The Second Demographic Transition Theory in Practice:

The Case of Israel

by

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Dissertation submitted in partial fulfillment of

the requirements for the degree of

Doctor of Philosophy in Sociology

Dissertation committee

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Doctoral Colloquium: 10th May 2013

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1. General overview: theoretical framework and key concepts

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This chapter introduces the theories and concepts used throughout the manuscript. It shows the relevance of the current research for contemporary sociological and demographic debates. It highlights the importance of studying in-depth a particular society as a model of the general demographic, political and socio-cultural processes. The chapter opens with Inglehart's revised modernization theory, which inspired the formation of the Second Demographic Transition (SDT) theoretical framework for describing changes in family attitudes and behaviour in the West a few decades ago. Firstly, developments in both these theories as well as the Human Empowerment framework are briefly discussed. Emancipative value change is emphasized as an important driving force of demographic and social change. Secondly, it is suggested to implement a theory-testing approach when the case at hand is Israel. Thirdly, the chapter specifies the contribution of this research to the broader study of social change. Finally, the chapter provides with an overview of the structure and content of this manuscript in regards to the methods, data and analyses.

1.1 Inglehart's revised modernization theory, human empowerment framework and emancipative values

The theme of how moral values, attitudes and mass belief systems affect different spheres of life has left its mark on the discourse in social sciences for the last several decades. While one of the most referred to theories related to cultural value orientation has been Inglehart's post-materialism (Inglehart 1977), materialist vs. postmaterialist values have become an element of the more recent two dimensional concept of 'traditional vs. secular-rational values' and 'survival vs. self-expression values' (Inglehart and Baker 2000; Inglehart, Norris and Welzel 2002; Inglehart and Welzel 2005).

Inglehart and Baker (2000) coined the term of self-expression values connected to the self-actualization, participation in decision-making processes and environmental protection as an expression of Maslow's concept of "higher order needs" (Maslow 1954). The theory of the transition from survival values to self-expression values claims an intergenerational shift in emphasis from survival concerns related to issues of economic and physical security toward concerns about self-expression, subjective well-being, and quality of life. Secular and self-expression values emerge among birth cohorts that grew up under conditions of rising existential security. During the past four decades, these values have become increasingly widespread throughout postindustrial societies (Inglehart, Norris and Welzel 2002).

Central components of this theory comprise two-polar cultural traits or dimensions. The dimensions across which the value orientation of different societies shifts in the course of development are the Traditional/Secular-rational dimension and the Survival/Self-Expression dimension. The negative poles of the two dimensions (traditional values, survival values) represent the pre-industrial stage of modernization, while the positive poles represent the industrial stage (secular-rational values) and postindustrial stage (self-expression values) of modernization (Inglehart and Welzel 2005). For example, traditional values are linked with religion, family values and a nationalistic outlook among other factors and survival values emphasize economic and

physical security. By contrast, secular-rational values emphasize secular-rational authority while self-expression values emphasize individual autonomy, civil liberties and an increasing activist role in society and politics (Inglehart, Norris and Welzel 2002).

Being strongly linked with various societal phenomena and democracy, self-expression values have been shown to be stable attributes of societies (Inglehart and Welzel 2010). Self-expression values are a worldview that gives the individuals a sense of free choice, expands personal autonomy and increases subjective well-being (Welzel and Inglehart 2008). The emancipative nature of self-expression values shared by a large proportion of population in a given society entitles people to govern their lives and enhances equality. It empowers people. In brief, human empowerment requires three major pre-requisites: knowledge societies, emancipative beliefs and institutionalized legal rights (Alexander and Welzel 2011a; Welzel, Inglehart and Klingemann 2003).

Emancipative values are further elaboration of the self-expression values. They represent the motivational aspect of human empowerment. These values refer directly to the degree to which people claim their rights and exercise their freedoms at the personal and collective levels. Two important qualities of emancipative values are that they emphasize freedom of choice and equality of opportunities for individuals to gain this freedom (Welzel 2013). Emancipative values emerge when rising education and cognitive resources allow making better informed choices, and when people value the equal distribution of the freedoms (Welzel 2012). Mass changes in attitudes and value orientations change people's goals in life and their behaviours (Inglehart and Welzel 2010).

1.2 Recent developments in the Second Demographic Transition theory

The linkage between value orientation and family behavior has been particularly explored in population studies under the umbrella of the Second Demographic Transition (SDT) (Lesthaeghe 2010; Lesthaeghe and Surkyn 1988, 2002; Sobotka 2008a, 2008b; Surkyn and Lesthaeghe 2004; van de Kaa 1996, 1999, 2001). An essential ingredient of Europe's Second Demographic

Transition is the connection between the demographic and value transformations (Surkyn and Lesthaeghe 2004). Changing moral order and the conviction that the views and ideas people hold individually or collectively have a direct impact on their family related behaviour are the story of the Second Demographic Transition.

The concept of the Second Demographic Transition in the West was developed by Dirk van de Kaa and Ron Lesthaeghe (Lesthaeghe 1998). It refers to a shift on both attitudinal and behavioural levels, or, in other words, to a change in opinions accompanied by changes in family behaviour. The change in family behaviour involves massive postponement of parenthood; widespread use of modern contraception, which enables couples to pursue other goals earlier in life; spreading cohabitation and rising union instability; rise in proportion of non-marital births; rise in voluntary childlessness and overall decline in fertility below replacement level as women cannot and eventually do not wish to make up for all the postponed births (Sobotka 2008a).

During the last decades the SDT gained its popularity as the narrative of ideational and cultural change due to the overwhelming preoccupation with self-fulfillment, personal freedom of choice, personal development and lifestyle, and emancipation (van de Kaa 1996). The change in opinions mainly occurred in the following dimensions: secularization, rejection of traditional religious beliefs and of institutional authority, non-conformism, and unconventional moral ethics. It is important to stress, nevertheless, that value change *per se* is not the only factor that has shaped the Second Demographic Transition (Surkyn and Lesthaeghe 2004). Value change can be regarded as an ideational factor which definitely matters, but other structural factors matter as well (Lesthaeghe and Surkyn 2004).

Lesthaeghe and Surkyn (1988) argue that attempts to measure cultural change in preferences, values, and ideational goals, are important to warrant explicit integration in any theory of family formation. However, the European Values Survey, as well as the World Values Survey, is not designed as a demographic

inquiry, and therefore, the measurement of family behaviour is rather crude, and the possibilities to link value scales with indicators of this behaviour are limited.

For instance, in a study on new forms of household formation in countries in transition of Central and Eastern Europe, Lesthaeghe and Surkyn (2002) find that the entire restructuring of society is the accelerator of the ideational and demographic changes. For instance, they find a substantial rise in the number of women who do not need children for life fulfillment, who regard marriage as an outdated institution and who consider that motherhood for women without a partner or husband is acceptable. Still, if one wants to monitor the progression of the SDT to the Mediterranean region given that the European Fertility and Family Surveys (FFS) of the early 1990s are outdated by now, one is short of indicators (Lesthaeghe and Surkyn 2004).

Lesthaeghe and Surkyn (2004) ask rhetorically whether the SDT can spread to other continents and non-European societies and immediately answer that "[a]t present this is obviously a major new question for demographers and other social scientists to ponder" (p. 21). They expect that firstly, traditional union formation will give way to other forms in societies that respect individual choice, value egalitarianism and where democratic institutions are functioning. Secondly, they expect that the rising demand for women's higher education, and self-realization, would cultivate other tastes and life-styles. These would lead to sub-replacement fertility. Thirdly, they expect acceleration in the spread of the newly emerging behaviours due to global communication. At the same time, the authors argue, fundamentalist reactions might also occur when the global ideational shift becomes evident.

In Israel, which is placed in the Middle East and is a part of the Mediterranean region, the same methodological problems as in the West prevented so far a systematic analysis of the SDT. Keyfitz (1986) in a classical article "The Family That Does Not Reproduce Itself", which searches for causes of the low-fertility phenomenon in the Western world, asserts that "[w]hat data exist on

social structure tend to be qualitative and anecdotal. Yet the lack of data is not intrinsic, and persistently asking the questions can provide a stimulus to gathering the data" (p. 141).

1.3 Socio-cultural paradox in Israel: between the East and the West

In socio-economic terms, Israel is considered to be a modern society: it harbors a postindustrial economy that generates a high per capita income; it is open and connected globally and constitutes a formal democracy. In socio-cultural terms, however, Israel is a profoundly traditional society (Anson and Meir 1996; Fogiel-Bijaoui 2002). Israel seems to be an outstanding phenomenon among the high income economies because of the unusually high levels of fertility, religiosity and the permanent existential threat posed by the security situation. This traditionalism-modernism paradox requires an in-depth investigation since it might be the key for further understanding the nature of the SDT process.

An array of family behaviours can be found in Israel, including the most profoundly traditional as well as postmodern (Anson and Meir 1996; Fogiel-Bijaoui 2002; Sullivan 1998). However, the change in family behaviours has seldom been discussed in connection with the change in values. In particular, in-depth empirical research of family values and behaviours beyond fertility and of broader socio-cultural connections has not been extensive. The extreme diversity and heterogeneity of society within the State of Israel and the scarcity of data specifically designed for research of values and family behaviour has posed many methodological challenges for social researchers; many of these challenges still prevent investigation of many political, social, cultural and demographic ties.

1.4 Current research
1.4.1 Theoretical and empirical contribution

The aim of the current research is twofold: firstly, it aims at enriching the existent theoretical framework of the SDT and filling one of the gaps, for which the SDT has been criticized (Coleman 2004; MacInnes and Pérez Díaz 2009; Reher 2011) – the nature of relations between the change in demographic

behaviour and value change. Secondly, this research explores the SDT in a relatively unexplored geographic region: the State of Israel. Although the relations between demographic and value transformations were extensively studied in the Western world, less is known about this process in non-European societies (Lesthaeghe 2010; Lesthaeghe and Surkyn 2004).

According to van de Kaa (2001), the results of one of his empirical studies on postmodern fertility preferences and value orientation are not incompatible with the idea that the SDT was fueled by the shifts in values. However, he admits, they are not particularly convincing either. He is dissatisfied with the fact he had to rely on an existing data source – World Values Survey (WVS) – to operationalize "bourgeois postmodernity" (p. 324). He also mentions that it is worthwhile to investigate the possibilities further as "true" postmodern ideas might easily become trend setting if new role models are created and broadcasted widely. Finally, he stresses the need to make more attempts at integration and synthesis in order to achieve a broader understanding of a contemporary society and summarizes with a precaution: "I have seen so many detailed model specifications regarding a specific issue, in a specific country, at a precise point in time, that I frequently find it difficult to be content with accumulation of knowledge achieved in that way" (van de Kaa 2001: 325).

Chapter 2 of this manuscript offers some insights in regards to the points above. Results of empirical tests of the relations between ideational and behavioural change with the aggregated WVS data are reported. Chapter 2 provides with additional evidence to the "footprints" and "anchored narratives" described previously (Lesthaeghe and Surkyn, 2006; van de Kaa, 1996). It extends the findings globally at the aggregate level and discussed the underlying mechanisms.

At the same time, on the global scale many factors may operate in various directions, and therefore, produce inconclusive evidence, while within a certain country some specific and contextual features may well be isolated and the mechanisms may be much better understood. Since the objective of the current

research is to analyze the demographic transition as an integrated process, which evolves along with cultural and economic changes, there is a need in in-depth investigation of the underlying mechanisms. Every process of socio-cultural change is shaped by local constraints as well as contextual and path-dependent factors. In case of Israel, these are geopolitical situation, security conditions, state-religion relations and the religious outlook of the society. It is important, therefore, to focus on a single country in order to confront with these issues and isolate what might be the causes and the consequences of the process of change.

As mentioned earlier, studying Israel is potentially revealing due to the presence of a unique paradox of traditionalism-modernism that is of critical relevance in the light of general theories. This dissertation will zoom in on the different aspects of this paradox. Chapter 3 overviews the SDT in Israel and deals with the population composition effects by religious and other factors over time and across population groups. A whole array of transitions and non-transitions, which stem from the large variety of worldviews and behaviours, is shown. Outliers are identified and socio-political implications are discussed. Chapter 4 tests competing explanations of a non-typical to the SDT behaviour, namely, the highest fertility in the developed world. It tests which of the factors is crucial as a determinant of the outstanding fertility in Israel. Chapter 5 analyzes the factors which might hamper the progress of the SDT in Israel. These are institutional and social-structural constraints, such as state-religion relations that can hardly ever be found in the developed societies.

1.4.2 Structure of the dissertation, research questions and methodology

This dissertation is paper-based; it is comprised of four research articles, some of which are already published and others at various stages of the peer-review process. Chapters 2-5 are entirely based on modified versions of these articles. Table 1 presents a general overview of the methodological aspects in each of the research articles. For more detailed description of methods and data, please see the respective Chapter.

Research questions and hypotheses that are tested throughout the dissertation are specified as follows. Research question in **Chapter 2** reads: what is the nature of relations between factors of economic and human development, and value change with age at marriage? Higher age at marriage for women means that marriage postponement is taking place in a given society, and that is considered to be one of the main features of the SDT. The hypothesis is that human empowerment, economic development, higher education for women and value change, affect marriage postponement, while the impact of the former factors on the latter is stronger than vice versa.

Research questions that **Chapter 3** is dealing with are: to which degree a generational change in attitudes and value orientations has been pronounced among various population groups in Israel? Which group has been altering family behaviour over time? Does the behavioural change correspond to attitudinal? Have the groups experienced marital and fertility transitions? What are the consequences of these transitions? What are the implications of the various groups' growth rates, increasing behavioural differences and heterogeneity? Some of these questions are exploratory, and therefore, no *a priori* hypotheses were set out. Nonetheless, four hypotheses based on previous findings have been derived:

1) Demographic trends associated with the SDT might be primarily found among Jewish non-religious groups and groups of European origin. The religious continuum from secular pole to Ultra Orthodox reflects also in family behaviour and attitudes.
2) The Moslem population is found on a pre-transitional level.
3) Postponement of marriage and childbearing is followed by recuperation, so that the above replacement fertility is achieved by most groups.
4) Such characteristics of the SDT as widespread cohabitation, out-of-wedlock childbearing, and voluntarily childlessness are marginal in the repertoire of behaviours of all Israeli groups.

Research questions in **Chapter 4** are: which factor, religiosity or nationalism, is the decisive one in explaining Jewish fertility in Israel? What are the relations between religiosity, nationalism and fertility and how do they structure a system? What are the additional factors that influence fertility? Comparison between the proposed set of models, which represent research hypotheses to be tested, highlights the strengths and weaknesses of each of them. The modeling proceeds from confirmatory to exploratory.

Chapter 5 deals with the following questions: has there been a shift over time in attitudes toward civil marriage in Israel? Is there an inter-generational change in attitudes toward civil marriage? Which factors explain restrictive attitudes to civil marriage? The first two hypotheses are that the support of civil marriage in Israel increases over time, and that the younger generations are more tolerant of the idea of instituting civil marriage in Israel than the older. The third hypothesis is that religiosity and the degree of identification with the nation are strongly connected to attitudes towards civil marriage.

Table 1: Methods and data used in the dissertation

	Chapter 2	Chapter 3
Based on research article	**Testing the Second Demographic Transition theory with seemingly unrelated regression: marital postponement and human empowerment**	The Second Demographic Transition in Israel: One for all?
Time frame	1981-2008	1950-2011
Sample	49 countries representing world regions	Israeli representative; various Western, Central and Eastern European countries
Type of data ('objective'/ 'subjective')	Survey data on attitudes ('subjective'); official statistics on marriage, income and education ('objective')	Survey data on attitudes ('subjective'); Population Register data and survey data on an array of family related behaviours ('objective')
Level of analysis	Aggregate	Aggregate
Unit of analysis	Country	Country; group (by religious affiliation, religiousness and ethnicity)
Temporal aspect of the data	Cross-sectional time-series (2 time-points) data	Long time-series data, and cross-sectional short time-series data
Data source	World Values Survey (WVS); World Marriage Data and Human Development Index (HDI) of the United Nations; World Bank indicators	Statistical Abstract of Israel and Social Survey of the Israel Central Bureau of Statistics; national surveys of the Guttman Center of the Israel Democracy Institute; European Social Survey (ESS); International Social Survey Programme (ISSP); WVS
Dependent variable	Age at marriage, emancipative values, education, income	Various family related attitudes and behaviours
Statistical analysis	Seemingly unrelated regression analysis	Descriptive statistics
Generalization	To a theory; to world's population	To Israel's population

Table 1 (continued): Methods and data used in the dissertation

	Chapter 4	Chapter 5
Based on research article	The case of religiosity, nationalism and fertility among Jews in Israel revisited: theory-comparison using structural equation modeling	Religion, demography and attitudes toward civil marriage in Israel 1969-2009
Time frame	2009-2010	1969-2009
Sample	Israeli Jewish (and other not classified by religion) women	Israeli representative; Arab minority (Moslem and Christian) was excluded from the main analysis
Type of data ('objective'/ 'subjective')	Survey data on attitudes and socio-economic variables; reported number of births ('subjective')	Survey data on attitudes and socio-demographics ('subjective')
Level of analysis	Individual	Individual; aggregate
Unit of analysis	Individual	Individual; group (by the level of religiosity and migrational background from the former Soviet Union)
Temporal aspect of the data	Cross-sectional data; singular time-point	Cross-sectional time-series data (5 time-points)
Data source	Democracy Survey 2009-2010, The Guttman Center of the Israel Democracy Institute	Election survey, Democracy survey, Weekly survey and AVI CHAI surveys (various years) of the Guttman Center of the Israel Democracy Institute; Social Survey 2009 of the Israel Central Bureau of Statistics
Dependent variable	Number of children	Attitude towards instituting civil marriage in Israel
Statistical analysis	Structural equation modeling	Analysis of variance and OLS regression analysis
Generalization	To a theory	To Israel's population

2. Testing the Second Demographic Transition theory with seemingly unrelated regression: marital postponement and human empowerment[1]

2. Testing the Second Demographic Transition theory with seemingly unrelated regression: marital postponement and human empowerment

This chapter is based on an empirical study that tested one of the basic premises of the SDT theory that the shift in value orientation fueled the behavioural change. In particular, the connections between human empowerment and postponement of marriage were tested across the globe in the last three decades. World Value Survey aggregated data 1981-2008 and supplementary cross-national time series data on marriages as well as Human Development Index (HDI) were used as data sources. Human empowerment was measured using two components: human capacities, as captured by the HDI, GNI and tertiary education alternatively; and emancipative values. Marriage behaviour was captured by a measure of singulate mean age at marriage. The results of seemingly unrelated regression analysis show that the relations between marriage postponement and human empowerment are reciprocal, with some asymmetry. Emancipative value change has a stronger effect on marital postponement than vice versa. Emancipative value change was found the most prominent determinant of marital postponement when compared with other measures of human empowerment. Implications for individual behaviour and possibilities of causal inference are discussed as concluding remarks.

2.1 Introduction: theories and concepts

Four decades ago, cutting-edge research on marriage patterns concluded that average age at first marriage might converge and move world populations toward homogeneity (Dixon, 1971). Since then marriage trends show signs of growing divergence instead (Billari and Liefbroer, 2010; Huinink, 2012; Sobotka and Toulemon, 2008), not only across Europe, but worldwide (Mensch, Singh and Casterline, 2005). Several methodological and conceptual problems raise challenges for researchers attempting to explain these recent changes (Kalmijn, 2007). No consensus exists regarding the causes and consequences of these changes (Seltzer et al., 2005; van de Kaa 1996). The endogenous relations between demographic, economic, and socio-cultural factors pose an array of puzzle pieces. The goal of this paper is to assemble them.

During the last decades, substantial evidence accumulated from around the globe suggests that societies change their value orientation from traditional to modern and from modern to postmodern (Inglehart and Baker, 2000; Inglehart and Welzel, 2005). This ideational change started in post-industrial Western societies, and continued to spread worldwide. Some of the value change is emancipative in nature, leading people to emphasize freedom of choice and self-realization goals, as opposed to compliance with traditions and authority (Welzel, 2012; Welzel and Inglehart, 2010). Economic and human development is strongly linked with the quest for equality and freedom, represented by the rise of emancipative values (Welzel, 2012). At the national level, these values and attitudes, associated with modernization, are as stable as standard social indicators. They comprise societal attributes which are connected with several important societal phenomena, such as gender equality (Inglehart and Welzel, 2010). Empowering economies, emancipative values and democratic institutions allow individuals to govern their lives. These three conditions are necessary for human empowerment (Welzel and Inglehart 2008).

A traditional view of family, as a social construct, is that it is meant to provide security, and promote individual and social stability (Bourdieu, 1996; Keyfitz,

1986). Traditional worldviews encourage family-oriented lifestyles and early marriage. Holding these views is a survival strategy, which opposes anything that might threaten the traditional family structure, such as divorce, abortion and homosexuality (Norris and Inglehart, 2004).

As people gradually abandon traditional beliefs and adopt emancipative values, the social order changes. Societies become modern and more secular. Traditional division of gender roles changes toward female political and economic empowerment in contrast with traditional roles as wives and mothers (Dixon, 1971). Time and resource allocation for women shifts from their families as a primary focus to alternative life domains. Women's education and full participation in the labour force increase the opportunity costs of raising children. Changing moral norms further promote changes in mass attitudes towards the institution of marriage and family (Inglehart, Norris and Welzel, 2002). Hence, family formation is delayed and childbirth postponed until other important life-goals are achieved. This sequence of events in the developed societies has been referred to as the Second Demographic Transition (SDT) (Lesthaeghe and van de Kaa, 1986; van de Kaa, 1987).

The SDT theory connects demographic behavioural trends, such as marital and childbearing postponement, to the values in Western societies (van de Kaa, 1996). Being '"the" mainstream concept among population scholars dealing with demographic change in European societies' (Billari and Liefbroer, 2004: 1), SDT theory provokes many debates. Only traces of evidence that imply causal relations between ideational and behavioural change have been found (Lesthaeghe, 2010; van de Kaa, 2001). Some doubts have been raised as to what comprises the initial cause of these demographic and value changes. Another disputable issue has been the degree to which the SDT can be extended beyond Western societies (Coleman, 2004; MacInnes and Pérez Díaz, 2009; Reher, 2011).

Women's empowerment is also facilitated by the rise in emancipative beliefs and higher education (Alexander and Welzel, 2011a, 2011b; Welzel, Inglehart

and Klingemann, 2003). Marriage at an early age inhibits educational attainment, and attainment simultaneously delays marriage for women (Marini, 1978). Furthermore, changes in attitudes toward gender roles affect age at marriage. The relations of education, values, and age at marriage seem to be endogenous and reciprocal. These factors prevented previous research from clarification of the mechanisms at work, especially in developing countries (Mensch, Singh and Casterline, 2005; Thornton, Axinn and Teachman, 1995).

The current research aims at highlighting the nature of relations between changes in values and marital behaviour on a global scale. Providing some more direct evidence is crucial for understanding the relations between value change, economic development and behavioural change of recent decades. This question will guide this analysis. Empirically testing these relations using time-series data provides a missing link, for which both the SDT and human empowerment theoretical framework have quested (Billingsley, 2010; Lesthaeghe and Surkyn, 2006; Welzel and Inglehart, 2008). The following sections describe the rationale behind conducting the present study, methods used for data analyses, and subsequent results. The paper concludes with a discussion of the findings and their meaning in regards to the SDT theory.

2.2 The current research: methodological considerations

Establishing causality in family research has always been a tricky business. In demographic research, the notion that causal relations cannot be established without manipulation is regarded as extremely restrictive (Bollen and Pearl, 2012), and therefore, alternative views are adopted (Godwin, 1988). Ní Bhrolcháin and Dyson (2007), for instance, suggested ten criteria for enabling causal inferences. When these criteria are met, one could argue that the effects in one factor are likely to be caused by the other.

Causal model building, testing and further establishing whether the gathered evidence are robust enough to support the theoretical claim will be the strategy in the current study, following Godwin (1988). Whether emancipative value change and human empowerment can be counted among the major *causes* of

marital postponement in contemporary societies might be seen as an overarching theoretical question.

In order to imply any causality, the question of endogeneity must be sorted out. Although it has been argued that the sequence of events plays a key role in the causal chain related to demographic transition (Lesthaeghe and Surkyn, 2006; van de Kaa, 1996, 1997), in endogenous systems many processes occur simultaneously. Hence, the relevant issue is not necessarily the sequence, but rather the degree of influence of one factor on another and the underlying mechanism. The current research questions to be explored and empirically tested are: what is the nature of relations between factors of economic and human development, and value change with age at marriage?

The hypotheses derived from the theoretical presumptions described above would be that human empowerment, economic development, higher education for women and value change, affect marriage postponement in a given society. That is, the impact of the former factors on the latter is stronger than vice versa. Higher human development and emphasis on emancipative values enhance marriage postponement, but not the opposite. Inferring causality will be a matter for further discussion in the concluding part of this paper. The next section presents a method for modeling the relations between the variables and studying them as a system.

2.3 Seemingly unrelated regression modeling

In contrast to relations that can be depicted from one time point in cross-sectional data, the simultaneously estimated system used in the current research analyzes relations between variables dynamically between two time points. It quantifies the impact of change in each variable on each other at a later time point. This is done in the absence of panel data using time-series cross-sectional data on the aggregate level.

Seemingly unrelated regression (SUR) modeling is an advantageous method of studying the relations between marital postponement, human development and

emancipative value change in the current study. First, it establishes how a change in each factor is connected with a change in each other. Second, it shows which one of the effects is stronger. SUR encompasses a system of equations, where the coefficients are estimated simultaneously, and hence, are unbiased in the sense that they take into account the error correlations across equations. This feature of SUR is of utmost importance.

The interpretation of the SUR coefficients in the present study is similar to least-square regression coefficients in a multivariate model, where a relative effect for each independent variable is estimated on the predicted outcome. In this study change (delta) between two time points of a variable is treated as independent variable. These delta variables are regressed simultaneously in a system of multiple equations. It can be shown that change in a given variable had an effect on the outcome. If the reverse impact is not found, or is weak, then there is a case for causal inference: the variable with a stronger effect would be referred to as the cause, and the variable with the weaker or non-existent effect would be the consequence. In case of reciprocal relations, where the variables affect each other, the size of effect of each of them on the other can be estimated and compared across equations.

This type of modeling has an advantage over estimating single least-squares equations separately: SUR takes into account the highly correlated disturbances (errors) of different equations (Zellner, 1962). This procedure is attractive when normality in distribution is not present because it still yields consistent coefficients (Zellner, 1963). Also, when correlation among variables across equations exists, or there is a correlation within an equation, SUR is a valid and an efficient procedure, since SUR modeling extracts information from the data through reducing the effects of multicollinearity (Binkley and Nelson, 1988). Since in the present study the errors at the first time point are strongly connected with those at the second time point and the variables across equations are correlated – SUR is the optimal estimation procedure.

2.4 Variables and measures
2.4.1 Singulate mean age at marriage[2] (SMAM) as a measure of family behavior

Family behaviour is the dependent variable in this study and it is measured in terms of age at first marriage in each country. Early age at marriage is a prominent indicator of societal prevalence of traditional family behaviour. Postponement of marriage and births to later years has been the most recognizable feature of the SDT (Lesthaghe, 2010; Sobotka, 2008), when traditional patterns give way to modern and post-modern.

Data on marriage are available worldwide and comprise long time series[3]. Singulate mean age at marriage (SMAM) will be used here for cross-country comparisons of marital transition. This measure is 'synthetic' since it is calculated as the proportion of never-married women in each five-year age group, starting from the age of 15 until 50[4]. It represents the mean duration of being single (in years) among women who marry until 50, and might be regarded as an equivalent measure to mean age at first marriage. The latter measure might be misleading due to varying age-structure across societies, and therefore, is not suitable for cross-national comparisons. Mean age at marriage, as opposed to SMAM, underestimates the average age at marriage in developing countries because it is based on five-year age-groups, and the younger cohorts there are mostly larger than the older. Another measure, median age at marriage, is not always available. In few cases when SMAM was not available[5], mean age at first marriage was used.

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[2] Age at marriage and singulate mean age at marriage are used interchangeably throughout the paper

[3] Data originate from the United Nations 2008 World Marriage Data, retrieved on 22.09.2011

[4] SMAM might be inflated, when marriage postponement occurs and the percentage of eventually married by 50 drops (Mensch, Singh and Casterline 2005), because of the original assumption of constant proportions of never-married over time in each successive cohort (Hajnal 1953). The current research assumes that this constitutes only a negligible flaw, since in some countries SMAM is also affected by age misreporting (United Nations 2009) For method of computation of SMAM, see
http://www.un.org/esa/population/publications/WMD2008/Metadata/SMAM.html

[5] These cases were Serbia and Malta. Data source for the mean age at first marriage was UNECE Statistical Division Database, retrieved on 21.09.2011 from
http://w3.unece.org/pxweb/dialog/varval.asp?ma=051_GEFH_FirstMariages_r&path=../databas e/STAT/30-GE/02-Families_households/&lang=1&ti=First+marriages+by+age+and+sex

Singulate mean age at marriage can increase under two conditions; both of them correspond with the SDT theory and imply marital transition. In the first case, when the percentage of never-married until 50 increases in each age group, SMAM increases. In the second case, when the percentage of ultimately remained unmarried increases, SMAM increases as well. A society, where the frequency of marriage in each age group is dropping and where the percentage of the unmarried population is becoming higher, is considered as post-transitional in the SDT literature (Lesthaeghe, 2010). Therefore, both sources of increase in SMAM, although not distinguishable in the current study, point at marital transition or marital postponement.

2.4.2 Human Development Index (HDI) and emancipative values

Economic development and emancipation from authority are important components of human development. HDI[6] introduced in 1990 by the United Nations is an established indicator of economic and human development. The three major components of HDI, namely, life expectancy, national product per capita, and years of education represent the resources that increase human capacities and individual freedoms (King and Murray, 2001). Although HDI has been criticized for being an imperfect measure, and for being too crude for measuring development among the developed countries (Kelley, 1991; Srinivasan, 1994), both conceptual and methodological advantages of HDI surpass by far its disadvantages for the needs of the current research. Firstly, its composition has improved since 1990, and includes now also the expected years of schooling, in addition to observed, as a measure of education (United Nations, 2010). Secondly, it describes fairly well the development if all types of economies are present in the sample, and not only the developed countries. In addition, HDI, in contrast to GNI, does not solely focus on economic dimension while describing human capacities, but overall human development. It is available for most world economies and comprises relatively long time series. Therefore, HDI was used in the current study to account for development in each country.

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[6] Data file *HDI Trends 1980-2010* from the Human Development 2010 report, retrieved on 28.09.2011 from http://hdr.undp.org/en/statistics/data/

In order to cross-validate the HDI as a reliable indicator of economic and human development, separate analyses will consider GNI alone, and an alternative measure of education. This alternative measure of education is the percentage of women over 25 who completed tertiary education as a share of total adult population over 15[7]. This indicator of female educational level in a country is used as an alternative measure to observed and expected years of schooling.

Emancipative values were constructed, using the concepts of Welzel and Inglehart's (2010) model, and described in Alexander and Welzel (2011b). These are a summative index of four sub-indices, which include personal autonomy, lifestyle tolerance, gender equality and people's voice values, based on twelve World Values Survey (WVS) items. Emancipative values comprise an index from 0 to 1, when 0 indicates a complete absence of emancipative beliefs and total deference to authority. Emancipative values used in the current research are country mean scores, calculated from WVS aggregated data 1981-2008[8].

The advantage of using emancipative values (Welzel, 2013; Welzel and Inglehart, 2010) as an explanatory variable in research, which deals with value change, is the following. The SDT theory was formulated using Inglehart's post-materialist values as the main factors, whose change gives way to further behavioural change. Emancipative values rely on the same theory, and are a further elaboration of Inglehart's original concepts. This research aims at testing the nature of relations between values and family behaviour. Therefore, it uses the tools developed within the paradigm in order to produce some meaningful results.

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[7] Data obtained from the World Bank data, Education Statistics, Barro-Lee: Percentage of population (age 15+) by educational attainment, age 25+, female, completed tertiary, retrieved on 26.11.2011 from http://databank.worldbank.org/ddp/home.do?Step=1&id=4

[8] The author thanks Christian Welzel for providing the data on emancipative values. For more details on emancipative values see Alexander and Welzel (2011a,b), Welzel and Inglehart (2010) and Welzel (2013)

2.5 Data

WVS[9] surveys were conducted in waves since 1981, with the sample of participating countries varying from one wave to another and increasing over time. For instance, some countries participated in all five waves of the WVS, while others participated only once. Therefore, the availability of time-series data varies for different countries. In the current research, the most important question relates directly to the timing of events. In order to clarify the nature of relations between value change and marital behaviour, at least two time points are required.

The data file for the current research was compiled from several sources: the WVS 1981-2008, World Marriage Data 2008, the HDI 1980-2010 and World Bank Data 2011 Barro-Lee indicators. See Appendix 1 for descriptive statistics of the main research variables, and Appendix 2 for correlation matrix of all research variables.

Since the data on values pose most limitations, for these data originate from surveys, the countries in the sample in the current study were chosen such that they had participated in at least two non-consecutive WVS waves leaving 49 countries from 6 continents.

This guarantees that the minimal interval required for the current research between the two time points is approximately one decade. For countries, where data were available for an interval of more than a decade, the maximal interval was preferred. Therefore, the length of the intervals differs from country to country. These differences were accounted for, in order to allow some meaningful comparisons between countries, as described below.

Data on emancipative values were corrected for the length of the intervals between the two time points, as follows: in every country emancipative values were recalculated for the sample mean of 15.06 years interval. 15.06 years is

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[9] See World Values Survey, Ann Arbor: ISSR, University of Michigan.
www.worldvaluessurvey.org

the mean duration between the two time points, for which the data were available. In other words, the actual country's emancipative values at the second time point were replaced by the expected one[10], given each country's performance during the years, for which the information exists. The difference between them is referred to as change, which can be positive or negative. The working assumption is that the relations between age at marriage, values, education and human development would remain the same, had the composition of the countries in the sample been altered.

The country normalized scores of SMAM, HDI, GNI and education were obtained as follows: the score at the first time point is the original score obtained in each country in the same year as emancipative values or closest available. Then the same procedure was performed as for emancipative values: the expected scores at the second time point were recalculated for the mean interval of 15.06 years, such that no discrepancies between the timing of the occurrence of the events arise. Age at marriage, GNI and education were transformed into indices between 0 and 1[11], where 0 was obtained from the minimum score in the sample and 1 from the maximum. Since HDI and emancipative values are indices, no further transformation was required. The advantage of using indices from 0 to 1 is ease of interpretation.

2.6 Results

The change in SMAM, values and human development across countries are shown in Figures 1-3. Over the time period of approximately fifteen years, SMAM has risen in all the countries in the sample. The vast majority of countries has also experienced emancipative value change, and rise in HDI. These changes in marital behaviour, values and development are not uniform,

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[10] Expected emancipative value score at T_2 was calculated as follows: firstly, annual change for each country was obtained by dividing the difference between scores at the two time points by the number of years between observations, and secondly, by multiplying the annual change by 15.06.

[11] This transformation was performed using the formula $\dfrac{x_i - x_{min}}{x_{max} - x_{min}}$

however, and neither are they equal. Tertiary education rates of women and GNI have also increased in a majority of countries in this time period.

As expected from the correlation matrix in Appendix 2, countries' rankings in human empowerment measures correspond to rankings in age at marriage. For instance, countries extremely low in HDI, such as Nigeria, India, China, Moldova and Brazil also display low levels of emancipative value orientation, and among the lowest age at marriage. Over the analyzed decades, some countries demonstrated deferencial[12] value change, as opposed to emancipative. For example, Nigeria, China and Egypt, and to a lesser extent such change occurred in Latvia, Russia, Turkey and Romania.

Belarus and South Africa experienced a decline in HDI, but this trend did not reflect in their values or prevalence of marriages. In fact, they experienced emancipative value change and a rise in age at marriage. Not surprisingly, the leaders of emancipative value change – Finland, Denmark, Germany, Switzerland and Sweden – were also among the leaders in HDI and reached the highest age at marriage, which exceeded the age of 30, except Switzerland, where average age at first marriage was 29.4 for women in 2010 (Swiss Federal Statistical Office, 2012). Overall most countries displayed an increase in both SMAM, emancipative values and HDI.

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[12] The term 'deferencial' is used originally by Welzel (2013) to describe the opposite of 'emancipative'. The word is rooted in 'deference to authority' as opposed to 'emancipation from authority'

Figure 1: Singulate mean age at marriage in 49 countries at two time points
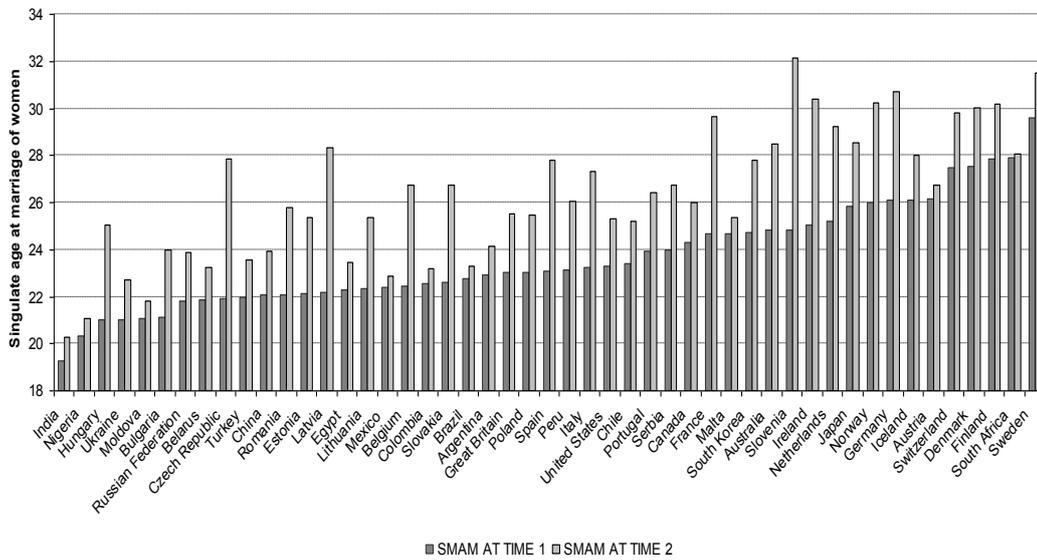
Source: calculated by the author from World Marriage Data 2008 (United Nations, 2009)

Figure 2: Emancipative values in 49 countries at two time points
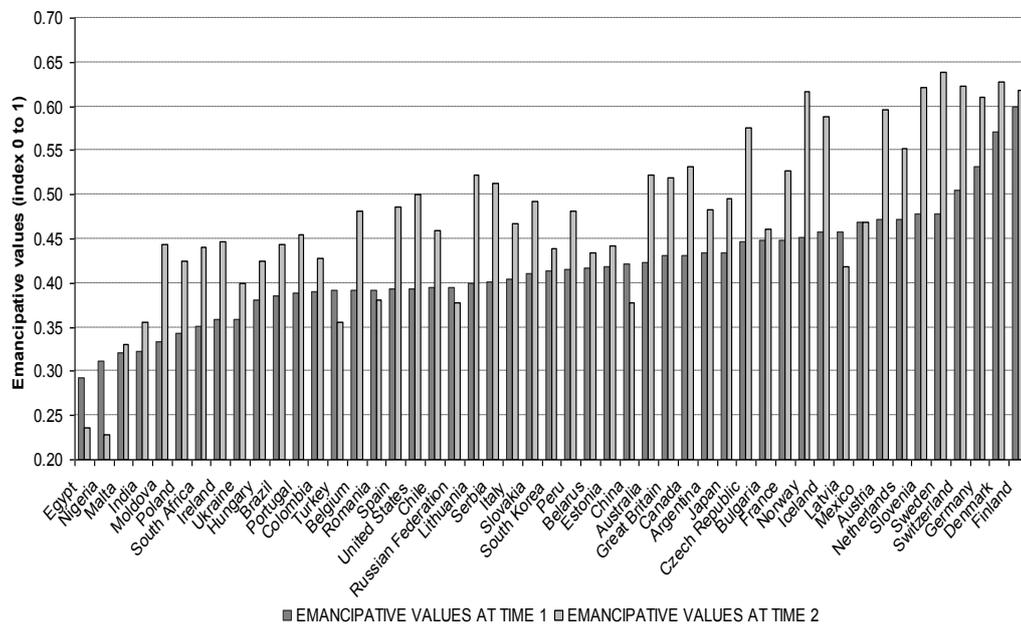
Source: calculated by the author from WVS data 1981-2008 (provided by Welzel, 2011)

Figure 3: Human Development Index in 49 countries at two time points

HDI AT TIME 1 □ HDI AT TIME 2
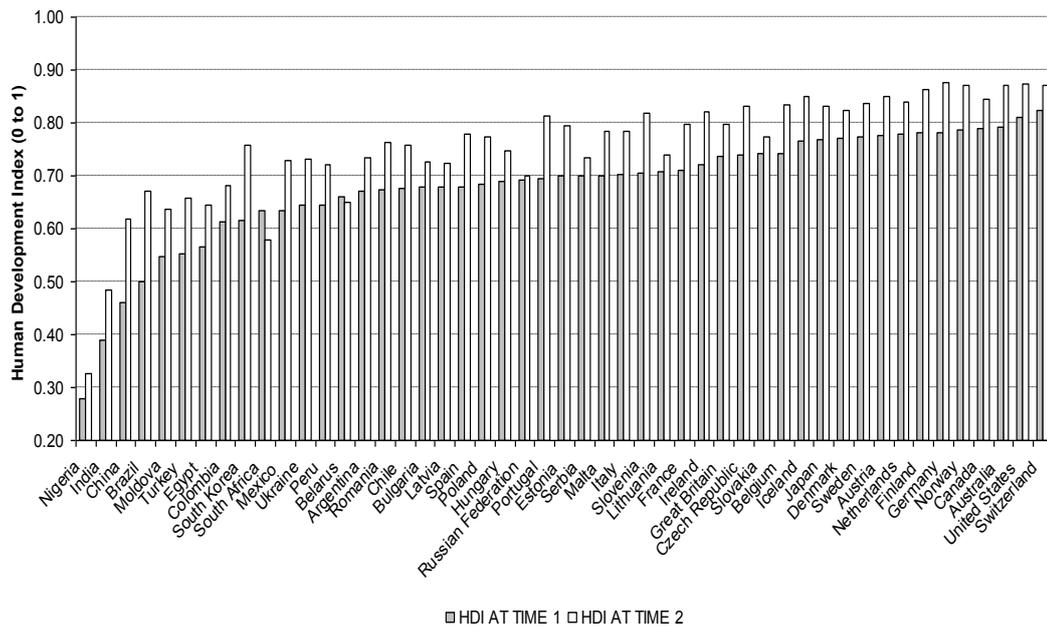
Source: calculated by the author from The Human Development Index 2010 (United Nations, 2010)

Turning to multivariate analysis, results of seemingly unrelated regressions show that the relations between emancipative values and SMAM are reciprocal (Table 2). The impact, however, is not symmetrical. Values are a better predictor of age of marriage cross-nationally than age of marriage is of predicting values. This is captured in the first two columns of Table 2. In the first column, the change in emancipative values is a stronger predictor of age at marriage at T_2 with an unstandardized coefficient of 1.27 than the change in age at marriage as a predictor of emancipative values at T_2 with a coefficient of 0.21 in the second column. The same trend is found when only age at marriage and emancipative values were regressed in a system of two equations without controlling for human development – see Appendix 3. The coefficients were 1.28 and 0.20 respectively. This is support of the research hypothesis that emancipative value change promotes marriage postponement.

Table 2: Seemingly unrelated regression analysis of singulate mean age at marriage, emancipative values, and Human Development Index in 49 countries

Equation	Independent variables	Dependent variable		
		Age at marriage at T_2	Emancipative values at T_2	HDI at T_2
(1)	Age at marriage at T_1	0.94 (8.16)***		
	Change in emancipative values	**1.27 (3.81)***		
	Change in HDI	0.96 (2.12)**		
	Constant	0.08 (1.54)		
(2)	Emancipative values at T_1		1.18 (9.17)***	
	Change in age at marriage		**0.21 (3.48)***	
	Change in HDI		-0.25 (-1.24)	
	Constant		-0.04 (-0.75)	
(3)	HDI at T_1			0.86 (13.65)***
	Change in age at marriage			0.12 (2.81)**
	Change in emancipative values			0.02 (0.17)
	Constant			0.14 (3.77)***
	R^2	**0.67**	**0.66**	**0.89**
	RMSE	0.124	0.055	0.035
	χ^2	151.03	129.90	401.80

Notes: Significance levels: n.s. p>0.05; **p≤0.05; ***p≤0.001. Entries are unstandardized regression coefficients; z-values in parentheses. Post-estimation tests for multicollinearity (VIF), and Breusch-Pagan / Cook-Weisberg test for heteroskedasticity reveal no violation of OLS assumptions in each regression equation; Breusch-Pagan test reveals independence of residuals across equations

These results appear to be robust across various models. The conclusions hold when the variables have a logit[13] transformation (see Appendix 4). The coefficients were 1.25 for the change in emancipative values predicting age at marriage at T_2 and 0.14 for the change in age at marriage predicting emancipative values at T_2. The same pattern was found when an alternative variable for economic development was introduced. Using GNI instead of HDI the coefficients were 0.84 in the first column and 0.11 in the second (see Appendix 5). In all these equations, Wald-test of equality of coefficients showed statistically significant difference. The only exception, where Wald-test did not show significant difference between coefficients, was in models where

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[13] Logit transformation was performed using the formula $\ln\left(\dfrac{x_i}{1-x_i}\right)$

all variables were z-standardized (Appendix 6). This could indicate that the asymmetry is rather weak.

Emancipative values and the level of human development, as measured by the HDI, explain between 67 and 68 percent of the variance in age at marriage across 49 countries (Table 2 and Appendix 4). Norris and Inglehart (2004) have shown similar findings: the country's position on traditional versus secular-rational scale, together with HDI, explained two-thirds of the variance in total fertility rates.

Besides the main finding of emancipative value change that influences age at marriage, another system of asymmetrically reciprocal relations – between age at marriage and HDI – was found significant (Table 1). The change in HDI is a stronger predictor of age at marriage at T_2 with a coefficient of 0.96 than the change in age at marriage as a predictor of HDI at T_2 with a coefficient of 0.12. The effect of human development, as captured by HDI, on increase in age at marriage is smaller than the effect of the emancipative value change, but is, nonetheless, important. It supports the SDT premises regarding the relations between economic and value changes as required conditions for behavioural changes (van de Kaa 1996).

Table 3 demonstrates the relations between values, education and age at marriage. The effects of educational attainment are parallel to the effects of the HDI, while the impact of emancipative value change on age at marriage at T_2 remains greater than the opposite (coefficient of 0.99 in the first column compared to 0.15 in the second column). Education also plays a role – its change significantly influences the age at marriage at T_2 (coefficient of 0.31). Interestingly, change in age at marriage has almost the same impact on education at T_2 (coefficient of 0.29). These relations are symmetrically reciprocal. This finding corroborates the conclusions of Marini (1978).

Table 3: Seemingly unrelated regression analysis of singulate mean age at marriage, emancipative values, and tertiary education for women in 49 countries

Equation	Independent variables	Age at marriage at T_2	Emancipative values at T_2	Education at T_2
		Dependent variable		
(1)	Age at marriage at T_1	0.90 (7.83)***		
	Change in emancipative values	**0.99 (2.91)****		
	Change in education	0.31 (2.23)**		
	Constant	0.14 (3.45) ***		
(2)	Emancipative values at T_1		1.15 (9.03)***	
	Change in age at marriage		**0.15 (2.42)****	
	Change in education		0.15 (2.40)**	
	Constant		-0.06 (-1.14)	
(3)	Education at T_1			1.10 (10.58)***
	Change in age at marriage			0.29 (2.16)**
	Change in emancipative values			0.80 (2.65)**
	Constant			0.03 (0.87)
	R^2	**0.69**	**0.67**	**0.69**
	RMSE	0.121	0.054	0.120
	χ^2	148.97	139.97	134.30

Notes: Significance levels: n.s. p>0.05; **p≤0.05; ***p≤0.001. Entries are unstandardized regression coefficients; z-values in parentheses. Post-estimation tests for multicollinearity (VIF), and Breusch-Pagan / Cook-Weisberg test for heteroskedasticity reveal no violation of OLS assumptions in each regression equation; Breusch-Pagan test reveals independence of residuals across equations

2.7 Discussion

The impact of human empowerment measures on the postponement of marriage in the last three decades is found to be in accordance with Inglehart's revised modernization theory, upon which the SDT theory is based. The opposite effects, despite being weaker, imply that some feedback mechanism is playing a role in relations between human empowerment and marital postponement. Such a macro-level mechanism may function in societies, where economic and human development and cultural changes are further fostered by an increasingly large proportion of women in higher education and the labour market – a situation enabled by postponement of family formation and childbearing. This further promotes overall societal and economic development.

The mechanism behind the reciprocal relations between the percentage of women in tertiary education and age at marriage may well operate directly, but also indirectly via "climate" or context influences. The direct effect of prolonged education at the societal level operates by creating an alternative occupation to early marriage and its increasingly high opportunity costs. In the same manner, when women are not married at younger ages, they are more readily available for attending institutions of higher education, which would explain the effect of education. In other words, in some societies the vast majority of women are being occupied within the higher educational system during young adulthood, and hence, tend to marry at older ages. In other societies, women are more available for early marriage because they do not attend institutions of higher education. Thus, higher education produces the observed increase in the share of unmarried women, especially in the young age groups, and thus the rise in age at marriage.

At the same time, an indirect effect of education might operate via emancipative value change in the society. The rising share of highly educated women might create a social climate where traditional beliefs are relaxed, thus giving way to alternative worldviews. In societies, where emancipative value change has been predominant, it is most likely that a large variety of choices is regarded as normative, including postponement of marriage, finite or infinite. Social norms are powerful behavioural guidelines for individuals, while social learning facilitates the spread of such newly emerging types of behaviours (Kohler, Billari and Ortega, 2002; Liefbroer and Billari, 2010). As a consequence, women change their preferences toward the type of first union, and instead of marriage, choose to enter other living arrangements, such as cohabitation, single living, or living-apart-together relations. In all these cases, the average age at marriage in the society rises, and so does the variation of the age at marriage (Huinink, 2008).

2.8 Conclusions and summary

Two main findings have been presented and discussed in this paper. Firstly, in 49 countries around the globe, postponement of marriage is influenced most of

all by emancipative value change, when compared with other important factors, such as economic prosperity and high levels of education for women. Secondly, a stronger impact has been found of emancipative value change on rising age at marriage across societies rather than vice versa.

Using simultaneously estimated regression equations, this research has shown that value change boosts age at marriage. The robustness of this result has been demonstrated in various models, controlling for different competing factors. This study has included some major explanatory variables that have been suggested in previous research, and therefore, may conclude that no alternative feasible explanation can be easily produced.

As to the question of causal inference: the findings support the SDT theory and offer a preliminary confirmation of its premises regarding the direction of anticipated effects. Doubtless, some feedback effects are present in this system of asymmetrically reciprocal relations. Interpretations of these effects, as well as the underlying mechanisms, have been suggested. Nevertheless, the weak asymmetry of the effects allows speculating about the nature of relations between the emancipative value change and marital transition, and implying that these changes may be connected not only by correlation. Hence, empirically testing the relations between the ideational and behavioural change using SUR provides with important insights: it adds to the existing evidence in the form of "footprints" and "anchored narratives" that have been previously suggested (Lesthaeghe and Surkyn, 2006; van de Kaa, 1996).

It is important to mention that the conclusions cannot be directly transferred to individual behaviour, without risk of ecological fallacy. The complex relations between value change and age at marriage would be indeed most interesting to further investigate at the individual level. This research has been limited to aggregate level data analyses since the WVS do not collect individual data on age at first marriage. Therefore, further studies are needed to address the question of whether the trends at the individual level correspond to those found at the country level. The expectation stemming from this research regarding the

individual behaviour would be that the predispositions and mechanisms behind the effects are likely to be similar.

Congruity among the world regions does not seem to be the trend in regards to marriage, although some evidence exists that fertility indeed converges (Wilson, 2011). It would be most interesting to examine whether public beliefs regarding marital behaviour also match the societal norms regarding childbearing. The dynamics of global variation in values, norms and behaviours opens more than enough space for future research.

3. The Second Demographic Transition in Israel: one for all? [14]

3. The Second Demographic Transition in Israel: one for all?

This chapter explores family behaviours and attitudes in Israel over the last decades through the lens of the Second Demographic Transition (SDT). Although fertility transition to replacement level among certain societal groups has been previously shown, the question of how the transition unfolds in other domains remains open. The goal of this chapter is to highlight the diversity of marital and fertility transitions and non-transitions among various groups of this heterogeneous society, and to compare Israel's transitions to European ones. Emancipative value change, postponement of marriage, alternative living arrangements and a growing variety of fertility regimes were analyzed. A full range of pre-transitional, transitional, and post-transitional elements was found among the groups. Such sign of the SDT as growing childlessness was not found, and the spread of other features as unmarried cohabitation and non-marital childbearing was found limited. Population composition effects were isolated. It was found that the level of religiosity and the country of origin are important factors which differentiate family behaviours and attitudes. The connection between value orientation of the groups within Israel and their family behaviours is discussed. The socio-structural and institutional constraints that might impede further progression of the Second Demographic Transition in Israel are also discussed.

3.1 Introduction

Demographic transition is not a new theme in studies of fertility and family behaviour in Israel. Much has been said about Israel's transition to fertility replacement level and the role of immigration in this process (Friedlander and Feldmann 1993; Okun 1996; Friedlander et al. 1999; Friedlander 2002). In fact, Friedlander and Feldmann (1993) showed that the secular Israeli Jews of European origin have reached an advanced stage in fertility transition toward below replacement level similarly to Europeans. However, the question of how the transition unfolds in other domains remains open.

What the present study adds to this debate is a quantification of the ongoing changes through the theoretical lens of the Second Demographic Transition (SDT) (Lesthaeghe and van de Kaa 1986; van de Kaa 1987, 1997, 2001; Lesthaeghe 2010). In the paper, a range of behaviours related to the SDT are analyzed; not only fertility *per se*. This holistic approach allows synthesizing various demographic phenomena in a more integrative perspective, differentiating between the pre-transitional, transitional, and post-transitional elements, and investigating the complex mechanism of the onset and diffusion of the transition process.

SDT is a broad term that describes a variety of changing family related attitudes and behaviours. Lesthaeghe (2010) and van de Kaa (2001) distinguish between marital transition and fertility transition, which occur along with the societal value change. Marital transition refers to the postponement of marriage, the emergence of various types of living arrangements, and to alternative forms of cohabitation and procreation. The consequent fertility transition culminates in an overall postponement of childbearing, and a decrease in the eventual number of births.

The chapter is structured as follows: firstly, it tests to which degree a generational change in attitudes and value orientations has been pronounced among various population groups in Israel. Secondly, it shows which group has been altering family behaviour over time, and whether the behavioural change

corresponds to attitudinal. Essentially, the question of the SDT is a question of change in behaviours accompanied by change in attitudes. Such features of marital transition as postponement of marriage, rising cohabitation, tolerance of non-marital sexual relations, and non-marital living arrangements are discussed. Thirdly, fertility transition and some of its consequences are analyzed. Newly emerging fertility regimes, growing proportions of multiple births and increasing age at motherhood are examples of phenomena related to fertility transition. Special attention is paid to the growing variety of mother profiles. Israel's patterns of the SDT are compared with Europe as a reference. Finally, the implications of the various groups' growth rates, increasing behavioural differences and heterogeneity are discussed in light of the broader socio-cultural and political context.

3.2 Theoretical background

SDT theory presumes that the rise of individual autonomy values in post-industrial economies is accompanied by the postponement of family formation and childbearing; greater instability of existing unions; and increasing variety of living arrangements and alternative lifestyles (Lesthaeghe and van de Kaa 1986; van de Kaa 1987). The widening opportunities in life, increasing freedom of choice, and the rising emphasis on emancipative values are nurtured to a large extent by an expansion of individual resources and progressing democratization, according to the revised theory of modernization and Human Empowerment framework (Welzel et al. 2003; Inglehart and Welzel 2005; Welzel and Inglehart 2010). However, path-dependent, contextual, and nation-specific factors alter the course of the demographic changes (Lesthaeghe 1998; Inglehart and Welzel 2010). Moreover, regional-historical context, social stratification, and diffusion mechanisms lead to a variation in family formation within a given society (Surkyn and Lesthaeghe 2004). Although Inglehart and Welzel (2010) show that variation in basic value orientations is generally smaller within than between societies, there might be exceptions. A case in point is Israel.

The current paper argues that under certain circumstances the societal-level perspective falls short in explanations when faced with cleavages which divide societies internally. World views and mass beliefs held by various groups of Israeli society, as well as their demographic behaviour, resemble more an assembly of different world regions than segments of the same society. That is why studying Israel is potentially revealing. This society confronts us with a unique paradox that is of critical relevance in light of general theories. In socio-economic terms, Israel is modern because it harbors a postindustrial knowledge economy that generates a high per capita income. In socio-cultural terms, however, Israel might be considered a profoundly traditional society, which preserves conservative family values (Lavee and Katz 2003), and consequently, offers little ground to assume any transition whatsoever. High total fertility rates are not the least reason for that: the fertility levels are unusually high even among those Jewish sectors of the population that have made the transition to modernity (Anson and Meir 1996). This traditionalism-modernism paradox is the key for further understanding the profile of this particular society, and the nature and mechanism of the transition process in general.

Social stratification in all societies restricts human choice by limiting individual horizons (Welzel and Inglehart 2010). Although Israeli society as a whole might be viewed as rather traditional, the social groups vary greatly in their worldviews and value orientations. Social stratification in Israel is usually conceptualized in terms of belonging to the national majority of Jews (and others, who are not classified by religion; the vast majority of them are immigrants of 1990s from former USSR) or the minority of Arabs (Moslems, who comprise about 20% of total population, and Christians – about 2% of total population); among the Jews further division by ethnic origin takes place. Two major groups are of Asian or North African origin and of European or American origin, and the largest ethnic group in 2009 is of Israel born Jews (Figure 4).

Figure 4: Characteristics of Israeli population by religious affiliation and ethnic origin

Population by religious affiliation in 1949-2009   **Population by ethnic origin in 1948-2009**
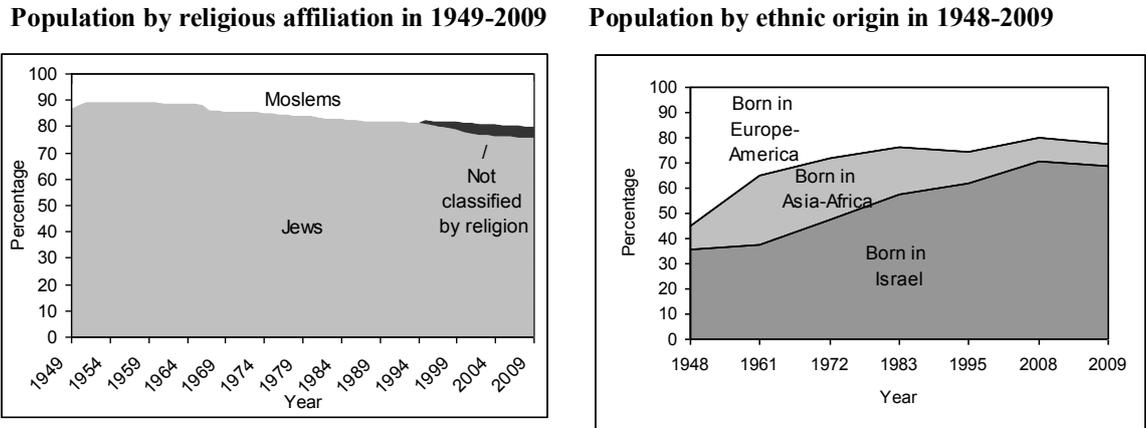
Source: calculated from ICBS, Statistical Abstract of Israel 2010, Tables 2.1, 2.2, 2.25

Besides ethnicity, Israel is stratified by the level of religious observance. Religiousness is considered an important determinant of political behaviour (Shamir and Arian 1999), family size (Friedlander and Goldscheider 1978) and way of life (Smooha 2005). Affiliation with a certain ethnic and religious social group implies belonging to a community with very distinct cultural norms, interests and goals in life (Katz-Gerro et al. 2009). The vast majority of Jews in Israel are subject to influences of one or more of these sub-cultures (Liebman 1997). In Israel's deeply divided society one of the most recognized social cleavages is between the secular majority and the Ultra Orthodox, who aim to impose their beliefs and norms on all aspects of public and private life (Smooha 2004).

The cleavage between religious and secular groups forms a continuum which is clearly based on their different world views, values, and norms. It is common in Israeli surveys to ask the participants - in addition to the standard self-definition of religious identity - to rate the level of their religious observance (Arian et al. 2008). Such 'objective' measures of religiousness, as frequency of church attendance, in Israel would produce a distorted picture, since the synagogue for Jews functions not only as a place for praying and worshiping, but also as a gathering place for broader community purposes (educational, social, and political). That is, synagogue attendance is not necessarily a proxy for

religiousness. Thus, self-definition of religious identity and rating the level of religious observance are considered a valid measure of the respondents' religiosity.

In 2009, 8 per cent of adult Jewish Israelis defined themselves as 'Ultra Orthodox', 12 per cent as 'religious', 13 per cent as 'traditional religious', 25 per cent as 'traditional non-religious', and 42 per cent as 'non-religious /secular'. Among Moslem Israelis 10 per cent define themselves as 'very religious', 51 per cent as 'religious', 29 per cent as 'not so religious', and 11 per cent as 'non-religious' (Israel Central Bureau of Statistics 2010a). Since one of the basic prerequisites needed for the onset of the First and Second Demographic Transitions is the secularization of society (Lesthaeghe 2010), some sizeable and fiercely religious groups in Israel do not fit the typical transition profile.

3.3 Current research

SDT theory predicts the following chain of events as a consequence of ideational change toward more individualistic value orientation (van de Kaa 1987): postponement of marriage, a rise in alternative types of living arrangements, postponement of first births, a rise in late and out-of-wedlock childbearing, and a decrease in overall fertility. Thus, the major components of SDT are high proportion of women aged 25-29 never married, rising percentage of currently cohabiting, late fertility schedule, and below replacement fertility. Additional components are high divorce rate, low frequency of abortions, and high proportion of women using modern contraception. However, the sequence is not universal, some stages are country-specific, and above all, there is within-country heterogeneity (Sobotka et al. 2003; Lesthaeghe and Neidert 2006; Sobotka 2008).

Some country-specific features hamper the onset and slow the diffusion of demographic transition in Israel. These are the state-religion relations and traditionalism of the society. Religion plays a key role in the public sphere (Liebman 1993, 1997; Fogiel-Bijaoui 2002; McQuillan 2004; Smooha 2005);

the family laws are religious (Gottschalk 1951; Strum 1989); and gender roles are traditional (Semyonov and Lewin-Epstein 1991; Stier and Lewin-Epstein 2000; Safir et al. 2003; Toren 2003; Yaish and Kraus 2003; Stier and Yaish 2008). Nonetheless, Jewish Israelis gradually adopt alternative lifestyles; self-expression values are rising (Yuchtman-Ya'ar 2002); and 'postmodern families' and such form of unions as cohabitation is slowly spreading (Katz 2001; Fogiel-Bijaoui 2002; Baloush-Kleiman and Sharlin 2004). The leaders of the change are secular Jews of European origin, educated, and residing in big cities (Fogiel-Bijaoui 2002). These recent findings of changing family behaviour lead to the first hypothesis in this paper:

1) Demographic trends associated with the SDT might be primarily found among Jewish non-religious groups and groups of European origin. The religious continuum from secular pole to Ultra Orthodox reflects also in family behaviour and attitudes.

As mentioned earlier, the vast majority of Moslems are religious. The modernization of family patterns of the Moslems did not progress throughout the 1980s and the 1990s; therefore, their fertility remained at relatively high levels (Friedlander 2002). Such behaviours as dating may be prohibited and the parents' consent is needed for a bride to get married (Lavee and Katz 2003). The domination of the religious law is interpreted as a facet of cultural autonomy of the Moslem community, and thus, is tolerated (Fogiel-Bijaoui 2002). Hence, the second hypothesis can be derived:

2) The Moslem population is found on a pre-transitional level.

Since existential security concerns and nationalistic outlook are still part of the geopolitical realm of many Israelis (Arian 1995, 2003, 2005; Smooha 2005), not all features of the SDT might be present. Previous findings regarding the national and socio-cultural profile of Israeli society show a preference of large families and high value of children (Friedlander and Goldscheider 1978; Fogiel-Bijaoui 2002; Landau 2003; Lavee and Katz 2003; Nauck and Klaus 2007;

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Suckow 2008; DellaPergola 2009; Schellekens 2009). The family as a social construct is subject to social approval (Bourdieu 1996), leading to the encouragement of certain types of individual behaviour. Social feedback, normative influences, mechanisms of peer group pressure, and compelling role models initiate the so-called social interaction effects (Montgomery and Casterline 1996; Kohler et al. 2002). Prospective mothers enter a social realm which offers broad kin and public support for childrearing (Berkovitch 1997; Morgan and Berkowitz King 2001), and calls for compliance with group norms in childbearing evidenced in pro-natal public policy (Friedlander 1973; Landau 2003; Manski and Mayshar 2003).

Moreover, social milieu of the country (Nahmias 2004) establishes the overall moral norms and generates pressures that foster obedience. Israel is a relatively small country where social networking functions as a major dimension of social relations. Individuals are strongly connected one with another by either familial, residential, linguistic or friendship ties. These connections are highly emotional in nature, for social relations of Israelis are often described as warm, personal, and informal (Smooha 2005). Thus, the existing traditional norms might influence the course of development in overall family behaviour. Further hypotheses read as follows:

3) Postponement of marriage and childbearing is followed by recuperation, so that the above replacement fertility is achieved by most groups.

4) Such characteristics of the SDT as widespread cohabitation, out-of-wedlock childbearing, and voluntarily childlessness are marginal in the repertoire of behaviours of all Israeli groups.

3.4 Methodological considerations

Does the comparison between demographic transitions in Western democracies and the demographic processes in Israel make sense? Under which conditions are these demographic developments comparable? Although Israel differs from the West in many basic characteristics (Smooha 2010), a working assumption

of this research, following Smooha (2005), is that European countries are the natural units of comparison to Israel for several reasons. Firstly, the majority of Israel's Jewry originates from Eastern and Central Europe, and many are West-oriented. Secondly, having a comparable standard of living, Israel is tied to the West by numerous political, military, economic, and cultural relations. Thirdly, the set of values known as 'the Protestant ethic' brings Israeli Jews closer to the West (Smooha 2005: 437).

Yet, one should not disregard Israel's exceptional social heterogeneity (Friedlander and Feldmann 1993). Over a quarter of Israel's total population is not Western and does not wish to be Western: Ultra Orthodox Jews "try hard to keep the old ways as much as possible, to reject Western values and to believe that redemption will come by strict observance of traditional Judaism" (Smooha 2005: 424), while Israeli Arabs identify themselves with the Arab world. These two groups are outstanding in their reproductive behaviour. Period total fertility rates (TFR) of Moslems in 2001 was 4.7 children per woman including the Bedouins in the South whose TFR was 9.2, and TFR of Ultra Orthodox Jews comprised 7.7 (Gurovich and Cohen-Kastro 2004). Can there be any transition at sight for these groups?

Furthermore, these extraordinary fertility rates which almost ceased from existence in the 21st century create interesting statistical effects of population composition. That is, due to differential natural increase, the population structure changes: the share in population of groups with the highest natural increase becomes over time more substantial. These compositional effects are a direct consequence of heterogeneity in reproduction, and must, therefore, be taken into account.

Finally, the discussion of Israel's family related behaviour requires recognition of Israel being a conglomerate of groups with various national, ethnic, and religious backgrounds, and the fact that significant fractions of the population are immigrants. The theme of how the mosaic of Israeli population has emerged is extensively described in the literature (see, for example, Friedlander 1975;

Friedlander and Goldscheider 1978; Ben-Moshe 1989; Okun 1996; Friedlander et al. 2002; Philippov and Bystrov 2011). The working assumption is that the timing of immigration to Israel for Jews has less impact on family related behaviour than the region of origin, and the level of religious observance, as a result of the two main factors: one, the incorporation of societal norms and values in the socialization process, for many women occurred during their stay in the country of origin. Value orientations which are formed in early adulthood influence the choice of path in family formation (Lesthaeghe and Surkyn 2006), and remain relatively persistent throughout the individual's life-span (Inglehart and Baker 2000). Two, some of the immigrant women completed their childbearing abroad, and hence, their completed fertility resembles that of their country of origin more than that of the country of destination.

3.4.1 Data

The main data sources are Population Register of vital statistics from 1949 onwards published annually in the Statistical Abstract of Israel; Social Survey data collected annually since 2002 by the Israel Central Bureau of Statistics; Israel national survey data of the Guttman Center (former Israel Institute of Applied Social Research) (various years); and cross-national survey data of the International Social Survey Programme (ISSP) (various years), European Social Survey (ESS) 2002 and 2008 and World Values Survey (WVS) 2001[15]. In all of the above surveys the sample represents the adult population of Israel.

The advantage of using cross-sectional time series survey data from the same source is that the context related distortions can be detected and neutralized. The advantage of using surveys conducted at the same point of time from

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[15] Social Survey data was received from Israel Social Data Center (ISDC) at the Hebrew University of Jerusalem. For detailed description of Social Survey background, methods and sampling see http://surveys.cbs.gov.il/Survey/EngHelpTexts/Help2009.htm. For details on the Guttman Center data see:
www.idi.org.il/sites/english/TheGuttmanCenterSurveys/Pages/TheGuttmanCenter.aspx
For details on the International Social Survey Programme data see www.issp.org, and the European Social Survey see www.europeansocialsurvey.org. Details on the World Values Survey are found at www.worldvaluesurvey.org.

various sources is that by comparing the results one can cross-validate the quality of the data from these sources (Beckers 2010). By implementing these two types of survey data in the analysis, the current research consorts the advantages of both.

3.4.2 Methods and procedure

In order to clarify the issue of social compositional effects on family attitudes and behaviour, the overall attitudinal or behavioural change will be examined, as a starting point. Then, the question whether the overall change (if it exists) is due to a change in each ethno-religious group, or is merely an outcome of the changing weight of these various groups in the total population will be addressed. Breaking up the data on fertility behaviour by ethnic and religious parameters will allow answering this question. Thus, the groups, in which the traditionalism-modernism paradox exists, will be identified. The groups, which are characterized by a consistent traditionalism or modernism pattern, will also be detected. Signs of transition on a group level might exist, even though on an aggregate (country) level these might be obscured.

Last, but not least concern relates to ideational change. Change in which values is most important to test? The theory of the SDT relies on Inglehart's post-materialism (Lesthaeghe 2010), supported empirically by the World Values Survey (WVS) data. The concept of emancipative values, which is further elaboration of Inglehart's original self-expression values, proposed later by Welzel and Inglehart (2010) and Welzel (2013), relies on similar theoretical premises and the same data source. Emancipative values comprise an index from 0 to 1 of value orientation that supports for gender equality, expression of people's voice, personal autonomy and lifestyle tolerance. The index was constructed using formative logic. It summarizes conceptually complementing elements of liberating value orientation (Welzel 2013). Change in these emancipative values is the one that can primarily and most effectively show the ideational change relevant to the SDT in any given society. Therefore, in the current research, the ideational change will be tested using the concept of emancipative values.

3.5 Results and discussion

3.5.1 Attitude and value change in Israel

According to the SDT theory, ideational change escorts the behavioural one. This generational value change is of crucial importance since it is a necessary (but not sufficient) condition of the SDT (Lesthaeghe 2010). In order to track this change, one needs to account for the time dimension. One way of showing change over time, when only cross-sectional survey data are available, is by testing the effect of year of birth on value orientation. If one finds systematic differences in attitudes and values between the younger and the older respondents, one can regard the phenomenon as a societal value change.

Emancipative value change indeed has taken place in Israel, as shown in Figure 5. Two important trends can be distinguished: firstly, some evidence of ideational change is seen from the higher emancipative value orientation of the younger Jewish respondents compared to the older. Secondly, a generational change in attitudes has occurred on the aggregate level among Jewish Israelis, but not the Arab (the vast majority of whom are Moslems).

The emancipative value orientation was calculated in Israel on basis of nine items of the WVS, grouped into lifestyle tolerance (acceptance of homosexuality, divorce and abortion); personal autonomy (imagination and independence as important child qualities, and non-indication of obedience as such quality); and people's voice (priority given to protecting freedom of speech, to giving people more say in important government decisions, and giving people more say about how things are done at their jobs and in their communities). The score 0 indicates total absence of emancipative value orientation and total deference to authority, while the score 1 indicates absolute expression of emancipative value orientation and a quest for freedom and equality (Welzel 2012).

Figure 5: Emancipative value orientation among Jews and Arabs in Israel in 2001 by year of birth

Jews
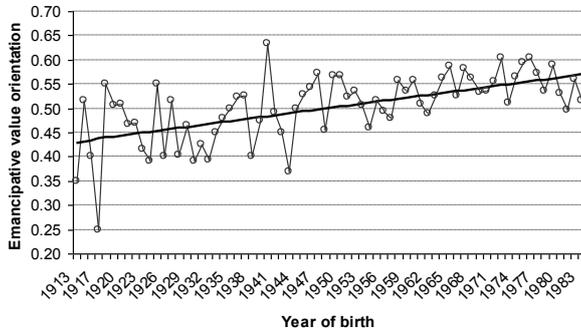
Arabs
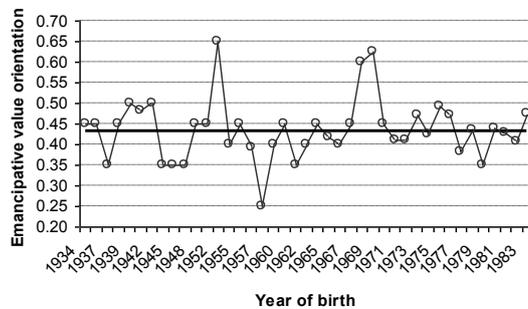
Source: calculated from the WVS (2001) data provided by Christian Welzel
Notes: Regression estimates for Jews (N=1,002) were based on y'=0.605-0.002*Age; p<0.001
Regression estimates for Arabs (N=151) are y'=0.433; effect of age non-significant

Gender equality was not measured in the WVS 2001 in Israel, and therefore, was not included in the index. Fortunately, however, attitude change on issues related to gender roles and lifestyles can be presented using complementary data from another source, ISSP 2002, as follows. Analysis of variance shows statistically significant effect of age on attitudes, and thus, confirms that generational change has taken place. Older people tend to agree more that: 'people without children lead empty lives', 'bad marriage is better than no marriage', 'it is better to marry, if people want children', 'household satisfies as much as paid job', 'work is NOT the best way for women to achieve independence', (p<0.05); 'what women really want is home and children', and 'divorce is NOT the best solution when marriage faces problems' (p<0.10) (calculated from ISSP data 2002).

Another important notion is that the scope of value change differed between religious and non-religious groups, while the religious groups displayed more traditional value orientation, and tended not to change it. The effect of religiosity was found statistically significant ($p<0.05$) in analysis of variance within all the examined attitudes, except for the item 'bad marriage is better than no marriage', where no significant difference was found among people of various levels of religiosity (ISSP data 2002).

These findings support the first two research hypotheses. Overall value orientation among the Jewish respondents has changed in a predicted direction of less traditional and more liberal attitudes toward family and gender roles. Both data sources above provide with evidence of generational value change on the aggregate level. On the group level, primarily, and most profoundly, the young non-religious Jewish groups lead this change. There is also evidence that the change occurred among some of the religious groups, although their values can be characterized as rather traditional. The most religious groups, as expected, were marked by conservative worldviews. No significant value change was found among the Moslems.

As some signs of the ideational change were found to be present among certain groups, the next step would be to analyze whether the behavioural change is present as well. The following sections relate to what happens in domains of living arrangements and childbearing. The main questions to be answered are: have marital and fertility transitions taken place in Israel?

3.5.2 Marital transition in Israel
3.5.2.1 Marital behaviour and attitudes

Attitudes to marriage in Israel are interesting to inspect if one wishes to understand the marital behaviour. For instance, seventy-three per cent of Jewish respondents stated that religious wedding is important to them, and sixty-four per cent stated that couple, who wants children, must be married (Social Survey 2009). The latter statement is a more permissive trend compared to 1994, when seventy-four per cent shared that view (ISSP 1994).

Not surprisingly, inasmuch as ninety-four per cent of Israelis aged 45-49 in 2008 were married at least once in the course of their life (ICBS, Statistical Abstract of Israel 2010). Marriage in Israel can still be regarded as close to universal. Among European countries only in Bulgaria and the Czech Republic the percentage of ever married by age 50 exceeded ninety per cent for birth cohort of 1965 (Sobotka and Toulemon 2008). Israel lags behind Europe, where universal marriage has ended.

Yet, marital transition unfolds in Israel since the seventies. Despite the fact that there has been a mass postponement of marriage among the Jewish population, there is no evidence of marked postponement among the Moslems. The mean age of Jewish women at first marriage has risen from 21.8 in 1970 to 25.7 in 2009, and of Moslem from 20.1 to 21.4 (ICBS, Statistical Abstract of Israel, various years). This increase of four years for Jews in Israel corresponds with European transitional patterns. The mean age at first marriage of Jewish women is similar to Eastern and Central European. For instance, in 2005 in Israel (Jewish women), Romania and Poland the mean age at first marriage comprised 25.4 years, in Bulgaria 25.8 years, in Czech Republic 26.4, and in Hungary 26.7. Jewish Israeli mean age is higher than Russian (23.3) or Lithuanian (25.0) but much lower than Dutch (29.1), Spanish (29.3), French (29.4), and Swedish (31.5) (Sobotka and Toulemon 2008).

The percentage of never married has increased over the last two decades in each age group among the Jewish women. Among the aged 20-24 the share of never-married reached 78.4 per cent in 2009, and among aged 25-29 it exceeded forty-five per cent (ICBS, Statistical Abstract of Israel 2011, Table 2.20). The most drastic postponement of marriage is found within the latter age group: between 1994 and 2009 the rise in the share of never-married of this age exceeded twenty-three percentage points (Israel, Statistical Abstract of Israel, various years, Tables 2.19, 2.20). Postponement is also evident among women aged 30-34: in 1994 the share of never married comprised approximately ten

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per cent, while fifteen years later their share increased to approximately twenty per cent.

However, postponement of marriage is not uniform; some Jewish women continue marrying in their early twenties while others wait until their thirties. The level of religiosity plays here a key role. The Ultra Orthodox women do not show signs of marital transition at all, while less religious show them to different degrees. The scope of postponement of marriage during the last decade by the level of religiosity is demonstrated in Table 4. The secular group is pioneering with almost thirty percentage points difference between 1968 and 2009 in the share of single women aged 20-29. The alternatives for these non-religious women to marriage are non-familial living arrangement; living with a partner, and residing with the parents (Einhorn 2005).

Table 4: Percentage of never married Jewish women aged 20-29 by the level of religiosity in 1968-2009

Religious identity (as measured by The Guttman Center)	1968-1969	1986-1988	1991-1992	Religious identity (as measured by the Social Survey)	2002-2003	2004-2005	2006-2007	2008-2009
Religious	38	39	*35*	Ultra Orthodox	20	22	18	29
				Religious	43	47	50	53
Traditional	33	51	46	Traditional religious	50	55	66	62
				Traditional non-religious	63	64	63	73
Non religious	49	58	63	Secular	69	75	77	78
Total	**38**	**50**	**49**	**Total**	**59**	**61**	**62**	**65**
N	525	498	321	N	1,364	1,443	1,308	1,252

Notes: the samples are pooled from the same source because of a non-sufficient number of observations in a single survey; in some surveys the distinction was made between single, married, widowed and divorced. Italics indicate small number of respondents in respective cell; caution is needed in interpreting these data.
Source: calculated from the Guttman Center data 1968-1992 and Social Survey data 2002-2009

3.5.2.2 Factors impeding marital transition

Besides religiosity, another characteristic impedes severely the marital transition in Israel. Contrary to the West, in Israel civil marriages do not exist as such. This institutional constraint on the marriage market is highly problematic from the liberal point of view (Sapir and Statman 2009) since it limits individual freedoms. The authority to certify marriage and divorce lies in hands of each religious community. That is, Orthodox rabbinical courts grant certificates of Jews; *Sharia* courts grant certificates of Moslem and Druze; and authorized officiating ministers grant certificates of Christians. Marriages and divorces performed abroad or 'alternative marriages' performed in Israel are not included in official vital statistics (ICBS, Statistical Abstract of Israel 2011). They are, however, acknowledged and registered at the Population Register for taxation, health insurance, and economic benefits purposes (Israel, Ministry of Interior 2011).

Marital transition also implies increasing divorce rates. Although they are an important feature of the SDT, direct conclusions as to why they rise so slowly in Israel can hardly be drawn. No doubt, the status quo in the sphere of marriage and divorce in Israel complicates the procedure of marriage dissolution. Despite a certain rise, divorce rates in Israel are rather low and range from 1.7 (per 1,000 persons) in the 1950s to 1.9 in 2009 (ICBS, Statistical Abstract of Israel 2011, Table 3.1). Compared to Europe, in Israel the attitude toward divorce as a solution to problems in marriage is quite similar (ISSP 2002). Consequently, the interpretation of divorce trends of Israelis requires caution.

Rising liberal aspirations might be another reaction to the legislative constraint. The secular groups of population object the fact that the only legal way of marrying in Israel is through religious ceremony at Orthodox Rabbinate (Gavison 2003; Liebman and Don-Yehiya 1984). Their answer might be an unmarried cohabitation and non-marital procreation inside these unions, marrying abroad, and marrying in Israel in alternative ways. These implications

to the situation on the marriage and divorce market need to be further investigated.

3.5.2.3 Alternatives to marriage

Cohabitation as an alternative to a conventional marriage form of union is accepted to various degrees among the Jewish Israelis but not the Moslem Israelis, for whom this option does not exist as normative (Einhorn 2005). Younger Israelis, similarly to Europeans, support cohabitation to a significantly greater extent than the older (Malnar 1999). This is not surprising, since the younger cohorts are less traditional, emphasize less survival values, and show higher levels of self-expression values (Inglehart and Baker 2000).

Interestingly, attitudes toward cohabitation have been positive only among the non-religious and traditional Jews (Table 5). In the same manner, the support of unmarried cohabitation, which is defined as a substitute or alternative to marriage (Heuveline and Timberlake 2004), and pre-marital cohabitation, has greatly increased over the last decade only among them. Both religious groups became over the decade less tolerant of cohabitation, that is, they seem to progress in the opposite direction to the SDT.

Looking at the total Jewish population, one can clearly observe compositional effects: the support of pre-marital cohabitation drops from 63 per cent in 1994 to 62 per cent in 2002 and of unmarried cohabitation from 61 per cent to 57 (see Table 5). Even though the support for these behaviours has risen among the non-religious and traditional Jews, the increasing weight of the religious groups in the total population (due to their extremely high birth rates) obscures the secular-liberal attitudes toward cohabitation in Israel. That is, the population composition is a strong enough factor to conceal the obvious transitional trend of the non-religious and traditional groups. This notion is of tremendous importance for future monitoring of Jewish demographic trends.

Table 5: Attitudes among Jewish Israelis toward unmarried and pre-marital cohabitation by the level of religious observance

Level of religious observance	1994 (N=1,278)			2002 (N=1,012)	
	Percentage of approval of				
	Unmarried cohabitation	Pre-marital cohabitation	Pre-marital sexual relations	Unmarried cohabitation	Pre-marital cohabitation
Very religious	11	8	0	8	3
Religious	28	25	15	26	22
Traditional	53	59	55	58	67
Non-religious	70	73	77	77	83
Total	**61**	**63**	**65**	**57**	**62**

Source: calculated from ISSP data 1994, 2002

In contrast to relatively positive attitudes toward cohabitation in Israel, the behavioural pattern differs greatly. The absolute levels of 3-4 per cent of adult Jewish population currently cohabiting can be considered as remarkably low, in spite of a slight rise during the last two decades (ISSP 1994-2007).

Overall, the spread of ever experienced unmarried cohabitation among the younger Jewish cohorts is greater than the older (Figure 6). An exception is the youngest age group of 20-24, who might have been not yet fully exposed to this alternative. The compulsory army service in Israel Defense Forces (until the age of 20 for women and 21 for men) might cause this delay. Additional explanation for the seeming decline in ever experienced unmarried cohabitation among the young people below the age of 35 is once again the population composition effect. Among the younger cohorts there are more people who define themselves as religious. Therefore, their behavioural pattern dominates the trend among all the young.

If the data are broken up by level of religiosity, there is an increase in ever experienced unmarried cohabitation among the non-religious and traditional Jews. Moreover, as a prelude to marriage, pre-marital cohabitation is much more widespread than unmarried. Pre-marital cohabitation leads by some 20-30 percentage points (at maximum) compared to unmarried cohabitation. This behavioural trend corresponds with moral norms and attitudes towards such types of behaviours. The cohort of non-religious and traditional Jews born in

1968-72 crossed the 50 per cent threshold of ever experienced unmarried cohabitation (ESS 2002). The following cohorts have not reached this threshold so far. The question, whether the population composition will ever allow reaching such thresholds in future, remains open.

Figure 6: Ever experienced unmarried cohabitation among Jews in Israel in 1994, 2002 and 2008
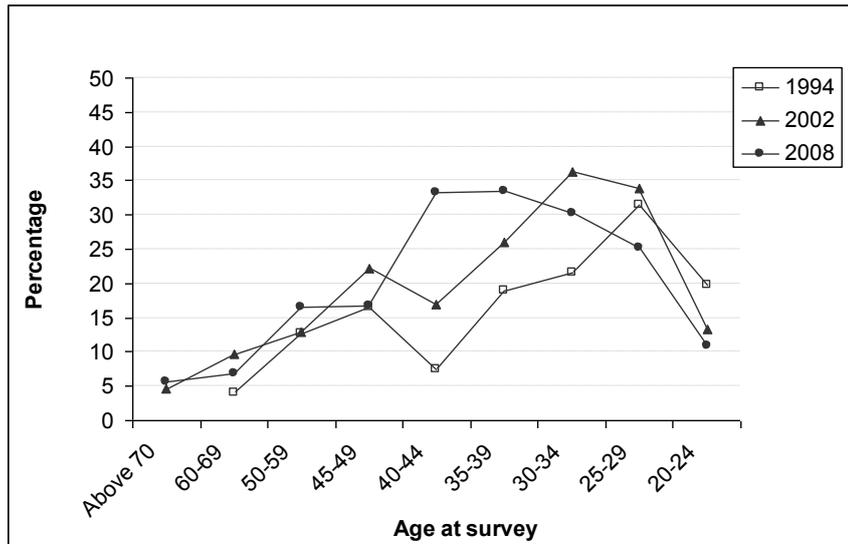
Note: the item reads 'have you ever lived with a partner whom you eventually did not marry?'
Sources: calculated from ISSP 1994; ESS 2002, 2008 data

Nevertheless, until the age of 29 the percentage of currently cohabiting women in Israel in 2008 – which is eleven per cent – is similar to some of Europe, but generally much lower: about 10 per cent reported cohabitation in Poland and Portugal, 11 per cent in Slovakia, 13 per cent in Spain, 17 per cent in Bulgaria, 21 per cent in Germany and Denmark, 23 per cent in Hungary, 25 per cent in Norway and France, 30 per cent in Finland, 33 per cent in the Netherlands and 36 per cent in Sweden (data of ESS 2008).

To sum up the trends in marital transition: religious women do not postpone marriage and do not participate in alternative living arrangements. They display consistent patterns of traditionalism *per se,* so the SDT is not a relevant term for describing their attitudes and behaviour. In contrast, groups, who observe religious tradition to a lesser extent, do postpone their marriage to various

degrees, accept alternative living arrangements as a norm and cohabit more frequently. They appear to experience a Second Demographic Transition during which the concept of family is redefined (Lesthaeghe 2010).

3.5.3 Fertility transition in Israel
3.5.3.1 Postponement of childbearing

The trends in fertility transition resemble those of marital transition. The same groups show same patterns of postponement in childbearing. On the aggregate level, Jews in Israel postpone births, as the figures on age-specific fertility rates in a cross-temporal perspective show. The timing of the onset of postponement is important: while in 1993 the majority of births occurred at ages 25-29, by 2010 Jewish women of various ethnic origins have completed the shift toward ages 30-34 (ICBS, Statistical Abstract of Israel, various years). However, there was no fertility transition found whatsoever among the Moslems, whose main childbearing ages remained 15-24. Moslem fertility levels were still remarkably high, although these were lowered during the last decades.

Figure 7 illustrates postponement of births among Israel-born Jewish women, which is typical to fertility transition. Similar picture can be observed among the rest of the ethnic groups. An outstanding case is women born in the former USSR. Although their fertility regimes resembled the rest of the ethnic groups, the rates were only half as high. In Israel no group has shown below replacement fertility so far, except these women immigrants from the former USSR.

Jewish fertility is most interesting to analyze by the level of religious observance. In 2009 only two per cent of secular women gave birth before they were 25 years of age; seventy six per cent postponed their first birth in the age group of 25-29; and thirty eight per cent still remained childless at 30-34 (calculated from the Social Survey 2009 data). This postponement of births to late childbearing ages is similar to the one in most European post-transitional countries. Nevertheless, the timing of childbearing among the most religious groups differed: until the age of 24, twenty eight per cent of the religious and

thirty two per cent of the Ultra Orthodox gave birth (ibid). So, if one wishes to speak about fertility transition in Israel, only the secular Jewish women fully fit the criteria of the SDT. Traditional women are on the way of approaching the thresholds and are strong candidates for the SDT.

Figure 7: Age-specific fertility rates of Israel born Jewish women in 1993-2010
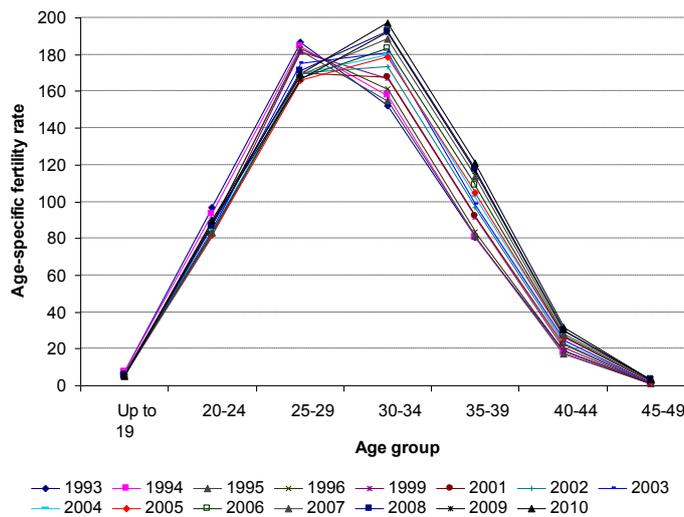
Source: calculated from the ICBS, Statistical Abstract of Israel data, various years

The fertility transition aligns with the marital: secular and traditional Jewish women postpone their marriage and childbearing until their thirties and further. This trend is definitely non-traditional and contradicts conventional familial norms of early marriage and early childbearing. Does this postponement of childbearing among the Jewish secular and traditional women end up at ultimate childlessness or do they manage to recuperate and eventually compensate for all the delayed births? Completed fertility which is analyzed in the next section sheds light on this question.

3.5.3.2 Completed fertility in Israel

Analysis of completed cohort fertility inquires into historic fertility of women who have already completed their reproductive careers. It shows fertility of real (as opposed to hypothetical or "synthetic") cohorts of women,

and is simple for interpretation since it indicates the actual number of children per woman. It is most accurate in demonstrating the level of fertility for a given cohort because it embodies the tempo effects by accounting for recuperation of delayed births. Thus, it neutralizes the tempo distortions of the period measure of total fertility (Bongaarts and Feeney 1998). Figure 8 presents completed cohort total fertility rates in Israel of women born in 1932-68 by religious affiliation, the level of religiosity, and ethnic origin.

Figure 8: Completed cohort fertility rates of Israeli women born in 1932-68 by religious affiliation, religious observance and ethnic origin
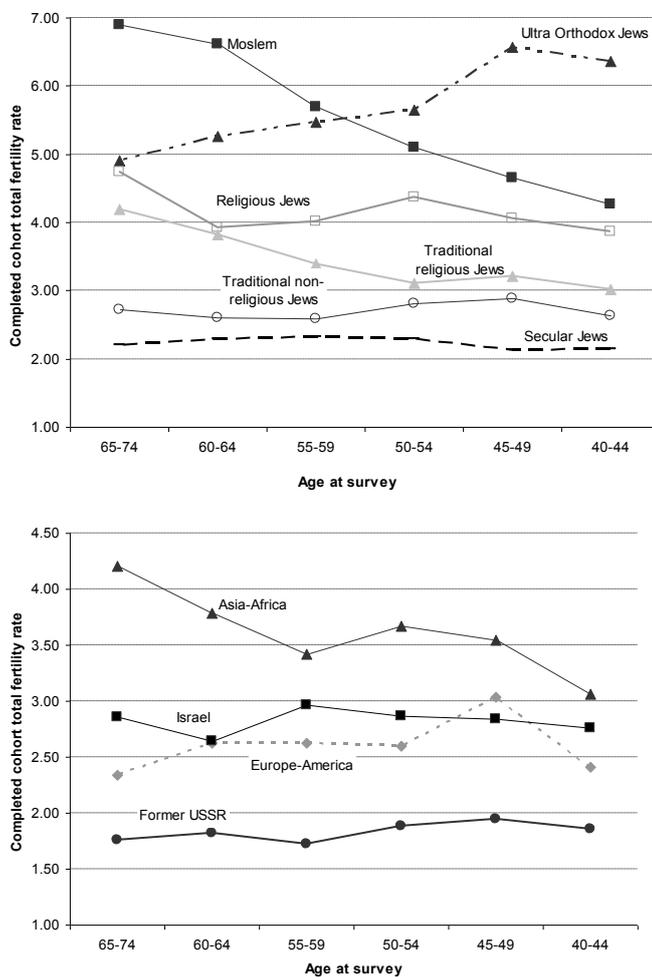
Note: grouping by ethnic origin is without Ultra Orthodox

Source: calculated from pooled data of Social Survey 2006, 2007, 2008

The completed fertility rates of Ultra Orthodox Jews and Moslems are the highest; the rates decline along with a decrease of the level of religious observance for the Jews. Ultra Orthodox Jews display opposite patterns to the

SDT – rising fertility over the last decades. Religious Jews and Moslems displayed high levels of fertility. Although their completed fertility is gradually decreasing, the levels were still tremendously high in 2008, even among the cohort of women aged 40-44 who were about to complete their reproductive career. The fertility of secular women of European origin born before 1964 was found below the replacement level: completed cohort total fertility rates of these women comprised 2.0 children per woman, while secular women born in the former USSR showed the lowest completed fertility of 1.7 children per woman (data of Social Survey 2009). Thus, research hypotheses 1 and 2 are supported.

The completed fertility can be portrayed by other means as well. For example, parity progressions ratios show the percentage of women of a given parity who have given birth to at least one additional child. In other words, parity progression ratios from 0 to 1 indicate the share of women who progress from the state of childlessness to the state of being a mother of one child, and so on. Figure 9 demonstrates the variety of fertility regimes in Israel. For example, after having one child women from the former USSR exhibited an extremely sharp decline in progression rates towards the second child. Such intriguing pattern can be referred to as 'stopping at one' (at most) behaviour (Hosseini-Chavoshi et al. 2006). For secular Jews it was 'stopping at three' behaviour.

Extreme fertility regimes, which can be characterised as 'non-stopping even at four', were displayed by Ultra-Orthodox and Moslem women. Their parity progression ratios remained relatively stable at very high levels across almost all birth orders (more than 90 per cent until birth order four and more than 80 per cent for births of higher order). In other words, women who gave birth to four children did not stop at all and were likely to progress to the fifth, sixth, seventh, and more children.

Figure 9: Parity progression ratios of Israeli women born in 1932-68 by religious affiliation, religious observance and ethnic origin
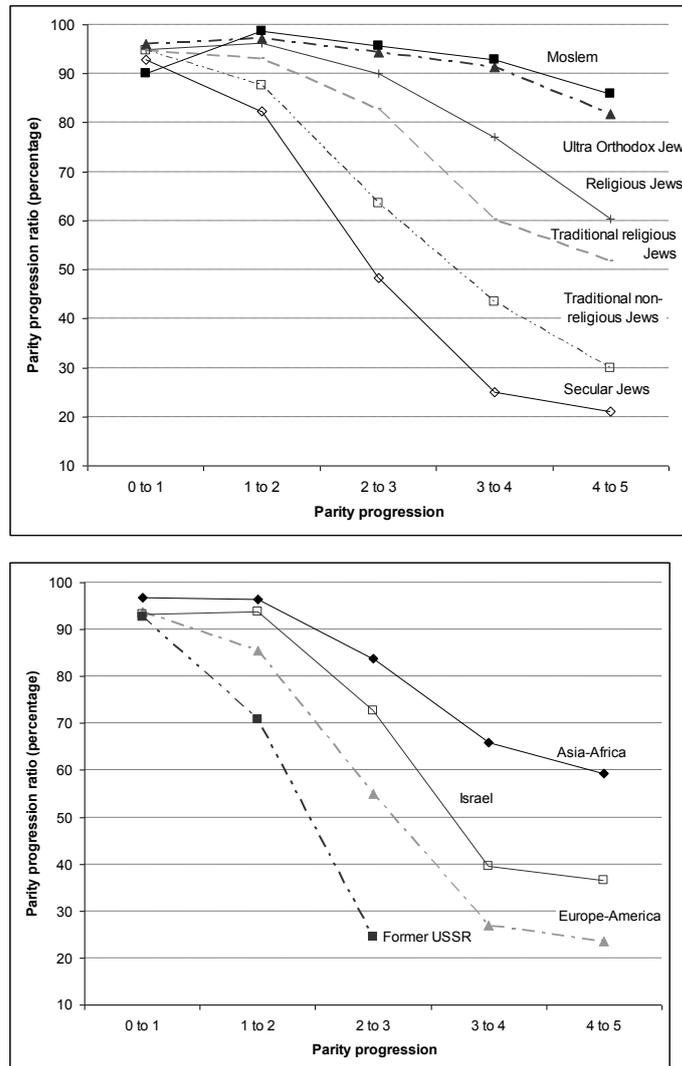
Notes: the number of children at parities higher than 7 is documented in the Social Survey as 7+. Therefore, for high-fertility sub-populations the calculations were based on 8 as the maximal parity. This may lead to some underestimation of completed fertility among these subpopulations. Grouping by ethnic origin is without Ultra Orthodox.

Source: calculated from pooled data of Social Survey 2006, 2007, 2008

These heterogeneous fertility patterns have been studied previously: Friedlander and Feldmann (1993), for instance, argued that the heterogeneity of Israel's population disguises fertility declines of some sub-groups which transit toward the European low fertility pattern. Using a period measure of total fertility in 1983-85, the authors showed that the group of European ethnicity (immigrants from European continent or Israeli-born descendants of such immigrants)

displayed below replacement fertility in the beginning of the eighties. However, since these authors have calculated a period measure, it could have been distorted due to tempo effect of postponement of childbearing. The recuperation that has occurred afterwards at the late childbearing ages could not have been captured by Friedlander and Feldmann's period measure. It is, however, taken into account within the completed fertility analysis performed in the current study.

Comparison with European countries shows that Israeli women noticeably differ in their fertility profiles. In the EU-27 completed cohort fertility of women born in 1968 was 1.74 children per woman, ranging from the lowest of 1.49 in Germany to the highest of 2.22 in Cyprus (VID 2010). Only two groups in Israel closely resemble Europeans: secular Jewish women are placed at the upper threshold of European fertility while women born in the former USSR fall close to the European average.

In fact, Israelis, unlike many Europeans in the first decade of the 21st century, still keep the fertility above the replacement level. There are no signs of low-lowest fertility at sight. How are these levels maintained if childbearing is postponed? The answer is recuperation of births at late childbearing ages. Figure 10 demonstrates the rising fertility among the Jewish women born in Israel aged 35-39 and 40-44 over the last decades. Intriguingly, during these late childbearing ages the fertility rates of Jewish women born in Israel outnumber the fertility rate of women born in the former USSR at its peak. This fact stresses the magnitude of the phenomenon of late childbearing.

Figure 10: Rising fertility at late childbearing ages among Israel born Jewish women in 1955-2010
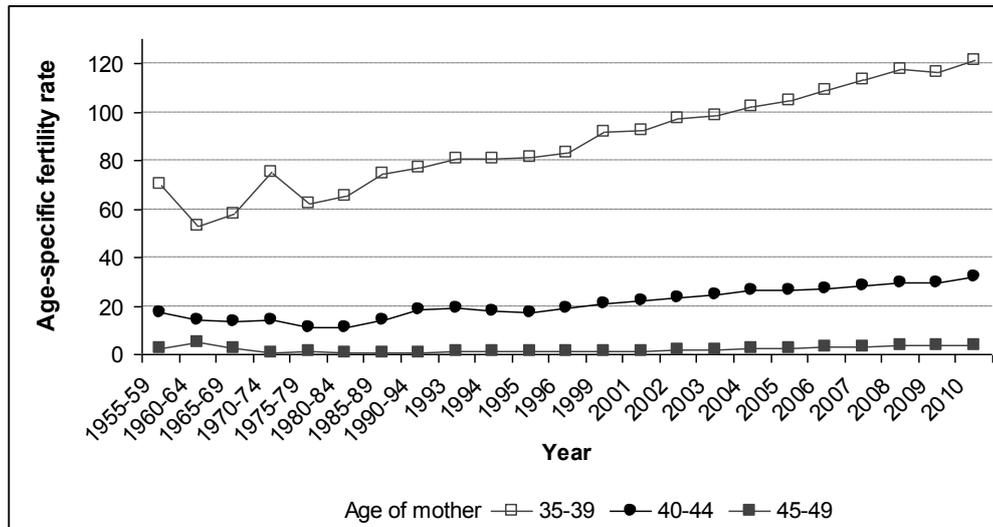
Source: edited from the ICBS, Statistical Abstract of Israel, various years, Tables 3.12, 3.13 and 3.14

3.5.3.3 Contraception behaviour

To complete the discussion of fertility transition, an additional feature of the SDT, namely, the use of modern contraception needs to be addressed. Efficient contraception is one of the dimensions according to which countries differ. The majority in Israel can be characterized as progressing toward European standards. In contrast to late 1980s, when the intrauterine device (IUD) was most frequently used contraception method among Jewish women aged 18-39 and the pill was the second most prevalent (Okun 1997, 2000), later on this picture changed. According to the survey of the Israel Association for the Advancement of Women's Health (2003), the pill became the most frequently used contraception among Jewish women aged 25-44. Twenty-six per cent used the pill and another 18 per cent used IUD. Israeli Jewish women have, therefore, passed the first phase of the SDT (Sobotka et al. 2003) in that respect.

Abortion in Israel is used mainly as a method of correction and subject to approval of governmental Committees for Termination of Pregnancy. Approximately 98 per cent of cases are approved annually since 2000. The rates of legal abortion decreased from about 153 per 1,000 live births in 1987 to 117 in 2010 (ICBS, Statistical Abstract of Israel 2010, Table 3.20), and these are

comparable with the lowest in Europe: only the Federal Republic of Germany ranked lower with 143 in 1985, and the Netherlands with 107 in 1984 (van de Kaa 1987). In 2009 in the Netherlands, which may be seen as a country with the lowest abortion rates among the developed countries, the abortion ratio was 153 per 1,000 live births (about 12.5 per cent of these were of women residents of other states who had traveled to the Netherlands especially for this purpose) (Netherlands, Inspection for Healthcare 2010).

3.5.3.4 Implications of fertility transition

As a consequence of postponement of childbearing until very late ages, three main demographic outcomes can be observed: firstly, the percentage of multiple births rises dramatically after the age of 45 due to assisted reproduction; secondly, extremely low levels of eventual childlessness are found because of the almost complete compensation for all the delayed births; and thirdly, out-of-wedlock fertility at those ages rises as well. As a result, mother profile in the society changes tremendously. Motherhood is no longer the prerogative of the married young women at their twenties or thirties.

Since some women cannot give births without the means of assisted reproduction at late childbearing ages, the likelihood of multiple births increases. The incidence of giving birth to a few newborns at late ages is much higher than at young ages, when such medical intervention is less frequent. For instance, in 2008, approximately thirty per cent of births to women older than 45 included more than one newborn (Figure 11). In the future this proportion could rise even more. This interesting phenomenon is a direct outcome of the postponement and recuperation in childbearing. Such developments can be expected in post-transitional societies, where the timing of childbearing is shifted and subjected to various individual life-goals.

Figure 11: Proportion of multiple births among Jewish women in Israel in 2002-2008
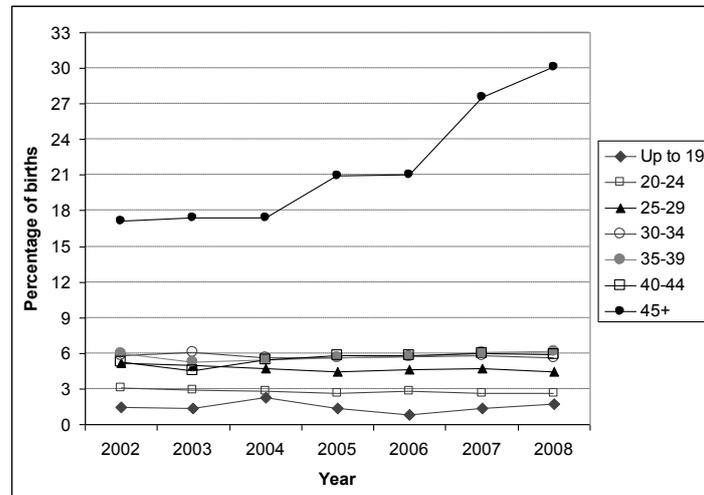
Source: edited from the ICBS, Statistical Abstract of Israel, various years, Tables 3.17 and 3.18

Jewish Israeli women seem to catch-up with childbearing despite the postponement. The ultimate childlessness is relatively low among all the Jewish women, regardless of the level of their religiosity. For instance, among women born before 1959, who have just recently completed their childbearing career, the highest ultimate childlessness comprised seven per cent for secular, and the lowest two per cent for the Ultra-Orthodox (calculated from data of Social Survey 2009). Such phenomenon can be understood better in light of Jewish traditional familism and affect for children which have been already studied in-depth (Fogiel-Bijauoi 2002). For instance, 61 per cent of agreed in 1994 and 58 per cent in 2002 with the statement 'people without children lead empty lives' among Jews clearly show preferences for having children (data of ISSP 1994).

Furthermore, such a life guiding principle as raising a family was found of the highest importance for the vast majority of Jews (data of ISSP 1994). The religiousness here had a weaker impact than in other questions regarding norms and values. The conviction that one should have children, or at least one child, seems to affect the overall population of Israel. It is stronger than the conviction that one should marry: a rising percentage of Jewish women at late childbearing ages give birth out-of-wedlock (Figure 12).

Figure 12: Non-marital age-specific childbearing among Jewish women in 1962-2010
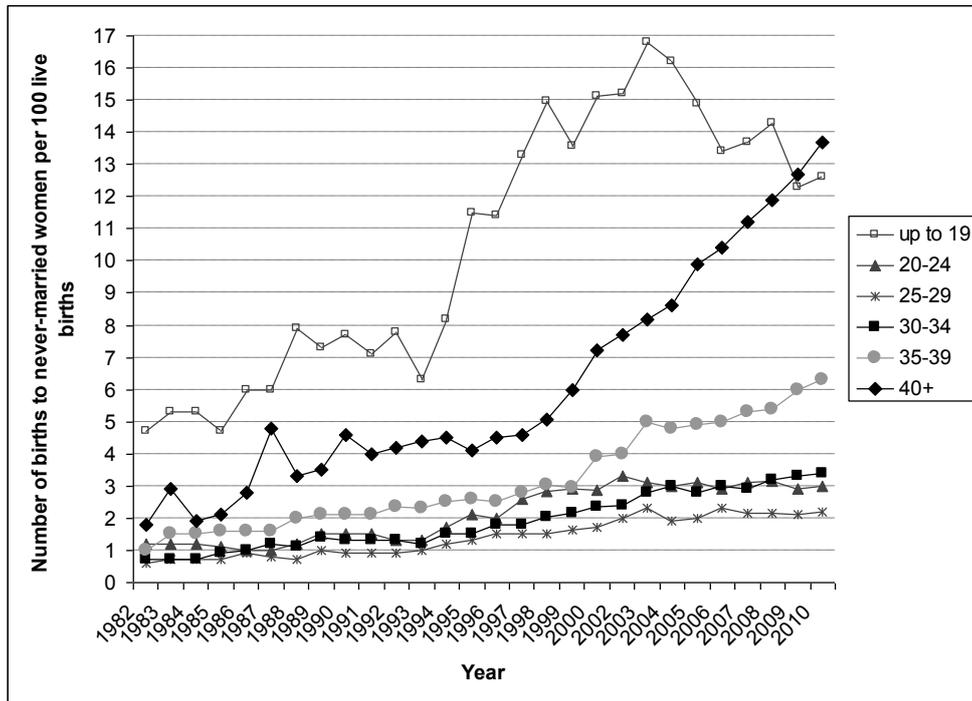
Note: Births to never-married Moslem, Druze and Christian women are not reported in order to protect these women from possible violent outcomes of such 'a violation of family honor' (Fogiel-Bijaoui 2002: 41)

Source: edited from ICBS, Statistical Abstract of Israel, various years, Tables 3.16 and 3.17

On the total, however, the non-marital childbearing is still marginal and sums up to approximately 4 per cent of all births in 2010 (ICBS, Statistical Abstract of Israel 2011, Table 3.17). A similar percentage, fewer than 5 per cent, was found only in Greece and Cyprus, but these are exceptions compared to most European countries, where the non-marital childbearing is much above 20 per cent (Perelli-Harris et al. 2009).

Apparently, not every single feature of SDT is present in Israel. Eventual childlessness is almost non-existent, out-of-wedlock childbearing is minor, and so is the unmarried cohabitation. The fourth hypothesis is, therefore, also supported.

The growing heterogeneity in reproduction and changing mother profile has important implications for the society in general, and for the higher education system, where women stay longer, as well as the labour market, which needs to adjust to the needs of the late motherhood, in particular. Flexibility, openness and readiness to change are the key issues. The extent to which the society, the institutions and the markets can successfully adjust to the newly emerging family forms and needs, affects directly the individual well-being.

3.6 Summary and conclusions

This study analyzed recent developments in family behaviour and the underlying processes of social change in Israel. It showed that over the past two decades most of the Jewish population experienced transition in living arrangements, marriage, and childbearing behaviours accompanied by emancipative value change. This congruence between behavioural and ideational change corresponds with the premises of the SDT theory, and shows, using an Israeli example, that the demographic transition echoes to some extent the transition toward post-modernity.

This study also confirmed that Israeli society is highly heterogeneous in the scope and timing of approaching the transition. SDT in Israel unfolds in a non-uniform manner. There is a clear connection between the level of religiosity by self-definition and the degree of transition along the continuum. The secular pole is in the vanguard of the SDT: the non-religious groups experienced marital and fertility transitions both on attitudinal and behavioural levels. The Ultra Orthodox pole does not seem to approach the SDT, neither in value orientation, nor in family related behaviours. Evidently, this group has not even completed the first demographic transition, at least in regards to fertility. Friedlander and Feldmann (1993) reached similar conclusion. Secularizing trends, as well as the liberation from religious authorities, seem to be crucial elements for emergence of any significant change in family attitudes and behaviours.

Although there is no one path of the SDT, which all societies must walk, core features are likely to be found in most post-transitional societies. Israel is not an exception in that respect. However, some features are country-specific. In Israel they are mainly connected to childbearing behaviours. Upbringing children seems to be a very strong societal value, which is also expressed at the behavioural level. Compensation for delayed births, which maintains fertility above the replacement level for non-religious women, extremely low levels of ultimate childlessness, and the frequent out-of-wedlock childbearing at late ages, clearly indicate that. These features, coupled with the low prevalence of unmarried cohabitation, similarly to other Mediterranean countries, imply that some traditional family norms still dominate in Israel. One reason for these norms are being preserved might be that the religious environment in Israel enhances the religiosity of the most secular Jews and even non-Jews who reside among them (Lazerwitz and Tabory 2002).

Moreover, Israeli marital transition takes place within conditions which fall far apart from the European. As the authority to regulate personal matters, such as marriage and divorce, lies at hands of the Orthodox institutions, this status-quo has created frictions between population groups that are advanced in the SDT and those who are not (Bystrov 2012b). The absence of civil marriage and divorce certainly poses a serious social institutional constraint that has a long-term impact on such features of the SDT as alternative living arrangements and frequency of divorce.

One could speculate about the socio-political implications of changing population structure of the Israeli society in the long-term. Population projections show, that the Ultra-Orthodox group will continue growing, given the current fertility trends. The proportion of this group might reach approximately 18-21 per cent in the total Jewish population in 2030. The share of children will be very large: over the years the Ultra-Orthodox population is becoming younger. Moslems might comprise approximately twenty per cent of the total population of Israel that year (Ben Moshe 2011; Paltiel et al. 2012).

Such rapid changes in population composition affect the cultural, economic, and political arena. From the socio-economic aspect, this implies that the young and dependent Ultra-Orthodox population cannot sustain itself without massive support of the state. The support is comprised of direct payments, as well as governmental expenditures on education, health and other systems. If the increasing demand for support is not sufficiently supplied in time, the standard of living might deteriorate (Bystrov 2007; Bystrov and Soffer 2012).

Redistributive justice questions might sharpen the existing social chasms, described in the beginning of this paper. Socio-economic and political struggles which have not been settled so far between the groups might further escalate. Further studies of political and socio-cultural implications could shed light on what can be expected from the differential growth of the various population groups. The chances of progression or inhibition of the SDT among various groups need to be illuminated.

4. Exploring the outliers: the case of religiosity, nationalism and fertility among Jews in Israel revisited[16]

4. Exploring the outliers: the case of religiosity, nationalism and fertility among Jews in Israel revisited

This chapter tests competing explanations of childbearing behaviour among Jews in Israel. Contrary to Western high-income democracies, total fertility in Israel has not declined during the last three decades, despite some clear evidence of Israel's undergoing the Second Demographic Transition. Two alternative explanations at the aggregate level address this phenomenon: the first refers to the high levels of religiosity as the major responsible factor for high fertility. According to the second, high fertility stems from the nationalist sentiment, while the connection between religiosity and fertility is spurious. Using structural equation modeling, the current study estimates the contribution of each of these two factors separately at the individual level. Religiosity and nationalism were constructed as latent variables, based on the individual-level observed measures. Supporting previous studies at the aggregate level, the current analysis confirmed that religiosity is the main determinant of fertility at the individual level as well. However, at the individual level, nationalism had an effect on fertility only due to its high connection with religiosity. Migrational background from the former Soviet Union had a negative effect on fertility. Attitudes toward gender roles had no direct impact on fertility.

4.1 Introduction

Since economic growth worldwide brings along changes in fertility preferences and behaviour, the birth rate consequently falls (Keyfitz 1992). Although fertility transition and convergence at lower levels is considered a global process (Wilson 2011), the fertility in Israel does not fully follow this pattern. Israel is commonly regarded as a progressing democracy, which harbors a high-income economy (Bystrov 2007). Surprisingly, however, the relations between the economic development and fertility do not hold there: the total fertility rates are 2.98 children among Jewish women, and 3.51 among Moslem in 2011 (ICBS 2012). These are the highest in the developed world, and higher than in some of the developing countries. Israeli case provides with evidence of reversal to the global process, and therefore, is interesting to examine in the light of evidence of the Second Demographic Transition (Bystrov 2012a; Bystrov and Soffer 2012).

Two prominent explanations of Israel's unusually high fertility dominate the field: *Religiosity* has been shown as the decisive determinant of Jewish fertility, after ethnic origin and socio-economic status have considerably reduced their explanatory power (Friedlander 2002; Friedlander and Goldscheider 1978). Friedlander and Feldmann (1993) have shown that religiosity has explained nearly seventy-six percent of the variance in total fertility of the analyzed urban units.

Later on, *nationalism* was offered as a competing concept for explaining variation in fertility among the Jewish population (Anson and Meir 1996). It was argued that high levels of fertility stem from nationalist sentiments. Once nationalism and the standard of living in the analyzed areas were controlled for, religiosity was found to be insignificant. Recognizing the high positive correlation between religiosity and fertility, the authors claim that national security is at least as decisive in all aspects of family related behaviour as religiosity. After all, pressing security conditions in a country might shift the publics' emphasis toward less libertarian priorities (Welzel and Inglehart 2008)

and toward greater emphasis on the family as a stable, trusted, and protected from the external world unit (Bourdieu 1996).

The goal of the present study is to test these two alternative explanations of high fertility of Jewish women in Israel at the end of the first decade of the new millennium. It aims at showing which factor – religiosity or nationalism – is more influential. Revisiting the case of religiosity, nationalism and fertility once more after decades of academic debates on the subject is interesting for several reasons.

Firstly, the current research is theory-driven: it juxtaposes existing explanations, and seeks to resolve the controversy regarding the two competing determinants of outstanding childbearing behaviour for a modern society. It empirically tests the theoretical premises and shows which is more valid when confronted with the most recent data.

Secondly, the present chapter contributes to the existing knowledge by analyzing new data at the individual level of analysis, which was disregarded previously. Previous studies compiled data at the aggregate level from 1983 census and 1984 elections (Anson and Meir 1996; Friedlander and Feldmann 1993). Fertility, religiosity and nationalist sentiments have been treated as supra-individual phenomena. In contrast, this research analyzes individual-level data on fertility, religiousness and political attitudes from national surveys of 2009-2010. It is needless to say that the two levels of analysis differ, and one cannot draw conclusions regarding individual behaviour basing on these two studies without the risk of ecological fallacy.

Thirdly, the current study defines the concepts of nationalism and religiosity in a straightforward manner, thus strengthening the link between the theoretical concepts and their operationalization. The concepts of nationalism and religiosity are developed in the current study using confirmatory factor analysis. Also, much attention is paid to distinguishing between these interconnected constructs, especially since Judaism as a religion and Jewishness as a

nationality are closely tied. Indicators of internal consistency and evidence in support of construct validity are provided. In contrast, Friedlander and Feldmann's (1993) measure of religiosity in the statistical areas was calculated as aggregated percentage vote for religious parties in 1984 elections (p. 297). Such measure of religiosity might be rather fuzzy, for sometimes even non-Jewish citizens (predominantly Druze) vote for Jewish religious parties (Anson 2010). In Anson and Meir's (1996) study both concepts of religiosity and nationalism were derived from votes in the same 1984 elections. The authors described in details their method of typifying the studied areas by religiousness and nationalism (p. 12-18). However, that method is problematic as well, since differentiating between religiosity and nationalism in various statistical areas solely on the basis of voting patterns in single elections produces ambiguities.

Finally, using structural equation modeling (SEM), the present study investigates the relations between the research variables as a complex system. SEM allows generating more comprehensive explanatory models of fertility than least squares regression analysis that might suffer from problems of multicollinearity (see Friedlander and Feldmann 1993) and correlation between errors. SEM avoids these problems and uses all the available information on underlying covariance structure and correlated errors. It also estimates the measurement error. Besides controlling for observed socio-demographic variables, SEM allows constructing unobserved (latent) variables and obtaining factor scores, which indicate the importance of each factor in explaining the outcome (fertility).

The rest of this chapter is structured as follows: a theory-testing approach is adopted firstly, and an exploratory approach is applied next (Boomsma 2000). Methods for constructing the measures and data used are reported in the methodological chapter, followed by a presentation of the results of the structural equation modeling. Broader discussion of the findings and concluding remarks complete the chapter.

4.2 Explaining the fertility puzzle: concepts and frame

Jewish fertility in Israel over the last three decades has been above the replacement level of 2.1 children per woman, which is much higher than in other post-industrial countries. This high rate is partially due to the extremely high total fertility rate (TFR) of the religious groups. TFR of the most religious group, the Ultra-Orthodox, has been above 6.0 children per woman ever since 1980. It peaked with above 7.5 children per woman in 2002-2006 and decreased to 6.5 by 2009 (Hleihel 2011). Ultra-Orthodox comprised approximately 13% of the Jewish population in 2009 (Paltiel et al. 2012). On the religious-secular continuum, this group displays contemporary 'maximum' fertility in Israel. Contemporary 'minimum' fertility is represented by women who are not classified by religion (the vast majority of whom are secular 1990s immigrants from the former Soviet Union). Their fertility comprised 1.5 children per woman in 2005-2009 (ICBS 2012).

Since the 1950s, fertility has varied among different social groups, and its determinants have changed. While socio-economic status and ethnicity (Asian-African as opposed to European-American) have been considered as decisive factors affecting fertility, religiosity has been later identified as the most important source of variation (Friedlander and Feldmann 1993). In addition, religiosity has been found interacting with socio-economic status and ethnic origin. However, the lack of demographic data connected with socio-cultural variables hampered in-depth research of the determinants of Jewish fertility (Goldscheider and Friedlander 1981). Questions that remained unanswered are how ultimate socio-economic and structural determinants, as well as religious values and cultural norms, account for the differences in individual reproductive behaviour (Schellekens and van Poppel 2006). The next two sections present theoretical considerations and the recent findings regarding the determinants of Jewish fertility in Israel.

4.2.1 Traditionalism and religiosity as determinants of fertility

Religiosity, traditionalism and nationalism are frequently mentioned concepts in recent family research in Israel (Raz-Yurovich 2010). Religiosity was

identified as the major explanation of high fertility in many studies (Bystrov 2012a; Friedlander 2002; Friedlander and Goldscheider 1978; Okun 2000). It has been shown that overall fertility in Israel conceals highly heterogeneous fertility rates of groups varying by level of religiosity.

While fertility rate of the secular group is similar to top European rates, the trend displayed by the most religious resembles the natural-fertility regimes. The exceptionally high fertility of the Ultra-Orthodox stems from their way of life, especially, from early marriage, and almost universal marital fertility. Socio-cultural structure of this community, internal normative influences and political arrangements with the Israeli governments, limit the individual choice for members of this community. High fertility in accordance with religious tradition and social norms can be regarded as a direct consequence of living in this particularly closed society (Friedlander and Feldmann 1993).

Traditional familism of Israelis in general has been identified as another important cause for their preference of a large number of children (DellaPergola 2009; Gurovich and Cohen-Kastro 2004; Manski and Mayshar 2003). Jewish religious tradition emphasizes family values and traditional division of gender roles (Fogiel-Bijaoui 2002; Lavee and Katz 2003; Stier and Lewin-Epstein 2000; Stier and Yaish 2008). The breadwinner role of the 'main provider' is argued to be still the prerogative of the man (Fogiel-Bijaoui 2002), although the increasing number of postmodern families might break the traditional gender stratification patterns.

Since the restructuring of traditional family and gender roles occurs at a different pace among the various social groups (Anson 2010), it might have a different impact on the consequent fertility preferences. Keyfitz (1986) argued that the male-dominant societies lead women to constrained choices over their life-course, and ultimately translated into traditional family structure. 'Appropriate' gender roles taught in childhood maintained the social order where women are 'properly' oriented towards wifehood and motherhood. Therefore, those sub-populations, communities or individual families, where

the traditional division of gender roles is strongly pronounced, and which 'protect' their women from outside influence, might spread whereas others may contract (Keyfitz 1986: 152).

Traditional views of gender roles and religiosity have been advocated as important determinants of fertility preferences in Israel. However, the question of their direct impact as well as their impact in conjunction with other determinants requires an empirical testing. The current research will address this issue in addition to the main question of interest whether it is religiosity or nationalism that eventually influences fertility.

4.2.2 Nationalism as a determinant of fertility

Nationalism has been suggested in mid-nineties as an alternative explanation of the differentiated Jewish fertility. Anson and Meir (1996) asserted that nationalistic sentiments are a more sociologically complete explanation than religiosity. The variance in fertility of urban areas was explained by the differentiation in voting for the political parties, which represent more or less nationalistic standpoints of the electorate. Although high fertility was correlated with high degrees of both nationalism and religiosity in the respective geographic units, nationalism was found a better predictor of fertility than religiosity.

The main argument was that nationalistic sentiments are derived from the 'conscience collective' of the Israeli society within the geopolitical setting in the Middle East. The salience of the national security issues in Israel emphasizes the importance of group strength. Hence, the groups that feel most threatened tend to support the nationalistically oriented parties and have more children. This explanation has been empirically supported at the aggregate level but the authors admit that they have not tackled the micro-question of how such ideology impacts fertility (Anson and Meir 1996).

Similar theoretical arguments have been raised by other authors. Cleland and Wilson (1987) claim that in hazardous environment high fertility can be

perceived as advantageous for group survival. Nahmias (2004) notes the common perception of Israel as a dangerous country and states that Israeli "cultural milieu" encourages high fertility (p. 110). Smooha (2005) draws attention to "the high risk attributed to soldiering" that influences the relatively large number of children per family, and to the fact that "national security considerations and concerns pervade all Israeli spheres of life" (p. 429).

Israel is situated in a region where national conflicts arise quite frequently. At the individual level, national security seems to be a major concern indeed, as national public opinion surveys show. In 2008, 47% of Jewish respondents mentioned general and personal security issues (including terror, captured soldiers, Iranian threat, Arab-Israeli conflict, army and relations with the Palestinians) as the most important problems that should be taken care of by the government. In 2007, when asked whether there is going to be another war with the Arab countries, only 6% of Jewish Israelis answered negatively and additional 10% answered "don't know". A vast majority believes that there is going to be another war: 18% believe that the war is going to occur within the timeframe between several weeks to several months, 42% believe that the war might occur in a year or two, another 17% believe it might be in 3 to 5 years, and 7% believe it might be in 6 years or more (Democracy Surveys 2007-2008 data, The Guttman Center, author's calculations).

Provided that national security needs in Israel are perceived as a major part of everyday life, these "low order" needs confine people's value orientation near the "Survival pole" in Inglehart's terms (Inglehart 2000). Perhaps Israeli value orientation is dictated by the issues of security and tends to approach the "Survival pole" with greater proximity than previous studies have found (see, for example, Yuchtman-Ya'ar 2002). Therefore, the concept of nationalism as a factor affecting the number of given births needs to be assessed at the individual level as well.

4.3 Current research

The main questions of the current research are: which factor, religiosity or nationalism, is the decisive one in explaining Jewish fertility in Israel? What are the relations between religiosity, nationalism, traditionalism and fertility and how do they structure a system? What are the additional factors that influence fertility? A set of models is proposed in order to tackle these questions. Comparison between these models will highlight the strengths and weaknesses of each of them. The modeling will proceed from confirmatory type to exploratory.

The first two models are derived from the previous research by Friedlander and Feldmann (1993), and Anson and Meir (1996), while the third model is an alternative, which is suggested in the present study. The three basic models to be tested in the current research are the following:

1) Restricted model states that religiosity influences fertility. According to Friedlander and Feldmann (1993: 300), '…religiosity is invariably the most important explanatory variable, making the largest contribution to the explained variance'. Nationalism was not tested in that study.

2) Full mediation model reads that nationalism influences fertility, while the impact of religiosity is fully mediated by nationalism. Anson and Meir (1996: 23) suggest '… that much of the religiosity recorded in fertility surveys is an expression, in consciousness and in the mode of daily living, of a strongly felt nationalist sentiment, and that once this nationalist sentiment is controlled for, there is no direct effect of religiosity on fertility'.

3) Partial mediation model presumes that both factors, religiosity and nationalism, affect fertility. This model is exploratory and needs to be empirically tested. It combines both features of the previous two models in the sense that it is the least restrictive and allows for direct influence of

both religiosity and nationalism on fertility. It also allows for interconnection between religiosity and nationalism. Religiosity has been previously found closely associated with right-wing voting (Shamir and Arian 1999), which is one of the expressions of nationalism.

The study aims at optimizing the internal validity of the design, in which religiosity and nationalism are the explanatory factors of fertility. At the first stage, the impact of each factor on fertility will be isolated. Next, more complex models will be introduced: these will control for other important socio-economic and demographic variables (age, years of schooling, income and migrational background from former USSR). The purpose at this stage of modeling is to test the robustness of the initial results and to identify the best fitting model to the data.

At the next stage, another latent construct will be considered as an additional independent variable, namely, traditionalism in regards to gender roles. Although traditional views of gender roles are connected with high religiosity, they differ as a concept. The most elaborate model will include the three latent constructs – religiosity, nationalism and traditionalism in regards to gender roles – as well as socio-demographic controls. The aim of this part of the analysis is to explore the roles of the three constructs altogether in explaining the outcome.

4.4 Data and methods

The data originate from the Democracy Surveys[17] 2009 and 2010 of the Guttman Center[18]. The samples in surveys were set as representative of the adult population in Israel. The data sets were compiled into one, where Jewish

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[17] Democracy Surveys were conducted in March 2009 and March 2010, in Hebrew, Arabic and Russian, among individuals aged 20 and over; landline telephone survey. For detailed description of background, methods and sampling see Arian, Philippov and Knafelman (2009) and Arian et. al (2010)

[18] Former Israel Institute of Applied Social Research. Data obtained from the Guttman Center of The Israel Democracy Institute
(www.idi.org.il/sites/english/TheGuttmanCenterSurveys/Pages/TheGuttmanCenter.aspx)

and other women, who are not classified by religion, were analyzed (N=1,051). Descriptive statistics of the main variables of interest, as well as the reasoning behind the choice of the respective items, are briefly presented in the following sections.

The surveys included items on political attitudes, religious identity, level of observance of the religious tradition and socio-demographic characteristics – gender, age (ranged from 18 to 94 (Mean=47; SD=16); distributed normally), migrational background from the former USSR (18% of respondents were 1990s immigrants from the former USSR, and 82% were non-immigrants), years of schooling (ranged from 0 to 30; mean=14.17; SD=2.84), income compared to an average household in Israel (among the Jewish respondents 20% much below, 21% slightly below, 31% average, 19 slightly above and 9% much above the average), and number of children (ranged from 0 to 11 and above; mean=2.25; SD=1.76; Poisson distribution).

4.4.1 Measuring religiosity at the individual level

Religious identification and level of observance of Jewish religious tradition represent religiousness at the individual level and considered a valid measure of religiosity in Israel (Arian, Ventura and Philippov 2008; Bystrov 2012a,b; Goldscheider and Friedlander 1983). The two items on religious identification and observance are highly correlated ($r_{Pearson}$=0.77). When asked about their religious identity, 50% of the respondents reported that they are secular, 29% traditional, 12% religious and 9% Ultra-Orthodox. When asked 'To which extent do you observe Jewish religious tradition?' 20% answered 'not at all', 42% 'observe to a certain extent', 21% 'observe to a large extent' and 15% 'totally observe'. Religious identity also corresponds with the number of births, as can be seen from Appendix 7.

4.4.2 Measuring nationalism at the individual level

The concept of nationalism at the individual level is defined using previously tested items on political attitudes. Individual political attitudes were found predictive of political behaviour (Philippov and Bystrov 2011; Shamir and

Arian 1999); nationalistic outlook explained attitudes to introduction of civil marriage in Israel (Bystrov 2012b); and attitudes to the territories were found important in electoral choice between the seventies and mid-nineties (Shamir and Shamir 2008).

Nationalism is constructed from the following items: left-right political affiliation (7-point Likert scale), degree of agreement that the government should encourage Arab emigration from Israel (4-point Likert scale), standpoint regarding withdrawal from Judea and Samaria as a part of the agreements with the Palestinians (3 categories), and the degree of agreement to give the Arab neighbourhoods of Jerusalem to Palestinians as a part of the agreements (4-point Likert scale). Cronbach's alpha which indicates internal consistency between these four items is 0.68. In 2010 questionnaire of the Guttman Center, used in the current study, the latter two questions were not asked. Since the latent variable of nationalism is partially constructed from incomplete data, caution is required in interpretation of the results[19].

4.4.3 Measuring traditionalism in regards to gender roles at the individual level

Traditionalism in regards to gender roles was constructed from three items: 'Do you agree that men are better political leaders than women?', 'Do you agree that men should provide and women take care of the house?' and 'Do you agree that professional career development is equally important for women and men?'. These items are moderately interconnected (Cronbach's alpha=0.50). These items were available for 2009 only, and hence, caution is required in reading the results (see footnote 19). Nevertheless, since attitudes toward gender roles are theoretically important, they were included in the current study despite this methodological limitation. The latent construct of traditional views of gender roles requires a particular attention as a separate factor from

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[19] The working assumption is that missing data are independent of other data in the analysis. Maximum likelihood approach is considered effective in the presence of missing data and produces unbiased estimates when the data are missing completely at random or at random (Asparouhov and Muthén 2008)

religiosity due to the massive evidence of its relevance in the process of social and cultural change (Inglehart, Norris and Welzel 2002).

4.4.4 Procedure

At the first stage of this study, confirmatory factor analysis (CFA) was applied. CFA measured the degree to which the items are relevant components of the latent variables. Table 6 presents the factor scores of the items that construct the unobserved variables, hereinafter RELIGIOSITY, NATIONALISM and GENDER ROLES. Table 7 presents the correlation matrix of these latent constructs. The aim of this part of analysis was to confirm that the choice of items was adequate, and that they reliably reflected the underlying covariance structure of the data. Given set of items was validated by statistically testing the significance of the factors that comprise the latent variables.

At the second stage of the study, structural equation modeling was implemented. Poisson regression models were estimated; estimator was maximum likelihood. Models were estimated using Mplus Version 6 (Muthén and Muthén 2010). The analyzed models are presented from simple to complicated (Boomsma 2000).

Table 6: Confirmatory factor analysis of religiosity, nationalism and traditionalism in regards to gender roles

Latent variable	Constructed from items	Factor loading (Standard error)
RELIGIOSITY	• Religious identity by self definition (4 categories) • Level of traditional observance (4-point Likert scale)	0.99 (0.01) 0.88 (0.02)
NATIONALISM	• Left-right political affiliation (7-point Likert scale) • Government should encourage Arab emigration from Israel (4-point Likert scale) • Standpoint regarding withdrawal from Judea and Samaria as a part of the agreements with the Palestinians (3 categories) • Support to give the Arab neighbourhoods of Jerusalem to Palestinians as a part of the agreements (4-point Likert scale)	0.73 (0.03) 0.51 (0.03) 0.84 (0.03) 0.64 (0.04)
GENDER ROLES	• Men are better political leaders than women (4-point Likert scale) • Men should provide and women take care of the house and family (5-point Likert scale) • Professional career development is equally important for women and men (4-point Likert scale)	0.60 (0.05) 0.68 (0.06) 0.49 (0.06)

Notes: Entries are standardized estimates (p<0.001); N=1,051; latent variables are scaled to a variance of one; global fit measures for this analysis are: Log likelihood=-8387; Akaike Information Criteria (AIC)=16859; sample-size adjusted Bayesian Information Criteria (BIC)= 16933. Source: The Guttman Center, Democracy Surveys 2009-2010

Table 7: Correlation matrix of latent variables

	RELIGIOSITY	NATIONALISM	GENDER ROLES
RELIGIOSITY	1.00		
NATIONALISM	0.65***	1.00	
GENDER ROLES	0.34***	0.52***	1.00

Notes: Significance levels ***p<0.001 **p<0.05; N=1,051

4.5 Results and discussion

4.5.1 Factors influencing Jewish fertility in Israel: religiosity vs nationalism

In line with the previous studies at the aggregate level (Anson and Meir 1996; Friedlander and Feldmann 1993), a positive effect of religiosity on fertility was found in this study at the individual level as well (Table 8). The effect was found to be invariably strong and statistically significant in all models. That is, contrary to Anson and Meir's (1996) argument, the effect of religiosity was not spurious at all at the individual level; on the contrary, it was found to be the most prominent. The probability of giving birth to a child increased if the woman was religious, controlling for other factors (age, nationalism, being born in USSR, years of schooling and income). Therefore, the full mediation model, where the impact of religiosity was completely mediated by nationalism, is not amenable. The association between religiosity and fertility seem to be straightforward.

Surprisingly, however, spurious association was found between nationalism and fertility at the individual level, in contrast to Anson and Meir's (1996) findings at the aggregate level (Figure 13). This full mediation of nationalism by religiosity was not expected, since nationalism could have been at least partially mediated, and had some direct effect of its own. A comparison between Model 2 and 3 in Table 8 indicates that once religiosity was introduced, the effect of nationalism became insignificant. Only when religiosity was omitted from the regression equation, did nationalism have an impact on fertility. However, omitting an important factor from the model created biased estimates and increased the error term. That can be seen from comparison of the goodness-of-fit measures (AIC and BIC) of the first two models, when the omission of religiosity worsened the fit of model 2 compared to 1. The conclusion is that religiosity remains the most important factor in explaining fertility at the individual level. Nationalism may influence fertility only indirectly via its very strong connection with religiosity.

Studies of fertility behaviour in Europe and the U.S. also showed its connection with the level of religiosity. On average, religious women had more children

than non-religious (Philipov and Berghammer 2007; Westoff and Marshall 2010). This general pattern has been explained by social structural factors, such as social networks and community, and by traditional views of family and gender roles that are connected with religiousness. Interestingly, in Austria no significant differences were found between levels of religiosity of the parents of two versus three of more children (Berghammer 2012), but in Israel this was obviously not the case.

Table 8: Structural equation modeling of number of children among Jewish women in Israel in 2009-2010

Model	1	2	3	4	5	6
Factor	Factor loadings (standard errors)					
RELIGIOSITY	0.64***		0.73***	0.63***	0.61***	0.56***
	(0.03)		(0.06)	(0.07)	(0.07)	(0.07)
NATIONALISM		0.59***	-0.13*	-0.03	-0.01	0.06
		(0.04)	(0.08)	(0.08)	(0.08)	(0.08)
Born USSR				-0.23***	-0.24***	-0.26***
				(0.05)	(0.05)	(0.06)
Years of schooling					0.11**	0.08*
					(0.04)	(0.06)
Income						0.15**
						(0.05)
N	1,024	1,024	1,024	1,024	1,007	844
Akaike Information Criteria (AIC)	15209	15297	15207	15189	14993	12612
Sample-size adjusted Bayesian Information Criteria (BIC)	15260	15348	15260	15244	15049	12664
Log likelihood	-7575	-7619	-7573	-7563	-7464	-6273

Notes: Significance levels ***p<0.001 **p<0.05 *p<0.10 n.s. p>0.10; dependent variable (number of children) was specified as a count variable in all models; estimated parameter of log(age) was fixed at one and controlled for in all models; Poisson models were estimated; estimator maximum likelihood. Latent variables (capitalized) are scaled to a variance of one; entries are standardized estimates; in models 5 and 6 there are missing data on years of schooling and income, and hence, N is smaller. Source: The Guttman Center, Democracy Surveys 2009-2010

Figure 13: Comprehensive model of fertility among Jewish women in Israel 2009
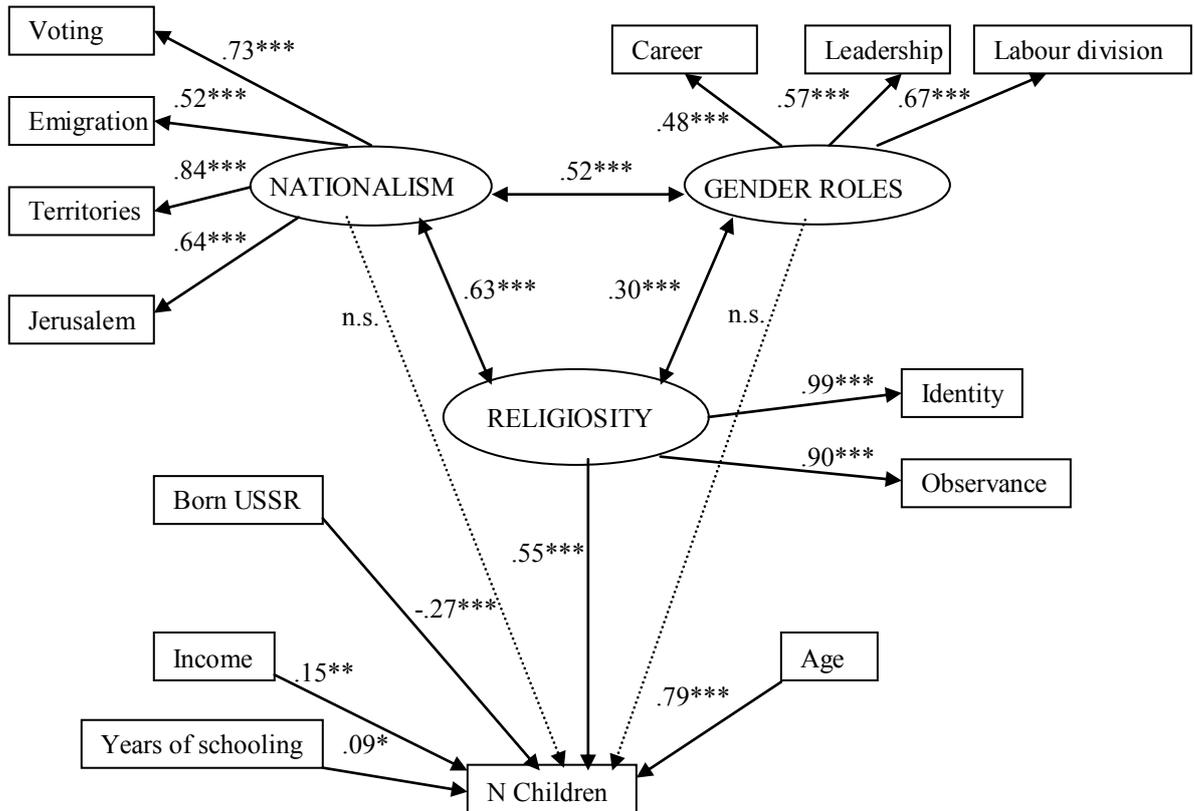
Notes: Entries are standardized estimates; significance levels ***p<0.001 **p<0.05 *p<0.10 n.s. p>0.10; latent variables are scaled to a variance of one; global fit measures are: Log likelihood=-8260 AIC=16618 Sample-size adjusted BIC=16694; dependent variable (number of children) was specified as a count variable; estimated parameter of log(age) was fixed at one; Poisson model was estimated; estimator maximum likelihood. Latent variables (capitalized) are scaled to a variance of one; N=844

4.5.2 Additional factors influencing fertility

Figure 13 demonstrates the system of relations between various factors affecting fertility at the individual level. Among the tested variables, the strongest direct impact on fertility is that of religiosity: increase in religiosity significantly increases the probability of giving a birth. Other important factors that were tested and found directly influencing fertility are migrational background from the former Soviet Union, income and education.

The negative effect of being a 1990s migrant from the former USSR on the other hand, was an expected outcome and has been previously described in demographic literature (Bystrov 2012a; Nahmias 2004). The probability of

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giving a birth decreased if the woman was a 1990s migrant from the former USSR (Figure 2). Although the effect was of a small-to-medium size, it was significant and robust across various models (Table 8).

The positive but rather weak effect of education on fertility is found in the current study. This positive relationship has also been found by Schellekens (2009); the possible explanation was that family allowances that are instituted in Israel since 1975 reduce opportunity costs of having an additional child for highly educated women compared to less educated women. That is, having a larger family is relatively more affordable for more educated individuals. This may be for various reasons – greater flexibility in combining paid work outside and household responsibilities, more efficient ways of childrearing, and overall less forgone hours and years, and consequently, less lost earnings over the lifetime (Schellekens 2009).

Traditionalism in regards to gender roles did not have a significant direct effect on the likelihood of giving any additional births. However, it had some indirect effect on the number of born children via religiosity, and an additional indirect effect via nationalism and its connection to religiosity. Therefore, theoretical expectations that upholding traditional views of gender roles might influence fertility have not been empirically supported.

4.6 Summary and conclusions

This article provided with some new insights into the old topic of searching for the reasons of high fertility in Israel. It contributed to the accuracy of description of the reproductive behavior of Israeli society by using a direct approach to measuring religiosity and nationalism from the large-scale national survey data. The precision in identifying the level of religiosity enabled establishing some important links between fertility, religiosity and political orientation of Israelis.

Clear evidence of religiosity being a major determinant of fertility compared to other factors at the individual level was presented. Alternative explanation of

nationalism at the aggregate level by Anson and Meir (1996) did not find any further support at the individual level, although a strong link between nationalistic attitudes and high level of religiosity was found. Structural equation modeling confirmed that nationalism was mediated by religiosity which influences fertility, but not vice versa. The lack of congruence between the previous findings at the aggregate level and the current findings at the individual level suggests that the presumed mechanism of the national survival via increased reproduction does not seem to be a parsimonious explanation of Jewish fertility.

In contrast to the previously found negative association between education and fertility, as well as between income and fertility (Goldscheider and Friedlander 1981; Westoff and Marshall 2010), in the current research, income and years of schooling have shown a weak positive effect on the number of children. Perhaps the heterogeneity within the high-fertility groups in regards to education and employment is responsible for this weak connection. For instance, contrary to the traditional breadwinner role of the man, in Ultra-Orthodox families women are the ones who are employed (mostly in education and other services sector) while men devote their time to religious studies (Friedlander and Feldmann 1993). Therefore, more complex relations between higher education, employment, income and fertility might be found. In-depth investigation of the impact of these interactions was not, however, the goal of this study.

1990s migrational background from the former USSR had a negative effect on the number of children, thus corroborating previous findings (Bystrov 2012a; Nahmias 2004). The weak and indirect evidence of the connection between attitudes toward gender roles and the number of children might have been due to the limitation of the measurement instrument. It would be most interesting to further investigate the link between traditional views of gender roles, religiosity and fertility.

Finally, van de Kaa describes the postmodern fertility preferences as follows: "The emotional satisfactions of parenthood can be achieved most economically by having one or perhaps two children" (van de Kaa 1987: 6). Populations that are not part of the postmodern world but have the same aspirations tend to reduce their fertility levels. In Israel, some groups do not wish to be postmodern or modern at all (Friedlander 1973; Smooha 2005); in this case, high fertility is the thing of the past, present and foreseeable future.

5. Factors impeding the SDT in Israel: past and future [20]

5. Factors impeding the SDT in Israel: past and future

In the developed world, Israel is the only country without a civil option of regulating personal matters. Determinants of changes in attitudes towards the introduction of the civil marriage in 1969-2009 among the Jewish population are the focus of this paper. According to the Human Empowerment framework, the support of civil marriage should increase over time, and the younger should be more permissive than the older. However, despite the growing support among all population groups, the changes in population composition influence negatively the overall attitude. Being religious, the younger cohorts inhibit the trend of permitting the couples to marry any way they choose. Besides religiosity, the attitude towards civil option can be predicted by the degree of identification with the nation, and migrational background from the former Soviet Union. The relative impact of the two demographic forces – the natural increase of the religious versus the immigration – is analyzed and discussed. Further theoretical implications are suggested.

5.1 Introduction

The traditionalism-modernism paradox of the contemporary Israeli society has been puzzling social researchers for quite a while. Theoretical expectations stemming from Israel's relatively high socio-economic position among world economies would be that Israel, like every other post-industrial state, is also progressive in its human development. However, despite the fact that the State of Israel is modern, the vast majority of the public marries in religious ceremonies. The crucial question 'why won't there be civil marriage any time soon in Israel?' in the title of Fogiel-Bijaoui's (2003) article was not meant to be rhetorical. There are no laws regulating civil marriage or civil divorce in Israel. Religious personal law is the only law regulating the familial status of Israeli citizens[21]. Intermarriage is still excluded as such, at least for non-Moslems[22]. So far, the introduction of the civil option has been rejected by the Israeli parliament (de Blois, 2010).

Authoritative power over regulating personal matters was granted to the Orthodox religious institutions by the state leadership in 1953, as part of the so called 'status quo' agreements, in an attempt to create national solidarity. This status quo has created frictions among the societal groups and been repeatedly challenged. Some scholars hold the view that this conflict will remain unsolved in the foreseeable future (Fogiel-Bijaoui, 2002; Lifshitz, 2006) and will hardly ever become less acute (Englard, 1987).

Galanter and Krishnan (2001), on the contrary, argue that Israel is moving towards secularization, and the religious style of administering family law gives way to state supervision. The bold decision of the Supreme Court in the sixties functions as a binding precedent for recognizing civil marriages performed abroad (Sapir and Statman, 2009). Although this possibility of obtaining civil

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21 This paper focuses on the Jewish Israelis as a research population. Analysis of the situation regarding the family law of Moslems, Christians and Druze, who enact the personal law within separate systems, is beyond the scope of the current research

22 Moslem men are allowed to marry a non-Moslem woman according to *Hanafi* law if she belongs to the 'people of the Book', that is Jews or Christians (Abudabbeh, 1996: 428); the Moslem law based on this doctrine is still in force in Israeli *Shari'a* courts which are the heritage of the Ottoman Empire (Khadduri, 1978)

marriage abroad opened a back door for couples who wish to circumvent the religious law[23], it is problematic from the liberal point of view (ibid) and is not sustainable as a solution (Gavison, 2003). As Aharon Barak, the former President of the Supreme Court of Israel, expressed: "This situation continues for political reasons... It violates human rights... It is a question we shall have to solve soon... It is a time bomb that, if not dealt with properly, may have severe consequences" (Barak, 2002).

Current research aims at mapping the contemporary state of affairs in the dispute between state-religion and state-society relations regarding the institution of marriage in Israel. Worldviews of the society on the institution of civil marriage are the focus of attention. This study examines the questions as to whether the public is inclined to preserve the so called status-quo or introduce a secular path in the regulation of personal matters, and which societal factors explain these standpoints. In particular, attitudes toward civil marriage in Israel from a comparative perspective across time and societal groups are analyzed.

The first part of the chapter introduces the recent changes in socio-cultural structure alongside the political processes involving civil marriage. The second part demonstrates how public opinion in regards to civil marriage fluctuates as a result of differential growth rate of the various population groups. It shows the growing potential of the religious groups to shift the balance according to their worldviews. The third part concentrates on the reasons as to why the liberal views toward marriage might prevail among certain individuals but not others.

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23 In 2000-6 about 13% percent of Jewish Israeli couples have married abroad (Israel Central Bureau of Statistics 2007, author's calculations). The leading destination for civil marriage abroad was Cyprus followed by FSU, USA and Bulgaria. In 2006 the Czech Republic became the second major destination (ibid). The share of immigrants from the former Soviet Union (FSU) among the marrying abroad in 2000 was approximately 42% (Dovrin, 2006), and it remained so throughout the period 2000-6 (Israel Central Bureau of Statistics, 2007, author's calculations)

5.2 Background and frame

5.2.1 Changes in structure of the Jewish society in Israel

Israel is a deeply divided society where the most prominent social distinctions, beside the national Arab-Jewish split, are between religious and secular groups, between immigrants and the rest of the Israelis, and among various ethnic groups (Smooha, 2004, 2005). Religiosity and ethnicity explain the differentiation in ways of life, cultural consumption, political choices and family behavior (Friedlander and Feldmann, 1993; Katz-Gerro, Raz and Yaish, 2009; Shamir and Arian, 1999). During the last three decades, religious observance became the most noticeable social distinction in Israel, while ethnicity and socio-economic factors have substantially reduced their explanatory power for family behavior (DellaPergola, 2009; Friedlander, 2002).

Ethnicity, nonetheless, has received particular attention since a sizeable mass of the population from the former Soviet Union (FSU) entered Israel during the nineties. This mass migration has posed another reason as to why the conflict over civil marriage has been refueled. Firstly, the secular orientation of the majority of FSU immigrants posed difficulties for them to accept the fact that the state allows the Orthodox to dominate in regulating personal matters. Religious family law was described as obscure, ancient and peculiar, and seen as 'unacceptable for most reasonable people in the twenty-first century' (Remennick, 2007: 64). Secondly, among the approximately one million newcomers who arrived since 1989 a few hundred thousands are excluded by the religious personal law. These people are not eligible to marry within the Jewish community because they are defined as non-Jewish according to the Orthodox doctrine. In order to marry in Jewish Orthodox ceremony, both parties must be recognized as being Jewish.

In 2010, the option of spousal registry was introduced by the parliament only for cases in which both parties are defined as 'being of no religion' and who cannot marry within any religious community in Israel (The Knesset, The Israeli Parliament, 2011). However, this legislation solves the problem of marrying in a civil ceremony for a very limited number of people: in 2000-2006

approximately four percent of all marriages of Jewish Israelis performed abroad were such cases (Israel Central Bureau of Statistics, 2007, author's calculations). Some couples of mixed religious affiliation still cannot legally marry without a religious conversion. This state of affairs is regarded as highly problematic from the human rights point of view, since it is incompatible with the right to freedom of thought, conscience and religion (Merin, 2004).

Personal law has been seen as acting against freedom of conscience, also for the rest of secular public and not just 1990s immigrants (Liebman and Don-Yehiya, 1983, 1984; Gavison, 2003). Shortly before this migration began, social covenants as one expression of civic actions arose following the ideological crisis and the inability of the political system to settle the religious-secular conflict (Cohen and Rynhold, 2005). The Gavison–Medan Covenant constitutes one of the most comprehensive public attempts to abolish the religious monopoly over the regulation of personal status (Artsieli, 2004). The various bottom-up and top-down initiatives, including those of the Supreme Court, the left parties and Israeli academia, indicate that public awareness of the acuteness of the problem has sharpened. It seems that the social schisms have not disappeared over time; they have divided the society further apart.

5.2.2 Theoretical considerations and the current research

The rising aspirations and individualism in the West have increased the demand for personal autonomy. Political institutions have also been subject to this emancipative value change, which emphasizes freedom of choice for individuals, tolerant attitudes towards the other and liberalism. The Human Empowerment Model (Welzel and Inglehart, 2008; Welzel, Inglehart and Klingemann, 2003) builds on three basic pillars – (1) availability of action resources, such as individual material and cognitive resources, skills and connectivity; (2) growing emphasis on self-expression values that motivate people to govern their lives; and (3) effective democratic regime that institutionalizes legal rights, thus allowing for civil and political liberties and choice. Human empowerment implies that the authoritarian rule can no longer be acceptable (Inglehart and Welzel, 2005, 2010).

The changing worldviews of Israelis follow the western pattern (Smooha, 2005; Yuchtman-Ya'ar, 2002). Nevertheless, an absence of the institution of civil marriage in Israel poses a serious structural constraint on the path of human empowerment. It might strongly impede the Second Demographic Transition (SDT) (Lesthaeghe and van de Kaa, 1986). SDT refers to change in marital and childbearing behaviors along with value orientation. Therefore, the theoretical expectation that family preferences and behavior would alter following changes in values might not be fully realized in Israel.

The current research aims at answering the following questions: has there been a shift over time in attitudes toward civil marriage in Israel? Is there an inter-generational change in attitudes toward civil marriage? The first two hypotheses are that the support of civil marriage in Israel increases over time, and that the younger generations are more tolerant of the idea of instituting civil marriage in Israel than the older. These hypotheses are derived from the notion that western value orientation has been partially shown in Israel, primarily in regards to preference of values of self-expression and quality of life as opposed to materialistic values (Yuchtman-Ya'ar, 2002). Increasing liberal attitudes toward sexual norms and cohabitation (Katz, 2001) suggest that a more liberal standpoint might evolve over time in regards to civil marriage as well, despite the concerns of national pride and traditions.

Opposite views toward civil marriage might also evolve as a result of existing national sentiments (Anson and Meir, 1996), persisting familism (Fogiel-Bijaoui, 2002; Smooha, 2005), and traditionalism of the society in regards to gender roles and division of labor (Fogiel-Bijaoui, 2002; Stier and Lewin-Epstein, 2000). Hence, another question of interest for current research is which factors explain restrictive attitudes to civil marriage?

The third hypothesis is that religiosity and the degree of identification with the nation is strongly connected to attitudes towards civil marriage. Shamir and Arian (1999) suggest that the collective Jewish identity in Israel involves two dimensions: the external dimension operates through concepts of the land (or

territories), the borders and the relations with the Palestinians. The internal dimension links the issues of Jewish religion, nation and citizenship. These national identity dimensions were found to be strongly predictive of electoral behavior and political choice. That is, religiosity, low education, lower socio-economic status and an Asian-African ethnic background were closely associated with right-wing voting. Religious observance had the strongest effect among all other socio-demographic predictors. Moreover, attitudes to the territories became an increasingly important determinant of voting between the seventies and mid-nineties (Shamir and Shamir, 2008).

As to external identity, the narrative of the biblical 'promised land' connects the Jewish nation and the land, where the State of Israel is currently located (Yuval-Davis, 1980). Jewish settlements on the territories of Judea and Samaria, which are allegedly part of the 'promised land', are viewed by the religious nationalists as fulfillment of God's will. Bloc of the Faithful, *Gush Emunim*, advocated and implemented the governmental policy of settling in Judea and Samaria from the seventies onwards, and saw itself as the successor of the early Zionist movement (Strum, 1989).

As to internal identity, the idea of preserving the nation via control over personal matters has been repeatedly discussed in the literature and given various interpretations. For instance, according to Yuval-Davis (1980), the personal law is meant to directly define the national collective: "Controlling women and their familial status, therefore, is of a crucial importance to the Zionist movement which gives the utmost importance to reproducing the national boundaries of the Jewish people, in and outside Israel" (Yuval-Davis, 1980: 21). Fogiel-Bijauoi (2003) argues that the personal law in Israel serves nationalistic interests of preventing mixed marriages by legally separating between 'them' and 'us'. These socio-cultural explanations suggest that the collective national identity of the Jewish Israelis does not allow for free choice when individuals face the institution of marriage.

5.3 Data and methods

In the first stage, changes in attitudes to civil marriage in Israel over time are analyzed using univariate ANOVA and ANCOVA. Social Survey 2009 of the Israel Central Bureau of Statistics[24], the Guttman Center[25] surveys (Elections Survey, 1969[26] and Weekly Survey, 1993[27]) and AVI CHAI surveys[28] (1991[29], 1999[30]) are used as the data sources. The samples in The Guttman Center surveys were set as representative of the Jewish adult population in Israel, and the sample in the Social Survey 2009 as representative of the total adult population in Israel. The Arab population was not analyzed in the current research.

The dependent variable in the current study is based on the item 'It should be made possible to conduct civil marriage in Israel for those who are interested in it' (1991, 1993, 1999, 2009). In 1969 the wording slightly differed; it read 'Do you agree that the laws of marriage/divorce remain under Rabbinate's exclusive jurisdiction?'. Therefore, some degree of caution is required while interpreting the results. The answers were coded on a Likert scale from 1 'totally agree' to 4 'totally disagree' in 1969 and 2009; and on a scale from 1 'definitely should' to 6 'definitely should not' in 1991, 1993 and 1999. The data were compiled in a single set. The dependent variable was subject to recoding and linear

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[24] Data obtained from Israel Social Data Center (ISDC) at the Hebrew University of Jerusalem, Israel. Social Survey was conducted between January and December 2009 in Hebrew, Arabic and Russian among individuals aged 20 and over; computer-assisted personal interviews; response rate 79.9%. For detailed description of the Social Survey background, methods and sampling see http://surveys.cbs.gov.il/Survey/EngHelpTexts/Help2009.htm

[25] Former Israel Institute of Applied Social Research. Data obtained from the Guttman Center of The Israel Democracy Institute
(www.idi.org.il/sites/english/TheGuttmanCenterSurveys/Pages/TheGuttmanCenter.aspx)

[26] Election Survey (data file G0305 August) was conducted in August 1969, in Hebrew, among Jewish population above 18 years old; response rates are non-available

[27] Weekly Survey (file G1064 February 266) was conducted in February 1993, in Hebrew, among Jewish population above 20 years old; telephone survey; response rates are non-available

[28] For detailed description of background, methods and sampling of AVI CHAI surveys 1991 and 1999, conducted by the Guttman Center, see Levy, Levinsohn and Katz (1997, 2000)

[29] AVI CHAI survey 1991 was conducted between 20 October and 16 December 1991 in Hebrew, among Jewish population above 20 years old; face to face interviews; reported response rate 95%

[30] AVI CHAI survey 1999 was conducted between June 1999 and September 1999 in Hebrew and Russian, among Jewish population above 20 years old; face to face interviews; reported response rate 95%

transformation, such that eight categories of answers were obtained, ranging from 0 'totally disagree' to 1 'totally agree'.

The second stage of the research implemented OLS regression modeling in order to show which factors explain permissive attitudes to marriage. The level of observance of Jewish religious tradition and self-definition of religious identity are the standard measures of religiosity in Israel (Arian, Ventura and Philippov, 2008). The religious identity measure highly correlates with the level of observance of the Jewish religious tradition $r_{Pearson}$=0.69 in the Social Survey 2009 of the Israel Central Bureau of Statistics and $r_{Pearson}$=0.75 in the Democracy Survey[31] 2009 of the Guttman Center. These two cross-sectional survey data sets were analyzed separately. The sample of each survey contains sixteen percent of 1990s immigrants, which accurately correspond to their share in population. The phrasing of the dependent variable in the latter reads 'couples should be allowed to marry in any way they choose'.

The independent variables were grouped by socio-demographic characteristics (which were available in both data sets), traditional attitudes (available in the Social Survey 2009) and nationalistic attitudes and identification with the nation (available in the Democracy Survey 2009 data). Socio-demographic characteristics included gender, age (by five-year age groups), ethnicity (respondent born Israel, born FSU, born Europe-America and born Asia-Africa), religiosity (secular, traditional non-religious, traditional religious, religious, and Ultra-Orthodox[32]), education (below 11 years of schooling, 11-12, 13-15 and above 16) and socio-economic status (per capita income below 2,000 NIS; 2,001-4,000 NIS; and above 4,000 NIS[33]).

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[31] Democracy Survey was conducted in March 2009, in Hebrew, Arabic and Russian, among individuals aged 20 and over; landline telephone survey; response rate around 40%. For detailed description of background, methods and sampling see Arian, Philippov and Knafelman (2009)

[32] These five categories of religious identity measure were defined by the Israel Central Bureau of Statistics. In the Guttman Center, four categories are used. For more details see Arian, Ventura and Philippov (2008)

[33] NIS refers to the New Israeli Shekel which was equal to approximately 0.20€ or 0.28 US$ in January 2011

Traditional outlook was assessed by the degree of agreement with the statement 'a couple who wants children must be married' on a Likert scale of 4 (recoded into dichotomous variable), ideal number of children in a family in the respondent's opinion and the actual number of births (only answers of women were analyzed for the latter item) (data of Social Survey, 2009).

Nationalistic outlook was assessed by the following five interconnected items[34]: (1) right-wing political orientation (measured originally on a Likert 7-point scale and recoded into three categories – left, center and right); (2) standpoint regarding withdrawal from the territories of Judea and Samaria as a part of the agreements with the Palestinians ('not withdraw under any circumstances', 'agree to withdraw from small and isolated settlements' and 'agree to withdraw from all settlements including big conglomerates'); (3) a question: 'would you support giving the Arab neighbourhoods of Jerusalem to Palestinians as a part of the agreements?' (measured on a Likert scale of four categories); (4) a statement 'the government should encourage Arab emigration from Israel'(measured on a Likert scale of four categories); (5) a degree of agreement with the statement 'Israeli Arabs should be denied the right to vote and be elected to the parliament' on a Likert scale of five categories (data of the Democracy Survey, 2009). These items might represent the external national identity, following the terminology used in Shamir and Arian (1999).

Identification with the nation was assessed by the following three items: 'would you like to live in Israel in the long term?', 'would you agree that one of your family members marries a non-Jewish American citizen?' and 'would you agree that one of your family members marries non-Jewish immigrant from the former USSR?' (The Democracy Survey, 2009). These items represent the internal national identity, following Shamir and Arian (1999) definitions, while the first construct the Israeli identity as primary and the latter ones construct the Jewish identity as primary.

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[34] The internal consistency measure, Alpha-Cronbach is α =0.71 (N=698)

5.4 Results

5.4.1 Attitudes toward instituting civil marriage in Israel

During the last four decades, the public was asked repeatedly for its opinion on instituting civil marriage in Israel. Thus, shifts in attitudes toward civil marriage can be observed. Generalization to a total adult Jewish population can be made since the samples were considered to be representative. Table 9 presents the change in attitudes toward civil marriage in 1969-2009.

Two trends can be distinguished: between 1969 and 1999 the attitudes toward civil marriage became more favourable. Each religious group changed attitudes in favour of the civil option. Even the respondents who completely observe religious tradition regarded the civil option slightly more positively. The total Jewish population became more tolerant over time towards the idea of the introduction of the civil option on the marriage market. However, between 1999 and 2009 another intriguing trend appeared: although in each group the attitudes continued shifting in the direction of favouring civil marriage, the total support did not build up anymore and even declined by two percentage points.

Table 9: Percentage of agreement to institute civil marriage in Israel among the Jewish population in 1969-2009

Percentage of agreement[a] to institute civil marriage in Israel					
Source	The Guttman Center				Social Survey
Year	**1969**	**1991**	**1993**	**1999**	**2009**
Level of observance of the Jewish religious tradition					
Non-observant	82 N=85	89 N=247	89 N=270	94 N=1,280	95 N=386
Partially observant	42 N=191	61 N=506	60 N=565	78 N=2,512	88 N=1,870
Very observant	20 N=41	26 N=278	25 N=216	38 N=1,054	62 N=2,224
Completely observant	5 N=55	8 N=160	6 N=129	15 N=788	23 N=1,452
Total Jewish population	**43 N=372**	**51 N=1,200**	**54 N=1,180**	**65 N=5,710**	**63 N=5,932**

Source: calculated from the Guttman Center surveys (1969, 1991, 1993, 1999); Social Survey 2009 [a] Hereafter 'agree' includes 'strongly agree' and 'agree' where the answers were on a 4 point scale and 'definitely should', 'should' and 'perhaps should' where the answers were given on a 6 point scale

These results support only partially the research hypothesis that there is a growing tolerance of the institute of civil marriage in Israel over time. In the first decade of the new millennium, the trend has changed, and the mean support was leveled off. Apparently, the proportion of individuals who hold an extreme negative view on civil marriage rose in the total population in 2009 in such dramatic way that stagnation took place. The argument in this paper is that the stagnating effect is due to the changing composition of the population, which has experienced two major developments during the last two decades: mass immigration from the FSU and high growth of the most religious group. The opposite effects of these two demographic phenomena are assessed separately. Firstly, the negative impact of the most religious on total support of civil marriage is discussed.

The increasing weight of the most religious groups (who hold the most unfavourable attitude toward civil marriage) in total population has neutralized the more favourable attitudes of less religious in 2009. The increasing weight of the most religious group stems from the extremely high birth rate. The total fertility of the Ultra Orthodox comprises 7.00 children per woman (Friedlander, 2002). The annual growth rate of 6-7% among the Ultra-Orthodox core (Gurovich and Cohen-Kastro, 2004) means that this radically religious population doubles itself approximately every 13 years (Bystrov and Soffer, 2012). The effects of this tremendous growth on population composition have been demonstrated in demographic research literature (Bystrov, 2012a; Friedlander and Feldmann, 1993; Friedlander, 2002; Gurovich and Cohen-Kastro, 2004). These population composition effects indicate that the structure of the Jewish society in Israel has been rapidly changing.

Exponential growth of the Ultra-Orthodox population is seen in Figure 14. Since the proportion of births that occur among the Ultra-Orthodox core has been much higher than among other groups, the share of very religious individuals among the younger cohorts is considerably higher than among the older. These figures indicate that the most religious group significantly

influences the population structure in Israel. This fundamental change in population structure leads to long term consequences.

Figure 14: Percentage of the Ultra-Orthodox in the total Jewish population by age groups in 2002-2009
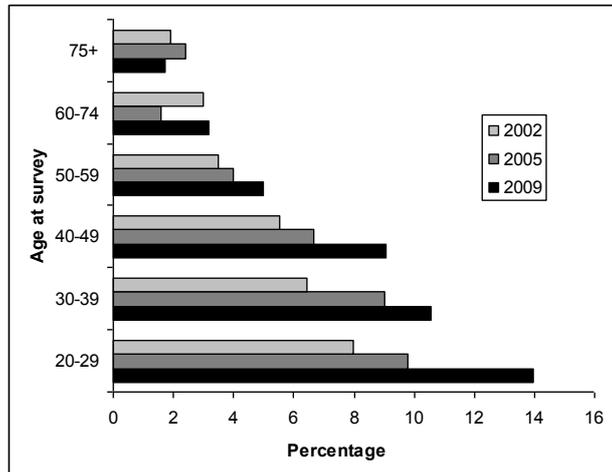
Source: calculated from the Social Survey (2002, 2005, 2009)

Analysis of variance, which explains about thirty-five percent of variance in support of civil marriage (R^2=0.35) among Jews in Israel in 1969-2009, produces a similar picture: the most religiously observant groups hold most negative attitudes towards civil marriage, while the non-observant group holds the most positive attitude. While the score 0 indicates total disagreement to introduce civil marriage and 1 total agreement, the mean score of non-observant Jews was M=0.85 (standard deviation SD=0.24; N=2,268), partially observant M=0.69 (SD=0.33; N=5,643), very observant M=0.45 (SD=0.37; N=3,815) and completely observant M=0.19 (SD=0.31; N=2,583). These differences in attitudes by religious definition are of the highest explanatory power ($F_{1/14,280}$ =7057.58, partial η^2=0.33, p<0.001), controlling for year of survey, age and 1990s migrational background. Therefore, as the population of Israel is composed of a continuously growing proportion of religious and Ultra-Orthodox, the attitudes become less liberal in total.

As for the impact of the 1990s immigration on support of civil marriage: in analysis of variance, controlling for year of survey, age and religious

observance, the immigrants were found more supportive of the idea of instituting civil marriage than the rest of Jews ($F_{1/14,280}$=44.17, partial η^2 =0.003, p<0.001). Mean score among the immigrants comprised M=0.78 (SD=0.29; N=1,147) and among the rest of Jews M=0.54 (SD=0.39; N=13,162). Interestingly, an interaction effect between age and immigration was found significant in this model ($F_{12/14,280}$=2.32, partial η^2 =0.002, p<0.01). In other words, attitudes to civil marriage of younger immigrants compared to the older differed from their counterparts among the rest of Jews. Older immigrants showed more supportive attitudes to civil marriage than the younger. For the rest of Jews, the picture was reversed: the older were less supportive. The main effect of age was also found to be significant but rather weak ($F_{13/14,280}$=1.95, partial η^2 =0.002, p<0.05), with the younger being more supportive for civil marriage than the older.

The interaction effect can be explained by the socialization processes of the young immigrants which took place at least to some extent – if not fully – in Israel, whereas the socialization of the older immigrants took place in a secular state – the former Soviet Union. As a result, the worldviews of the young immigrants tended to converge with those of the local youth. The gap in worldviews of the older immigrants, compared to their local counterparts, remained much wider.

Polynomial linear contrast estimates show how much of the support towards civil marriage is explained by the individuals' religious observance compared to 1990s migrational background, taking into account the change in attitudes over time. The impact of the passing time explains, surprisingly, only about one percent of variance (p<0.001). The impact of 1990s migrational background adds another 2.5 percentage points to the explanatory power (p<0.001). Age of respondents has been found to have negligible explanatory power. The greatest impact on support of civil marriage is that of religious observance: it explains up to approximately thirty one percent of variance alone and up to

approximately thirty five together with other factors (the passing time, age and 1990s immigration) (p<0.001).

Table 10 shows how the population composition effects come about. Controlling the data by the 1990s migrational background and the level of religiosity of the respondents, allows for estimating the marginal contribution of each of these demographic factors over time to overall change in attitudes. From Table 10, one can directly estimate the size of effects of the 1990s immigration and the religious growth on the total outlook of the society in the following manner: the score one in agreement to introduce civil marriage can be regarded as hundred percent of support, and score zero as null support. Therefore, estimated mean support of civil marriage without 1990s immigrants, compared to observed mean support, shows that immigrants have actually increased the support of civil marriage by approximately one percentage point in 1999, and by four percentage points in 2009 (difference between the third column and the fourth).

Table 10: Mean support of civil marriage in 1969-2009 (0 indicates total disagreement to introduce civil marriage; 1 indicates total agreement)

Year	N	Observed mean score of support	Estimated marginal means corrected for 1990s immigration [a]	Estimated marginal means corrected for religious observance	Estimated marginal means corrected for religious observance and 1990s immigration	Estimated marginal means corrected for religious observance, 1990s immigration and age (mean)
1969	372	**0.435**	0.435	0.434	0.434	0.430
1991	1,200	**0.484**	0.484	0.512	0.512	0.510
1993	1,180	**0.508**	0.508	0.506	0.506	0.506
1999	5,710	**0.598**	**0.584**	**0.614**	0.609	0.608
2009	5,949	**0.561**	**0.529**	**0.714**	0.702	0.704

[a] Estimations corrected for 1990s immigration in the table were calculated for zero immigration. Estimations corrected for religious observance were calculated for mean score of religious observance of 1969 (M=2.82). Estimations corrected for age were calculated for mean age of respondents (M=43.92)
Source: calculated from the compiled data set of Guttman Center surveys (1969, 1991, 1993, 1999) and the Social Survey 2009

In the same manner, if the different weight of the religious in the total population is controlled by keeping the mean religious observance on the base level of 1969, the difference between the observed and estimated support rises from approximately two percentage points in 1999 up to approximately fifteen percentage points in 2009 (difference between the third column and the fifth). In other words, during the last decade, the change in population composition due to the religious growth accounts for around thirteen percentage points in (non-)support of civil marriage.

5.4.2 Determinants of permissive attitudes toward marriage

As the previous section shows, support of civil marriage in Israel generally decreases with age, religiousness, and increases if the respondent is an immigrant of the 1990s from the FSU. For the FSU immigrants an opposite impact of age was found compared to the rest of population – the support of civil marriage increased with age. These attitudinal trends correspond to the behavioral patterns that were found in a recent study on marriage of Israelis abroad: older age at marriage, higher socio-economic cluster, being an immigrant from the FSU of the 1990s, and being previously married were significant predictors of the likelihood of Israeli citizens to marry abroad (Dovrin, 2006).

The results of the OLS regression analyses in Tables 11-13 indicate that the socio-demographic variables (age, migration from the FSU of the 1990s, education, income and religious identity) serve as strong predictors of attitudes toward civil marriage. These socio-demographic factors explain cumulatively up to forty-five percent of variance in attitudes (Table 3). Religious identity alone explains 39 percent of the variance, while ethnicity alone explains nine percent (N=4,551). No doubt, religiosity in Israel is the most powerful social determinant, as previous studies have shown (Shamir and Arian, 1999; Friedlander, 1993, 2002). Ethnicity was also found to be an important determinant, especially the recent migrational background from the FSU. Asian-African ethnic origin was found a significant predictor too.

Table 11: OLS regression models[a] of support of civil marriage by socio-demographic variables and traditionalism (figures are unstandardized Beta-coefficients; dependent variable: degree of agreement with the statement 'it should be made possible to conduct civil marriage in Israel for those who are interested in it' on a 4-point Likert scale when 'totally agree'=1; 'totally disagree'=0)

Model	(1)	(2)	(3)	(4)	(5)	(6)[35]
N	4,551	4,551	4,551	4,551	4,551	2,519
R^2	0.09	0.17	0.43	0.47	0.44	0.48
Constant	0.32***	0.33***	0.68***	0.77***	0.73***	0.65***
Gender (ref. male)	0.05***	0.04***	0.01	0.00	0.01	-
Years of schooling (ref. 1-10)						
11-12	0.07**	0.03	0.01	0.00	0.01	0.03
13-15	0.13***	0.07***	0.08***	0.06***	0.07***	0.07**
above 16	0.18***	0.11***	0.12***	0.10**	0.12***	0.14***
Per capita income (ref. below 2,000 NIS)						
2,001-4,000 NIS	0.12***	0.11***	0.00	0.00	0.00	0.01
above 4,000 NIS	0.21***	0.22***	0.40**	0.02*	0.03**	0.04**
Ethnicity (ref. born Israel)						
born FSU[36]		0.24***	0.10***	0.12***	0.08***	0.10***
born Asia-Africa		-0.19***	-0.09***	-0.08***	-0.08***	-0.08***
born Europe-America		0.02	0.01	0.01	0.00	0.02
Religious identity (ref. secular)						
traditional non-religious			-0.21***	-0.17***	-0.20***	-0.19***
traditional-religious			-0.38***	-0.33***	-0.36***	-0.34***
religious			-0.55***	-0.47***	-0.50***	-0.55***
Ultra-Orthodox			-0.73***	-0.63***	-0.62***	-0.68***
Agree that 'a couple who wants children must be married'				-0.17***		
Ideal number of children[37] (ref. 2)						
0-1					0.01	
3					-0.04**	
4					-0.07***	
5					-0.11***	
6					-0.14***	
7-9					-0.18***	
10-21					-0.16***	
Number of births the respondent has given						-0.02***

[a] All models control for age; Sig. ***p≤0.001 **p≤0.05 *p≤0.1; *Source:* Social Survey 2009

Two additional groups of variables explain attitudes toward civil marriage after controlling for socio-demographic variables: traditional family values and behavior, and political attitudes. The support of civil marriage decreases if

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[35] Only women were included in this model

[36] This category includes only immigrants of the 1990s from the FSU; respondents born in the FSU who migrated earlier are included in the category of born Europe-America

[37] The first two categories were merged because of a very small N: only two respondents chose 0 as an ideal number of children and nineteen respondents chose 1

respondents agree that 'a couple who wants children must be married', if the reported ideal number of children is higher than three and as a number of given births rises. Hence, traditional outlook is a separate determinant from religiosity, of non-liberal attitudes toward civil marriage, and contributes up to additional five percentage points to overall explained variance.

Table 12: OLS regression models of permissive attitude toward marriage by nationalistic outlook (figures are unstandardized Beta-coefficients; dependent variable: degree of agreement with the statement 'couples should be allowed to marry in any way they choose' on a 4-point Likert scale when 'totally agree'=1; 'totally disagree'=0)

Model	(1)	(2)	(3)	(4)	(5)	(6)
N	678	678	678	678	678	678
R^2	0.33	0.35	0.35	0.34	0.33	0.34
Constant	0.83***	0.80***	0.91***	0.79***	0.79***	0.74***
Political orientation[a] (ref. center)						
left-wing		0.10**				
right-wing		-0.07**				
Attitude as to the territories of Judea and Samaria (ref. withdraw totally)						
not withdraw			-0.14***			
withdraw partially			-0.06			
Agree to give the Arab neighbourhoods of Jerusalem to the Palestinians				0.02		
Disagree that the government should encourage Arab emigration from Israel					0.02	
Israeli Arabs should not be denied the right to vote and be elected to the parliament						0.02**

Notes: all models control for socio-demographic variables (gender, age, ethnicity, religiosity, years of schooling and socio-economic status which is measured here by family expenditures compared to Israeli average); Sig. ***$p \leq 0.001$ **$p \leq 0.05$ *$p \leq 0.1$; Source: The Democracy Survey 2009. [a] Political orientation was measured on Likert scale from 1 to 7; right-wing orientation includes categories 1-2 (N=206), center 3-4 (N=344) and left-wing 5-7 (N=148)

Certain worldviews related to politics, land and nation also explain non-liberal attitudes toward marriage. Radically nationalistic outlook and hostile attitude towards the Arab minority was held in 2009 by up to a third of Jewish Israelis. However, in questions of land and territories, the nationalistic outlook was supported by a much larger proportion of respondents. For example, forty five percent stated that Israel should not withdraw from the territories of Judea and

Samaria under any circumstances. Sixty percent objected to give the Palestinians the Arab neighbourhoods of Jerusalem as part of the agreements.

Table 13: OLS regression models of permissive attitude toward marriage by identification with the nation (figures are unstandardized Beta-coefficients; dependent variable: degree of agreement with the statement 'couples should be allowed to marry in any way they choose' on a 4-point Likert scale when 'totally agree'=1; 'totally disagree'=0)

Model	(1)	(2	(3)	(4)
N	788	788	356	404
R^2	0.33	0.34	0.40	0.36
Constant	0.84***	0.81***	0.75***	0.74***
Wish to live in Israel in the long-term (ref. yes)				
doubt		0.08**		
no		0.02		
Agree that a family member marries a non-Jewish American			0.15***	
Agree that a family member marries a non-Jewish FSU immigrant				0.19***

Notes: all models control for socio-demographic variables. Sig. ***p≤0.001 **p≤0.05 *p≤0.1; Source: The Democracy Survey 2009.

As to the issue of intermarriage between Jews and non-Jews from the FSU or the United States: about two-thirds of Jewish Israelis would not support their family member marrying a non-Jew of either origin. Among the 1990s immigrants, about a quarter did not support such intermarriage (data of the Democracy Survey, 2009). In fact, nationalistic worldviews in Israel appear quite frequently among the masses.

The following series of findings (Tables 12-13) indicate that the liberal attitude toward marriage:

- decreases if the respondent's political orientation is right-wing and increases if it is left-wing
- decreases if the respondent objects to withdrawal from Judea and Samaria as a part of the agreements with the Palestinians
- increases if the respondent disagrees that the Arabs should be denied the right to vote and be elected in the parliament
- increases if the respondent doubts about living in Israel in the long term

- increases if the respondent agrees to an inter-religious marriage in his/her own family, i.e. that a family member marries a non-Jewish American citizen or a non-Jewish immigrant from the FSU

5.5 Conclusions and summary

This chapter has discussed two main points: firstly, the effects of changing population composition in the medium and long term have a substantial impact on the societal outlook. Population composition in Israel changed dramatically due to mass immigration from the FSU during the last two decades and due to the extremely high growth rate of the Ultra-Orthodox. The immigration has strengthened the camp of supporters of instituting civil marriage in the host society. The growing weight of the Ultra-Orthodox has leveled off the support to civil marriage.

Secondly, nationalistic and traditional outlook, though highly correlate with the level of religiosity, constitute autonomous explanatory factors. These findings are of critical importance since they shed light on the worldviews and value orientations of people who object to the liberalization of the institution of marriage.

Though both demographic factors of the secular immigration and the fertility of the religious have altered the population composition, the influence of immigration on the policy regarding civil marriage has proven to be limited. According to Lazerwitz and Tabory (2002), societal religious surroundings affect even the most secular people in Israel. The converging worldviews of the young immigrants with those of the local youth, which have been shown, might be a consequence of such social influence.

Another reason might be the civic passiveness among the FSU immigrants, which has been shown by Philippov and Bystrov (2011). Despite the substantial electoral power of nineteen seats in the parliament (out of one hundred and twenty) (Philippov, 2007), the FSU immigrant community has failed to force

the Israeli political system to act in their interests. Civic passiveness might explain why the immigrants have been reluctant to stand for their civic rights.

The implications of the situation regarding marriage and divorce in Israel for the progression of the Second Demographic Transition might be of interest to scholars of socio-demographic research. The institutional structural constraint on the marriage arena is a unique feature of Israel compared to European countries that have experienced this transition since the seventies. How does this constraint affect the family formation and marriage dissolution patterns in Israel? How will the absence of civil marriage affect the trends in cohabitation and alternative living arrangements in the future? How does this constraint affect the formation of worldviews regarding family among the young, who grow up in a high income and knowledge society? These questions remain open for future research.

The shortcomings of the religious legislation and the growing political strength of the religious parties suggest that Israel might move away from the liberal and egalitarian model of state-religion relationship (Neuberger, 1999). The direction of development in a country such as Israel is not linear. Liberalizing attitudes and the adoption of emancipative values have failed so far in creating enough pressure on the legislative system to constitute civil marriage in Israel. Therefore, even if people are willing to govern their private lives, the institutional background is still not ready. In order for the Human Empowerment Model to work in Israel, the lacking element of an empowering regime is urgently needed. But even if this institutional component is suddenly available, the time until the motivational component runs out is up to the population composition, and thus, very limited.

6. General discussion and conclusions

6. General discussion and conclusions

The goal of this dissertation was to examine several aspects of the demographic and social change within the conceptual framework of the SDT theory. It was argued that focusing on a single case study is beneficial for analyzing the underlying mechanisms and studying the transition as an integrated process. Case study approach creates insights into the causes and the consequences of the demographic transition, which is interconnected with broader cultural and economic changes within a context. Such in-depth inquiry also reveals the issues at stake from the individual point of view, which are often missing in many studies of demographic changes. It also discloses some information about the factors that might hamper the onset and slow the progression of the SDT.

In order to meet this goal, several studies were conducted. Each of them aimed at analyzing a particular aspect of the overarching research problem. The first study, described in Chapter 2, aimed at gathering some empirical evidence to the basic premise of the SDT theory that the ideational shift was the one that fueled the behavioural change and not vice versa. Chapter 3 was designed to provide a general overview of the transition process in a single country, Israel, which served as a case study of the SDT, and provide an initial clue of what are the main issues concerning the progression of the SDT there.

Chapters 4 and 5 analyze the factors behind two of the most outstanding phenomena that distinguish Israel from other high income democracies: high fertility and the absence of the institute of civil marriage. Both of these phenomena are directly connected to the SDT. Having the highest fertility levels in the developed world, Israel proves to be an outlier in one of the most noticeable features of demographic behaviour. In the marriage domain, Israel is a unique case in the developed world as well: not only the institute of civil marriage is absent there, but the overall attitudes towards instituting civil marriage in the country are also quite restrictive. These two phenomena are specific to Israel, and represent those contextual, path-dependent and historical peculiarities that are frequently referred to in cross-national research as unexplained variation at the country level.

6.1 Summary and discussion of the main findings

Firstly, emancipative value change in the last three decades was shown to be the most important determinant of massive postponement of marriage across the globe, compared with economic development and increase in women's education. Although some feedback mechanism was found in relations between human empowerment and marital postponement, these findings support the SDT theoretical premises. They offer a preliminary confirmation at the macro level that marital transition is likely to occur in open societies that cherish free choice and equal opportunities for individuals. When these become important societal values, other family related attitudinal and behavioural changes are likely to occur.

Secondly, it was shown that in the past two decades most of the Jewish population in Israel experienced value change in parallel to marital and fertility transitions. Using the Israeli example, it was demonstrated that the demographic transition goes hand in hand with the transition toward post-modernity. Although there is no one path of the SDT that all societies must walk, in most post-transitional countries some core features are likely to be found. In this respect Israel is not an exception: value change seems to be a pre-requisite to behavioural change.

At the same time, it was shown that Israeli society is highly heterogeneous in the scope and timing of approaching the SDT. A clear connection was found between the level of religiosity and the progression of the SDT. Some religious groups, such as the Moslem minority and the Ultra-Orthodox Jews do not approach the SDT thresholds, neither in value orientation, nor in family related behaviours. It was concluded that SDT in Israel unfolds in a non-uniform manner.

Moreover, some SDT related behaviours were found to be specific to Israel. Upbringing children, for instance, was shown to be a very strong societal value, manifested at the behavioural level as well. Among some population groups this manifestation has been taken to an extreme degree. Evidently, some societal

groups have never completed even the first demographic transition in regards to fertility. Comparison with European countries also demonstrated that Israel differs tremendously in regards to fertility profiles. High fertility in Israel was argued to be the trend of the past, present and future.

Thirdly, unequivocal evidence of religiosity being the most prominent determinant of fertility compared to other factors at the individual level was presented. Although a strong connection at the individual level between nationalistic attitudes and high level of religiosity was found, the alternative explanation of nationalism as a determinant of fertility did not find any further support. This finding contrasts the previously found connection at the aggregate level between nationalist sentiments and fertility (Anson and Meir 1996). Structural equation modeling showed that nationalism was mediated by religiosity, but not the opposite, as was previously claimed.

Finally, it was shown that Israeli marital transition takes place within conditions which significantly differ from those in developed countries. In the developed world, Israel is the only country where religious institutions are granted exclusivity in conducting marriage and divorce. Therefore, the absence of the civil option of regulating personal status was argued to be a major social institutional constraint. Such features of the SDT as marital postponement, alternative living arrangements and frequency of divorce were argued to be directly influenced by the unavailability of the civil option.

In particular, changes in public opinion in regards to the question of desirability of instituting civil marriage in Israel were analyzed. These shed light on the prospects of changing the existing legislation. They also shed light on the worldviews of people who object to the liberalization of the institution of marriage. The study concluded that the religious and nationalistically oriented groups have increased over time their potential to shift the balance in this state-society-religion matter. Implications for further progression of the SDT in Israel were discussed.

6.2 Conclusions and implications

Several conclusions may be drawn from the empirical findings presented in this dissertation. Firstly, it was confirmed that high heterogeneity in a variety of attitudes and demographic behaviours is a prominent characteristic of Israeli society in the last decade, and that it is most likely to stay for some time to come. Friedlander (2002) reached the same conclusion in regards to Israel's fertility. The current research extended this conclusion to other family related behaviours and attitudes.

Secondly, population composition effects were shown to be a strong social force that is capable of reversing attitudinal and behavioural long-term trends. The composition of Israel's population changed drastically due to the 1990s migration from the former Soviet Union. It also changed gradually due to the differential natural increase of various religious groups. This latter gradual change has a potential for more far reaching implications than the migrational wave.

In particular, extremely high natural increase of the most religious groups implies that the attitudinal and behavioural differences among the groups in Israel are likely to maintain in the future. The contemporary variety of worldviews and behaviours in Israel is even likely to rise in the short- and medium-term, despite the previously expected convergence to an Israeli average. This may result in increase of social cleavages and political conflicts that have been described elsewhere (Arian et al. 2009, 2010; Bystrov and Soffer 2012; Smooha 2004, 2005).

In practical terms, since the young Ultra-Orthodox population cannot sustain itself independently, it will continue relying on the state support in supplying its basic economic and security needs. At the same time, the ageing secular population cannot sustain the total population in the long-term. Redistributive justice questions might intensify the already existing struggles. According to Eisenstadt (2011), "[t]he 2009 elections indicated both a clear shift in the

direction of religious and political struggles, but at the same time, the fragility of the political frameworks." (p. 39).

Secondly, such institutional and social-structural characteristics, as state-religion and society-religion relations, can be regarded as constraining rather than neutral factors. Sustainability of the non-liberal institutions tends to augment the complexity of the inter-group relations, and restrict individual choices up to violation of human rights (Barak 2002). Interestingly, the allegedly remote from politics question of instituting civil option for regulating personal status is, nonetheless, tightly connected with the national-political individual attitudes. Non-permissive personal attitudes towards liberalizing the institution of marriage in Israel seem to be another form of expression of nationalistic views, radical political attitudes and intolerant attitudes towards the out-groups.

Thirdly, expressions of nationalism in family related questions in Israel is more likely to be connected to internal Jewish identity, religion and belonging to the Jewish people than to external identity, territorial borders and relations with the Arab neighbours. This conclusion does not contradict the argument that nationalistic outlook that separates between in- and out-groups is the one responsible for some family related outcomes (Fogiel-Bijaoui 2002). Nevertheless, it is important to differentiate between the two concepts in order to identify the forces that operate behind basic social phenomena and to investigate their implications.

From the theoretical perspective, this research also contributed to strengthening the external validity of the concept of emancipative values (Welzel 2013), as well as providing an additional support for the SDT premises. Since emancipative values are a recent elaboration of a more established concept of self-expression values, testing them within the family related domain was highly important. Emancipative values have been found to be strong predictors of marital postponement, which is an important SDT feature. They also have been shown to be associated with intergenerational change within populations

that are undergoing the SDT, but not with those populations which do not exhibit demographic transitional patterns. Thus, emancipative values proved to be a reliable instrument that contributes both to the human empowerment framework and the SDT theoretical framework.

Finally, integrating individual-level analysis for highlighting some critical aspects of macro-level phenomena, such as the SDT, proved to be crucial not only for understanding deviant behaviours, outliers and peculiarities, but also for illuminating the necessary conditions for the onset and further progression of the whole process. One can learn from this academic exercise, for example, that the traditionalism-modernism paradox will be a persistent feature of the Israeli society for years to come. One can also learn that without major value change, no significant relaxation of traditional family behaviours can take place. These conclusions may well be projected on other pre-transitional and transitional societies in Eastern Europe and the Middle East.

6.3 Directions for future research

This dissertation has limitations which open opportunities for future research. Firstly, the relations between the change in value orientation and change in demographic behaviour have been investigated in the current research only at the aggregate level, and only in regards to age at marriage. It would be interesting to extend this line of research to other SDT related behaviours at the individual level as well. It is expected that the predispositions and mechanisms behind the effects at the individual level would be similar to what has been shown at the aggregate level.

Secondly, methodological challenges and the lack of data have prevented testing many potentially revealing hypotheses in regards to the progression of the SDT in Israel. For example, direct links at the individual level between value orientations and demographic behaviour could hardly be established, and where it was possible, they were established in a very narrow sense. In particular, emancipative value change at the individual level in Israel could not be directly connected to demographic outcomes, for the data were lacking.

Thirdly, many interesting connections need additional empirical examination: the connection between attitudes toward gender roles and demographic outcomes, the impact of interactions between religiosity, nationalistic outlook and traditional views of gender roles on demographic outcomes, the mechanism behind the non-support for institution of civil marriage and the mechanism behind the relations between demographic outcomes and emancipative value change.

Questions that remain open for future research are: how does the absence of civil marriage in Israel affect the family formation and marriage dissolution patterns in Israel? How will it affect the trends in cohabitation and alternative living arrangements in the future? How does it affect the attitude formation in regards to family among the young people? Will the majority of population in Israel in a few decades support such statements as: "Satan is not a conqueror, not an imperialist, not a capitalist, not an exploiter. He is a seducer. He comes with Barbie dolls and cocktails and provocative TV programs and movies and, worst of all, emancipated women"[38]? In the meantime, there is no clear answer to these questions.

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[38]Citation from Bernard Lewis (1997, p. 127), where he refers to Islamic fundamentalist views of the West, in particular, the U.S.

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Appendices

Appendices

Appendix 1: Descriptive statistics of the variables in the seemingly unrelated regression models (indices from 0 to 1)

	Minimum	Maximum	Mean	Standard deviation
Age at marriage at T_1	0.04	0.64	0.34	0.17
Age at marriage at T_2	0.08	0.98	0.55	0.22
Emancipative values at T_1	0.29	0.60	0.42	0.06
Emancipative values at T_2	0.23	0.64	0.48	0.09
HDI at T_1	0.28	0.82	0.68	0.11
HDI at T_2	0.33	0.88	0.75	0.11
Tertiary education for women at T_1	0.00	0.80	0.18	0.16
Tertiary education for women at T_2	0.00	0.94	0.34	0.22
GNI at T_1	0.00	0.83	0.29	0.20
GNI at T_2	0.00	0.99	0.41	0.26
Change in age at marriage	0.01	0.54	0.21	0.13
Change in emancipative values	-0.08	0.16	0.06	0.06
Change in HDI	-0.05	0.17	0.07	0.04
Change in tertiary education for women	-0.01	0.60	0.16	0.13
Change in GNI	-0.11	0.36	0.12	0.09

Appendix 2: Pearson correlations between age at marriage, emancipative values, tertiary education for women, GNI and HDI (N=49)

		Singulate age at marriage		Emancipative values		Human Development Index		Tertiary education for women		GNI	
		T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2
Singulate age at marriage	T_1	1.00									
	T_2	0.81	1.00								
Emancipative values	T_1	0.60	0.64	1.00							
	T_2	0.69	0.75	0.81	1.00						
Human Development Index	T_1	0.61	0.71	0.59	0.75	1.00					
	T_2	0.57	0.72	0.59	0.75	0.94	1.00				
Tertiary education for women	T_1	-0.16	-0.13	0.01	0.06	0.18	0.16	1.00			
	T_2	0.05	0.12	0.18	0.26	0.40	0.41	0.82	1.00		
GNI	T_1	0.67	0.71	0.64	0.77	0.79	0.77	-0.07	0.17	1.00	
	T_2	0.71	0.75	0.59	0.76	0.77	0.81	-0.10	0.22	0.95	1.00

Appendix 3: Summary of seemingly unrelated regression analysis of mean age at marriage and emancipative values in 49 countries

Equation		Age at marriage at T_2	Emancipative values at T_2
(1)	Age at marriage at T_1	0.90 (7.77)***	
	Change in emancipative values	**1.28 (3.78)*****	
	Constant	0.16 (4.27)***	
(2)	Emancipative values at T_1		1.19 (9.23)***
	Change in age at marriage		**0.20 (3.31)*****
	Constant		-0.06 (-1.21)
	R^2	**0.67**	**0.66**
	RMSE	0.124	0.055
	χ^2	140.60	127.79

Notes: Significance levels: n.s. p>0.05; **p≤0.05; ***p≤0.001. Entries are unstandardized regression coefficients; z-values in parentheses. Post-estimation tests for multicollinearity (VIF), and Breusch-Pagan / Cook-Weisberg test for heteroskedasticity reveal no violation of OLS assumptions in each regression equation; Breusch-Pagan test revealed that residuals were not independent across equations

Appendix 4: Seemingly unrelated regression analysis of mean age at marriage (in logits), emancipative values (in logits), and Human Development Index (in logits) in 49 countries

Equation		Dependent variable		
		Logit of age at marriage at T_2	Logit of emancipative values at T_2	Logit of HDI at T_2
(1)	Logit of age at marriage at T_1 1	0.94 (8.16)***		
	Logit of change in emancipative values	**1.25 (3.01)****		
	Logit of change in HDI	1.57 (3.36)***		
	Constant	0.05 (0.21)		
(2)	Logit of emancipative values at T_1		1.19 (9.05)***	
	Logit of change in age at marriage		**0.14 (2.69)****	
	Logit of change in HDI		0.16 (0.93)	
	Constant		0.10 (0.92)	
(3)	Logit of HDI at T_1			0.98 (14.76)***
	Logit of change in age at marriage			0.13 (3.33)***
	Logit of change in emancipative values			0.14 (1.04)
	Constant			0.25 (4.55)***
	R^2	**0.68**	**0.67**	**0.89**
	RMSE	0.643	0.227	0.181
	χ^2	160.16	127.61	453.32

Notes: Significance levels: n.s. p>0.05; **p≤0.05; ***p≤0.001. Entries are unstandardized regression coefficients; z-values in parentheses. Post-estimation tests for multicollinearity (VIF), and Breusch-Pagan / Cook-Weisberg test for heteroskedasticity reveal no violation of OLS assumptions in each regression equation; Breusch-Pagan test reveals independence of residuals across equations

Appendix 5: Seemingly unrelated regression analysis of age at marriage, emancipative values, and GNI in 49 countries

Equation	Independent variables	Dependent variable		
		Age at marriage at T_2	Emancipative values at T_2	GNI at T_2
(1)	Age at marriage at T_1	0.81 (6.49)***		
	Change in emancipative values	**0.84 (2.45)****		
	Change in GNI	0.50 (2.30)**		
	Constant	0.16 (4.39) ***		
(2)	Emancipative values at T_1		1.05 (8.81)***	
	Change in age at marriage		**0.11 (1.95)***	
	Change in GNI		0.35 (2.40)***	
	Constant		-0.03 (-0.55)	
(3)	GNI at T_1			1.16 (17.69)***
	Change in age at marriage			0.13 (1.48)
	Change in emancipative values			0.66 (2.99)**
	Constant			0.00 (0.15)
	R^2	**0.70**	**0.70**	**0.91**
	RMSE	0.119	0.051	0.079
	χ^2	141.02	158.74	609.84

Notes: Significance levels: n.s. p>0.05; **p≤0.05; ***p≤0.001. Entries are unstandardized regression coefficients; z-values in parentheses. Post-estimation tests for multicollinearity (VIF) and Breusch-Pagan / Cook-Weisberg test for heteroskedasticity reveal no violation of OLS assumptions in each regression equation; Breusch-Pagan test revealed that residuals were not independent across equations

Appendix 6: Seemingly unrelated regression analysis of z-standardized singulate mean age at marriage, emancipative values, and Human Development Index in 49 countries

Equation	Independent variables	Dependent variable		
		Age at marriage at T_2	Emancipative values at T_2	HDI at T_2
(1)	Age at marriage at T_1	0.73 (8.23)***		
	Change in emancipative values	**0.34 (3.87)***		
	Change in HDI	0.17 (2.22)**		
	Constant	0.00 (-0.04)		
(2)	Emancipative values at T_1		0.76 (9.21)***	
	Change in age at marriage		**0.29 (3.53)***	
	Change in HDI		-0.11 (-1.29)	
	Constant		0.00 (0.00)	
(3)	HDI at T_1			0.88 (13.84)***
	Change in age at marriage			0.15 (2.86)**
	Change in emancipative values			0.01 (0.11)
	Constant			0.00 (0.00)
	R^2	**0.67**	**0.66**	**0.88**
	RMSE	0.567	0.579	0.336
	χ^2	153.48	130.53	401.38

Notes: Significance levels: n.s. p>0.05; **p≤0.05; ***p≤0.001. Entries are unstandardized regression coefficients; z-values in parentheses. Post-estimation tests for multicollinearity (VIF), and Breusch-Pagan / Cook-Weisberg test for heteroskedasticity reveal no violation of OLS assumptions in each regression equation; Breusch-Pagan test reveals independence of residuals across equations

Appendix 7: Number of children by self-definition of religious identity of Jewish women in Israel in the Guttman Center surveys 2009-2010

Religious identity	Mean number of children (standard deviation)	N
Secular	1.92 (1.33)	505
Traditional	2.29 (1.60)	299
Religious	2.97 (2.09)	118
Ultra-Orthodox	3.44 (2.84)	87

Declaration

I hereby declare that this dissertation was completed without any unauthorized aid/s. I have used only those sources and aids as are referenced. All exerts, citations and ideas are indicated.

Bremen, November 30, 2012

Evgenia Bystrov