0	100.0	3,388
25-30	59.0	41.0	100.0	3,533
Educational level of interviewer				
High school	35.0	65.0	100.0	1,038
University and higher	54.2	45.8	100.0	2,943
Background of interviewer				
Natural sciences	18.1	81.9	100.0	867
Social/educational sciences	54.8	45.2	100.0	6,054
Experience of interviewer				
None	40.0	60.0	100.0	4,342
1	52.0	48.0	100.0	1,280
2 and more	79.8	20.2	100.0	1,299
Feelings of respondent				
Good/better/same/no difference	49.9	50.1	100.0	6,730
Bad/worse	52.2	47.8	100.0	191
Reliability of answers				
Good/very good	49.3	50.7	100.0	5,619
Poor/medium	52.7	47.3	100.0	1,302
Time of the interview				
Morning	46.0	54.0	100.0	2,200
Afternoon	48.1	51.9	100.0	3,616
Evening	61.2	38.8	100.0	1,105
Field stage				
Beginning	57.5	42.5	100.0	2,016
Middle	45.6	54.4	100.0	3,210
End	51.0	49.0	100.0	1,695
Day of interview				
Weekday	50.0	50.0	100.0	5,690
Weekend	50.1	49.9	100.0	1,231
Any break during the interview				
No	49.9	50.1	100.0	6,643
Yes	52.2	47.8	100.0	263
Age				
15-24	44.5	55.5	100.0	1,261
25-39	50.3	49.7	100.0	2,907
40-59	52.2	47.8	100.0	2,753

Table B.1 (continued). Distribution of Interviews with Quality Levels by Interviewer and Respondent Characteristics, and Field and Interview Settings

	Quality Levels			**Number of women interviews**
Variables	**Low**	**High**	**Total**	
Mother tongue				
Turkish	52.2	47.8	100.0	5,581
Kurdish	36.7	63.3	100.0	1,127
Arabic and other	51.4	48.6	100.0	213
Marital status				
Currently married	50.7	49.3	100.0	5,406
Formerly married	56.6	43.4	100.0	426
Never married	43.6	56.4	100.0	1,088
Educational level of women				
No education	41.4	58.6	100.0	1,271
Primary	52.4	47.6	100.0	2,918
Secondary and higher	51.0	49.0	100.0	2,732
Respondent working status				
No	47.2	52.8	100.0	4,857
Yes	56.7	43.3	100.0	2,061
Controlling behaviors by husband				
None	52.4	47.6	100.0	1,110
At least one behavior	50.5	49.5	100.0	5,193
Justification of violence				
0	52.6	47.4	100.0	3,805
1	53.1	46.9	100.0	1,046
2 and more	42.6	57.4	100.0	2,070
Refusals to have sex				
0	24.2	75.8	100.0	167
1	47.3	52.7	100.0	78
2 and more	50.5	49.5	100.0	6,676
Region				
West	60.9	39.1	100.0	2,203
South	61.3	38.7	100.0	583
Central	42.0	58.0	100.0	1,372
North	39.9	60.1	100.0	986
East	27.3	72.7	100.0	1,777
Type of residence				
Urban	50.7	49.3	100.0	4,720
Rural	47.5	52.5	100.0	2,201
Wealth index				
Poor	47.2	52.8	100.0	2,990
Medium	49.4	50.6	100.0	1,405
Rich	52.8	47.2	100.0	2,526
Total	50.0	50.0	100.0	6,921

Table B.2. Logistic Regression Results for the Likelihood of High Quality Interviews

(ref. low quality interviews)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Age of interviewer	0.86**	0.86**	0.86**	0.86**	0.84**
Educational level of interviewer					
High school	1.48**	1.45**	1.52**	1.43**	1.68**
University and higher	1.00	1.00	1.00	1.00	1.00
Background of interviewer					
Natural sciences	3.90**	4.01**	4.30**	4.24**	5.10**
Social/educational sciences	1.00	1.00	1.00	1.00	1.00
Experience of interviewer					
None	3.51**	3.38**	3.32**	3.43**	3.22**
1	2.53**	2.45**	2.47**	2.63**	2.33**
2 and more	1.00	1.00	1.00	1.00	1.00
Feelings of interviewers					
Good/better/same/no difference	1.11	1.07	0.97	0.94	0.94
Bad/worse	1.00	1.00	1.00	1.00	1.00
Reliability of answers					
Good/very good	1.35**	1.34**	1.41**	1.39**	1.22*
Poor/medium	1.00	1.00	1.00	1.00	1.00
Time of the interview					
Morning	-	1.73**	1.65**	1.62**	1.30*
Afternoon	-	1.65**	1.56**	1.55**	1.27*
Evening	-	1.00	1.00	1.00	1.00
Field stage					
Beginning	-	0.80**	0.78**	0.74**	0.87**
Middle	-	1.23**	1.24**	1.24**	1.67**
End	-	1.00	1.00	1.00	1.00
Day of interview					
Weekday	-	1.07	1.07	1.08	1.15
Weekend	-	1.00	1.00	1.00	1.00
Any break during the interview					
No	-	0.94	0.92	0.90	0.97
Yes	-	1.00	1.00	1.00	1.00
Age of women			0.99*	0.99	1.00
Mother tongue					
Turkish	-	-	1.26**	1.26	1.42
Kurdish	-	-	1.95**	1.62	1.88
Arabic and other	-	-	1.00	1.00	1.00
Marital status					
Never married	-	-	1.40**	1.26	1.32
Formerly married	-	-	0.92**	0.89	0.89
Currently married	-	-	1.00	1.00	1.00

Table B.2 (continued). Logistic Regression Results for the Likelihood of High Quality Interviews (ref. low quality interviews)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Educational level of women					
No education	-	-	1.38*	1.27	1.25
Primary	-	-	1.08*	1.02	1.03
Secondary and higher	-	-	1.00	1.00	1.00
Respondent working status					
No	-	-	1.23**	1.22*	1.20*
Yes	-	-	1.00	1.00	1.00
Controlling behaviors by husband					
None	-	-	-	0.94	0.98
At least one behavior	-	-	-	1.00	1.00
Justification of violence					
0	-	-	-	1.31**	1.24**
1	-	-	-	0.92**	0.89
2 and more	-	-	-	1.00	1.00
Refusals to have sex					
0	-	-	-	1.86	1.60
1	-	-	-	1.13	1.04
2 and more	-	-	-	1.00	1.00
Region					
East	-	-	-	-	5.31**
North	-	-	-	-	2.58**
Central	-	-	-	-	3.64**
South	-	-	-	-	1.54**
West	-	-	-	-	1.00**
Type of residence					
Urban	-	-	-	-	1.08
Rural	-	-	-	-	1.00
Wealth index					
Poor	-	-	-	-	0.88
Medium	-	-	-	-	0.95
Rich	-	-	-	-	1.00
Constant	2.35**	1.87**	1.60**	1.81**	1.43**
Nagelkerke R square	0.22	0.24	0.26	0.27	0.33
Number of women interviews	6,921	6,921	6,921	6,921	6,921

**p<0.01, *p<0.05

Appendix C. Modification Indices for the Rapport Impact on Interview Quality

Table C.1. List of Modification Indices for the Rapport Impact on Interview Quality

			M.I.	Par Change					M.I.	Par Change	
R5	<-->	R1	7.757	0.008	no	e14	<-->	e22	6.034	-0.002	
R5	<-->	R6	8.597	0.000	no	e14	<-->	e19	6.239	-0.001	
e24	<-->	R2	5.559	0.005	yes	e14	<-->	e17	9.059	-0.003	yes
e24	<-->	R6	57.602	0.000	yes	e13	<-->	rapport	7.163	-0.020	
e24	<-->	R5	6.023	-0.001	no	e13	<-->	R6	14.097	0.000	yes
e23	<-->	R5	17.097	-0.001	yes	e13	<-->	e23	4.460	-0.002	
e22	<-->	R1	60.382	0.092	yes	e13	<-->	e22	7.629	-0.006	
e22	<-->	R6	5.332	0.000	yes	e13	<-->	e19	20.368	-0.008	yes
e22	<-->	e24	16.747	0.007	yes	e13	<-->	e16	10.964	-0.006	yes
e19	<-->	rapport	5.817	0.011	no	e13	<-->	e14	16.745	0.004	yes
e19	<-->	R1	55.067	0.070	yes	e12	<-->	R5	7.751	0.008	
e19	<-->	R5	34.336	0.002	no	e12	<-->	e22	60.363	0.092	yes
e19	<-->	e24	26.593	0.007	yes	e12	<-->	e19	55.084	0.070	yes
e19	<-->	e22	45.637	0.009	yes	e12	<-->	e16	17.232	0.042	no
e18	<-->	R5	27.886	0.003	yes	e11	<-->	R5	5.992	0.000	
e18	<-->	e22	72.708	-0.017	yes	e11	<-->	e24	42.204	0.003	yes
e18	<-->	e19	84.950	0.015	yes	e11	<-->	e22	14.746	0.002	yes
e17	<-->	rapport	92.053	0.067	yes	e11	<-->	e13	5.942	-0.002	
e17	<-->	R7	150.549	0.023	yes	e10	<-->	e13	4.895	-0.001	
e17	<-->	R3	148.130	0.000	yes	e9	<-->	R7	5.036	-0.002	
e17	<-->	R5	250.165	0.008	yes	e9	<-->	R3	5.081	0.000	
e17	<-->	R4	146.774	0.002	yes	e9	<-->	R2	7.127	-0.003	
e17	<-->	e24	6.121	0.005	no	e9	<-->	R5	16.440	-0.001	yes
e17	<-->	e22	9.791	0.006	yes	e9	<-->	R4	4.846	0.000	
e17	<-->	e19	12.853	0.006	yes	e9	<-->	e24	8.561	0.003	yes
e16	<-->	rapport	46.716	0.033	yes	e9	<-->	e19	8.403	-0.002	no
e16	<-->	R7	153.087	0.016	yes	e9	<-->	e18	4.726	-0.002	no
e16	<-->	R3	138.309	0.000	yes	e9	<-->	e15	7.122	-0.003	
e16	<-->	R1	17.203	0.042	no	e8	<-->	rapport	12.752	0.018	yes
e16	<-->	R6	5.086	0.000		e8	<-->	R1	20.459	0.047	no
e16	<-->	R4	154.700	0.001	no	e8	<-->	e23	19.228	-0.003	no
e16	<-->	e24	5.333	-0.003		e8	<-->	e22	15.906	0.006	no
e16	<-->	e22	7.941	-0.004	no	e8	<-->	e19	47.827	0.008	no
e16	<-->	e18	5.670	0.004	yes	e8	<-->	e18	71.088	0.015	yes
e15	<-->	e24	5.557	0.005		e8	<-->	e16	10.633	0.004	no
e14	<-->	rapport	9.903	-0.008		e8	<-->	e14	4.912	-0.001	no
e14	<-->	R7	5.934	-0.002		e8	<-->	e12	20.440	0.047	no
e14	<-->	R3	6.929	0.000		e8	<-->	e9	5.180	-0.002	
e14	<-->	R4	5.982	0.000		e7	<-->	R1	5.457	0.033	
e7	<-->	e12	5.455	0.032		e7	<-->	e23	7.121	-0.002	
e7	<-->	e9	7.407	-0.003		e7	<-->	e22	7.172	0.005	

			M.I.	Par Change	
e6	<-->	R6	48.992	-0.001	yes
e6	<-->	e24	45.821	-0.015	yes
e6	<-->	e23	25.329	-0.005	yes
e6	<-->	e22	50.589	-0.015	no
e6	<-->	e19	7.456	0.005	
e6	<-->	e18	42.163	0.016	no
e6	<-->	e17	32.683	-0.015	no
e6	<-->	e11	50.606	-0.004	yes
e6	<-->	e9	26.933	-0.006	yes
e6	<-->	e8	25.915	0.010	yes
e5	<-->	e17	144.966	-0.031	yes
e5	<-->	e16	139.675	-0.021	yes
e5	<-->	e14	6.863	0.002	
e5	<-->	e9	4.902	0.003	
e4	<-->	rappor	40.237	-0.023	no
e4	<-->	R7	60.823	-0.008	yes
e4	<-->	R3	62.820	0.000	yes
e4	<-->	R4	61.605	-0.001	yes
e4	<-->	e16	100.938	0.010	no
e4	<-->	e8	10.851	-0.003	no
e4	<-->	e5	63.315	0.012	yes
e3	<-->	rapport	573.449	0.171	yes
e3	<-->	R7	760.265	0.052	yes
e3	<-->	R3	772.079	0.001	yes
e3	<-->	R6	6.179	0.000	
e3	<-->	R4	764.223	0.004	yes
e3	<-->	e22	44.647	0.014	yes
e3	<-->	e19	5.421	0.004	
e3	<-->	e17	61.018	0.020	yes
e3	<-->	e16	58.436	0.014	no
e3	<-->	e11	8.039	-0.002	yes
e3	<-->	e5	770.907	-0.074	yes
e3	<-->	e4	18.217	-0.006	yes

			M.I.	Par Change	
e7	<-->	e19	20.693	0.007	yes
e7	<-->	e18	10.132	0.007	yes
e7	<-->	e17	262.940	0.039	yes
e2	<-->	rapport	141.479	-0.089	yes
e2	<-->	R7	183.550	-0.027	yes
e2	<-->	R3	185.721	0.000	yes
e2	<-->	R2	49.560	0.020	no
e2	<-->	R1	11.185	-0.052	
e2	<-->	R5	52.837	0.004	yes
e2	<-->	R4	187.283	-0.002	yes
e2	<-->	e22	107.852	-0.023	yes
e2	<-->	e19	5.383	-0.004	
e2	<-->	e17	17.124	0.011	
e2	<-->	e16	66.739	-0.015	no
e2	<-->	e15	49.640	0.020	no
e2	<-->	e12	11.159	-0.052	
e2	<-->	e8	48.988	-0.013	yes
e2	<-->	e7	56.720	0.019	no
e2	<-->	e5	185.577	0.038	yes
e2	<-->	e4	110.461	0.016	yes
e2	<-->	e3	164.315	-0.035	yes
e1	<-->	rapport	65.953	0.033	no
e1	<-->	R7	89.116	0.010	yes
e1	<-->	R3	91.232	0.000	yes
e1	<-->	R1	25.957	-0.044	
e1	<-->	R5	19.184	-0.001	
e1	<-->	R4	90.811	0.001	yes
e1	<-->	e24	6.009	0.003	
e1	<-->	e17	6.002	0.004	
e1	<-->	e16	149.393	-0.013	no
e1	<-->	e14	5.195	-0.001	
e1	<-->	e13	7.492	0.004	
e1	<-->	e12	25.993	-0.044	no
e1	<-->	e8	7.504	0.003	
e1	<-->	e7	19.317	-0.006	
e1	<-->	e5	92.350	-.0.015	yes
e1	<-->	e3	122.621	0.017	yes
e1	<-->	e2	348.484	-0.030	yes

1st step: 601<M.I.<=700-recommended 4 modifications

2nd step: 501<M.I.<=600-recommended 1 modification

3rd step: 301<M.I.<=400-recommended 1 modification

4th step: 201<M.I.<=300-recommended 1 modification

5th step: 101<M.I.<=200-recommended 19 modifications

6th step: 51<M.I.<=100-recommended 21 modifications

7th step: 25<M.I.<=50

Table C.2. List of Justifications for Modifications

			Justifications				Justifications
e24	<-->	R2	Impact of response reliability on dynamic factors, and joint factors (2nd and 3rd) on rapport	e14	<-->	e17	Number of visits may be higher at the end of the field due to nonresponse
e24	<-->	R6	Response reliability as an indicator of response quality	e13	<-->	R6	Response quality may be affected from interview time
e23	<-->	R5	Respondent feelings after the interview as an indicator of respondent burden	e13	<-->	e19	Evening interview may be more possible with educated, working women
e22	<-->	R1	Language matching status may leads to late interviews	e13	<-->	e16	Affecting different sub-factors, but rapport at the end
e22	<-->	R6	Data quality problems may come up due to language matching status	e13	<-->	e14	Indicators of same factor
				e17	<-->	e19	Indicators of same factor
e22	<-->	e24	Referring same factor	e12	<-->	e22	Language matching status may affect start hour of interview
e19	<-->	R1	Evening interviews with educated and working women	e12	<-->	e19	If educations are matched, evening interviews are possible
e19	<-->	e24	Educational matching may leads to high response reliability	e11	<-->	e24	'No idea' responses directly affect response reliability
e19	<-->	e22	Constructed variables with the same logic: matching, referring rapport	e11	<-->	e22	If languages are not matched, 'no idea' responses may be more common
e18	<-->	R5	Age matching may leads to reduced burden of respondent	e9	<-->	R5	If there is a straight lining for women with bad health, it contributes respondent burden
e18	<-->	e22	Constructed variables with the same logic: matching, referring rapport	e9	<-->	e24	Straight lining directly affect response reliability
e18	<-->	e19	Indicators of same factor	e8	<-->	rap.	Health status impact on rapport
e17	<-->	rapport	Indicator of 2nd factor, referring rapport	e8	<-->	e18	Age matching may lead to less respondent burden
e17	<-->	R7	Impact of field stage on interview quality through rapport	e7	<-->	e19	Educational level matching may result in reduced interview duration
e17	<-->	R3	Field stage is a varying process, indicating a dynamic interview factor	e7	<-->	e18	Age matching may result in reduced interview duration
e17	<-->	R5	Interviewers may increase respondent burden at the beginning stage	e7	<-->	e17	Interview duration may be affected from field stage, especially beginning stage
e17	<-->	R4	Interviewers may feel high workload at the beginning stage	e2	<-->	rap.	High number of interviews in a day may ease rapport building

			Justifications				Justifications
e17	<-->	e22	Referring same factor at the end, rapport	e2	<-->	R7	Referring same factor at the end, interview quality
e3	<-->	e22	Language matching may affect interview length per interviewer	e2	<-->	R3	Number of interviews in a day could be evaluated under dynamic interview factors
e16	<-->	rapport	Impact of i'wer background on rapport through 2nd factor	e2	<-->	R5	Referring same factor at the end, interview quality
e16	<-->	R7	Impact of i'wer background on quality through rapport	e2	<-->	R4	Referring same factor, interview workload
e16	<-->	R3	Referring same factor at the end, rapport	e2	<-->	e22	Language matching status may affect number of interviews
e16	<-->	R1	Referring same factor at the end, rapport	e2	<-->	e8	Referring same factor at the end, interview quality
e16	<-->	e18	Indicators of same factor	e2	<-->	e5	Indicators of same factor
e6	<-->	R6	Increasing risk of low response quality with the increasing number of questions	e2	<-->	e4	Indicators of same factor, workload
				e2	<-->	e3	Indicators of same factor, workload
e6	<-->	e24	Increasing risk of low response reliability with the increasing number of question	e3	<-->	R3	Interview length could be evaluated under dynamic interview factors
e6	<-->	e23	More questions resulted from violence experience may affect respondent feelings after the interview	e1	<-->	R7	Referring same factor at the end, interview quality through interviewer workload
e6	<-->	e11	Increasing number of 'no idea' responses leads to increased number of filled items	e1	<-->	R3	Cooperation rate of interviewer could be evaluated under dynamic interview factors
e6	<-->	e8	Indicators of same factor	e1	<-->	R4	Referring same factor, workload
e5	<-->	e17	Interview duration may vary according to field stage	e1	<-->	e5	Referring same factor, workload
				e1	<-->	e3	Referring same factor, workload
e5	<-->	e16	Interview duration may vary according to background	e3	<-->	e17	Interview length per interviewer may be higher at the beginning stage of field
e4	<-->	R7	Impact of urban clusters on quality through workload	e1	<-->	e3	Referring same factor, interviewer workload
e4	<-->	R3	Proportion of urban clusters could be accepted under dynamic interview factors	e3	<-->	rapport	Increasing interview duration may help to high rapport
e4	<-->	R4	Indicator of relevant factor	e3	<-->	R7	Impact of interview length on quality through workload
e4	<-->	e5	Indicators of same factor	e3	<-->	e11	Straight lining on 'no idea' responses may affect length
e3	<-->	R4	Indicator of relevant factor				
e3	<-->	e5	Indicators of same factor	e3	<-->	e4	Indicators of same factor

Appendix D. Summary of Thesis Interests and Statistical Techniques

Table D.1. Measurements and Constructs Used in Statistical Models

Measurement models	1st order CFA	2nd order CFA	Path Analysis	Structural Equation
start hour of interview Time of the interview number of visits	Timing and frequency of visits	RAPPORT		
student background of interviewer field stage age and educational level similarity between interviewer and respondent	Interviewer characteristics and similarity between interviewer and respondent			
interview duration (per interviewer) interview length (per woman) language matching respondent feelings reliability of answers	Dynamic interview factors			
cooperation rate (interviewer) proportion of urban clusters fieldwork length (day) interviewer duration (per interviewer) number of completed interviews (on a given day)	Interviewer workload	INTERVIEW QUALITY		
filled items interview length (woman) perceived health status	Respondent burden			
straight-lining on woman's health no idea responses on refusing sex no idea responses on attitudes towards violence	Response quality			

Appendix E. Original Article

EXPLORING FACTORS TO BUILD RAPPORT BETWEEN INTERVIEWER AND RESPONDENT: INSIGHTS FROM THE NATIONAL RESEARCH ON DOMESTIC VIOLENCE AGAINST WOMEN IN TURKEY[1]

Melike SARAÇ[2]

Ahmet Sinan TÜRKYILMAZ[3]

ABSTRACT

Examining interviewing process in terms of interviewers and respondents are crucial due to their major roles on survey estimates, cooperation and non-response. The rapport between interviewers and respondents plays a critical role on disclosure of answers and response quality. Therefore, there is a need to unveil factors behind rapport from interviewers' and respondents' perspectives. We aim to explore factors to build rapport and investigate variation among subgroups whose interviews conducted with high rapport. This study utilizes the *National Research on Domestic Violence against Women in Turkey* (2014) data and *Field Staff* data to achieve objectives. Our findings suggest that *timing and frequency of visits*, *interviewer characteristics and similarity,* and *dynamic interview factors* are essential when building rapport. The study also points out that there are statistically significant variations among women by socio-demographic and socio-economic characteristics as well as sensitive variables such as exposure to violence and controlling behaviors by husbands.

Keywords: Respondent, Interviewer, Rapport, Violence, Exploratory Factor Analysis, Turkey

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Exploring Factors to Build Rapport Between
Interviewer and Respondent: Insights from the
National Research on Domestic Violence against
Women in Turkey

Melike SARAÇ
Ahmet Sinan TÜRKYILMAZ

GÖRÜŞMECİ VE CEVAPLAYICI ARASINDAKİ UYUMU OLUŞTURAN FAKTÖRLER: TÜRKİYE'DE KADINA YÖNELİK AİLE İÇİ ŞİDDET ARAŞTIRMASINA DAYALI BULGULAR

ÖZ

Görüşme sürecini görüşmeciler ve cevaplayıcılar açısından incelemek, görüşmeciler ve cevaplayıcıların araştırma tahminleri, iletişim ve cevapsızlık gibi konulara olan etkileri nedeniyle oldukça gereklidir. Görüşmeci ve cevaplayıcı arasındaki uyum, cevapların beyan edilmesi ve kalitesinde önemli rol oynamaktadır. Bu nedenle, görüşmeciler ile cevaplayıcılar arasındaki uyumu oluşturan faktörleri görüşmeciler ve cevaplayıcılar açısından ortaya çıkarmaya ihtiyaç duyulmaktadır. Bu çalışmanın amaçları, görüşmeciler ile cevaplayıcılar arasındaki uyumu oluşturan faktörleri keşfetmek ve görüşmeleri yüksek uyum ile gerçekleşmiş cevaplayıcılar arasındaki farklılıkları göstermektir. Çalışmada, 2014 yılında gerçekleşen *Türkiye'de Kadına Yönelik Aile İçi Şiddet Araştırması* ve bu araştırmanın *Saha Personeli* verileri kullanılmaktadır. Bulgular, *ziyaretlerin zamanlaması ve sıklığı*, *görüşmeci özellikleri ve benzerlik* ile *dinamik görüşme faktörleri*nin uyumu oluşmasında önemli kavramlar olduğunu ortaya koymaktadır. Ayrıca sonuçlar, görüşmeleri yüksek uyum ile tamamlanmış kadın grupları arasında sosyo-demografik ve sosyo-ekonomik özellikler ile şiddete maruz kalma ve eş tarafından uygulanan kontrol edici davranışlar gibi hassas değişkenlere göre belirgin farklılıklar olduğunu göstermektedir.

Anahtar kelimeler: Cevaplayıcı, Görüşmeci, Uyum, Şiddet, Keşfedici Faktör Analizi, Türkiye

Exploring Factors to Build Rapport Between Interviewer and Respondent: Insights from the National Research on Domestic Violence against Women in Turkey

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1. INTRODUCTION

There is a growing demand for high quality survey estimates to understand social phenomena in a society and mechanisms behind these. Sample surveys, which provide detailed data on a large range of matters, provide useful information through a representative sample. In addition to considerable methodological studies which focus on data quality (Channon, Padmadas and McDonald, 2011; Corsi, Perkins and Subramanian, 2017), it is known that interviewer and respondent play considerable role at the data collection stage in interviewer-administered social surveys. These main actors of interviewing can produce measurement and non-response errors that could be originated from lack of accuracy or completeness of responses. In survey methodology field, there are numerous studies that deal with interviewer and respondent as well as the impact of their characteristics on survey cooperation, response behavior, measurement and quality (Berk and Bernstein, 1988; Campanelli, Sturgis and Purdon, 1997; Davis, Couper, Janz, Caldwell and Resnicow, 2009; Durrant, Groves, Staetsky and Steele, 2010; Flores-Macias and Lawson, 2008; Hox et al., 2002; Olson and Peytchev, 2007; Pickery, Loosveldt and Carton, 2001).

Importantly, the interaction between interviewer and respondent might have a considerable impact on getting accurate and complete answers, yet little is known about determinants and level of rapport between interviewer and respondent. There are only a few qualitative studies to understand interviewing process from the cognitive perspective (Belli, Lepkowski and Kabeto, 2001; Foucault Welles, 2010; Van der Zouwen, Dijkstra and Smit, 2004). There is a lack of quantitative studies which identify the rapport between interviewer and respondent and investigate its influence on survey outcomes. The gap in the literature might be associated with the uncertainty of the rapport meaning. Indeed, impalpable meaning of the rapport and difficulty to describe it had been mentioned in related studies (Garbarski, Schaeffer and Dykema, 2016; Goudy and Potter, 1975; Schober, 2016). The authors discussed the rapport in conjunction with the certain

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concepts such as social distance, comfort, willingness, motivation, demographic similarity, interviewing technique, and social desirability bias (Dijkstra, 1987; Garbarski et al., 2016; Sheatsley, 1951).

Cooperation with the sample unit, developing rapport during the interview and keeping motivation of respondent on a high level are noteworthy issues when assessing interviewer individuality, survey standardization and high quality responses. Olson and Bilgen (2011) identified the rapport as a positive friendly environment and suggested that building rapport may lead to better data quality. Similarly, Belli et al. (2001) argued that conversational rapport may have an impact on response accuracy through increased motivation of respondents to cooperate with the survey request. Green and Krosnick (2001) also stated that rapport might help to trigger respondents to work hard and thus, provides high quality data in face to face surveys. In line with these statements, Dijkstra (1987) and Sun (2014) pointed out that building strong rapport may help to produce reliable and valid reports especially for sensitive questions although a few studies have found the contrary findings (Weiss, 1968). On the other hand, there are also a few studies which indicate no relationship between rapport and validity of responses (Belli et al., 2001; Goudy and Potter, 1975).

Given this background and Lavin and Maynard (2001) suggested, it is obvious that rapport is still need to be well-defined considering both respondent and interviewer characteristics. Furthermore, investigating variation among women who achieve high rapport is remarkable effort considering the growing emphasis on gaining cooperation, maintaining motivation and getting high quality data. Therefore, exploration and understanding of rapport concept and examining high rapport variation across groups still require further studies. Accordingly, the current quantitative study has two main research questions: (1) what are the concepts to build rapport between interviewer and respondent? (2) which subgroups of women differ from each other in terms of establishing high rapport?

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To the best of authors' knowledge, this is the first methodological paper in Turkey that identifies rapport between interviewer and respondent and reveals significant variation among women groups whose interviews conducted with high rapport, in particular by sensitive information provided by the *Research on Domestic Violence against Women in Turkey (VAW study).* In view of the recent emphasis on the association between sensitivity and rapport in surveys, an effort on exploring components to build rapport for a sensitive survey conducted in Turkey seem to be valuable. Furthermore, the findings of the study are expected to provide a new insight to clarify interaction between interviewing actors, considering interviewer and respondent characteristics as well as interview related factors.

This paper is divided into five main sections. The first section presents the need and motivation of the study in light of current literature and study objectives. The second section reviews literature on interviewer and respondent as well as interaction established by them. The third section introduces data sources, provides constructed variables and statistical techniques to achieve study objectives. The fourth section explores the rapport between interviewer and respondent through selected variables and focuses on significant variation among women by various characteristics. The fifth section discusses study findings together with current literature and future studies.

2. LITERATURE AND THEORETICAL FRAMEWORK

2.1. Literature

Interviewer impact on survey cooperation and response quality have been examined and assessed in recent studies (Durrant et al., 2010; Oyinlade and Losen, 2014; Vercruyssen, Wuyts and Lossveldt, 2017). Age, gender, education, experience and interviewer expectations are most studied interviewer characteristics when investigating interviewer impact on survey participation (Amos, 2018; Hansen, 2006; Hox, De Leeuw and Kreft, 1991; Lipps and Lutz, 2010; Pickery et al., 2001; Singer, Frankel and Glassman, 1983). On the

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other hand, as Durrant et al. (2010) suggested, there are limited surveys that collect detailed information on interviewers and the limitation leads to lack of studies that investigate interviewer variance.

Rapport does not exactly mean interaction and it is hard to explain concept because of its impalpable meaning and using in different ways. Although rapport was handled in studies, there are no unique features and aspects to build and maintain rapport (Garbarski et al., 2016). Unobservable nature of interaction, feeling of connection, mutual comfort, feeling comfortable, respondent cooperation, coordination, interview difficulty, sense of connection, ease of conversational connection and interest, harmonious and friendly relationship, social distance are among the measures of rapport in the literature (Capella, 1990; Davis et al., 2009; Foucault Welles, 2010; Garbarski et al., 2016; Goudy and Potter, 1975; Weiss, 1968). Overall, meaning of rapport is inconclusive and as stated by Bell, Fahmy and Gordon (2016) rapport meaning may vary from over-friendliness to professional neutrality. Moreover, Sun (2014) and Tickle-Degnen and Rosenthal (1990) addressed that rapport is a dynamic and interactive phenomenon which emerge from each individual during the interview.

Physical features such as eye contact and frequency of smiles and nods are suggested to describe rapport (Gubrium, Holstein, Marvasti and McKinney, 2012). Additionally, interviewers' and respondents' assessments on degree of rapport and comfortable feeling were taken to measure rapport (Goudy and Potter, 1975; Weiss, 1968). Interviewers' non-verbal behaviors, smiling, nodding and direct gazes, were examined and interviewer smiling and nodding were found to be significant when developing rapport (Foucault Welles, 2010). Moreover, Goudy and Potter (1975) put forward that there may be no linkage between interviewer performance and rapport. Interviewing technique was mentioned as another factor to establish rapport due to the fact that standardized interviewing may restrain degree of rapport (Fowler Jr and Mangione, 1990; Sheatsley, 1951).

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Interviewer-respondent similarity is argued under the examination of nonresponse and response accuracy. In the recent studies, impact of socio-demographic (mis)match between interview actors was handled on item level non-response in face to face interviews (Durrant and D'Arrigo, 2014; Durrant et al., 2010; Vercruyssen et al., 2017). On the other hand, stating affirmative responses to attitude questions was argued under the impact of gender and age dissimilarity between interviewer and respondent (Oyinlade and Losen, 2014). In the earlier studies, interviewer-respondent similarity in terms of demographics such as age, education, socio-economic status and attitudes was discussed within the context of rapport and response accuracy (Sheatsley, 1951; Weiss, 1968). For instance, matching of ethnicity was found as an influential factor on why less conservative answers were given to race questions (Williams Jr, 1968).

Not only identifying factors to build rapport, at the same time ways to determine rapport level is important in order to evaluate degree of rapport. Tickle-Degnen and Rosenthal (1990) described high level of rapport along with high level of mutual attentiveness and positivity. In a study conducted by Weiss (1968), degree of rapport was classified as confiding, frank, equivocal, guarded and hostile based on interviewers' assessments at the end of the interview. Foucault, Aguilar, Miller and Cassel (2013) used an interview situation scale that includes relaxed, cooperative, and unfriendly measures to determine degree of rapport. Johnson, Fendrich, Shaligram, Garcy and Gillespie (2000) created social distance index which refers to points between 0 and 4 when determining low and high rapport. Dijkstra (1987) and Williams Jr (1968) argued curvilinear structure of rapport level when explaining association between rapport level and response validity. In other words, optimal rapport level is found to be efficient rather than extreme values of rapport.

The discussions towards rapport remind sensitivity and social desirability in survey methodology literature. Gubrium et al. (2012) stated that rapport may be defined as level of feeling embarrassment as response to sensitive questions. Biemer and Lyberg (2003) also emphasized the huge impact of rapport on survey

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interests that are prone to social desirability bias. In line with these studies, Schober (2016) suggested that the rapport building behaviors might be detected in response validity especially for sensitive questions on embarrassing and illegal behaviors. Van der Zouwen et al. (2004) argued that less socially desirable answers to sensitive questions were provided by respondents when the rapport is built during interview. Similarly, Dijkstra (1987) has also found that respondents provide more sensitive information in personal interviews with the help of supporting behaviors of interviewers. In face to face experimental study the extensive study, positive impact of rapport was detected on disclosure of sensitive questions (Sun, 2014). Furthermore, respondents' tendency to be influenced from socio-demographic characteristics of interviewers was examined through the comparison between answers to sensitive questions and factual questions (Davis et al., 2009; Schnell and Kreuter, 2005). In contrast to positive impact of rapport on disclosure of sensitive questions, too high rapport may result in lower validity due to response bias (Mensch and Kandel, 1988). Similarly, Weiss (1968) put forward that better rapport result in large proportion of biased answers due to the fact that respondents have a tendency to give more socially desirable answers.

Apart from main actors of interviewing and their interaction, impact of interview related factors such as presence of third person, namely translator, mode of data collection, field stage and timing of interview were investigated within the context of developing quality of data as well as rapport between interviewer and respondent (Johnson, Grant, Khan, Moore and Armstrong, 2009; Sun, 2014).

In light of the findings of the previous studies, it could be concluded that there is an inconclusive literature on meaning and level of rapport as well as its impact on responses. This is probably originated from varying aspects of rapport and different methodologies adopted in the studies.

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2.2. Theoretical Framework

Liking theory and the concept of *social distance* could be associated with the study that examines the matching characteristics between interviewer and respondent when building rapport. Liking theory asserts that respondents would like to interact with the interviewers who share similar experiences and have similar characteristics. In other words, according to liking theory, social interaction between individuals is shaped by whether they like each other or not. This similarity leads to more willingness to establish harmonious relationships (Groves, Cialdini and Couper, 1992). Furthermore, similarity on attitudes, religiousness and background between individuals are the essential factors to enhance liking (Byrne, 1971; Stotland and Patchen, 1961; Drachman, de Carufel, and Insko, 1978), and it can be practiced in survey settings to build rapport between interviewers and respondents. In light of this theory, we expect an impact of the existing similarities between interviewers' and respondents' socio-demographic characteristics when establishing relationship during the interview. In other words, rapport between interviewers and respondents might be affected from whether they have shared similar socio-demographic characteristics or not.

Concept of social distance also refers to similarities between individuals in terms of social class and ethnicity as well as age and gender (Katz, 1942; Lipman-Blumen, 1976; Weeks and Moore, 1981). Hodgetts and Stolte (2014) described the social distance as experiencing a sense of (un)familiarity between individuals in terms of having different social, ethnic, religious or occupational groups. Furthermore, race and social class differences between people are used jointly to describe social distance (Williams, 1964). Based on this concept, interviewers and respondents might be in different ages or social classes, and they may have different educational levels. Considering the liking theory and social distance concept, the impact of dis(similarity) could be remarkable influence to build rapport between those actors.

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3. METHODOLOGY

3.1. Data Sources

The main data source of this study comes from *Research on Domestic Violence against Women in Turkey* which was conducted in 2014. In Turkey, the nationally representative household survey was carried out by the Hacettepe University Institute of Population Studies in collaboration with Turkish Republic Ministry of Family and Social Policies the General Directorate on the Status of Women. The survey aims to collect nationally representative data on women's background characteristics, prevalence and consequences of violence against women, and coping strategies for violence against women by conducting face to face interviews.

The main survey theme, domestic violence, is such a sensitive issue that many ethical rules such as safe name use "Turkey Women and Family Survey", interviewing one woman per household, signing an informed consent form by interviewer to indicate respondent approval and conducting the interview in a private setting were taken into account in line with the Ethical and Safety Guidelines (WHO Department of Gender and Women's Health, 2001). Firstly, an adult member aged 15 and older in households was interviewed by using household questionnaire. Once the household interview was completed, a woman who is between 15 and 59 was selected randomly among all eligible women in that household using Kish table. Most of the questions in the household and woman questionnaires were prepared on the basis of "Multi-country study on Women's Health and Domestic Violence against Women" which was carried out by World Health Organization. Out of 11,247 households with completed interviews, 7,462 women were interviewed in the survey (GDSW and HUIPS, 2015).

Women data set provides not only information on background characteristics and violence exposure of women but at the same time interview related variables, opinions and feelings of interviewer. The study mainly use interview related variables, opinions and feelings of interviewer and certain respondent

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characteristics at the rapport index construction. Still, the study requires additional data source that provides information on interviewer characteristics for multidimensional examination of rapport. To compensate this need, field staff data set was constructed and utilized to reach study objectives. Field staff data set provides information about socio-demographic characteristics of 104 fieldworkers, which were obtained through recruitment forms to work. In order to conduct analyses, women and field staff data sets were merged identifying interviewer identification number as a key variable. Hence, analyses were conducted by using the merged data set.

3.2. Variables

In the process of rapport index construction, which is the first stage of the analyses, variables which describe interview environment and field staff were used. Furthermore, basic characteristics of respondents were used to measure variables that denote similarity between interviewer and respondent. Interviewer related variables include interviewer characteristics, opinions and feelings, performance indicators, and similarity with the respondent. The variables which refer to similarity were only constructed based on `age' (up to 5 years), `educational level', and `region' differences due to the limited information.Regional matching was also considered with place of birth of interviewers and respondents' place of residence up to 12 years due to the data availability. Considering performance indicators, 'cooperation rate' denotes the proportion of completed women interviews over all women interviews per interviewer. 'Mean duration' denotes mean length of interview per interviewer and calculated with the information of interview's start and end times. The cut-off values were specified based on mean values. Interview related variables comprise timing of visits, field and visits, length of interviews and other interview related variables. 'Field stage' was constructed based on first month of the fieldwork (April) and later (May, June, July). 'Language matching' refers to similarity between interview language and respondent's mother tongue.

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In the first stage of the study, most of the variables were selected based on the previous literature on establishing rapport and survey quality assessments. Furthermore, fieldwork experiences were considered when selecting variables regarding interviewer performance, field and visits. All variables in the process of rapport index construction are presented in Table 1.

Table 1. Variables used in the principal component analysis

Interviewer related variables		Interview related variables	
Interviewer characteristics	*Similarity*	*Timing of visits*	*Other variables*
Experience*	**Age**	**Start hour**	**Translator use***
No	Not matched	9-11 AM or 6-10 PM	Used
Yes	Matched	11-12 AM or 1-6 PM	Not used
Enrolled student	**Educational level**	**Interview day***	**Language matching**
No	Not matched	Weekday	Not matched
Yes	Matched	Weekend	Matched
			Presence of mother-in-law in household*
Background	**Region***	**Timing**	
Natural sciences	Not matched	Morning or evening	No
Social/educational sciences	Matched	Afternoon	Yes
Opinions and feelings	*Performance indicators*	*Field and visits*	*Length of interviews*
Reliability of answers	**Cooperation rate***	**Field stage**	**Interview length**
			Less than 21 or more than 89 minutes
Poor or medium	More than 1.15	Beginning	
Good or very good	Less than 1.16	Middle or end	Between 20 and 89 minutes
Feelings after the interview	**Mean duration**	**Number of visits**	**Break duration***
	Less than 34.6 minutes		
Bad or worse		1 or 2	More than 10 minutes
Good, better, same or no difference	34.6 minutes or higher	3 and more	None or less than 10 minutes

*refers to variables that were excluded from final model of the principal component analysis.

In the second stage of the study, variation among women groups who have high level of rapport were investigated based on demographic/basic characteristics, socio-economic characteristics, violence related variables, attitudes and other variables. Certain variables were converted to index type variables through the principal component analysis and then those were classified into sub-categories. All variables for the second stage analyses are presented in Table 2.

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Table 2. Variables used in the Complex Samples Generalized Linear Model (CSGLM)

Demographic/basic	Socio-economic	Violence related	Attitudes	Other variables*
Region	Educational level	Emotional violence[a]	Opinions towards gender roles[e]	Presence of mother-in-law
Type of residence	Working status	Sexual violence[b]	Justifications towards violence[f]	Translator use
Age	Wealth index	Physical violence[c]	Refusals to have sex[g]	Interview day
Mother tongue	Income status	Severity of violence		Break duration
Marital status	Spending earnings	Controlling behaviors[d]		Regional similarity
Living children		Suicidal thoughts		Cooperation rate
Use of contraception		Physical injuries		
Children under 5		Violence and health		
General health				

*refers to variables that were excluded from final model of the principal component analysis that's why those were used in pairwise comparison.

The categories of the variables will be presented with the study findings.

[a]Emotional violence is measured in the VAW study with exposure to four different acts of violence (i) *insulting/cursing*, (ii) *humiliating/belittling*, (iii) *intimidating* (iv) *threatening to hurt the woman or someone she loves*.

[b]Sexual violence is measured in the VAW study with exposure to three different acts of violence (i) *forced sexual intercourse* (ii) *having sexual intercourse when she did not want to because she was afraid* (iii) *being forced to do something sexual that she found degrading or humiliating*.

[c]Physical violence is measured in the VAW study with the acts of violence (i) *slapped her or threw something at her* (ii) *pushed or shoved her* (iii) *hit her with his punch* (iv*) kicked, dragged her or beat her up* (v*) choked or burned her* (vi*) threatened to use or actually used a gun, knife or other weapons against her*.

[d]Controlling behaviors was constructed based on the women's statements on her relationship with her husband/partner:*'trying to keep woman from seeing her friends'*, *'trying to restrict/prevent contact with her family of birth and close relatives'*, *'insisting on knowing where women she is at all times'*, *'ignoring her and showing lack of interest in her'*, *'getting angry if she speak with another man'*, *'being suspicious that she is unfaithful'*, *'expecting her to ask his permission to go to a health institution in case of her health problems'*, *'interfering with the clothes she wears and wanting her to dress as he wants'*, *'interfering with the clothes she wears and wanting her to dress as he wants'*, *'interfering with her use of social network sites such as Facebook or Twitter'*.

[e]Opinions towards gender roles includes the items *'not arguing with the husband and keeping silent if woman disagrees with him'*, *'spending her own money according to her own will'*, *'doing housework like cooking, dishwashing, laundry and ironing by men'*, *'necessary to beating children to discipline them'*, *'responsibility of attitudes and behaviors of a woman by men'*.

[f]Justifications towards violence refer to approval of beating the wife by husband. It involves the items *'neglecing the housework'*, *'objecting to her husband'*, *'refusing to have sexual intercourse with husband'*, *'asking husband whether he has other relationships'*, *'suspecting of man that she is unfaihful'*, *'finding out that she has been unfaithful'*.

[g]Refusal to have sex refers to refusing sex with her husband and was generated based on the items *'not to want'*, *'his drinking'*, *'having health problems'*, *'mistreating her'*.

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3.3. Statistical Methods

3.3.1. Exploratory Factor Analysis

Exploratory factor analysis method is a widely used statistical technique in many disciplines to develop standard measures for unobservable concepts such as satisfaction, social status and social and physical activity (Fernandez-Ballesteros, Zamarron and Ruiz, 2001; Wang, Tolson, Chiang and Huang, 2010). As Fabrigar and Wegener (2011) stated, exploratory factor analysis is used with the aim of reaching an integrated form of a set of measured covariates based on the correlations among those. This multivariate method provides to understand relation structure of data (Hair, Black, Babin, Anderson and Tatham, 1998).

In accordance with the study objectives, principal component analysis was adopted for the first stage of the study. A rapport index was constructed through a set of variables to measure rapport between interviewer and respondent. The emerged factors to explore rapport were evaluated based on the Eigen values and factor loadings. To reach the study objectives, variables which have relatively low factor loadings and covariates that reveal unexpected contribution to build rapport were excluded from the analysis to improve the model fitting. The principal component analysis was conducted using SPSS 23, which is licensed statistical analysis software package for social survey data.

Final results of the exploratory analyses indicate three different factors that contribute to rapport between interviewer and respondent. Explained variances of these factors have almost equal weights, ranging from approximately 10 percent to 12 percent, that's why each of those were named according to common features of variables. The total factor value was calculated with the combination of the factor values.

Once the exploration phase of the study was completed, rapport levels were determined by aggregating factor values into subgroups. The values within the third quartile of rapport index was recoded into 'high' category whilst remaining were recoded into 'low/middle' category. The main reason behind this aggregation is to evaluate degree of rapport without any bias.

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3.3.2. Descriptive Analyses and Pairwise Comparisons

In the descriptive analysis phase, percentage distribution of women whose interviews completed with high and low/middle rapport and total number of women were presented by women characteristics. In the pairwise comparisons, a binary variable that denotes whether an interview was completed with high rapport was defined. The study variable for the pairwise comparisons as the following:

$$y = \begin{cases} 0, & low \ or \ middle \ rapport \\ 1, & high \ rapport \end{cases}$$

Afterwards, the proportions of women who have high rapport levels were compared to each other in order to reveal variation among women groups. The null hypothesis was constructed that there is no difference among subgroups in terms of developing high rapport during the interviews. It was required to consider design variables such as stratum and cluster information because of the complex sample design of the VAW study. Therefore, analyses for the pairwise comparisons were conducted using SPSS Complex Samples General Linear Model (CSGLM) procedure. Findings of the models were evaluated considering 5% and 1% significance levels.

The p-value for the two-sided test is given based on the

$$P(|T|) > \left| t(\hat{B}_i) \right|, \qquad \left| t(\hat{B}_i) \right| = \frac{\hat{B}_i}{SE(\hat{B}_i)}$$

where T is a random variable from the t distribution and $H_{0_i}: \hat{B}_i = 0$.

The women who aged between 15 and 59 consist of unit of analysis for both stage. Rapport index construction was conducted for 6,967 women due to missing information on interviewer identification number and certain selected variables to build rapport. On the other hand, pairwise comparisons were

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conducted over 2,323 women because of the high rapport restriction. Number of women for the rapport

index construction and pairwise comparisons is presented in Figure 1.

Figure 1. Number of women based on study variable
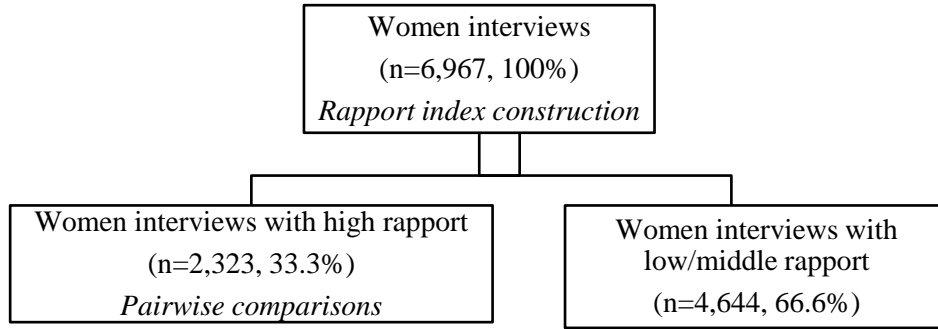
4. RESULTS

4.1. Rapport Index

Final results of the principal component analyses provide information about factorability of given variables

to explore rapport between interviewer and respondent (KMO coefficient=0.5). Eigen values of the factors

are found greater than 1, referring to positive contribution to build rapport. Results of exploratory analysis

also show that total explained variance by three factors was estimated as 33 percent.

Considering the factor loadings of variables, first factor could be associated with the start hour, timing, and

number of visits. For the second factor, enrolled student, background, field stage, similarity on age and

educational level result in high factor loadings. Lastly, reliability of answers, mean duration, interview

length, and language matching and feelings after the interview could be associated with third factor. In

other words, first factor refers to fix factors and was labelled as "*timing and frequency of visits*", second

factor refers to characteristics of interviewer and respondent and was labelled as "*interviewer*

characteristics and similarity", and last factor refers to flow factors of interview and was labelled as

"*dynamic interview factors*".

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The first factor, *timing and frequency of visits,* was found to be the most determinant factor with 12.5% variance while second factor, *interviewer characteristics and similarity,* has 10.7% of total explained variance. Lastly, 10% of total explained variance was estimated by *dynamic interview factors*.

Among factor variables, start hour (0.86), timing (0.84), mean duration (0.76), enrolled student (0.74), interview length (0.62), background (0.59), field stage (0.51), age similarity (0.36), and language matching (0.31) have quite high factor loadings. On the other hand, number of visits (0.27), educational level similarity (0.19), feelings after the interview (0.17) and reliability of answers (0.14) have relatively low factor loadings (Figure 2).

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Figure 2. Model Illustration for Rapport between Interviewer and Respondent

(Factor loadings are presented in the parenthesis)

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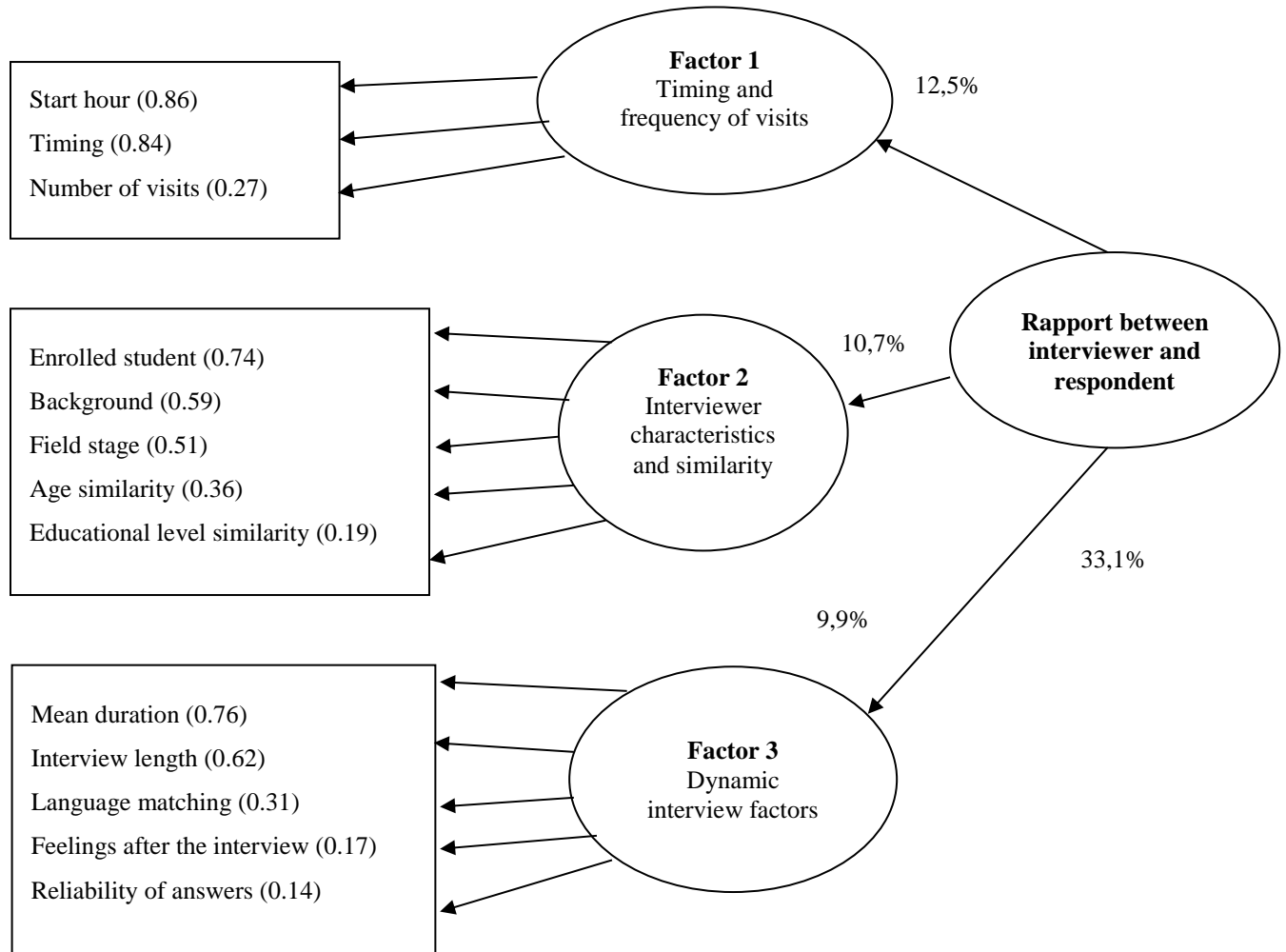
4.2. Descriptive Statistics and Variation among Subgroups

As a result of the distribution, 33 percent of individual interviews are classified under high rapport level while 67 percent of interviews are considered under low/middle rapport levels. In light of the descriptive findings, pairwise comparisons, which we performed the analyses on high rapport level, revealed significant variation among subgroups of women.

The percentage of interviews completed with high rapport is higher in South and Central regions (48% and 45%, respectively) compared to other regions. In line with this, the women interviews conducted in the West, North and East regions are significantly different from the South and Central ($p<0.01$). Developing high rapport and engagement is more frequent in rural areas than urban areas (40% and 31%, respectively) ($p<0.01$). The statistical comparison also indicates that interviews with high rapport is significantly more common among women who are older than 25 years, compared to women who is between 15 and 24 ($p<0.01$). Considering the mother tongue of women, women whose mother tongue is Turkish seems more advantageous in terms of establishing high rapport (36%) rather than women whose mother tongue is Kurdish and Arabic or other (21% and 25%, respectively) ($p<0.01$). When the marital status of women is considered, ever married women shows significant variation compared to never married women (35% and 25%, respectively) ($p<0.01$) (Table 3 and Table 4).

The percentage of interviews completed with high rapport is higher among women who have at least one living children (35%) and women who have at least one child under 5 (36%), compared to women who have not any living children (27%) and women who have not children under 5 (32%) ($p<0.01$ and $p<0.05$, respectively). On the other hand, number of children does not make any variation among on subgroups. The percentage of interviews conducted with high rapport is slightly higher among women who have used contraception (35%) than women who have never used method (31%), and these women show significant variation among each other ($p<0.05$). Women who have stated that their general health status is bad/very

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bad in the last 4 weeks differ significantly compared to the reference category (35% and 31%, respectively) (*p<0.01*).

Examining the socio-economic characteristics of women, the proportion of women with no education is significantly different from educated women (*p<0.01*). Developing high rapport is a little more often among women who are not working compared to working women (34% and 31%, respectively) (*p<0.05*). Similarly, women who have not any income have a slightly higher percentage compared to women who have income (34% and 31%, respectively) (*p<0.01*). Considering wealth index, women who are in the lowest wealth quintile have higher percentage compared to women who are in the highest wealth quintile (35% and 32%, respectively) (*p<0.05*) (Table 3 and Table 4).

Developing high rapport seems more frequently among women who were exposed to emotional, sexual or physical violence during their life compared to reference groups (37%, 39% and 38%, respectively). Moreover, women who exposed to emotional, sexual or physical violence indicate significant variation compared to reference groups (*p<0.01*, *p<0.05*, *p<0.01*, respectively). In line with this finding, women who have at least one physical injury are significantly different from women who have not any physical injury (*p<0.01*). Severity of physical violence does not make any variation in terms of building high rapport. The percentage of interviews completed with high rapport is higher among women whose controlling behavior index is high (37%) compared to women with middle or low levels (34% and 29%, respectively) (*p<0.01*). Establishing high rapport is a little more frequent among women who shared the suicidal thoughts compared to reference group (*p<0.05*). Women who exposed to physical or sexual violence during their life and stated that their general health status is bad/very bad differ significantly from the other women groups (*p<0.05*).

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Considering the attitudes towards gender roles, there is no variation among subgroups except for some items regarding refusal to have sex. Developing high rapport and engagement seem to be more frequent in interviews if women stated at least one items on refusals to have sex ($p<0.01$). Among other variables, only cooperation rate of interviewer indicates significant variation among subgroups. Percentage of interviews conducted with an interviewer whose cooperation rate is less than 1.16 is higher than interviews conducted with an interviewer whose cooperation rate is higher than 1.15 (38% and 32%, respectively) ($p<0.01$) (Table 3 and Table 4).

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Table 3. Characteristics and attitudes of women by rapport levels

	Low/middle	High	Number		Low/middle	High	Number
Demographic/basic				**Violence related**			
Region				**Emotional**			
West	74,3	25,7	2,203	No	69,2	30,8	4,272
South	52,1	47,9	583	Yes	62,7	37,3	2,643
Central	55,2	44,8	1,372	**Sexual**			
North	66,8	33,2	986	No	67,3	32,7	6,212
East	71,2	28,8	1,777	Yes	60,9	39,1	701
Residence				**Physical**			
Urban	68,7	31,3	4,720	No	68,8	31,2	4,857
Rural	59,5	40,5	2,201	Yes	61,8	38,2	2,057
Age				**Severity**			
15-24	71,7	28,3	1,261	No violence	68,8	31,2	4,865
25-39	65,1	34,9	2,907	Moderate	63,2	36,8	1,144
40-59	66,1	33,9	2,753	Severe	60	40,0	912
Mother tongue				**Controlling behaviors**			
Turkish	64,2	35,8	5,581	Low	70,9	29,1	2,258
Kurdish	78,8	21,2	1,127	Middle	65,7	34,3	2,288
Arabic and other	75,1	24,9	213	High	63,3	36,7	2,375
Marital status				**Suicidal thoughts**			
Never married	75,5	24,5	1,088	No	67,3	32,7	5,649
Ever married	65,1	34,9	5,833	Yes	63,8	36,2	1,251
Living children				**Injuries**			
0	72,6	27,4	1,505	None	67,3	32,7	6,385
1	65,7	34,3	964	At least one	60,1	39,9	533
2	64,9	35,1	2,081	**Violence and health**			
3+	64,9	35,1	2,371	Else	67,0	33,0	6,493
Use of contraception				Violence exposure and bad health	61,1	38,9	428
Never used	68,9	31,1	2,546				
Ever used	65,5	34,5	4,369	**Attitudes***			
Children under 5				**Refusals to have sex**			
No	67,8	32,2	4,843	None	83,4	16,6	167
Yes	63,9	36,1	2,078	At least one refusal	66,3	33,7	6,116
General health							
Bad/very bad	63,6	36,4	1,981	**Refuse to have sex if: woman has health problems**			
Not bad	67,8	32,2	4,936	No	75,2	24,8	294
Socio-economic				Yes	66,1	33,9	6,472
Educational level				**Other variables***			
No education	72,5	27,5	1,271	**Cooperation rate**			
Primary and higher	65,6	34,5	5,650	More than 1.15	68,3	31,7	4,234
Working status				Less than 1.16	61,6	38,4	2,687
No	65,7	34,3	4,857	**Total**	66,7	33,3	6,967
Yes	68,8	31,2	2,061				
Wealth index							
Low	65,0	35,0	2,990				
Middle	66,0	34,0	1,405				
High	68,4	31,6	2,526				
Income status							
No	65,5	34,5	5,293				
Yes	69,9	30,1	1,627				
Spending earnings							
No	66,1	33,9	5,579				
Yes	68,9	31,1	1,342				
Total	66,7	33,3	6,967				

*The items for other attitudes and variables do not differ significantly based on rapport levels.

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Table 4. Significance Values in Pairwise Comparisons

Demographic/basic						Violence related			
Region						**Emotional violence**			
	West	South	Central	North	East		No	Yes	
West	-	0,00**	0,00**	0,00**	0,04*	No	-	0,00**	
South	0,00**	-	0,31	0,00**	0,00**	Yes	0,00**	-	
Central	0,00**	0,31	-	0,00**	0,00**	**Sexual violence**			
North	0,00**	0,00**	0,00**	-	0,03*		No	Yes	
East	0,00**	0,00**	0,00**	0,03*	-	No	-	0,01**	
Type of residence						Yes	0,01**	-	
	Urban	Rural				**Physical violence**			
Urban	-	0,00**					No	Yes	
Rural	0,00**	-				No	-	0,00**	
Age						Yes	0,00**	-	
	15-24	25-39	40-59			**Severity of violence**			
15-24	-	0,00**	0,00**				None	Moderate	Severe
25-39	0,00**	-	0,49			None	-	0,00**	0,00**
40-59	0,00**	0,49	-			Moderate	0,00**	-	0,22
Mother tongue						Severe	0,00**	0,22	-
	Turkish	Kurdish	Arabic and other			**Controlling behaviors**			
Turkish	-	0,00**	0,00**				Low	Middle	High
Kurdish	0,00**	-	0,27			Low	-	0,00**	0,00**
Arabic and other	0,00**	0,27	-			Middle	0,00*	-	0,15
Marital status						High	0,00*	0,15	-
	Never	Ever				**Suicidal thoughts**			
Never married	-	0,00**					No	Yes	
Ever married	0,00**	-				No	-	0,02*	
Living children						Yes	0,02*	-	
	0	1	2	3 and more		**Physical injuries**			
0	-	0,00**	0,00**	0,00**			None	At least one	
1	0,00**	-	0,73	0,72		None	-	0,00**	
2	0,00**	0,73	-	1		At least one	0,00**	-	
3 and more	0,00**	0,72	1	-		**Violence and health**			
Use of contraception							Else	Violence-bad health	
	Never used	Ever used				Else	-	0,04*	
Never used	-	0,02*				Violence-bad health	0,04*	-	
Ever used	0,02*	-				**Attitudes**			
Children under 5						**Refusals to have sex**			
	No	Yes					None	At least one refusal	
No	-	0,01*				None	-	0,00**	
Yes	0,01*	-				At least one	0,00**	-	
General health						**Refuse to have sex if: woman has health problems**			
	Bad/very bad	Not bad					No	Yes	
Bad/very bad	-	0,01*				No	-	0,00**	
Not bad	0,01*	-				Yes	0,00**	-	
Socio-economic						**Other variables**			
Educational level						**Cooperation rate**			
	No education	Primary and higher					More than 1.15	Less than 1.16	

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Educational level

No education	-	0,00**
Primary and higher	0,00**	-

Working status

	No	Yes
No	-	0,04*
Yes	0,04*	-

Wealth index

	Low	Middle	High
Low	-	0,57	0,04*
Middle	0,57	-	0,22
High	0,04*	0,22	-

Income status

	No	Yes
No	-	0,01**
Yes	0,01**	-

Spending earnings

	No	Yes
No	-	0,12
Yes	0,12	-

Cooperation rate

More than 1.15	-	0,00**
Less than 1.16	0,00**	-

** refers significance at the 0.01 level, and * refers significance at the 0.05 level of t-tests comparing to reference category on the raw.

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5. CONCLUSIONS AND DISCUSSION

In this paper, we explored the factors to build rapport between interviewer and respondent by using the recent *Research on Domestic Violence against Women in Turkey* (GDSW and HUIPS, 2015) and investigated whether there is any variation on the high level of rapport among subgroups. Considering the findings of the first stage of the study, this paper provides a conceptual contribution that it helped to extend rapport definition by using three different factors. Furthermore, the study findings showed that *liking theory* and *social distance* concept are explanatory due to the fact that the similarities in the age and educational level between respondents and interviewers have a positive impact on rapport building in the interview process. In other words, the findings of the study support the arguments of the liking theory and the concept of distance, that both describe the (un)familiarity between people in terms of socio-demographics and attitudes, as well as its impact on establishing relationship (Groves, Cialdini and Couper, 1992). This confirms our expectation at the beginning that the rapport between interviewers and respondents is influenced from whether they have similar socio-demographic characteristics or not. The results of second stage of the study suggested the significant variation among subgroups of women for most of the selected variables.

Results of the first research question pointed out that *frequency and timing of visits, interviewer characteristics and similarity* and *dynamic interview factors* are able to explain rapport established between interviewer and respondent. Similar results regarding with the rapport exploration were also found in the previous studies (Foucault et al., 2013; Goudy and Potter, 1975; Sheatsley, 1951; Weiss, 1968; Williams Jr, 1968). The *interviewer characteristics and similarity* and *dynamic interview factors* also confirm that rapport is a dynamic and interactive phenomenon and influenced from each individual as suggested by Sun (2014) and Tickle-Degnen and Rosenthal (1990). Durrant et al. (2010) also underlined the similarity between respondent and interviewer to improve survey response.

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Our study also shows that interviewers' opinions and feelings related to interview, namely 'reliability of answers' and 'feelings after the interview' contribute to identification of rapport as suggested in the studies (Goudy and Potter, 1975; Weiss, 1968). In our study, educational level similarity is found a contributing factor of rapport between interviewer and respondent. In line with this finding, the significant impact of similarity in educational level similarity between interviewers and respondents was discussed within the context of giving more substantive answers to knowledge and attitude questions (Yang and Yu, 2008). In our study, timing of visits and field stage contributed to establish rapport between interviewer and respondent. These variables were also discussed within the context of quality of data by considering working hours of respondents (Johnson et al., 2009).

Considering the first stage findings, the study provides statistical evidence on the rapport identification which was mentioned based on the field observations or interviewer behaviors previously. In this sense, the principal contribution of this study to existing literature is that an unobservable concept, namely rapport between interviewer and respondent, can be identified in the light of three different factors. This study goes further and also provides statistical evidence on revealing variation among women whose interviews conducted with high rapport and engagement. In the study, less than 1% and 5% significance levels of the variability among interviews with high rapport were found for most of the selected women characteristics.

The significant residential difference may be attributable to warm relations established with individuals who live in rural areas in Turkey. Similarly, South and Central regions are known as rural migrant receiving regions and people who live in these regions may have rural characteristics. The relatively high response rates in rural areas also remind more cooperation with the respondent. The rate of respondent contact and agreement to survey participation might be influenced from interviewers (Durrant and Steele, 2009). In the VAW study, women response rate in rural areas was estimated as 87 percent whereas response rate in urban

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areas was estimated as 82 percent. The response rate among regions ranges between 72 percent in West Anatolia and 88 percent in Southeast Anatolia, Northeast Anatolia, and Aegean (GDSW and HUIPS, 2015).

The significantly higher proportion of interviews conducted with high rapport was found among women who are older than 25 compared to women who are between 15 and 24. This finding may be linked to privacy concerns and relatively low tendency of giving information among young women. Significantly higher percentage are found among women who are currently or formerly married, women who have at least one living child, and women who have at least one child under 5 compared to reference groups. The length of interview will increase depending on a set of questions on marital status, reproductive health and children, husband's background characteristics, and relationship between women and their husband and might help to build better engagement with respondent.

The high rapport built with women who are in the lowest wealth quintile, women who are not working and women who have not income may be associated with relatively high cooperation in terms of both finding at home and providing acquiescence. On the contrary, the higher percentage was found among educated women compared to women with no education. To make further explanations, multivariate analyses are needed though it might be related to comfortable interaction when answering questions and giving answers.

Taken together, our findings suggested variation between women who exposed to emotional/sexual/physical violence and women have not exposed to violence during their life. As a consistent finding, the significant variation also found among women who exposed to violence and stated that their general health is bad/very bad. According to VAW study results, 36 percent of women exposed to physical violence, 12 percent of women exposed to sexual violence, and 44 percent of women exposed to emotional violence in any time during their life (GDSW and HUIPS, 2015). Having at least one physical injury and high controlling behaviors by husbands provide consistent estimates with the violence exposure.

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Overall, not only exposure to violence but at the same time, willingness to share this information with an interviewer may be a highly sensitive issue. This situation could lead to high privacy matters and emotional burden of respondents and interviewers. Hence, giving honest answers to the sensitive questions requires confidentiality provided with high rapport between respondent and the interviewer.

Among other variables, cooperation rate of interviewer might be associated with interviewer burden during fieldwork. As Japec (2008) suggested, less interviewer burden may result in interviewer satisficing and feeling comfortable. Consequently, this may contribute to high degree of rapport.

The authors believe that this is the first study which provides a new insight on rapport identification considering interviewer and respondent characteristics as well as interview related factors in Turkey. The study also contributes to survey stages through the findings and suggestions. Being aware of differentials among women at the questionnaire design, training and data collection stages will help to obtaining better data. Our findings also suggest that different approaches to measure rapport will contribute to literature regarding interviewer and respondent relations. Furthermore, investigating the role of rapport between interviewer and respondent on the disclosure of answers will give better insights.

Undoubtedly, the discussions and our inferences on significant variation among women groups require further studies that focus on mechanisms behind developing high rapport. Moreover, it is obvious that studies which are designed to investigate interaction between respondent and interviewer are required in order to discuss the rapport with its pros and cons. Unfortunately, the data sets do not provide information about behaviors of interviewers, interviewing techniques, respondent's assessments, and other variables which refer to similarity between respondent and interviewer to measure rapport extensively (Dijkstra, 1987; Foucault et al., 2013; Foucault Welles, 2010; Goudy and Potter, 1975; Gubrium et al., 2012;

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Sheatsley, 1951; Weiss, 1968). In that sense, the study also calls for further studies which aim to investigate

all influencing factors on better engagement.

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ÖZET

Sosyal araştırmalarda görüşme sürecinin görüşmeci ve cevaplayıcı açısından değerlendirilmesi örnekleme dışı hataları minimize etmek açısından büyük bir öneme sahiptir. Özellikle yüz yüze yapılan görüşmelerde, yalnızca görüşmecilerin veya cevaplayıcıların özellikleri değil, aynı zamanda birbirleriyle kurdukları etkileşimin de veri kalitesine etkisi bulunmaktadır. Bu nedenle görüşmeci ve cevaplayıcı arasındaki uyumun doğru, tam ve güvenilir veri elde edilmesinde katkısı bulunmaktadır.

Türkiye'de sosyal araştırmaların metodolojisine dayanan çalışmalar oldukça az sayıdadır. Bu çalışma, ülke düzeyinde temsiliyeti bulunan bir örneklem araştırması olan Türkiye'de Kadına Yönelik Aile İçi Şiddet Araştırması (2014) ve bu araştırmanın Saha Personeli verilerini kullanarak görüşmeci ve cevaplayıcı arasındaki ilişkiyi tanımlamayı hedeflemektedir. Bu amaca ulaşmak için, nicel analiz yöntemlerinden birisi olan Keşfedici Faktör Analizi (Exploratory Factor Analysis) kullanılarak görüşmeci ve cevaplayıcı arasındaki uyum, görüşmeci özellikleri, görüşmeci-cevaplayıcı özellikleri ve görüşme özellikleri ile açıklanmaya çalışılmıştır. Çalışmanın bir diğer amacı da yüksek uyum ile görüşmelerini tamamlayan cevaplayıcılar arasındaki farklılıkları ortaya koymaktır. Bu amaca ulaşmak için ise Kompleks Örneklem Genelleştirilmiş Lineer Model (Complex Sample Generalized Linear Model-CSGLM) istatistiksel tekniği kullanılmıştır. Böylelikle cevaplayıcılar seçilen birtakım sosyo-demografik ve sosyo-ekonomik özelliklerin yanı sıra hassasiyet düzeyi daha yüksek olan şiddet ile ilgili değişkenler bağlamında değerlendirilebilmiştir. Tüm analiz yöntemleri Türkiye'de Kadına Yönelik Aile İçi Şiddet Araştırması'nın kompleks örneklem tasarımı dikkate alınarak uygulanmıştır. Görüşmeci ve cevaplayıcı arasında tanımlanan uyum kavramının düzeylerini belirlemek ise bu çalışmanın bir alt amacıdır. Uyum düzeylerini belirlemede yansız bir yaklaşım benimsenmiştir.

Çalışmanın sonuçları, *ziyaretlerin zamanlaması ve sıklığı*, *görüşmeci özellikleri ve benzerlik* ile *dinamik görüşme faktörleri*nin görüşmeci ve cevaplayıcı arasındaki uyumu oluşturan faktörler olduğunu

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göstermektedir. Benzer sonuçlara diğer ülkelerde yapılan araştırmalara ilişkin çalışmalarda da rastlanmaktadır. *Görüşmeci özellikleri ve görüşmeci-cevaplayıcı benzerliği* ile *dinamik görüşme faktörleri* görüşme sürecinin dinamik ve etkileşimli bir yapıya sahip olduğunu doğrulamaktadır.

Ayrıca analiz sonuçları, görüşmeleri yüksek uyum ile tamamlanmış kadın grupları arasında anlamlı sosyo-demografik ve sosyo-ekonomik özelliklerin olduğuna işaret etmektedir. Bunun yanı sıra, görüşmeleri yüksek uyum ile tamamlanmış kadın grupları şiddete maruz kalma ve eş tarafından uygulanan kontrol edici davranışlar gibi daha hassas değişkenlere göre de anlamlı olarak değişmektedir.

Özetle, bu çalışma sosyal araştırmalarda görüşmeci ve cevaplayıcı arasındaki uyumu Türkiye'de Kadına Yönelik Aile İçi Şiddet Araştırması örneği ile tanımlamıştır. Ayrıca görüşmeleri yüksek uyum ile tamamlanmış kadın grupları arasında farklılıklar olduğu hipotezini test etmiştir. Bu anlamda, görüşmeci ile cevaplayıcı arasındaki uyumun kavramsal faktörlerle açıklanması literatüre teorik olarak katkı sağlamaktadır. Cevaplayıcılar arasındaki farklılıkların ortaya konulması ise saha araştırmalarında soru kağıdı tasarımı, eğitim ve veri toplama gibi aşamalarda uygulamaya dönük stratejilerin benimsenebileceğini göstermektedir.

Bu çalışma ayrıca, görüşmeci ve cevaplayıcı arasındaki uyumun görüşmeci ve cevaplayıcı davranışları, görüşme tekniği ile görüşmeci ve cevaplayıcı arasındaki benzerliği yansıtan diğer değişkenler gibi faktörlerle kapsamlı olarak ele alan ve görüşmeci ile cevaplayıcı arasındaki uyumun veri kalitesine etkisini inceleyecek çalışmalara duyulan ihtiyacı göstermektedir.

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