Who starts a family?
The prospective association between psychological factors and family formation processes

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Abstract
The role of psychological factors for family formation processes has been underexplored in demographic research. However, psychological concepts such as personality, identity, or skills may have become increasingly relevant for family formation processes such as marital behavior, childbearing, or partnership dissolution, in particular in countries with high levels of individualism. This dissertation aims to address this research gap in various ways. First, the dissertation chapters examine the prospective associations between personality and family formation (marriage, fertility, dissolution) (chapters 1 and 2), identity and marriage (chapter 3), and leadership skills and family formation (marriage, fertility) (chapter 4). Second, the potential mediating role of socio-economic status indicators (income, education) for these relationships is explored (chapters 2, 3 and 4). Third, full siblings are compared to each other when applicable in order to control for shared background factors such as genetics or parental background (chapters 2 and 4). For these purposes, different data sources are used including large and representative survey data from Germany (chapter 1), Swedish register data (chapters 2 and 4), and survey data from Finland (chapter 3). Methodologically, a mix of widely used analytical methods have been applied such as event-history analyses, linear probability models, or Poisson regression models including individual and sibling fixed effects. The findings of this thesis suggest that psychological factors shape family formation processes across the selected European countries (Germany, Sweden, Finland) with high levels of individualism. Personality factors linked to social abilities (extraversion, social maturity, agreeableness) generally show positive associations with childbearing (chapters 1 and 2) and the probability to get married, and negative correlations with dissolution processes (chapter 2). Emotional stability is also positively associated with family formation processes (marriage, fertility), and negatively linked with partnership dissolution (chapter 2). However, these associations only relate to patterns for males whereas females do either not show clear associations (chapter 1), or had to be neglected based on data restrictions (chapter 2). Furthermore, certainty and commitment with future life plans (as indicator for identity) are positively linked with marriage risks over time (chapter 3). Regarding leadership skills (LS), as one specific type of skills, similar associations to personality effects from study 1 and 2 have been found, i.e. LS are positively correlated with marriage and fertility (chapter 4). The mediating effects of income and education, are relatively small for all associations so that future research may examine the role of other potential mechanisms such as intentions, attitudes, or health. Additionally, sibling fixed effects approaches do not show large difference compared to the patterns that are described above.

Keywords: Psychological factors, family formation, personality, identity, leadership skills, marital behavior, fertility, partnership dissolution.
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Steffen Peters
To my dear wife and my great family. You are the source of my energy.
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Abstract

Previous demographic research has mainly focused on sociodemographic factors such as gender, age, education, or income in order to explain family formation and dissolution processes. Psychological factors such as personality, identity, or skills have been relatively underexplored as explanatories for fertility, marriage or partnership dissolution. This dissertation addresses this research gap and copes with the question who starts a family, with a focus on marriage and fertility, but also including partnership dissolution. The thesis approaches this question from a psychological perspective by considering psychological concepts such as personality, identity, and leadership skills as main explanatories for family formation processes such as marital behavior, childbearing, and (in one chapter) dissolution processes. In addition to the psychological input to my studies, I also consider socio-economic indicators such as education or income as well as (social) contextual factors such as family background for explaining family formation processes.

Numerous demographic theories propose that individual and psychological aspects significantly influence demographic behaviors. For example, the concept of the Second Demographic Transition (SDT) highlights a shift towards more individualized behaviors and self-fulfillment in explaining demographic changes observed in various countries during the latter half of the 20th century. This period saw a decline in marriage and fertility rates alongside rises in cohabitation and divorce rates across many high-income nations. While structural factors such as increased participation of women in the workforce and higher levels of education may have contributed to these trends, the SDT framework also emphasizes the role of improved access to contraception and abortion services in shaping fertility patterns. This advancement has enabled individuals and couples to more easily align their reproductive choices with their personal desires, whether that involves opting for childlessness or planning for a specific number of children. The theory of planned behavior (TPB) further suggests that these fertility preferences are influenced by personality traits, although it stops short of providing a detailed analysis of how specific personality aspects affect fertility attitudes and decisions.

The chapters of this thesis examine different associations given that both psychological concepts and family formation are relatively broad and complicated. For instance, psychological factors include several dimensions includ-
ing personality, identity, and leadership skills, and each of these contains single facets. For instance, personality is shaped by the extent to which a person is extravert, emotionally stable, organized, or open to new experiences. Similarly, identity can be divided in many (sub)dimensions such as social identity, parent, or worker identity. Equivalently, family formation processes include different transitions such as to parenthood, to marriage, or to dissolution. This restricts each dissertation chapter to specific research questions (e.g. to what extent is identity associated with marriage) since it is impossible to study these two broad fields in one single manuscript. Therefore, this dissertation needs to be understood as a collection of the four chapters that, only considered altogether, may provide a clearer picture of how psychological factors are associated with family formation processes in high-income countries with high individualism levels.

The first chapter examines the prospective association between personality and fertility in the context of contemporary Germany using data from the longitudinal household survey SOEP (Socio-economic Panel Study) for the years 2005-2017. It contains personality information measured by the five factor model (FFM) including the factors agreeableness, conscientiousness, extraversion, neuroticism, and openness to new experience. Findings from Cox proportional hazard models examining men show that agreeableness and, in particular, extraversion are positively associated with higher chances to get a first child. However, higher extraversion scores are negatively linked with the chances to get a second child. Personality does not seem to play a great role for childbearing among women in the SOEP data.

The second study of this dissertation extends the first one in numerous ways although only two personality factors are considered – social maturity (SM) and emotional stability (ES). However, family formation is measured by various outcomes, i.e. by marriage, fertility, and partnership dissolution. Furthermore, the analytical sample does not stem from a representative survey (as in study 1) but includes all registered men that were born between 1963 and 1979 in Sweden and were still observed in 2018. The data come from, among other register sources, the Swedish military conscription, which restricts the analyses to men only. A mix of methodological approaches is used to examine the research question (e.g. linear probability models, Poisson regression models, Cox proportional hazard models). Findings of this study demonstrate that SM and ES are positively associated with the probability to get married and the number of children by age 39 and above. Negative associations were found for the relationship between both SM and ES on the one hand, and dissolution risks (divorce, cohabitation dissolution) on the other. However, the negative relationship has only been found for the lowest personality scores. Dissolution risks among higher SM and ES scores (3, 4, 5) do not show very different dissolution risks. Further analyses of this study reveal that the patterns are neither mediated by income, education, and marital/parental status, nor very
different when brothers are compared to each other, i.e. shared background factors do not explain the associations to a large extent.

The third study focuses on the association between identity and marriage. As mentioned above, identity reflects numerous dimensions and may be measured in different ways. In this chapter, the exploration of and commitment to one’s own future life plans is used as an indicator of personal identity. Analyses are based on survey data from Finland, namely the Finnish Educational Transition Studies, which follows secondary school students from different regions in Finland over time. Results show that individuals with larger commitment to future life plans have higher chances to get married over time, and that commitment levels decrease among singles over time. Similar to the second study, the results do not indicate mediation by income, education, or parenthood.

The final chapter of my dissertation studies the relationship between leadership skills and family formation processes (marriage, fertility) among men in Sweden. These analyses are based on Swedish register data, just as the analyses from the second chapter, and the measure of leadership skills also stems from military conscription. Again, linear probability and Poisson regression models are applied. Patterns are very similar to the associations described above for SM and ES from chapter two. Findings suggest that leadership skills are positively associated with the probability to get married and the number of children by age 39 or later among males in Sweden. Once more, mediation by income, education, and parental/marital status is very limited, and the observed patterns cannot be explained by shared family background factors to a large extent either since brother comparisons reveal similar findings.

This dissertation demonstrates that psychological factors have a strong impact on family formation processes in contemporary Germany, Sweden, and Finland. Personality, identity, and leadership skills shape individual transitions to marriage, parenthood, and partnership dissolution. Consequently, this thesis emphasizes the relevance of psychological concepts for family formation by arguing theoretically why these concepts are linked with each other, and by examining empirically how they are associated with each other. However, there is still much more room to explore regarding the role of these psychological concepts for marriage, childbearing, and dissolution.
Sammanfattning (Summary in Swedish)

Betydelsen av psykologiska faktorer för processer relaterade till familjebildning har ofta förbissetts i demografisk forskning. Psykologiska faktorer kopplade till personlighet, identitet och färdigheter kan dock ha kommit att bli alltmer relevanta för processer såsom åktenskap, barnafödande och separationer i kontexter med en hög grad av individualism. Denna avhandling syftar till att positionera sig i denna forskningslucka. Till att börja med undersöker avhandlingskapitlen de prospektiva sambanden mellan personlighet och familjebildning (åktenskap, fruktsamhet, separationer, i kapitel 1 och 2), identitet och åktenskap (kapitel 3), samt ledarskapsförmågor och familjebildning (åktenskap, fruktsamhet, i kapitel 4). För det andra utforskas den möjliga modererande rollen av socioekonomisk status (inkomst, utbildning) för dessa relationer (kapitel 2, 3 och 4). För det tredje jämförs helsyskon för att kontrollera för gemensamma bakgrundsfaktorer såsom genetik och föräldrars bakgrund (kapitel 2 och 4). De empiriska analyserna bygger på data från stora och representativa enkätundersökningar från Tyskland (kapitel 1), svenska registerdata (kapitel 2 och 4) och enkätundersökningar från Finland (kapitel 3). Datamängderna analyseras med hjälp av olika analytiska metoder, såsom livsförloppsanalyser, linjära sannolikhetsmodeller och Poisson-regressionsmodeller med individuella och syskonfixerade effekter. Avhandlingens resultat visar att psykologiska faktorer inverkar på familjebildningsprocesser i de studerade europeiska länderna. Personlighetsfaktorer kopplade till sociala förmågor (extroversion, social mognad, vänlighet) uppvisar generellt sett positiva samband med barnafödande (kapitel 1 och 2) och sannolikheten att gifta sig, samt negativa korrelationer med separationer (kapitel 2). Emotionell stabilitet är också positivt relaterad till familjebildning (åktenskap, fruktsamhet) och negativt kopplad till separationer (kapitel 2). Dessa samband är dock endast tydliga för män medan kvinnor antingen inte uppvisar några tydliga samband (kapitel 1) eller inte kan studeras på grund av olika datarestriktioner (kapitel 2). Därutöver kopplas engagemang visavi framtida livsplaner, som en indikator för identitet, till ökade åktenskapsintensiteter (kapitel 3). Ledarskapsfärldigheter är slutligen positivt korrelaterade med åktenskap och fruktsamhet (kapitel 4). De modererande effekterna av inkomst och utbildning är relativt små för alla studerade samband vilket indikerar att framtida forskning i stället skulle kunna fokusera på andra möjliga modererande mekanismer, såsom attityder eller hälsa. Dessutom uppvisar de syskonfixa
effekterna inte någon större skillnad jämfört med de generella samband som beskrivs ovan.
List of Studies

Study I: The prospective power of personality for childbearing: A longitudinal study based on data from Germany
Study II: The prospective power of personality factors for family formation and dissolution processes among males. Evidence from Swedish register data
Study III: Identity and marriage. A bidirectional approach based on evidence from Finland
Study IV: Leadership skills and family formation among males. A study based on Swedish register data
During the time of my PhD, I have presented my work at a number of conferences, submitted it to various journals, and talked about it with leading experts in the field. One question that has frequently been asked and that has always been a challenge for me is: *why and how should psychological factors be linked with family formation outcomes?* Obviously, this is an important question that should be addressed in my work, as it sketches the relevance and theoretical background of my research.

Recently, I have thought intensively about the question regarding why and how psychology is linked to family formation, and one approach to address it was to turn the question around: *is there any way that psychological factors are not associated with family formation processes?* To answer this question appears even more difficult to me, at least considering modern high-income societies, in which individualism is relatively prominent such as Sweden, Finland or Germany (The World Values Survey, 2023).

In the more recent past, psychological factors have been increasingly studied with regards to demographic outcomes. For instance, personality has been linked with health (Murray & Booth, 2015), mortality (Graham et al., 2017), or migration (Bernard, 2022; Jokela, 2009). The association between psychological factors and family formation processes has been less explored, though. This may be based on the lack of theoretical approaches that cope with the extent to which psychological factors may shape family formation.

The second demographic transition (SDT) theory, developed by Ron Lesthaeghe and Dirk van de Kaa (Lesthaeghe & van de Kaa, 1986; van de Kaa, 1987) in the 1980s, has stressed the importance of individualization for family formation in high-income countries. Certain trends in high-income societies, e.g. the rise of female labor market participation or increases in educational levels, have contributed to changes in demographic behavior (fertility, marriage, partnership dissolution) (van de Kaa, 1987). Therefore, individual life course trajectories, and in particular family life trajectories, have shifted away from traditional and standardized, towards individualized and de-standardized pathways (Elzinga & Liefbroer, 2007), known as de-standardization thesis (Brückner & Mayer, 2005; Buchmann & Kriesi, 2011). Consequently, life course decisions such as family formation are essentially shaped by individual preferences but social contexts such as macro-structural restrictions influence these decisions and, therefore, family formation as well (Dommermuth, 2008).
Another theoretical framework that considers psychological concepts as relevant factors for explaining family formation, is the theory of planned behavior (TPB). Specifically, personality is assumed to shape fertility via attitudes and intentions (Ajzen & Klobas, 2013). Both the SDT and the TPB may serve as theoretical foundations for explaining why it is important to look at psychological factors when examining family formation processes. However, neither one explains why and how psychology predicts childbearing or marital behavior. In this kappa, I will discuss several theoretical perspectives critically, and what their relevance is to my dissertation topic.

The lack of theoretical foundation for psychological factors as predictors for demographic outcomes may be one reason why psychological factors have, until recently, generally been neglected with regards to family formation processes. A further reason may be related to data availability, which has neglected psychological measures for a long time in demographic surveys. A further challenge addresses the volatility of psychological factors over time and age, which makes it difficult to establish clear connections between psychological factors and family formation.

In my dissertation, I consider a number of psychological measures as determinants for family formation processes. First, I focus on personality factors measured by the five factor model (FFM), which has been – among all personality measures – the most often used psychological predictor for family formation outcomes (fertility, marriage, partnership dissolution). Second, I look at the association between identity, which is another key concept of psychological research, and marriage. Third, I examine the correlation between leadership skills (as one type of skill – another psychological measure) and marriage/completed fertility. Given that psychological factors and family formation are relatively broad and complex concepts, the aim of this dissertation can only be to unpack the link between these concepts as much as possible. However, the provided insights will be far from complete. For instance, the associations between psychological factors and marriage are restricted to identity, leadership skills and two personality factors in this dissertation. Similarly, fertility has been studied in relationship to personality and leadership skills, but not to identity, and dissolution processes have only been studied with regard to personality factors. In the kappa, the examined associations between psychological factors and family formation processes are extensively discussed but additional information on (non-studied) correlations will be given whenever it appears appropriate.

These studies will provide the reader with a relatively broad overview of how psychological factors are associated with family formation in high-income countries, where family formation processes are typically, albeit not always, a decision. Although some processes may appear unplanned (e.g. unplanned pregnancies) and some individuals do not have full control over fertility behavior (e.g. infertile couples), members of high-income societies may have a large extent of autonomy on whether, and when, to have a child, get married, or separate from a partner. Therefore, individual factors, i.e. psychological...
factors, have the potential to play an important role for these individual decisions.

There are several aims that this introductory chapter of my thesis on the association between psychological factors and family formation processes follows. First, this kappa will introduce the key psychological concepts that play a major role in my dissertation chapters (personality, identity, leadership skills). These psychological concepts are very broad in themselves, i.e. they capture numerous facets and dimensions. In this dissertation, however, only specific, albeit widely used and accepted, measures could be explored. For instance, two of my dissertation chapters are based on the five factor model (FFM) as personality measure, which has commonly been used in research as indicator for personality (Ashton & Lee, 2005; Goldberg, 1993). However, personality consists of many different facets including behaviors, thoughts, and feelings (Uher, 2017), and some previous studies have also looked at other personality factors in relationship with family formation such as independence (Avison & Furnham, 2015), sociability (Jokela et al., 2009), self-esteem or shyness (Hutteman et al., 2013). In reality, it might be impossible to capture all single personality facets in one dissertation but the FFM has been shown as robust and reliable personality measure (Goldberg, 1993). Similarly, identity includes many different dimensions such as personal and social identity (Côté, 2006; Marcia, 1993; Meeus, 2011), or the identity as member of several social groups (worker, gender etc.) (Hogg et al., 1995; Scheepers & Ellemers, 2019) as suggested by the social identity theory (Tajfel, 1974; Tajfel & Turner, 1979). One chapter of this dissertation considers future life plans as only one dimension of identity but it may be argued that future life plans represent a variety of identity dimensions very well since they may include plans on important life trajectories such as career paths, educational transitions, or family formation. Leadership skills, another psychological concept that is used in this dissertation, may be defined in various ways and includes different facets such as organizational agility or command skills (Floris et al., 2020). The measure of leadership skills in this dissertation stems from psychological interviews that were conducted during the Swedish military conscription, and includes important facets of social adaptation and personality of the individuals (Ministry of Defense Sweden, 1984).

Second, this kappa has the aim to emphasize the relevance of psychological factors for family formation processes based on existing sociological and demographic theories. Therefore, the second part of this kappa presents and discusses different theoretical approaches. Particular focus of the discussion on the theoretical frameworks shall lie on the role of the social context for psychological factors, family formation processes and the association between these concepts. Additionally, the relevance of the socio-economic status (SES) such as career outcomes (e.g. income) or education will be discussed. The social context and SES are important potential determinants for the link between psychological factors and family formation and are, therefore, represented in the analyses of my dissertation chapters as well.
Third, the kappa intends to describe the data and methods that are used in the dissertation chapters in more detail. The German Socio-economic Panel Study (SOEP), Finnish Educational Transition Studies (FinEdu), and Swedish register data have been used in order to examine the research question of this thesis. All data sources have in common to provide longitudinal data including information on psychological concepts and family formation processes such as marital behavior and fertility. This allows me to explore the prospective association between the two concepts, i.e. psychological factors were measured before the family event of interest in each dissertation chapter, which is an important advantage compared to previous studies.

Based on the goals above, the kappa introduces the reader to the topic of the dissertation, whose main goal it is to examine the prospective association between psychological factors and family formation processes. Therefore, this dissertation shall emphasize the role of psychological factors for family events and transitions, demonstrate why it is relevant to consider concepts such as personality, identity, or skills for marital behavior or childbearing, and provide empirical evidence of the association between these concepts. The focus of this thesis is it to explain family formation processes by psychological factors with particular focus on both the SES (indicated by income and education in the analyses) and social factors (e.g. gender, family background).
Psychological Concepts

Before I elaborate further on the association between psychological factors and family formation processes, I would like to provide the reader with a definition of the used psychological concepts. In my dissertation, I focus on personality, identity and leadership skills as predictors for marriage, childbearing, and dissolution processes. In the following sections, I will explain what these psychological terms mean, how they can be measured, and how they may be linked with family formation.

The question may arise whether psychological concepts (e.g. personality, or identity) should be operationalized through a number of separate dimensions (e.g. personality factors), or whether they should be captured in clusters or profiles. Psychological factors are combined within each individual simultaneously, therefore, it appears intuitive to consider personality, identity, or skills as profiles. I have run additional analyses on personality clusters (using traits of the FFM in chapter 1) but these have not revealed clear patterns, and included identity profiles in my analyses of chapter 3. In general, however, the focus of my analyses lies on treating psychological facets separately, at least regarding personality. This is in line with the majority of previous studies that have examined the relationship between personality and family formation based on separate personality traits and different family outcomes.

Personality Factors

Personality is a widely used and complex psychological concept that covers a broad range of facets. It captures the ways in which individuals think, feel, and behave (Uher, 2017). Someone’s own personality is intrinsically linked to the individual throughout the entire life span. Previous studies have shown that some personality factors are more stable over the life course whereas others are more prone to change (Hopwood & Bleidorn, 2018). Furthermore, personality stability depends on age (Lucas & Donnellan, 2011; Specht et al., 2011), whether personality has been assessed via self-reports in surveys or interviews by trained raters (Hopwood & Bleidorn, 2018), the type of personality measure, and time intervals between observations (Ardelt, 2000). For instance, relatively low personality stability has been found within a Scottish sample across 63 years (Harris et al., 2016).
In general, however, a larger number of studies suggest a relatively high stability of personality over age. This evidence reaches back to some decades ago (Costa Jr. & McCrae, 1986), and suggests stable personality components across 30 (Leon et al., 1979), or even 50 years (Damian et al., 2019). Typically, individual personality levels become more stable during young adulthood, and do not change much more after age 30 (McCrae & Costa Jr., 2007; Terracciano et al., 2010). Further evidence suggests that personality stability declines again in older ages (60 years and above) (Lucas & Donnellan, 2011).

In demographic research, a number of different personality facets have been studied with regards to family formation outcomes. For instance, it has been explored to what extent family formation processes depend on personality facets such as emotionality, sociability (Jokela et al., 2009), self-monitoring (Leone & Hawkins, 2019), risk-tolerance (Schmidt, 2008), self-esteem, aggressiveness, or shyness (Hutteman et al., 2013). Several approaches to measure personality have been presented, e.g. the Hunter Wolf Scale of type A by Wolf and colleagues (1982), which considers factors such as aggression, eagerness-energy, responsibility, and leadership (Ravaja et al., 1996). However, one concept has been established as the most widely accepted measure of personality: the Five Factor Model (FFM). Therefore, I will focus on the FFM when I refer to personality in the following sections but it should be kept in mind that there are other personality factors that have been used in personality research.

Five Factor Model

The Five Factor Model (FFM) has been developed from the so called ‘Big Five’ (Ashton & Lee, 2005), which may be the more prominent version of this personality measure. Sir Francis Galton is considered to be among the first personality researchers who used a dictionary for collecting personality adjectives in order to find a proper number of personality factors (Goldberg, 1993). Subsequent personality researchers continued this work. Norman (1967), for instance, collected all terms relating to character or personality from the ‘New International Dictionary’. He excluded inappropriate terms based on a variety of reasons (e.g. seldom used, stemming from dialects). The resulting 2,800 terms were sorted into three general categories (‘Stable (Biophysical) Traits’, ‘Temporary States and Temporary Activities’, and ‘Social Roles, Relationships, and Effects’) with three or four subcategories (Norman, 1967).

At an early stage of personality research, Thurstone (1934) was the first to find five broad personality factors that are sufficient to describe 60 personality facets based on factor analyses. However, these 60 facets were not systematically, but rather arbitrarily, selected (Goldberg, 1993). Shortly after, Cattell (1943) established the approach to use personality measures, at which each end represents one personality facet (bipolar variables). For instance, the measure of extraversion not only provides researchers with information on
extraversion (e.g. a high extent of extraversion) but also on introversion (e.g. a low extent of extraversion), or low scores on neuroticism are equivalent to a high extent of emotional stability. Following this approach, one score of one personality dimension can be directly translated into its opposite (which, in turn, is another personality dimension). Subsequent research has then examined how many factors are sufficient in order to capture a large number of personality facets. Although Thurstone (1934) reported five broad personality factors, Donald Fiske (1949) was credited for finding the five-factor structure of personality (Goldberg, 1993) due to his more systematic approach. He used 22 bipolar personality facets, according to which individuals have been rated by three different sources: observers, mates, and self-reports (Fiske, 1949). The key finding was that five personality factors have emerged from factor analyses – independent from the rating source: 1) Social Adaptability, 2) Emotional Control, 3) Conformity, 4) Inquiring Intellect, and 5) Confident Self-Expression (Fiske, 1949). Such a five-factor structure (even if given different labels) has been supported by subsequent research (Norman, 1963; Smith, 1967; Tupes & Christal, 1992). Despite some more or less serious critics of the five-factor structure – some researchers proposed more (Cattell, 1943) and others proposed fewer factors (Peabody, 1967) – this number of personality factors has evolved to be quite robust (Goldberg, 1993; Kutta et al., 2020). Therefore, one reason for the wide acceptance of the Big Five lies in the fact that, despite its numerous critics and attempts to improve or even replace it, no better measure has yet been found (Goldberg, 1993).

Since the FFM has been derived from the Big Five, the differences between these personality measures are fairly small. As a first example, the Big Five measure is rooted in personality factor searches using dictionaries (lexical approach), i.e. personality researchers have looked at all words from dictionaries that describe personality, and run factor analyses in their studies to find overall factors (Goldberg, 1993). The FFM, on the other hand, has been developed using survey approaches, i.e. personality facets have been collected via questionnaires and, according to factor analyses, five overall factors have been established (McCrae & Costa, 1987). Secondly, the names of some factors differ slightly between the Big Five and the FFM. While the Big Five model calls one factor ‘intellect’, the FFM uses the term ‘openness to experience’ (Kutta et al., 2020). Also, the Big Five model considers emotional stability while the FFM uses its opposite (neuroticism). Further elaborations on the differences between Big Five and FFM can be found in Kutta et al. (2020). Since my research is (at least partly) based on surveys but not on dictionaries, I prefer to use the term ‘FFM’ over the ‘Big Five’ for consistency purposes, although one of my chapters looks at emotional stability (instead of neuroticism from the FFM).

The FFM describes the personality of individuals using five personality dimensions: 1) ‘agreeableness’ (being forgiving, friendly, sympathetic, or warm), 2) ‘conscientiousness’ (well-organized, hardworking, thorough, or...
liable), 3) ‘extraversion’ (talkative, sociable, or active), 4) ‘neuroticism’ (worrying, nervous, moody, or emotionally insecure), and 5) ‘openness to new experience’ (curious, broad-minded, or creative) (McCrae & Costa, 1987).

The extent to which these personality factors are present varies between individuals, and between groups. We know from previous studies, for instance, that men and women differ with regards to the levels of all these personality factors (Schmitt et al., 2017). In general, women have been found to score higher on agreeableness, conscientiousness, neuroticism (Schmitt et al., 2017; Vedel, 2016), and extraversion (Schmitt et al., 2017). In line with this, one study based on U.S. students has found higher scores on agreeableness, conscientiousness, and openness for females compared to males (Kwon & Song, 2011). However, there is also mixed evidence among students from North America and Europe, in particular regarding gender differences in openness (Schmitt et al., 2017). If gender differences have been found, however, they appear to be rather small, in general, and vary across cultures (Schmitt et al., 2017).

A few studies have also examined the extent to which the development of personality factors differs between genders, and findings have generally been mixed. For instance, no large differences in changes of personality factors between men and women from the U.S. over a 50-year period of time have been detected (Damian et al., 2019). However, this study is based on data with only two time points (50 years apart) of personality measure (Damian et al., 2019). Therefore, many events and processes may have happened in between, so that more detailed trends in, for instance, young or mid-adulthood could not have been observed. These ages may be of particular interest though, since a number of transitions typically appear at these age points (e.g. transition to parenthood, marriage, or from school to employment). Since these transitions are skipped in the observation period, findings may be limited with regards to personality development over time. Referring to conscientiousness, for instance, evidence from the Netherlands suggests linear and positive trends among young females whereas a rather U-shaped relationship has been found for males (Borghuis et al., 2017).

The linear trend among women is in line with the maturity principle (Borghini et al., 2017). This principle claims that individuals increase their levels of agreeableness, conscientiousness, or emotional stability over the life course (Caspi et al., 2005). Increases in certain personality traits come along with personality maturity processes, which are important for being a productive and functioning part of the society (Caspi et al., 2005). Moreover, individuals with high levels of psychological maturity may be more attractive in various dimensions of life so that they may benefit from their maturity with regards to love, career, and health (Caspi et al., 2005). The maturity principle may explain increases in certain personality characteristics of both genders, and of conscientiousness among females in the study of Borghuis and colleagues (2017).
The U-shaped patterns of conscientiousness among men, however, rather suit the disruption hypothesis (Borghuis et al., 2017). This hypothesis assumes that the development of personality factors is interrupted by temporary throwbacks, in particular in adolescence (Soto & Tackett, 2015). One common explanation is that reference values change during the transitions to and through adolescence, i.e. parents and other adults may increasingly expect more mature behavior from the juveniles (Denissen et al., 2013). Such expectations may not be met immediately by the adolescents but rather lead to internal processes that individuals need to reflect on (Denissen et al., 2013). During this phase, personality levels such as conscientiousness may decrease temporarily before the new expectations of adults are adapted (Denissen et al., 2013). Then, adolescents change their behavior, which is realized by the social environment, and personality levels (e.g. on conscientiousness) increase (Denissen et al., 2013). Given that the sample of Borghuis and colleagues consists of males and females in adolescence and early adulthood (12-22 years), the disruption hypothesis seems to explain the results on men (Borghuis et al., 2017). The result may indicate that girls are more robust towards disruption in personality development but tend to follow the maturity processes. However, these gender differences and their determinants remain speculative. Additionally, small differences between genders in personality changes have been found for emotional stability in Italy, with emotional stability increasing over age for males but not for females (Vecchione et al., 2012).

However, personality trait levels may not only vary between groups but also between individuals within the same group. For instance, there may be more or less extravert males as well as more or less conscientious females, depending on a large number of very individual facets (e.g. previous experiences, social surroundings, or the current life situation). These differences in personality levels among men or women may explain within-group differences in family formation. Therefore, it is essential to look at differences between both individuals from the same group and the groups themselves. My dissertation combines these perspectives. Chapter one, for instance, examines differences in childbearing transitions between both genders, whereas study 2 focuses on males only, which provides a more in-depth picture about the association between personality and family formation among males.

Regarding between-group comparisons, gender differences in personality trait levels and developments may also result in differences in the association between personality and family formation processes between men and women. Indeed, more or less distinct patterns appear from previous research, as discussed below. Before presenting empirical evidence on the association between personality factors and family formation, though, potential pathways for this relationship shall be discussed briefly.
Potential Pathways for the Link between Personality and Family Formation

One of the essential life decisions relates to family formation. Personality may shape these decisions via several potential pathways. One may group these pathways into two main categories: 1) pathways related to socio-economic status (SES) such as educational trajectories or income developments, and 2) non-SES related pathways, and both may correlate with each other. Personality may shape family formation processes through 1) SES indicators such as income, education, or the occupational choice. Holland (1958, 1959) has suggested that personality plays an important role for labor market outcomes such as vocational choice or college paths. Work situations and conditions, in turn, may affect family formation processes as well, in particular when individuals need to cope with work and family decisions that do not always go hand-in-hand (work-family conflict). However, the work-family conflict may have become less relevant over time in developed countries based on governmental support such as the opportunity for paid parental leave, and the guarantee to return to the prior job once the child has been born and the parental leave has ended, respectively. Nevertheless, previous research suggests that lower SES resources such as unemployment and economic uncertainty are linked with lower fertility intentions, at least among women in Sweden (Fahlén & Oláh, 2013). Similarly, fewer economic resources are associated with lower fertility intentions in Germany (Geist & Brauner-Otto, 2017).

Furthermore, personality may shape family formation via 2) non-SES pathways. For instance, individuals may think that their personality facets do not fit with the common challenges that parenthood may bring (Park, 2005). One reason for such a perspective may be that individuals consider children to be challenging to the realization of their own freedom (Langdridge et al., 2005). Therefore, individuals need to evaluate carefully and wisely whether they want to have children, and if so, when and how many. Similarly, personality may predict marital behavior since marriage is typically an individual choice to a large extent (i.e. individual desires and preferences are important), at least in high-income societies in Europe with relatively high levels of individualism. However, a marriage consists of two partners by definition so that it may also be considered as social behavior, i.e. a marriage depends on social relationships as well as on social norms that may drive the individual preferences. Nevertheless, personality may already play a role in partnership formation. As previous research has shown, individuals desire certain personality facets among their potential partners such as kindness (Buss & Barnes, 1986; Li et al., 2002), or responsibility (Buss & Barnes, 1986). Personality traits may not only be advantageous on the partner market due to partner preferences, but certain personality factors may also increase the chances of meeting new people such as extraversion or kindness. Individuals with such
characteristics may create larger social networks and, therefore, have more opportunities to find a partner. For instance, people with high extraversion scores are more likely to build up a larger social network (Neyer & Asendorpf, 2001; Schmitt & Shackelford, 2008), and to eventually enter marriage (Jokela et al., 2011; Lundberg, 2012). Furthermore, personality is linked with partnership satisfaction and happiness. Agreeableness belongs to the traits that are typically positively associated with relationship satisfaction, whereas neuroticism is quite detrimental for this outcome (Orth, 2013).

As mentioned above, SES and non-SES pathways may overlap and influence each other. Previous research has shown that personality is not only linked with single family formation outcomes but also with entire life trajectories (Mencarini et al., 2022). For instance, conscientiousness is negatively linked with trajectories shaped by family formation postponements and employment instability among women in Germany (Mencarini et al., 2022). Such an approach focuses on life trajectories including fertility, marital behavior, educational paths, and professional career. These facets cannot be disentangled from each other using such an approach, though, so it is not possible to say whether an association is driven by family formation processes (childbearing, marriage) or career-related processes (education, employment). My dissertation focuses on separate family formation outcomes only, but running mediation analyses in order to evaluate the SES impact on the link between psychological factors and family formation. Other (non-SES) pathways such as preferences, satisfaction, attitudes or intentions are not the focus of this dissertation but will be discussed in each chapter whenever it seems appropriate. With this background information on potential pathways between personality and family formation, empirical evidence will be presented for each personality factor of the FFM below.

Agreeableness

Agreeableness (being kind, warm, friendly) may intuitively belong to the factors that are most promising in terms of finding a partner and having children. Indeed, previous research has shown that individuals particularly search for partners who are kind and considerate (both are indicators for agreeableness) (Buss & Barnes, 1986; Li et al., 2002). This may be rooted in experiences in younger ages, in which individuals with a large extent of agreeableness are less prone to be in conflict with individuals from the opposite gender (Asendorpf & Wilpers, 1998). Therefore, agreeableness may be expected to promote romantic relationships. Once having found a partner, a large extent of agreeableness is, moreover, a beneficial trait for stabilizing the relationship since this factor is positively connected with partnership satisfaction (Orth, 2013) and quality (Holland & Roisman, 2008). Agreeableness is not only positively linked with partnership but also with fertility outcomes. A large extent of agreeableness fosters fertility intentions. For
instance, nurturance (being helpful and sympathetic) and affiliation (being open to meeting new people and finding friends), which are associated with agreeableness (Costa Jr. et al., 1991), are positively linked with fertility intentions (Miller, 1992). Additionally, previous research has demonstrated that agreeableness fosters planned pregnancies among women, and prevents unplanned pregnancies among men (Berg et al., 2013). Actual fertility behavior is also positively related to agreeableness. For instance, agreeableness is positively linked with the number of children women have and the timing of the first childbirth in men’s life courses (Jokela et al., 2011). Furthermore, agreeableness is negatively linked with childlessness, at least among women (Tavares, 2016). The positive association between agreeableness and fertility among females weakens only slightly with higher birth parities (Jokela et al., 2011).

Conscientiousness

The association between conscientiousness and family formation may be less clear than the link between agreeableness and family formation. Conscientiousness facets such as being well-organized and hardworking are associated with career outcomes that may also determine partnership formation and fertility. On the one hand, previous research has suggested a negative association between conscientiousness and career outcomes (Boudreau et al., 2001; Bozionelos, 2004; Gelissen & de Graaf, 2006; Roberts & Bogg, 2004), which may be based on higher conscientiousness being linked with vocational paths rather than with educational paths in younger ages (Usslepp et al., 2020). Therefore, higher conscientiousness may lead to younger people entering the labor market relatively early in life instead of following educational paths. This may further mean that such individuals have more resources available in early life stages, beneficial for partnering and childbearing.

On the other hand, however, a work-family conflict may also arise given that conscientious individuals typically follow clear career goals (Judge & Ilies, 2002), and report relatively high job satisfaction (Sutin et al., 2009). Therefore, individuals, and in particular women, may be in a situation in which they are forced to decide between career and family formation, which may result in career-oriented females showing lower fertility (Blossfeld & Huinink, 1991; Gustafsson, 2001; Shreffler & Johnson, 2013; Van Bavel, 2010). In line with this, postponements in childbearing are typically linked with higher income, in particular among women (Miller, 2011). For males, however, a positive relationship between career outcomes and childbearing has been shown (Andersson & Scott, 2007; Hopcroft, 2006; Kolk & Barclay, 2021). Furthermore, conscientiousness may be linked with partnership stability. For instance, this factor is positively connected with relationship quality (Holland...
& Roisman, 2008) and partnership happiness (Orth, 2013), but negatively associated with infidelity risks (Orzeck & Lung, 2005).

With respect to empirical evidence on the conscientiousness-fertility link, a large extent of conscientiousness has been found to prevent unplanned pregnancies (women), and to promote planned pregnancies (men) (Berg et al., 2013), possibly through the use of contraceptives. In general, previous studies point to a negative association between conscientiousness and childbearing in high-income settings. For instance, high conscientiousness scores are associated with a smaller number of children (Jokela et al., 2011; Skirbekk & Blekesaune, 2014), and a lower probability of having a first and a second child (Jokela et al., 2011), and these patterns are particularly distinct among women.

Extraversion

Among all traits from the Five Factor Model, extraversion is typically the one with the most distinct associations with family formation processes. Being active and sociable clearly helps to find a partner, whom one may also have children with, but also to gain resources (e.g. in terms of employment continuity, support for work-family conflict) from the labor market (Adsera, 2004, 2011; Conti & Sette, 2013). Whereas potential mechanisms on the personality-family formation nexus via the labor market are rather complicated and may vary between individuals and companies, the path via networking appears to be more obvious. Previous research has shown that high extraversion is positively connected with the social network size and the closeness to network members (Neyer & Asendorpf, 2001; Schmitt & Shackelford, 2008). Therefore, extravert individuals experience greater opportunities to find one or more potential partners for a serious relationship (e.g. cohabitation or marriage). Empirical evidence in line with this hypothesis points at higher extraversion being connected with an earlier entry into marriage (Jokela et al., 2011). Additionally, extraversion is positively associated with partnership quality (Holland & Roisman, 2008; Orth, 2013).

Extraversion and its corresponding lifestyle (being active, having larger social networks) may also affect sexual activity and childbearing (Allen, 2019). For instance, numerous previous studies have demonstrated a larger number of sexual partners among individuals with higher extraversion scores (Allen & Desille, 2017; Miller et al., 2004; Nettle, 2005, 2006; Schmitt, 2004). This may be one reason for extravert individuals showing higher risks for unplanned pregnancies (Berg et al., 2013). Furthermore, extravert individuals are more likely to enter parenthood (Jokela et al., 2011), have children earlier in life (Jokela et al., 2011; Tavares, 2016), and are less likely to stay childless (Avison & Furnham, 2015). Positive associations between extraversion and childbearing differ between genders, with stronger associations among males (Allen, 2019; Jokela et al., 2011; Skirbekk & Blekesaune, 2014), and between
birth parities, with stronger associations regarding first compared to second childbirths (Jokela et al., 2011).

Neuroticism

Neuroticism (or its reverse, emotional stability) has shown unclear patterns with regards to family formation processes. This may be based on two convincing lines of argumentation. On the one hand, there are good reasons for individuals who are nervous, insecure or low on emotional stability to enter romantic relationships and parenthood. For instance, such individuals may aim for higher stability and security in life, and stable unions or parenthood may help them to reach this goal (Friedman et al., 1994; Johns et al., 2011). Another potential explanation for a positive relationship between neuroticism and fertility may be that this personality factor is positively associated with unplanned pregnancies among women (Berg et al., 2013), possibly due to irregularities in contraceptive use or higher frequency of sexual relations. From an economic perspective, individuals with higher scores on neuroticism are more likely to have resources available for providing support for a partner or a child early in life since they tend to enter employment instead of following educational paths after upper secondary education (Usslepp et al., 2020).

On the other hand, however, a negative association between neuroticism and family formation outcomes may also appear plausible. Insecure individuals may particularly consider parenthood as a burden that they would like to avoid instead of committing to (Lillard & Waite, 1993). Furthermore, previous studies have shown that high scores on neuroticism are negatively associated with partnership quality (Donnellan et al., 2004) and satisfaction (Fisher & McNulty, 2008; Karney & Bradbury, 1997; Malouff et al., 2010; McNulty, 2008), which may also reduce motivation to have a child. These considerations speak somewhat of a negative association between neuroticism and family formation outcomes.

Indeed, some empirical evidence for a negative association between neuroticism and fertility exists. Higher scores on neuroticism are, for instance, linked with a lower number of children (Jokela et al., 2011), and with a lower probability of entering parenthood (Jokela, 2012). On the other hand, however, it has also been reported that higher neuroticism scores are linked with an earlier entry into parenthood (Jokela et al., 2011; Tavares, 2016). Therefore, previous findings on the specific association between neuroticism and fertility are mixed.
Openness to Experience

Openness to experience and its facets (creativity, curiosity, imagination) may be linked with family formation, particularly via vocational choice. This factor plays an important role for certain types of work, e.g. author or journalist (Costa et al., 1984), and is also positively connected with becoming self-employed (Caliendo et al., 2014). Having a child may be considered to restrict productivity in these occupations, though, since creativity or independence may be disturbed by childcare tasks. Additionally, openness predicts higher educational levels and cognitive achievements (Wainwright et al., 2008), both of which are typically negatively associated with childbearing (Hopcroft, 2006; Skirbekk, 2008). These negative associations are usually stronger among women (Sobotka et al., 2017), but have weakened over time (Jalovaara et al., 2019; Kravdal & Rindfuss, 2008).

With respect to reproductive behavior, previous research has also shown that openness is negatively linked with marriage risks, and with higher age at first marriage (Jokela et al., 2011). Moreover, this personality factor decreases the risk of an early onset of sexual activity and with the number of unprotected sex occasions (Miller et al., 2004), which may indicate delayed or no entry into parenthood. Indeed, several previous studies have suggested a negative correlation between openness and fertility. For instance, higher scores on this trait are linked with later first childbirth (Jokela et al., 2011; Tavares, 2016), lower probabilities of entering parenthood (Jokela, 2012; Jokela et al., 2011), and fewer children (Jokela et al., 2011; Skirbekk & Blekesaune, 2014).

Identity

Identity is another key concept of psychological research. Like personality, it is a very complex concept that captures a range of psychological facets and dimensions. Among other definitions, identity may be understood as a collection of different meanings that are linked with the self and its roles in different social situations (Burke & Tully, 1977).

The Understanding of Identity Based on Erikson

One of the first researchers who brought identity to the research agenda was Erikson, who focused on ‘sameness’ and ‘continuity’ of individuals in order to describe identity (Erikson, 1968). Subsequent researchers have added ‘distinctiveness’, and considered sameness as an indicator for ‘coherence’ (van Doeselaar et al., 2018). Each of these dimensions relates to the self of individuals – whether across life domains, e.g. one person acts or feels similarly at work and in their private life (coherence); across time, e.g. one person shows
similar attitudes or behaviors over time (continuity); or compared to other individuals, e.g. feeling unique and distinct (van Doeselaar et al., 2018).

Erikson described identity rather vaguely, using political, religious, or occupational facets as important elements (Erikson, 1950, 1968). Subsequent identity researchers have specified the identity concept more carefully, distinguishing – among others – between social and personal identity (Côté, 2006). Both dimensions form identity and may overlap each other. In line with previous research, however, I focus on personal identity as identity indicator in my dissertation, which includes individual facets such as values, beliefs, or life plans (Schwartz et al., 2014). Life plans may be particularly appropriate to the study of personal identity since they capture diverse life facets. Among others, it covers plans about career, education, and family formation processes. According to Erikson (1968), the development of personal (or ego) identity is substantial for the onset of romantic relationships. For many people, the strongest form of romantic relationships may still be marriage. Therefore, it is crucial to examine the impact that personal identity may have on marriage as outcome.

Based on Erikson’s theory, Marcia has established the identity status model (1966, 1993). This model is based on two identity dimensions and whether they are present or not. These two dimensions are 1) exploration, and 2) commitment. Exploration describes a process in which individuals explore their alternatives in any type of field (Marcia, 1993). For instance, after completing school education, individuals may explore whether they want to start a job (and if so, which one), or whether they would like to continue education (e.g. studying at a university). Possibly, other alternatives may also appear (e.g. travelling). Commitment means that individuals have chosen one option and committed – to whatever extent – to it (Marcia, 1993). In practice, this can be realized by signing a contract (e.g. when starting new employment) or signing up for something (e.g. to study at university). Similarly, exploration and commitment are important dimensions with regards to family formation processes. Individuals may explore their options on the partner market (e.g. by dating) before committing to one partner (e.g. cohabitation or marriage).

In Marcia’s model, exploration and commitment either exist (regardless of the extent to which they exist), or they don’t. Therefore, four different statuses may emerge: a) diffusion (no exploration, no commitment), b) foreclosure (commitment without exploration), c) moratorium (exploration without commitment), and d) achievement (exploration and commitment) (Marcia, 1993). Diffusion refers to a status in which individuals are not committed to something (e.g. no employment) and are not interested in exploring their options (e.g. preference to stay unemployed). Foreclosure describes commitment without prior exploration, which may appear counterintuitive. However, foreclosure may be found on the labor market when individuals start employment in a family business, i.e. without exploring their alternatives, individuals may commit to work in the company that is led by their own family. Moratorium
relates to the status in which individuals explore their options without committing to something (to a large extent). This can be the case if they just ended a prior commitment, e.g. left their previous company for any reason. In such a situation, individuals may explore their options before they make a choice. Achievement means the status in which individuals have committed to something after exploring different options (e.g. choosing one option after looking for job opportunities, attending job interviews etc.).

Relating to family formation outcomes, individuals may be in the diffusion status very early in their life (e.g. adolescence). Juveniles may not commit to partners or even children to a great extent, but may also not be particularly interested in exploring their options since they still have much time for family formation processes in their future (e.g. in young and mid-adulthood). After some time, they may move towards the foreclosure status. In more traditional societies, a partner may have been chosen by the parents, and individuals may marry this partner without exploring alternatives. In more liberal societies, partner choice often may not happen without prior exploration. However, partnership dissolution may emerge, and individuals explore their options on the partner market (e.g. date available potential partners) without committing to somebody, which may be considered as moratorium. Eventually, individuals may reach achievement when committing to a partner (e.g. by marriage) after exploring the options and having chosen the best fit. Typically, individuals may develop from diffusion/foreclosure towards moratorium and achievement (Kroger et al., 2010).

Marcia’s model has been established but also developed further in identity research. In particular, the dimensions of identity have been discussed in order to transition from the rather static identity status model to a more dynamic approach, so that different identity dimensions emerge (Luyckx, Goossens, et al., 2006). Exploration has been split into exploration in breadth and exploration in depth, and commitment into commitment making and identification with commitment (Luyckx, Goossens, et al., 2006). Whereas exploration in breadth means that individuals explore their options before they make any commitments (e.g. dating potential partners before starting a serious relationship), exploration in depth refers to exploring options after the commitment. Therefore, individuals may explore whether they are happy with their choice (e.g. a partner) after they have already started a commitment (e.g. cohabitation or marriage). Commitment making describes the process or the simple existence of a commitment. Identification with commitment means that individuals are fully satisfied and happy with their choice, i.e. they identify themselves with the commitment (e.g. marriage).

Soon after these more specified identity dimensions were proposed, a fifth dimension was added to this approach (Luyckx et al., 2008). As Luyckx and colleagues (2008) argue, exploration may contain both reflective and ruminative facets. They base their argument on previous studies that have shown that exploration is positively associated with openness to new experience on the one hand (Luyckx, Soenens, et al., 2006), and with identity crisis indicators...
(Kidwell et al., 1995) such as neuroticism (Luyckx, Soenens, et al., 2006), on
the other. Both existing exploration dimensions (in breadth, in depth) may be-
long to the reflective component of exploration. Thus, another exploration di-
mension must exist, which captures the ruminative component. Luyckx and
colleagues (2008) call this dimension ruminative exploration (mental distress,
personal uncertainty about life goals), which has been established as third ex-
ploration dimension, and the fifth identity dimension, respectively, ever since.

Variable- versus Person-centered Approach

Researchers may take two different perspectives when examining identity: the
variable- or the person-oriented approach. Both perspectives view individuals
and their identity differently, which also affects the methodological approach.
For instance, the variable-oriented approach understands the individual as a
sum of its facets, and each identity dimension may be measured and analyzed
separately from each other (Bergman & Trost, 2006). Consequently, research
using the variable-oriented approach typically applies linear regression mod-
els with identity variables as they come from questionnaires, i.e. each varia-
ble/dimension is separately included in the analytical models (Bergman &
Trost, 2006). The person-oriented approach, however, considers the person as
an entire system that may consist of different facets, but these cannot be con-
sidered independently from each other (Bergman & Trost, 2006). This means
that person-centered approaches require methods that treat individuals as a
whole that cannot be split into different facets. Therefore, any type of class
analysis (e.g. cluster analysis, latent class or latent profile analyses) are popu-
lar among researchers using the person-oriented approach (Bergman & Trost,
2006).

Although recent identity research has increasingly used class analyses, no spe-
cific number of identity clusters has been established as the optimum solution.
Previous research has suggested that seven identity clusters are usually found
in identity research, and that these patterns are relatively stable across studies
(Waterman, 2015). However, several studies have also found either four
(Claes et al., 2018), five (Mannerström et al., 2018), or six clusters (Manner-
ström et al., 2021).

Whether a variable- or a person-oriented approach should be applied has been
discussed in previous research (Bergman & Trost, 2006). Both approaches ad-
dress different research questions, depending on whether individuals are con-
sidered as a sum of their elements or as undivided wholes including their own
dynamics. Since person-oriented approaches, and typically applied latent class
analyses, are more abstract and difficult to grasp, it appears plausible to build
the theoretical framework based on the person-centered approach but run em-
pirical analyses following the variable-centered approach (using separate vari-
ables) (Bergman & Trost, 2006). Another solution may be to apply a combi-
nation of both approaches in order to provide a clearer picture of identity and
its affects or determinants (Bergman & Trost, 2006). In the part of my dissertation that deals with identity (chapter 3), I follow the latter suggestion since I aim for a picture of the identity-marriage nexus that is as complete as possible. Considering both the variable- and the person-oriented approach allows me to benefit from the strengths of both perspectives, e.g. the representation of the individual uniqueness (person-centered) (Crocetti & Meeus, 2014), and the distinction between single facets that may determine marriage, or be affected by marital status separately (variable-centered).

Life Events and Transitions

Identity as a psychological construct is not constant over time but rather develops and may still change over the life course, at least to some extent. Therefore, identity research may examine associations between identity and other factors at different stages of the life course, which come with different events and processes that have traditionally been understood as developmental tasks (Colarusso, 1992; Havighurst, 1948). However, life courses have changed in many contemporary societies of North and North-western Europe since each individual may decide independently over specific life paths, so the ‘standard’ paths are no longer the social norm, which is represented in the de-standardization thesis (Brückner & Mayer, 2005; Buchmann & Kriesi, 2011). Therefore, the terms of ‘life events’ or ‘life transitions’ are preferred over ‘developmental tasks’.

The development of de-standardization has been observed in several countries for different life transitions (completion of education, entry into labor market, marriage, or parenthood) (Buchmann & Kriesi, 2011). As one example, educational paths have been prolonged and the entry into labor market postponed over time in Germany (Brückner & Mayer, 2005). In line with these trends, high unemployment rates among young people have been observed, particularly in Southern Europe (Eurostat, 2022a). This may cause socio-economic uncertainties, which may also lead to postponement of family formation processes such as marriage or childbearing (Mary, 2012; Settersten Jr., 2012). However, there is still some evidence suggesting more traditional attitudes towards getting married and entering parenthood by the mid-20s in Finland and France (Mary, 2012).

As suggested above, the key elements of events and transitions over the life course are typically related to love and work, which have also been the objects of theoretical perspectives on life events (Erikson, 1968; Havighurst, 1948; Mayseless & Keren, 2014). Identity formation may be considered as a key transition in adolescence or young adulthood (Erikson, 1956). This period of life is typically accompanied by a number of work- and love-related transitions such as the completion of school education, the entry into labor market, parenthood, or the onset of a serious romantic relationship (Graber & Brooks-Gunn, 1996; Settersten Jr., 2012). Previous research has shown that reaching
these life events is positively associated with other life outcomes such as well-being (Schoon et al., 2012) and general life satisfaction (Howard et al., 2010).

Identity and Partnering

One chapter of my dissertation examines the association between identity and marriage. This association is of particular interest since Erikson (1968) pointed to the necessary condition of well-advanced identity formation for the onset of romantic and intimate relationships. However, the nexus between identity and relationship, and in particular marriage as a strong institution of partnership, has been under-explored in demographic research. One of the very few studies addressing the identity-relationship link has found that early identity development in adolescence predicts higher partnership intimacy in young adulthood among a small sample of Germans (Beyers & Seiffge-Krenke, 2010). Furthermore, the authors found that identity achievement, i.e. the status of commitment after exploration, is positively connected with partnership intimacy in young adulthood (Beyers & Seiffge-Krenke, 2010). The positive correlation between identity and intimacy is supported by a longitudinal study based on a small sample of U.S. adults (Sneed et al., 2012). Further research has examined relationship outcomes depending on identity facets; these do not relate to personal identity, though, but to other identity indicators such as identity consolidation (Pals, 1999) or friendship identity (Branje et al., 2014).

Identity Formation and Stability

Identity formation has been considered as a key transition in early life (Erikson, 1968). Erikson (1968) has argued that identity formation begins when previous identifications from childhood are no longer valid. Therefore, identity formation may be assumed to start in adolescence but is expected to be a slow progress that takes considerable time (Erikson, 1968), and may even be interrupted by throwbacks so that new identity formation processes may evolve (Luyckx et al., 2014). Consequently, identity formation is an ongoing process over ages that lasts at least throughout young adulthood. Young individuals may take time to explore their options in diverse life facets (e.g. labor market, partner market) before they commit to one, which may partly explain postponements in developmental tasks over time (Côté, 2016). Therefore, previous research has specifically focused on identity development in younger ages such as adolescence or young adulthood (Kroger et al., 2010). These processes from young ages may shape identity at later life stages, too (Côté, 2016).
In the context of the identity status model by Marcia (1993), identity statuses without (much) exploration emerge earliest in life course, i.e. diffusion (no exploration, no commitment) and foreclosure (no exploration, high commitment) (Kroger et al., 2010). Typically, identity is then assumed to develop towards statuses that are based on prior exploration such as moratorium (exploration without commitment) and achievement (commitment after exploration) (Kroger et al., 2010), which may be understood as development towards plan-based or goal-oriented identity statuses. Regarding the more specific identity dimensions, similar trajectories may emerge from exploration in breadth towards identification with commitment. As mentioned above, this development may be interrupted by throwbacks. For instance, adolescents may explore their options of studying at a university in breadth (exploring study fields etc.), commit themselves by getting enrolled, but may drop out of studies and try to find a better fit (other study field or entering the labor market) (Luyckx et al., 2014). These changes in exploration and commitment may also be observed with partnering processes, e.g. by dating (exploration in breadth), starting a romantic relationship that leads to cohabitation or marriage (commitment), union dissolution, and dating again. Therefore, one part of my dissertation looks at identity and marriage, while childbearing may be considered as a lifetime commitment from which individuals may not withdraw (at least, the status of being a parent will persist as long as the child and the parent are alive).

Identity stability in early life stages has been examined in several studies (Kroger et al., 2010). Typically, identity developments towards achievement have been found (Meeus, 2011). However, previous studies have also pointed to large proportions of individuals that remain relatively stable in their identity over adolescence (Kroger et al., 2010; Meeus, 2011). Additionally, identity developments towards goal-oriented statuses appear to be rather slow (Meeus, 2011), which is in line with Erikson’s theory (1968). However, variation occurs across different cultures. Whereas previous research based on Finns in mid-adulthood supports the idea of development towards plan-based or goal-oriented identity (Fadjukoff et al., 2016), other findings suggest rather stable trends in Japan (Shirai et al., 2016) or Sweden (Wångqvist et al., 2016). In particular, the Finnish context is of interest for my research on identity since previous research has found both decreases or no changes in identity dimensions in young adulthood (Mannerström et al., 2019), and developments towards achievement (or increasing commitment) in mid-adulthood over time (Fadjukoff et al., 2016). Whether marital status is connected with identity development in young adulthood in Finland has been examined in previous research, but no differences have been suggested (Mannerström et al., 2019). However, this research is based on a relatively short time period and on the variable-centered approach only (Mannerström et al., 2019). As argued above, both the variable- and the person-oriented approach provide a more complete picture of the identity-marriage link, which has also been examined in one part of my dissertation.
Leadership Skills

As another psychological component, my dissertation includes skills as a predictor for marriage and fertility. Since each individual combines numerous skills, just like personality facets or identity dimensions, my thesis cannot consider all of them and, therefore, makes use of only one specific set of skills, namely leadership skills (LS). LS may be measured in various ways and may have different meanings, depending on which life stage and life situation individuals are in. For instance, LS among juveniles may mean whether individuals like to organize free time activities, take the lead role in games, or serve as captain in sports teams. However, different challenges appear in adulthood, such as leading a group of people in order to work efficiently, or developing a set of organization skills. In terms of the military, LS refer to guiding a group of recruits, teaching and encouraging them to handle their tasks (Larsson & Kallenberg, 2006).

LS have been used in demographic research in order to explain fertility (Jokela & Keltikangas-Järvinen, 2009). They may be considered as suitable for these purposes based on their comparatively large representation of commonly used socio-economic indicators such as education or income. As previous research has demonstrated, LS are positively linked with career outcomes (Kuhn & Weinberger, 2005; Lund et al., 2007; Stone et al., 2018), which may also explain demographic events (Jalovaara et al., 2019; Kalmijn, 2011; Skirbekk, 2008; Sobotka et al., 2017). Furthermore, LS are closely intertwined with actual leadership positions in hierarchical structures. Hierarchies have been firmly established in human societies, as proposed by evolutionary psychologists (Cummins, 2006). According to this perspective, higher positions in hierarchies have traditionally been beneficial for one’s own survival, and on the partner market (Cummins, 2006). High social positions promise resources, which may help to find a partner who might look for protection and support in partnership and potential childcare (Buss, 1994, 2006). These considerations have been based on the evolutionary theory, and a discussion on human mating strategies has emerged (Buss, 1994, 2006).

LS consist of a number of facets such as guiding teams, communication skills, problem solving skills, and decision-making (Burke & Collins, 2001). Previous research has identified differences in leadership style by gender among accountants (Burke & Collins, 2001). For instance, although males focus on motivating people to work above their own interests (towards the interest of the team), e.g. by rewards to achieve, their leadership is also often characterized by intervening only once a mistake has been detected (Burke & Collins, 2001). Compared to female accountants, the male counterparts report lower skills on communication, coaching, and time management (Burke & Collins, 2001). Men show lower social and emotional competencies than women, which may also affect the leadership (skills) (Groves, 2005). Although research has increasingly examined gender differences in leadership skills/styles (e.g. De La Rey, 2005; Grisoni & Beeby, 2007; Groves, 2005), my dissertation
Human Mating Strategies from the Perspective of the Evolutionary Theory

Evolutionary psychologists have examined the question of which characteristics are beneficial on the human partner market for several decades (Buss, 1994). When looking for a partner, individuals may desire characteristics similar to their opposite-sex parent, or which complement their own facets well (Buss, 1994). However, evolution may help to understand the patterns of the human mating processes better, as evolutionary psychologists argue (Buss, 1994). Of particular interest are short-term (e.g. casual sex) and long-term mating (e.g. marriage), and the switch from short-term to long-term interests (Buss, 1994). One key point of evolutionary theory is that individuals aim for reproduction (Darwin, 1871). For reproduction, i.e. fertility, human beings need a partner (Buss, 2006), typically for sexual intercourse (with very few exceptions such as in vitro fertilization). Therefore, the most promising approach for successful reproduction is to find a good mating strategy. If individuals successfully find a partner, they have the chance to reproduce, whereas unsuccessful (i.e. bad) selection strategies will fail, and not produce offspring (Buss, 1994).

Evolutionary psychologists start their argumentation with Darwin’s evolution theory, in which he focuses on surviving as most the important process in evolution (Buss, 2006). However, he also observed many phenomena in nature that did not correspond with the survival hypothesis (Buss, 2006). For instance, the feathering of a peacock would attract predators instead of protecting the bird from them (Buss, 1994). Darwin developed the theory of sexual selection to solve this puzzle (Darwin, 1871). According to this idea, members of any species are not only interested in surviving but also in reproducing, and thus evolve their characteristics that are advantageous for reproduction (Darwin, 1871). He distinguished between two processes of mating selection (Darwin, 1871). First, same-sex individuals (typically males) are in competition on the partner market when searching for potential partners from the opposite sex (Darwin, 1871), which has been called ‘intrasexual competition’ (Buss, 1994). In this case, characteristics such as strength, size, or confidence are beneficial facets for reproduction success (Buss, 1994). Second, individuals (for Darwin, typically women) desire certain characteristics among their potential partners (Darwin, 1871), which is called ‘preferential mate choice’ (Buss, 1994). Therefore, characteristics will also reproduce (in case of successful mating) or fail to do so (when unsuccessful in mating) (Buss, 1994). Darwin considered
that males of a species typically compete with each other, and that females typically choose their partners in terms of sexual selection (Darwin, 1871). However, he could not explain why it was the males that compete, and the females that choose (Buss, 2006).

About a century later, Robert Trivers (1972) provided an explanation to these questions. He considered the parental investment for the offspring as the key point for sexual selection (Trivers, 1972). He argues that the sex with lower investment will compete with same-sex members for mating with the opposite sex, while the sex with higher investment will tend to select potential partners carefully (Trivers, 1972). Translated to human beings, this would mean that men may more often be in competition with each other, and women may more often be the ones to choose the partners (Buss, 1994). This role distribution can be concluded from the perspective of minimum investment (Buss, 1994).

Women need to invest around nine months of pregnancy and up to a few years of lactation for their offspring, at least (Buss, 1994). Compared to this investment, the effort of men to provide sperm, which can be done in a few minutes, is very low (Buss, 1994). Therefore, women are expected to choose carefully who to mate with, and potential partners must show certain characteristics that the women are looking for (Buss, 1994), such as responsibility or the willingness to commit to a family. Males, on the other hand, may compete with other males on the partner market (Buss, 1994).

Since men and women are assumed to have different interests in mating, evolutionary psychologists conclude that both genders must also develop different mating strategies (e.g. regarding short- or long-term mating), which further undergo evolutionary processes (Buss, 1994). One hypothesis, for instance, claims that males put a higher value on short-term mating than women do, which is supported by empirical evidence (Buss, 1994). Consequently, evolutionary psychologists argue that mating processes among human beings are not driven by arbitrariness or cultural background but by the evolution of desired characteristics (Buss, 1994). The question may arise of which characteristics are preferred in potential partners from both sexes. Previous research has shown that women tend to prefer men with better financial prospects and higher socio-economic status for both short- and long-term mating (Buss, 1994). On the other hand, men tend to report higher relevance of physical attractiveness of their potential partners than women do (Buss, 2006). However, it is also recognized that, in particular, long-term mating is a more complex process, in which a large number of facets such as kindness or love are involved (Buss, 2006).

From the evolutionary perspective, both genders need to cope with different challenges in mating processes (Buss, 1994). For instance, men face the problem of paternity (un-)certainty, while women need to invest more energy and time in reproduction (e.g. pregnancy, lactation) (Buss, 1994). Finding a suitable partner with, for instance, good parenting skills is a challenge that both genders face equally (Buss, 1994, 2006).
These benefits contribute to social inequalities and differences in finding a partner and entering parenthood. Evolutionary psychologists have recognized that competition between same-sex individuals is not necessarily restricted to physical battles but may also relate to hierarchical positions or status (Buss, 2006). Indeed, higher hierarchical positions have been associated with a higher number of mates worldwide (Betzig, 1983). Therefore, predictors of higher positions in hierarchies, such as leadership skills, may also be associated with mating, and, eventually, fertility.

Leadership Skills and Personality

Leadership skills (LS) may be considered a personality trait, as suggested by the Hunter Wolf Scale (Wolf et al., 1982). However, whether leadership belongs to personality, learned skills, or both has been extensively debated in previous research. Many previous studies focus on the relationship between personality traits and leadership (Bartone et al., 2009; Hogan & Judge, 2013; Houghton et al., 2004), suggesting that personality and leadership are different concepts. How closely leadership and personality are linked can be seen from the large number of theories that have been developed (for a brief overview see e.g. Chao & Chang, 2013; Greenwood, 1996; Sethuraman & Suresh, 2014). For instance, the Trait Theory of Leadership claims that leaders demonstrate certain personality traits that distinguish them from non-leaders (Greenwood, 1996; Judge et al., 2002). Hogan and Benson (2009) assume leadership to depend on personality via competencies. The authors argue that LS are linked with intra- and interpersonal skills, e.g. recruiting members of a team, persistence, or establishing and retaining positive relationships with all team members (Hogan & Benson, 2009). Therefore, personality measures can be understood as proxies for LS, instead of competing concepts. Other leadership theories take situational effects into account (Greenwood, 1996), or consider leadership as competencies that can be developed over time (Chao & Chang, 2013).

In line with the discussion about LS and personality is the question of whether LS are born or made, i.e. to what extent LS can change over time. This topic has been extensively debated in previous research, a number of theories have been developed, and yet, no clear answer to this question has been given. Traditional theories assume leadership to be naturally given, whereas more recent theoretical approaches consider LS as a mix between genetics and learned skills (Benmira & Agboola, 2021; Hunt & Fedynich, 2018). Thus, at least some parts of LS cannot be taught (Gunn, 2000; Malakyan, 2014), suggesting stability in LS over time to some extent. One may further argue that LS from earlier stages of life can be considered as ‘early life experience’, i.e. a time-constant factor that may affect future processes such as skills development, career paths, and family formation processes.
Independent from the question of whether LS are born or made – they are more or less directly linked with social status, and may show a stronger association with marriage and fertility than the other factors of the Hunter Wolf Scale (Jokela & Keltikangas-Järvinen, 2009). Previous research suggests that LS are linked with SES (Kuhn & Weinberger, 2005; Lund et al., 2007; Stone et al., 2018), which are, in turn, associated with marital behavior (Kalmijn, 2011; Schneider, 2011; Shafer & James, 2013) and childbearing (Jalovaara et al., 2019; Skirbekk, 2008; Sobotka et al., 2017). Indeed, higher leadership scores are positively linked with higher probabilities of having a first, second, and third child among both men and women (Jokela & Keltikangas-Järvinen, 2009).
Theoretical Background

After the introduction of the psychological concepts used in this dissertation, the question may arise of why and how these psychological factors may be associated with family formation processes. In order to approach the relevance of psychological factors for marriage, fertility and partnership dissolution, key theoretical perspectives will be presented in the following sections. These theoretical frameworks have contributed to opening the perspective of why psychological concepts such as personality, identity, or leadership skills might shape family formation processes.

Second Demographic Transition

The theory of the second demographic transition (SDT) was developed by Lesthaeghe and van de Kaa (Lesthaeghe & van de Kaa, 1986; van de Kaa, 1987) to explain observed demographic trends from high-income countries in the second half of the last century. These trends include, among others, decreasing fertility and marriage rates as well as increasing cohabitation and partnership dissolution rates (van de Kaa, 1987). The SDT captures a number of potential explanations for these developments. Structural components include the rise of female labor market participation, or increasing educational levels, in particular among women (Lesthaeghe, 2014, 2020; van de Kaa, 1987), or the change in social norms in terms of marital and fertility behavior (from traditional attitudes to more modern and individualistic ones) (van de Kaa, 1987). Additionally, the SDT elaborates on the individualization process that has increasingly become relevant for individual life courses over time in high-income countries (van de Kaa, 1987). Therefore, family formation processes, such as marriage or childbearing, may depend to a larger extent on individualization facets such as self-realization, self-fulfillment, or freedom. This means that members of high-income societies with relatively high individualization may shape their life courses more easily (compared to preceding generations) and control their fertility and partnership outcomes individually. This also includes the use of contraceptives and abortion, which have become more common in many high-income countries. Consequently, individuals from contemporary high-income and individualistic societies are often in a position whereby they can decide whether and when they want to get married or have children, how many children they aim for, and whether they want to
get divorced; briefly, they may choose their family status individually based on individual preferences over their life course to a large extent. All these developments have contributed to decreasing fertility and marriage rates, as well as increasing cohabitation and divorce rates, according to the SDT (van de Kaa, 1987).

The SDT has become one of the most widely-known and influential theories of demographic behavior. My dissertation focuses on the explanatory power that stems from individual, and to be more specific, psychological, factors with regards to family formation processes in high-income countries with high levels of individualism. For this purpose, I look at a number of commonly used psychological concepts. First, personality has gained attention in both data collection and statistical analyses in order to explain demographic outcomes in more recent research. I aim for new contributions to this field by using high-quality data, which allow me to add additional strength to my analyses (e.g. prospective study designs for German data, or the use of population data from Sweden). Second, identity has been established as another key concept within psychological research. However, the association between identity and family formation outcomes is still scarce. My dissertation addresses this topic by linking personal identity with marital behavior in Finland. Apart from personality and identity, I also examine the effects of leadership skills on marriage and childbearing, which adds a third dimension of psychological factors (non-cognitive skills) to my thesis. My analyses are based on high-quality surveys from Germany and Finland, and register data from Sweden.

**Individualism versus Collectivism**

In line with the theory of the second demographic transition, and in particular the argument around individualization, I would like to emphasize the relevance of individualism in the societies that I am studying. My dissertation chapters are based on the contexts of Germany, Sweden, and Finland. These countries belong to the high-income countries with relatively high individualism, and lower levels of collectivism. Individualistic societies consist of members that are rather independent from each other, and tend to develop and realize their own desires and attitudes (Triandis, 2018). Contrary, collectivistic cultures are characterized by a strong manifestation of the collective (Triandis, 2018). Individuals from these societies tend to give higher values to the goals of and benefits for groups of which they are members, instead of focusing on personal goals (Triandis, 2018). This will affect their daily social lives, individual routines, and family formation in various ways.

For instance, a member of a somewhat collectivistic society may generally follow social norms of and instructions from family members and peers since the value placed on the group’s interests is relatively high. This may be expressed in many daily life situations such as doing activities jointly with the family (e.g. going on trips, having breakfast or dinner together). These may
strengthen the bond to the social environment; in this case, the family. It appears to be intuitive that the family will also make an essential impact on the family formation attitudes of the individual if the value of this social group is considered relatively high in collectivistic societies. In my example regarding families doing many things together, the family has many occasions to express concerns or expectations on family formation that may influence the individual in their attitude. Furthermore, the individual may be driven by the family patterns that have emerged within their family. For instance, if one’s own parents were relatively young at the time of their marriage and entry into parenthood, the child has grown up in an environment with these specific norms and values. Starting a family at a young age may be perceived as normal or even desirable in these families, and the children may aim to copy their parents’ behaviors once they reach fertile ages. Additionally, individuals from collectivistic groups may strengthen the group by adding new members such as spouses or children. All these considerations may shape family formation patterns in collectivistic societies, in which the members are expected to place more value on the group’s behaviors, attitudes and interests than their own preferences.

Contrary, members of societies with relatively high individualism may tend to follow their own desires, which will affect family formation patterns. In the following, I may refer to “ideal types” of individualistic societies. However, no society is entirely individualistic or collectivistic, and all populations may combine individualist and collectivist facets that affect for family formation processes.

The individualistic context provides a different setting for shaping one’s daily life and is linked with different social norms, compared to the opportunistic one. For instance, family activities may still be on the agenda but, equally, individuals may also be allowed to do different things that meet the individual’s needs. Instead of doing a family trip, a young teenager may instead be interested in spending time with friends. In contrast to collectivistic societies, an individualistic context puts a higher value on individual preferences, and might, therefore, provide more room for individual development in terms of personality and identity, as well as regarding leisure time activities and daily routines. An individualistic setting may tolerate individual marriage or fertility attitudes, which may be expressed in usual daily life conversations with family members, friends, or working colleagues. These daily life routines may strengthen the individuality of a person that will also be translated into the actual family formation processes. For instance, if a person is used to taking own and independent decisions, which is socially accepted, then this also relates to family formation processes, and individuals may decide liberally whether and when to start a relationship, enter marriage, or embark on parenthood.

Several measures indicate relatively high levels of individualism in the countries that I study in my dissertation (Germany, Sweden, and Finland). One indicator of individualism levels within societies is the so called 6d-model of
national culture, which assigns levels of the six dimensions “Power Distance”, “Individualism”, “Motivation towards Achievement and Success”, “Uncertainty Avoidance”, “Long Term Orientation”, and “Indulgence” to different societies (Hofstede Insights, 2023). This model shows relatively high values on individualism for Germany (79 on a scale from 0-100), Sweden (87), and Finland (75) (Hofstede Insights, 2023). Other countries, such as China, score much lower (43) (Hofstede Insights, 2023), which is equivalent to a higher extent of collectivism. In line with the conclusions of the 6d-model of national culture, the represented countries of Germany, Sweden, and Finland are also evaluated as having relatively high self-expression values on the Ingleheart-Welzel World Cultural Map, as shown in Figure 1 below. Figure 1 represents the World Cultural Map from 2023 only, but Germany, Sweden and Finland have scored relatively high on both secular and self-expression values for decades (World Values Survey, 2023).

![Figure 1: World Cultural Map 2023](https://www.worldvaluessurvey.org/)

As can be seen in Figure 1 above, the countries studied for this dissertation (Germany, Sweden, Finland) are located on the top right corner of the map. This shows that these societies are characterized by relatively high levels of both secular (as opposed to traditional) values and self-expression (compared to survival) values. Particularly, the relatively high levels of secular values in these three countries will affect family formation processes significantly. Secular values, as opposed to traditional ones, represent the lower relevance of
religion and traditional family forms (World Values Survey, 2023). Therefore, individuals may experience lower levels of social pressure from family, peers and norms regarding family formation. For example, marriage and parenthood are no longer necessarily expected in societies with high secular values (at least not as much as in more traditional societies), and divorce as well as abortion are socially accepted to a larger extent (World Values Survey, 2023). Consequently, the individuals of such societies are more liberal in their decisions regarding family formation processes, and psychological factors, along with their own desires and attitudes, will be more relevant in these decisions. For instance, once people do not feel the strong expectations of parents or other members of the social structures to become parents, they may individually decide when to have children, if at all, to a greater extent. These societal circumstances will affect individual family formation trajectories, as marriage and parenthood are no longer highly expected. In particular, one item on the bipolar scale from traditional to secular values from the World Values Survey emphasizes the impact on individual family trajectories: while traditional societies consider obedience and religion to be more important for young children growing up than independence, the opposite is true for secular societies (World Values Survey, 2023). Therefore, individuals from secular societies may already perceive in childhood a relatively high extent of autonomy, which may substantially affect later life processes such as family formation. Children that grow up in contexts allowing them to behave independently from others may take life decisions according to their own preferences and desires to a larger extent compared to individuals from societies with lower focus on individualization.

Similarly, relatively high values on the dimension ‘self-expression’ representing cultures with high levels of individual autonomy of their members (World Values Survey, 2023) may express individual differences in psychological factors and their effects on family formation. Self-expression is based on liberty aspirations, and strengthens the power of individual choice in all life domains (Inglehart & Welzel, 2005). Therefore, societies with high self-expression allow greater extents of individualization, and family formation processes may be shaped according to individual preferences. High scores on self-expression represent more open attitudes and tolerance towards minorities (e.g. foreigners, homosexual couples) since the preservation of the culture is perceived to be secure (World Values Survey, 2023). The support and tolerance of minorities may strengthen the social norms to shape individual life trajectories according to one’s own preferences. In the case of homosexuality, for instance, individuals from societies with high levels of secular values may follow the norms to accept individual sexuality and family formation desires. This experience may easily adapt to heterosexual couples and their desires to marry, or to become parents. A person who is prone to accept and tolerate minorities, such as homosexual individuals, may also accept individuals who wish to stay single or childless since the values of self-expression are sufficiently high for these attitudes. Therefore, tolerance towards minorities may
also mean tolerance towards less traditional but instead individually-shaped family formation trajectories. This will, in turn, affect the individuals in their own family formation, particularly since they experience less social pressure and put more value on the self-expression of each individual. The findings of my dissertation do not necessarily apply to countries other than the three that I am studying. Other societies may show lower levels of individualism, and higher levels of collectivism and traditionality. Countries with higher scores on individualism support individuals in developing their own values and personality, and in acting accordingly (Cohen et al., 2016). This may also include family formation processes, which may be shaped individually according to one’s own preferences. In more collectivistic societies, however, the group and its norms appear to be more relevant than one’s own desires and attitudes (Cohen et al., 2016), which may reduce the effect of personality on family formation processes. For instance, members from collectivistic societies may be guided in their family formation plans by current social norms or attitudes and behaviors within the family, or among peers. Group values may outweigh individual preferences, whereas in more individualistic societies it may be the opposite. Thus, the association between psychological factors and family formation may be weaker in more collectivistic cultures. However, only future research on these contexts may clarify this assumption.

Structure and Agency

Similar to the discussion on individualism and collectivism above, the concepts of structure and agency cope with the extent to which an individual may behave autonomously (agency) or under structural constraints (structure). Structure and agency belong to those social terms that are difficult to define since they capture numerous facets (Hays, 1994). A structure in a social sense may be seen as a system in which social interactions between the same social actors repeatedly occur in the same (or at least similar) way (Bakewell, 2010; Layder, 1985). This relatively broad definition, however, already shows that a structure is not a precise concept, i.e. any approach to define it may fail (Sewell, 1992). Nevertheless, a few characteristics of structures may be identified. For instance, structures are produced by individuals, and as such they may not persist without their members (Hays, 1994). Regardless of which type of social structure one may think of, the necessary condition for the existence of such a structure is that it is built up by two or more individuals. A human society without the individuals is no longer a society, by definition. A family only exists when two or more people form the family. Therefore, the existence of and social relationships between individuals are the necessary components of social structures. However, social structures also shape individuals (Layder, 1985). The society may influence individual preferences, attitudes and behaviors via social norms or opportunities. Following the discussion on individualism and collectivism
from above, a society with fairly high levels of traditional values may determine individuals in a way that they also develop desires according to these traditional family norms (i.e. father, mother, child(ren)). Members from such a society may intend to follow the current and accepted social norms and, therefore, may aim for a traditional family as well. On the other hand, more individualistic societies may allow individuals to develop their own preferences and shape their family life in a way that is in line with their own values. If societies are characterized by higher tolerance towards same-sex couples, for instance, individuals may feel confident enough to stand up to their sexuality (but might hide their sexuality in traditional societies). Additionally, families may affect individual preferences as well. People who have grown up in a more traditional family may have learnt this specific family form from early childhood, and may consider such a family form as desirable. However, if families support children to develop their own personalities and values liberally, the children may choose different family forms from those experienced at a younger age.

Social structures may provide opportunities but also certain restrictions for individuals, which is the key argument in Giddens’ structuration theory (Giddens, 1984). For instance, families may provide a set of norms and rules, which may restrict individuals in their behavior. Children may be told by (grand-)parents, uncles or aunts to behave in certain ways (e.g. not bothering others, be careful when going outside etc.). On the other hand, children may also perceive some kind of security to hold a position within the family, where adults may take care of them. Structures may provide some rules that its members are expected to follow but these rules may also allow individuals to develop and act independently from other members, i.e. individuals may behave according to their own intentions and personality, for instance (Hays, 1994). Their developed personality may be, for individuals, the base for their behavior in various situations (Hays, 1994), or regarding family formation processes.

Previous research has identified some challenges in using the term “structure”. For instance, this term may describe different concepts in different fields, e.g. social structure from social sciences vs. materialistic structures in anthropology (Sewell, 1992). One major critique on the concept of structure in the social sciences is that the structure has usually been seen as too rigid an influential factor of social life (Sewell, 1992). This means that structures appear to be perceived as almost naturally given and unchangeable in their predictive power for social processes. To consider a structure for studying social relationships and behavior is undoubtedly relevant and even necessary. However, it would be too narrow to focus on structural components only, and ignore or neglect individuals with their own preferences, attitudes, and behaviors (agency). For instance, social changes have been observed in many societies over time (e.g. German reunification). Structures certainly play a role but there must be other factors that might explain these processes. Societies and social groups are not only driven by structures but also by their members, with their
individual values and behaviors. Once more, the necessity to increase attention on individuals as members of social structures, their motivations and attitudes becomes clear. For social theorists, the structures of and within societies are key to understanding social behavior, and while they tend to reject the idea of methodological individualism (King, 2007), they still have to consider the relevance of agency for social processes (Bakewell, 2010). Therefore, a basic understanding of agency and how this concept fits with social structures is necessary.

Agency may be seen as the capability of individuals to choose between a number of behavioral options (Hays, 1994), and to decide on their behavior according to their own preferences (Bakewell, 2010). Similar to the argumentation above, agency can only exist due to the social structure that it produces, and it is restricted by structural limitations (Hays, 1994). In a very extreme and individualistic view, individuals have full control over their behavior so that they are entirely independent and autonomous (Bakewell, 2010). This may be true for some situations, in particular given that individuals are responsible for their actions. Other behaviors and reactions may not be controlled so strictly, such as some signs stemming from body language. Furthermore, such an individualistic perspective may neglect the social impact on one’s own behaviors (Hays, 1994), i.e. even if people control their behaviors they may still consider social influence such as discussed in the section below on Identity Theory and Social Identity Theory (e.g. by the role expectations of others).

Nevertheless, agency may also shape social relations and structures to some extent (Sewell, 1992). The influence of agents on structures depends on the agents’ power, as well as the accessibility and the durability of the structure (Hays, 1994). For instance, an individual may shape the family structure to a larger extent if 1) the family is comparatively small, 2) the individual is the head of the family, and 3) the family is still relatively young so that certain routines still need to be established. According to Hays (1994), there are four different understandings of agency and its relationship to social structures. First, individuals are agents who carry the social structure that they have built or are part of. This is a fairly structuralist perspective, i.e. individuals are basically just pieces of the system who’s only function is to hold the structure together. In this sense, agency is non-existent and structures would not change. However, societies change, which suggests that structures are more than the pure sum of their individuals. Second, structures and individuals are in a reciprocal relationship (people create structures and shape them by their behavior but their behavior is shaped by the structure they are in). This means that social structures persist based on the social interactions of their members, as argued above. Third, the behaviors of the agents change the nature of the social structure. This view also appears realistic since structure members form and contribute to the structure, and the way they act within the system also defines the structure itself. Fourth, agents have full control over the social
world, and are only limited by biological and natural factors. As already discussed, this may be an extremely individualistic view that ignores the influence of social surroundings.

The discussion on individualism, collectivism, structure and agency may provide some useful insights on the relationship between psychological factors and family formation processes. The effect of existing structures or institutions, such as families regarding personality developments, attitudes towards fertility and marriage, and the actual behavior should not be underestimated. Also, the reciprocal association between structure and agents may play an important role when studying the effects of psychological factors on family formation. Individuals as part of structures, e.g. families and societies, determine the nature of the structure but are also shaped by it. For instance, individuals may have grown up in families with specific attitudes and expectations towards desired families of their children. This may influence the individuals since they learn from their parents, uncles, aunts, or grandparents which family form may be desired and realized. This may motivate the individuals to follow similar family goals. Additionally, individuals may determine the structure itself, i.e. the family. Having grown up and established their position within the group, individuals may provide convincing arguments and inputs that may change the family structure in various ways (e.g. norms in terms of family formation).

Consequently, the concepts of individualism, collectivism, structure and agency are important to be considered and linked in my dissertation, although there are some limitations. For instance, it is difficult to address the questions to what extent an individual is influenced by social surroundings, to what extent individuals are prone to letting the social context influence them, and whether this is then still social influence or rather one’s own personality. Therefore, the key point of the idea of individualism, collectivism, structure and agency, i.e. that structures and agency determine social processes, may be criticized from different angles. For example, social science philosophers have argued that the scientific prediction of social processes is required to fail since social scientists aim to study social processes that go far beyond what can be observed and, therefore, understood (Winch, 2003). Whereas natural scientists may test and accept/reject their theories fairly directly, social science usually faces data challenges aiming to describe social phenomena, which are extremely complicated (Holmwood & Stewart, 1991). Furthermore, social processes are conducted by individuals and, therefore, depend on their choices and behaviors (Holmwood & Stewart, 1991). As soon as individuals stop with certain social processes, these processes do not exist anymore. Therefore, social processes and individuals are closely intertwined with each other, and one must consider both together when examining one of them. Individuals drive social processes according to their own behavior and preferences. Therefore, psychological factors should receive greater attention in order to understand individuals before one may explain the social processes that stem from them.
Nevertheless, social structures also determine agency, as argued above. Therefore, it is important to take social components into account, which I intend to do in my dissertation by controlling for gender, education, and other factors.

Theory of Planned Behavior

Although the SDT implicitly suggests psychological factors as explanations for family formation processes (through the concepts of individualization and self-realization, as discussed above), it does not explicitly mention personality, identity, or skills. However, the theory of planned behavior (TPB) links personality with fertility, at least in an applied version by Ajzen and Klobas (2013).

The TPB was developed by Ajzen (1985) and builds upon the theory of reasoned action. The TPB follows the assumption that individuals’ social activities are, to some extent, determined by developed plans. These plans are not necessarily in line with the actual behavior since its attempt to realize it may be disturbed by internal (e.g. individual differences, skills, emotions, will power) or external factors (e.g. time restrictions, opportunities, dependence on others) (Ajzen, 1985). Moreover, the TPB includes attitudes and beliefs as determinants for the intentions or plans of behaviors (Ajzen, 1985, 1991; Ajzen & Klobas, 2013). As one specific application, Ajzen and Klobas (2013) have developed a model explaining childbearing as planned behavior using a set of influence factors, as shown below (Figure 2):

![Figure 2: The TPB (childbearing application)](source: Ajzen and Klobas (2013))
Figure 2 depicts the theoretical model of the TPB applied to fertility as outcome. Individuals have gained a greater degree of control over childbearing based on the availability of contraceptives and abortion in many high-income countries (Ajzen & Klobas, 2013). However, the proportion of unplanned pregnancies in many high-income countries should not be neglected, and is not captured by the TPB. Moreover, other pathways from personality to fertility as planned behavior may exist, apart from via intentions and attitudes that are included in Fig. 2 above. Other family formation outcomes such as marriage and partnership dissolution may rather be defined as planned behaviors, particularly in liberal settings, in which individuals are free to choose their partner and become separated from them if necessary. Nevertheless, Ajzen and Klobas (2013) focus on fertility as outcome, and only speak of planned pregnancies that are captured in their model.

According to the authors, the decision to have a child depends on several factors and steps. First, various background factors of the individual (e.g. personality, intelligence, attitudes) and societal (e.g. norms, political context, culture) level, as well as demographic factors (e.g. gender, age, education, income) determine different fertility-related beliefs. These beliefs may be grouped into behavioral, normative, and control beliefs, all of which affect fertility intentions (Ajzen & Klobas, 2013). Behavioral beliefs relate to potential consequences of parenthood and how individuals assess them. These are strongly linked with developing attitudes towards or against having a child, and, therefore, determine fertility intentions. Normative beliefs capture expected support from the social surroundings. Social pressure and subjective norms are assumed to play an important role in fertility intentions. Control beliefs refer to determinants that may affect individuals’ ability for childbearing, such as the financial or housing situation, which may contribute to perceived control over having a child. Fertility intentions may be directly realized given that individuals are often capable of translating their intentions into actual behavior. Thus, actual control over having a child may moderate the association between fertility intentions and behavior. Since actual control may be difficult to capture in many research designs, it is typically assumed to be represented by perceived control.

As the framework suggests, personality may play an important role for the entire process of planning for and having children. For instance, individuals who tend to worry a lot about certain facets of life may also be worried about potential negative consequences of having a child, or about the support from family and friends that they can expect. They may also be fearful of worrying even more as a parent since parents typically worry about their children in several situations (e.g. when the child is sick). Thus, attitudes and subjective norms against having a child may arise, which will result in low fertility intentions, or the plan to remain childless, respectively. On the other hand, however, childbearing may be perceived as a social expectation, and individuals who tend to worry a lot may fear disappointing relatives or friends. As another
example, extravert individuals may have generated such a large social network that they can expect much support, e.g. in terms of childcare or emotional support. Therefore, specific personality traits (such as high extraversion) may also lead to higher fertility.

As mentioned above, the TPB can easily be applied for the association between personality and partnership formation/dissolution processes as well. For instance, a person who worries significantly about the partnership may think about the potential consequences of a marriage, which may affect his or her attitudes towards getting married. A marriage may be considered as additional pressure, from which a worrying person may refrain. However, a marriage may also be seen as a stabilizing process, and, therefore, a worrying person may wish to get married to a potential partner. This is only one potential path from personality, via beliefs and attitudes, towards actual behavior, but personality factors may determine marital behavior in various ways, similar to elaborations on fertility above.

Identity Theory and Social Identity Theory

Focusing on identity as a psychological concept in one of my dissertation chapters demands a discussion about the extent to which the frameworks of identity theory and social identity theory suit my research questions. Both theories have been influential in sociological research, and I aim for providing an overview of these theories by describing them comparatively before I reflect on their relevance for my dissertation topic. Since identity theory appears to be closer to my research question than social identity theory, I will devote more attention to this framework.

Social Identity Theory

The social identity theory (SIT) is a social psychological theory that focuses on the social self and its relations to social groups (Hogg et al., 1995). It was developed by Henri Tajfel and colleagues (e.g. Tajfel, 1974; Tajfel & Turner, 1979). The key assumption of this framework is that each person is a member of several social groups (e.g. gender, race, work, sports team), which define the individual’s self (Hogg et al., 1995; Scheepers & Ellemers, 2019). A social group is defined as two or more individuals who are linked through a joint social identification and/or consider themselves to belong to the same social group (Stets & Burke, 2000). Each individual is, at least to some extent, committed with the social group due to ties with its group members (Stets & Burke, 2014). The level of commitment increases with the number and strength of ties (Stets & Burke, 2014). For instance, the ties to family members may be
stronger than the ties to friends. Therefore, individuals may tend to act according to the desires of the family rather than to friends’ wishes if both interests contrast strongly with each other in a situation. Since one person belongs to several social groups at the same time, each individual also contains several social identities (Hogg & Abrams, 1988; Scheepers & Ellemers, 2019), which influence their own behaviors, feelings, and thoughts (Hogg et al., 1995). For instance, a person may have an identity as male/female, partner, parent, and worker.

Social identities are determined by two essential underlying processes: categorization and self-enhancement (Hogg et al., 1995). Categorization is the process of grouping oneself to specific social groups according to shared characteristics (Hogg et al., 1995; Stets & Burke, 2000), while individuals with different characteristics are not part of these groups (Stets & Burke, 2000). Thus, the group forms itself, and builds norms regarding social behavior and its own interests that the group members aim to follow (Stets & Burke, 2000). Therefore, social groups that individuals are members of play a crucial role for the definition of the self and the (social) identity of that person (Hogg et al., 1995; Stets & Burke, 2000). Furthermore, the specific norms and interests contribute to the group distancing itself from other social categories.

Self-enhancement describes the process in which individuals evaluate the norms of their own social groups as more positive than the norms of other groups to which the individual does not belong (Hogg et al., 1995; Stets & Burke, 2000, 2014). For instance, a person from a specific occupation may think of advantages of working in this particular field compared to working in other fields. A handyman, for example, may particularly enjoy seeing his work as a visible product in the real world (e.g. a fence that he has built or a house that he has painted). This may be particularly beneficial for the identity of a person in that field, while an office job may instead be perceived as boring since such a job does not come along with physical activity and the results are not directly seen in the real world. On the other hand, an office worker may think of the benefits of his/her job compared to that of a handyman. For instance, the office worker may particularly enjoy being mentally active, to not do hard physical work, and to have a warm and dry working place regardless of the weather conditions.

Categorization and self-enhancement are interacted with individual beliefs (which may or may not be in line with the social group’s norms) about the social group, its relationships to other groups, and its perceptions (Hogg et al., 1995). They may affect the individual evaluation of whether the current social group is still the best fit, but may also lead to social changes (Hogg et al., 1995). For instance, an individual may belong to the social group of one political organization. Once the person is no longer convinced that the political attitudes fit the own attitudes, this person may leave the organization (and go to another one), or may strike for social change within the group that suits their own beliefs better.
Identity Theory

In the identity theory (IT) setting, the key component of identity is that individuals take a role within a social group, and that this role, its meanings and expectations will be incorporated into the self (Stets & Burke, 2000, 2014). Identity, similar to the SIT understanding, is the collection of self-views that are related to the social groups and the roles that one may take within these groups (Stets & Burke, 2000). The standing of the role in the group and the individual’s performance may even increase the self-esteem of the individual (Scheepers & Ellemers, 2019; Stets & Burke, 2000). Therefore, IT does not use the concept of social identity (such as SIT) but the term ‘role identity’ (Stets & Burke, 2000). Role identities are characterized by meanings and expectations (Stets & Burke, 2000), which have received greater attention in more recent identity theory research (Hogg et al., 1995; Stets & Burke, 2014). Meanings and expectations are key concepts in both SIT and IT. A meaning is the internal process between a stimulus and the (behavioral) reaction to this stimulus (Stets & Burke, 2014). Therefore, it may drive the (external) behavior, but the behavior may not necessarily correspond to the internal meaning. For instance, one person may become angry about another person’s behavior but decide to not transpose this meaning to their own behavior since a different meaning (e.g. acting diplomatically) may predominate. In general, however, the individual acts in line with the existing meanings and expectations, which serve as orientation for the self (Burke, 1991).

A meaning for one person appears to be very subjective, and may differ from other individuals’ meanings. One challenge of the individual within a role is it to consider its own as well as other people’s meanings and expectations, and act in a way that all meanings and expectations, to some extent, are met in a situation (Stets & Burke, 2000), even if one’s own interests may disturb other individuals’ identities (Stets & Burke, 2014). For instance, a couple that has lived together for several years may be expected to get married at some point (e.g. from friends, colleagues, or family). However, it is also the couple’s own meaning of marriage and their own expectations of the relationship that influence the decision of whether and when to get married. These meanings and expectations are intrinsically considered by the couple, and both partners need to balance out which factors are more or less relevant, and which decision may satisfy all meanings and expectations the best.

The individual perceives reflections and meanings of others (reflected appraisals) and is thus affected by them (Stets & Burke, 2014). If the perceived and the individual meaning differ, individuals may experience psychological distress and intend to act in a way that corrects this misbalance (Burke, 1991; Stets & Burke, 2014). For instance, a group of students that needs to prepare a presentation for one class may have one student who is taking the lead in organizing meetings, distributing tasks and other occasions. This person will be expected to continue with this role so that all group members wait for further instructions from the group leader. If the leader overestimates his/her authority
(e.g. by telling everybody how to do the tasks), group members may start to refuse. This may lead to psychological distress of the leader, and he/she may behave differently (e.g. telling people what to do but not how) so that expectations of the leader and one’s own behavior are balanced again. Consequently, the IT does not focus on the process of controlling one’s own behavior but rather on the reaction to the differences between one’s own and perceived meanings (Stets & Burke, 2014).

Following up on the elaborations above, meanings and expectations of a role may emerge from both the individual in this role and other people from the same or a different social group (Stets & Burke, 2000). Obviously, even individuals with the same roles may differ in their behavior (although social meanings and expectations are equivalent), based on their different individual meanings, interests and situational contexts (Stets & Burke, 2000). For instance, both partners within a couple may give different value to a marriage so that they face the challenge of whether to get married or not, which might only meet the desires of one partner. A (married or unmarried) couple, however, has been considered a special example of a social group since two partners do not necessarily act as a couple, or at least in only rare occasions (Stets & Burke, 2000). Both partners can still be considered as individuals with their own work lives, interests, and hobbies. In their behavior, a couple may not often act as a social group that differs from other social groups. For instance, if a couple attends a party, the partners may arrive and leave together but talk to different people at the party. Rather, joint activities that clearly separate the couple from other social groups might include situations within a household, or going on vacation together.

The social situation determines the extent to which individuals consider their person or social identity to be more important, and individuals act according to which identity is ‘activated’ (Stets & Burke, 2000), even if this disturbs other individuals’ identities. However, several identities may be considered as equally important (Stets & Burke, 2014). If these identities do not overlap each other (e.g. as athlete and singer), or do overlap but work in the same direction, individuals are not in a conflict (Stets & Burke, 2014). For instance, a person may protect the family in an emergency as both partner and parent. A conflict may arise when identities overlap and point toward different directions (behaviors) (Stets & Burke, 2014). For example, ethical conflicts may emerge when a friend is charged with a crime. As a witness, a person is obliged to tell the truth, even if this incriminates a good friend.
Comparison Between Social Identity Theory and Identity Theory

Identity theory (IT) and social identity theory (SIT) are similar in many dimensions. One obvious similarity is the terminology, as both frameworks look at ‘identity’ (Hogg et al., 1995). The common focus is the social behavior of a person based on a self that is related to social structures (Hogg et al., 1995; Stets & Burke, 2000). The key assumption of both frameworks is that social facets of the self are shaped by society and its social groups, neglecting the perspective that the self may be independent of the society (Hogg et al., 1995). Instead, the self and the social structure influence each other (Hogg et al., 1995). SIT and IT emphasize that individuals relate themselves to others, strengthening the bond between the self and society (Stets & Burke, 2000).

Individuals are assumed to compare themselves to others, and form social groups with individuals who show similar characteristics in certain regards (Stets & Burke, 2000). If the characteristics of the self and others differ, they belong to different social groups (Stets & Burke, 2000). According to both SIT and IT, individuals develop their identity based on this process of comparing to other groups (Hogg et al., 1995; Stets & Burke, 2000). The self, however, does not consist of one identity only, but instead is considered as a concept with several identities (e.g. identities as worker, parent, male/female) (Hogg et al., 1995).

Although both SIT and IT share a number of similarities, they also differ in several facets. They have been developed independent from each other, i.e. they do not share a very similar stock of references (Hogg et al., 1995). SIT may be considered as social psychological theory that focuses on social groups and intergroup relations, while IT belongs to the microsocial theories concentrating on individual behaviors that are determined by social roles (Hogg et al., 1995). Although the terminology is similar in SIT and IT, terms are often assigned with different meanings (Hogg et al., 1995). For instance, the process of categorizing him- or herself into social groups is named ‘self-categorization’ in SIT, while IT calls this ‘identification’ (Stets & Burke, 2000). Compared to SIT, IT focuses more on the individual’s perspective. Since individuals with their own interests form social groups, they need to negotiate the social interaction considering their own interests as well as the interests of other group members (Stets & Burke, 2000).

One approach to linking IT and SIT is it to consider the meanings of the self and of a role that may, to some extent, overlap (Stets & Burke, 2000). For example, if one person controls another person, this may be linked with the meaning of a role (e.g. as a supervisor) or a person identity (e.g. as a mastery person) (Stets & Burke, 2000). It is also generally assumed that individuals tend to value their person identity over their role identity if both meanings are inevitably in conflict (Stets & Burke, 2000). However, it is further assumed
Person Identity in (Social) Identity Theory

Social Identity Theory (SIT) and Identity Theory (IT) have considered ‘person identity’ as one specific type of identity (just as social identity, partner identity, or parent identity) in their frameworks. Person identity exists constantly, influences the individual in most situations, and consists of meanings that only the individual has (Stets & Burke, 2014). Therefore, person identity contributes to each social situation since individual characteristics are always present in social situations, and even influence them. For instance, the role of a police officer who catches a person for speeding is usually well-regulated since there are strict rules about what kind of penalties the person should receive. However, different people may interpret this role differently. For instance, some individuals cope with this situation in a rather strict and harsh manner while others act sympathetically and may refrain from a fine if the person has an urgent reason (e.g. to drive a relative to the hospital). In such a situation, the person identity will dominate in the decision to give the penalty or not, i.e. individual feelings and attitudes overrule the work identity as a police officer. Person identity also contributes to social groups. Social groups consist of individuals who share similar characteristics and who may interact with each other in some way. Therefore, a social group cannot exist without the individuals that belong to it. It appears to be intuitive that person identity, i.e. individual characteristics and attitudes, also shape the social group. The impact of one’s person identity on a social group may be more visible in smaller social groups. As one example, one may think of a learning group of university students, which may consist of three to five students. One person may be enough to motivate the entire group to meet regularly, given that this person has a strong attitude to motivate others to learn together. Within a core family of, let’s say, four people (mother, father, two children), the individual characteristics (i.e. the person identity) of the parents may shape family life in various ways. For instance, if the mother insists on doing a family activity every Sunday, this will influence the family’s routines, given that the other family members do not behave rebelliously.

Person identity may be considered as the most relevant type of identity for my dissertation, which focuses on psychological and highly personal factors. For a long time, person identity – although not completely ignored – has not received much attention in SIT and IT (Stets & Burke, 2000). In SIT, for instance, person identity has been considered as a type of self-categorization but it has not been explained how person identity may be integrated in the framework (Stets & Burke, 2000). Person identity is an important level of identification since it relates to the individual being different from others (Stets & Burke, 2014). Therefore, the person identity is not necessarily determined by
the social group, the role within it, or its meanings and expectations, but is defined by individual interests and desires (Stets & Burke, 2000). Furthermore, person identity is shaped by personal beliefs and other types of resources (e.g. trust, but also income or education) (Stets & Burke, 2014). One important difference to other identities relates to the underlying structural levels. A social identity, for instance, may be developed as a member of a specific class, race, or gender, whereas role identities are more often found in micro level structures (e.g. the role of a family head in a family) (Stets & Burke, 2014). Person identity, however, exists in all structures (Stets & Burke, 2014) since it is inseparably linked with the member of each group. Therefore, person identity may also serve as the master identity that overrules a person’s other social or role identities (Stets & Burke, 2000). However, person identity is highly complex, so should be examined according to only one or two dimensions at the same time (Stets & Burke, 2014).

Both the SIT and IT may serve as suitable theoretical frameworks for my dissertation topic on psychological factors and family formation processes. As will be discussed later, chapter 3 of this dissertation examines the association between identity and marriage, and identity has been measured according to future life plans. Therefore, IT appears to be a reasonable framework for this chapter. Furthermore, chapter 4 looks at leadership skills and family formation in Sweden, and leadership identity has also been explored in previous research (Burke, 2006; Riley & Burke, 1995).

Additionally, social identity – as a central concept in both SIT and IT – contains different components of group members (emotional, evaluative, psychological) that also strengthen the feeling to belong to this particular group (Stets & Burke, 2000). Commitment processes, as one example, belong to the psychological components (Stets & Burke, 2000), which are of particular interest for this dissertation. Family formation processes can already be considered as commitment, similar to belonging to a social group. A parent or spouse may be considered as part of a social group that is connected in several ways, e.g. by law, typically by sharing the same household, or by social expectations to act as one family. However, my dissertation addresses the question of which factors are linked to start this commitment. From this perspective, social expectations may play a particularly important role since some social groups may be expected to do different tasks during family formation processes. If, for instance, societal norms are present, according to which individuals are expected to have a child by the age of 30, then men and women may act according to these expectations after reflecting on them. Individuals from specific occupations such as kindergarten, or primary school teachers may perceive the social expectations to have a child based on their professional life, i.e. they may tend to have a child rather than not. Therefore, belonging to the social group of school teachers may be linked with higher probabilities of entering parenthood based on social expectations and individual reflections.
The SIT and, in particular, the IT include person identity, i.e. individual values, desires and interests, in their frameworks. The role of individual characteristics for behavior in specific situations and in the context of social groups, roles and expectations has been discussed. However, these theories do not appear to fit my dissertation topic particularly well for a number of reasons. First, although person identity has been considered for explaining behavior, the influence of the situation and the context still appears to be dominant in both frameworks. For instance, it has been shown that – although person identity affects behavior in a social situation – person identity verification emerges via reflected appraisals (Stets & Carter, 2011, 2012). This means that the difference between meanings of the individual and others shape a person’s behavior in a social situation. Whether this effect is similarly large when it comes to family formation processes may be questioned since family formation processes such as marriage and childbearing belong to the crucial life events, and individuals may tend to value their own (person) identity higher than social expectations when it comes to these life-changing processes. In particular, parenthood will essentially change someone’s life. Therefore, childbearing is not comparable with any other usual social situation, in which individuals may change their behavior to find a match between their own and other people’s meanings. To have a child is a transition with severe consequences. One may, therefore, argue that individuals may tend to act regardless of others’ expectations and meanings when it comes to fertility and, to a similar extent, marriage.

Additionally, IT and SIT emphasize the role of social contexts for individual behavior and person identity. However, the predictive power of individual attitudes, desires and preferences for the social context/situation has been neglected. Individuals may avoid situations or social groups that are not consistent with their personality, or in this case, with their person identity. For instance, if one person is characterized by a strong desire to lead other people, it is difficult to imagine that such a person will bring him- or herself into a situation in which he/she is led by others. Even if the situation requires accepting such a role, e.g. at work, an individual may only take this role due to the own interest based on person identity, e.g. to maintain the chances of being promoted. Whether a person with such an identity remains in the situation or a job that brings a high frequency of these situations for a long time, is – at the very least – questionable. Additionally, one may argue that individuals, to a large extent, determine situations according to their person identity. For instance, if one person from a relatively individualistic society experiences social pressure from family and friends to get married and have children against their own wishes, this person may refrain from frequent contact with these people. Thus, the individuality may be considered as being superior to the impact that the social surroundings may have.

A second reason why IT and SIT do not appear appropriate with respect to my dissertation is that family formation processes, in general, are not particularly
present in both theories. For instance, SIT has been developed to examine intergroup behavior (Hogg et al., 1995; Tajfel, 1974). Family formation, however, is not necessarily a type of intergroup behavior as it relates to within-group behavior (e.g. childbearing as the outcome of a couple). Even regarding other commonly used terms of both theories, it is difficult to apply family formation to these. For instance, it may appear counterintuitive to see family formation processes such as childbearing or marriage as a ‘situation’ or social behaviors in a situation, even if social situations may play a role in these transitions (e.g. meeting the future spouse in a social situation, or taking the risk of having unprotected sex in a specific situation that may lead to unplanned pregnancy).

Furthermore, neither IT nor SIT provide a definition of the term ‘situation’, a problem that will be further discussed in the person-situation debate below. Although a social group may exist for a long-term period (e.g. years) and individuals may also stay in a social role within this group for many years, the actual behavior relates to situations that may pertain to a short-term period of time, in which two or more individuals interact. As another indicator for my argument that SIT and IT do not particularly relate to family formation is it that they lack examples of fertility and marriage in their explanations. It would seem that both transitions (into parenthood and marriage) are not much considered in the framework, or at least they have been severely neglected. Therefore, IT and SIT appear more appropriate for studying behavior in specific situations.

The question is whether family processes may be considered as social situations. Usually, family formation processes, such as getting married and (to a large extent) having a child, are well-considered decisions in individualistic settings. Typically, the process of getting married, i.e. a wedding, requires long-term planning by both partners. Although pregnancies may emerge unplanned, time to actual childbirth still allows for some preparation. These family formation processes are based on one’s own desires and social interactions with a partner, family, friends, and other individuals. Due to the relatively long duration of these (repetitive) interactions over months or even years, one may, therefore, speak about social relationships or processes, instead of social situations.

Moreover, the social context for family formation appears less relevant once one considers the high levels of individualism in all studied societies (Germany, Sweden, Finland). As shown above in the section on individualism and collectivism, all considered countries are characterized by a relatively high extent of individualism, according to which individuals are relatively free to shape their life course. However, there is always a mix of individual (and psychological) factors, and the social context that determines family formation processes. In more individualistic settings, one’s own desires and preferences may be more important for fertility and marriage outcomes.
Consequently, social norms and restrictions still play a role in decision-making. One obvious example of the influence of the social context is that individuals need the societal background that allows them to act relatively liberally. Conversely, in countries in which the interests of the society or groups are valued over the individual ones, individuals may tend to follow social norms, i.e. the social context may be more relevant for family formation. Therefore, social circumstances are an essential requirement for individual decisions on each life course. In such a setting, psychological concepts such as personality may still play an important role in family formation outcomes, but this may be to a lesser extent. Once the society opens the option to shape life decisions independently, the social influence also becomes less relevant. In other words, the social context plays a fundamental role for individualistic life decisions, and may allow or impede the opportunities to decide liberally whether and when to get married/ have children.

IT and SIT are not the theoretical focus of my dissertation chapters since both theories give high value to social groups, social expectations, and role identities, albeit also considering individual preferences. However, the social context may certainly affect the person’s identity, the individual’s considerations and behavior. Therefore, to a certain extent, both theories are also addressed in my dissertation since I control for a number of social influence factors in my analyses (e.g. education, gender, income).

Life Course Perspective

One key theoretical concept for my dissertation is the life course perspective (LCP). According to the LCP, individuals’ life courses consist of numerous experiences, events, and processes (Macmillan, 2005). These events and transitions influence later life outcomes, and have to be considered in their social and historical context (Hutchison, 2011). Apart from the societal context, individuals’ agency, i.e. personality, desires, or attitudes, play a role in shaping the life course (Hutchison, 2011). Therefore, psychological factors such as personality, identity, or leadership skills (LS) in earlier stages of the life course may also affect the individual with its psychological factors later, as well as life events such as fertility or marriage in later life course stages.

The key concepts of the LCP are life events, transitions, trajectories, turning points, and cohorts (Elder Jr. et al., 2003; Hutchison, 2011). Life events and turning points are those which lead to significant and long-lasting changes in life (Hutchison, 2011). Life events may include important events such as marriage or childbearing, which may be planned some time in advance. Contrary, turning points typically turn out as essential life changes over time (Hutchison, 2011). For instance, entry into military service may not be considered as important for young males at first glance. However, it may turn out to be a turning point over time since serving in the army may strengthen some personal
characteristics (Elder Jr., 1998) such as confidence (as defender of the country) or self-discipline (an important skill in the military). However, there is also the argument that military service will not change males’ personality much, at least not for the better, e.g. anti-social men may become even more anti-social, if changes may be observed at all (Lindqvist & Vestman, 2010). Furthermore, transitions and trajectories are key concepts of the LCP. Transitions include status changes, i.e. they represent the end of an old life stage and the onset of a new one (Hutchison, 2011). Marriage or childbearing have been acknowledged as widespread examples of transitions that may influence the rest of life (Elder Jr. et al., 2003). Trajectories are usually more complex, and include several transitions. They usually relate to longer periods in life such as education or career (Hutchison, 2011). Birth cohorts, as a final key element of the LCP, reflect the historical context and age patterns well (Elder Jr. et al., 2003).

Apart from the four key concepts above, the LCP also contains four core themes (Hutchison, 2011): 1) lives in their historical context, 2) the timing of lives, 3) interrelated lives, and 4) human agency. In the following, I discuss these four themes in relation to psychological factors in order to understand how personality, identity, and leadership skills (LS) may affect later life outcomes. First, as individuals from the same society are born in different years, they grow up and live with different social environments (Elder Jr., 1994; Elder Jr. et al., 2003). Different historical contexts come along with different challenges in both career and family lives. Therefore, individuals require different sets of skills and abilities in both life domains. With regards to LS, for instance, several decades ago, globalization and technology were not as far developed as in contemporary societies. Companies in contemporary societies have the potential to expand all over the world. Leading a company with a few thousand workers is certainly different to running one’s own business in a historical context, in which staff were located at the same place. Furthermore, LS relating to social and romantic issues may have changed over time. Several decades ago, more traditional family forms were dominant in many societies. In such families, the men may have taken most of the important decisions in (daily) lives of a family. In contemporary societies, however, LS may be more gender balanced within a romantic relationship.

Second, the timing of lives, i.e. when certain events or transitions happen in the life, is a key theme of LCP (Elder Jr., 1998). For example, entry into marriage or parenthood may be experienced relatively early in an individual’s life course (Elder Jr., 1994), which may be reflected in worse mental health outcomes in later life (Elder Jr. et al., 2003). This may also relate to identity in terms of exploration and commitment processes over the life course. If young males enter fatherhood relatively early (e.g. through unplanned pregnancy of their partner), they may decrease exploration (e.g. on leisure time activities) and increase commitment levels (e.g. in terms of taking care of the offspring). These new circumstances (being a father) may require the men to focus on career in order to provide resources and security for the family, which will
also affect the work life (e.g. by aiming for job promotions, or applying for other jobs).

The third key theme within the LCP is about the interdependence of individual life courses (Elder Jr., 1994). Human life courses are typically shaped by social relationships, through which other individuals may influence human behavior (Elder Jr. et al., 2003). Friends, family members, or colleagues may support individuals in various daily situations but they may also control individual behavior via expectations, punishments, or gratifications (Hutchison, 2011). For instance, children may predominantly be influenced by their parents and siblings who may tell a child what behavior is right or wrong, e.g. in terms of social acceptance. In particular, attitudes towards family formation may be transferred intergenerationally so that individuals learn, at an early age, about potential benefits or drawbacks of the family life that they have grown up in. Parents may shape their children’s desires to enter (or not) marriage and parenthood by frequently telling the offspring about positive or negative consequences of forming a family. Moreover, social networks may shape psychological factors such as personality, identity, or LS. An adolescent sibling, for instance, may be given the task by the parents to occasionally take care of younger brothers or sisters, which may increase the responsibility of the elder sibling and may, therefore, determine personality development in terms of confidence, conscientiousness, or leadership skills.

The fourth key theme of the LCP relates to human agency, which describes the capability of individuals to behave according to their attitudes and desires (Hutchison, 2011). There are many examples in daily life in which individuals may act as agents when they follow their own goals. For instance, inviting friends to a party clearly shows the individual preferences towards people that the person would like to spend time with. However, there are also various situations that individuals cannot control (Hutchison, 2011). For instance, being promoted at work may be a strong individual desire but it is practically only possible if more powerful people offer the promotion. Furthermore, human agency is restricted by the social and historical context (Elder Jr. et al., 2003). For instance, if social norms suggest getting married early in life, the agency regarding marriage attitudes may be restricted, i.e. individuals may ignore their preferences not to get married and decide to follow social expectations.

Additionally, two more principles have been considered in previous research: diversity in life course trajectories, and developmental risk and protection (Hutchison, 2011). These are strongly related to the first four concepts, e.g. the diversity in life course trajectories may stem from different social contexts, different individual preferences (agency), or different social relationships that affect one’s own life course differently. Therefore, life course trajectories may vary between groups (e.g. men and women) as well as within groups (e.g. women will have different life course trajectories, i.e. different family or work trajectories). The developmental risk and protection refers to individual development during the life course, which will influence later life outcomes.
This is linked with agency, for instance, that one’s own experiences from the past may shape preferences and later life decisions, i.e. individuals develop according to their experiences and surroundings.

The first part of this kappa has clarified what may be understood as personality, identity, and leadership skills. Furthermore, it has sketched out why it is important to look at the relationship between these characteristics and family formation outcomes based on theoretical perspectives such as the SDT, or the debate on individualism vs. collectivism. Additionally, it has been explained how psychological factors may be linked with family formation using approaches such as the LCP or the TPB. Many different dimensions may be important for the link between psychological factors and family formation, e.g. intentions or health. In the following sections, however, the focus will lie on the role of the social context in family formation processes, which may be considered as a key factor for shaping both personality and family-related behavior.
The Role of Social Context

The association between psychological factors and family formation processes cannot be examined without considering the social context of both phenomena. As pointed out above, social context shapes the development of individuals and their behaviors according to their own desires and preferences. Within an individualistic society, the extent to which individuals can follow their goals and realize their preferences may be higher than in collectivistic societies. Therefore, the society, including its norms, laws, and constraints, will shape the realization of each person’s own preferences. However, it will always be a mix between individual preferences and social constraints that determines family formation; only the degree of social or individual influence may vary.

Furthermore, social context shapes the psychological development of a person as well as family formation processes. For instance, individuals may behave differently across situations, i.e. their personality does not need to be consistent in all situations. A person may be rather extrovert in one situation but extremely introvert in another. Consequently, the social surrounding shapes the extent to which an individual acts and develops towards one or other personality trait. For instance, in childhood and adolescence, individuals are surrounded by adults such as parents, other family members, or teachers who may make an impact by telling them how to behave. Additionally, social context influences family formation decisions through norms or laws. For instance, a society may consider the traditional family type, i.e. a two-sexes marriage with at least one child, as the standard family form, and this will be taken into account in individual behavior. For instance, two partners who have been together for a certain time may be repeatedly asked when they will marry or have children, assuming that it would be out of the question if they want to make these transitions. Therefore, I will discuss the role of social context for my dissertation topic in the following sections.

The Role of the Welfare State

One important point of the social structure to consider when individuals think of family formation plans and decisions relates to the support that is provided by the welfare state. The welfare typology by Esping-Andersen (1999) has
been a useful tool to describe and explore familialistic and defamilialistic welfare regimes. This typology addresses the question of to what extent the care of family members (children, the elderly) is the responsibility of the family, and to what extent the welfare regime should provide support (Leitner, 2003). The higher the welfare state support the less dependent are families from social capital (Di Giulio et al., 2012). The welfare state may support families and individuals via different channels. For instance, parents may benefit from welfare state support regarding availability of daily childcare facilities (Esping-Andersen, 1999). Moreover, the welfare state may support parents via certain time rights such as parental leave, direct and indirect financial support such as money transfers to parents and tax benefits, or social rights related to caregiving such as pension rights or social security rights (Leitner, 2003).

In Esping-Andersen’s typology of welfare states, familialistic systems and defamilializing states may be distinguished from each other (Esping-Andersen, 1999). Whereas familialistic regimes consider the household to be responsible for the care and the welfare of its members, de-familializing states aim to unburden the household in terms of their tasks to care about its members (Esping-Andersen, 1999). De-familialization may be approached via public social services or services from the market (Leitner, 2003). In general, a larger extent of de-familiarization is assigned to the Nordic countries compared to continental countries (Esping-Andersen, 1999), e.g. based on high levels of formal child care for children younger than three years of age (Leitner, 2003). Furthermore, gender equity in parental leave has been fostered. In Sweden, for instance, parental leave reforms were implemented in the 1990s and early 2000s (e.g. two months of parental leave were reserved for each parent), which encouraged both parents to take parental leave for some months (Duvander & Johansson, 2012). Another reform was the gender equality bonus (tax benefits) from 2008 but this reform did not lead to changes in the parental leave use in Sweden (Duvander & Johansson, 2012). However, it is still the mothers that take much longer parental leave (around 9.5 months) than the fathers (around 3 months) in contemporary Sweden (Duvander & Viklund, 2020), with the mothers typically taking the leave first (Eriksson, 2019). This is linked with labor market disadvantages for women (Evertsson & Duvander, 2011).

Germany has been considered as rather conservative, i.e. familialistic country regarding child care responsibilities (Esping-Andersen, 1999; Leitner, 2003). However, there have been essential changes in family policies in the German context since the early 2000’s, including several reforms in order to support parents and improve outcomes for the children (Ostner & Stolberg, 2015). For instance, parental leave regulations and childcare benefits have continuously been expanded including a codified right for German parents to make use of childcare for one year old children from 2013 onwards (Ahrens et al., 2022). Moreover, welfare state regulations may determine gender (in)equalities. For instance, direct cash transfers to parents may contribute to economic stability.
of families but it may also increase the risk of reduced employment, in particular among mothers (Bonin et al., 2013). Additionally, childcare may be a task that future parents need to consider in their childbearing intentions. In particular, women may be charged with this burden since they are typically the main caregiver in families across European countries (Bertogg & Strauss, 2020; Jang et al., 2012; Tur-Sinaï et al., 2020).

Consequently, welfare state support, such as parental leave regulations, the provision of daily childcare, or financial benefits, may play an important role in individual decisions for or against forming a family. Particularly strong effects of family policies have been found for transition intentions towards lower birth parities (Billingsley & Ferrarini, 2014). Sweden and Finland are considered as somewhat defamilialistic welfare states (Esping-Andersen, 1999; Leitner, 2003), and Germany as familialistic one which still provides some essential support for families (Ostner & Stolberg, 2015). When structural (dis-)advantages to family formation disappear (e.g. when the costs of children are at least partly covered by the state, or daily childcare is provided), other factors such as personality or identity may become more important for or against having children or getting married. However, recent research has shown that even in egalitarian and defamilialistic countries such as Sweden, parenthood premium effects (i.e. income increases after childbirth) emerge, in particular for men and have not changed much over time (Bygren et al., 2021).

Further adjustments in family policies need to be made to support dual earner family forms in Sweden, in particular since gender equality in the labor market and the household is linked with higher risks of sick leave among parents (Lidwall & Voss, 2020).

The sections above demonstrate that individuals and social structures are strongly intertwined. Support by the welfare state is only one way through which family decisions might be influenced. Many more potential pathways exist, and this dissertation may only cope with a fraction of them, e.g. social norms that will be discussed later. First, however, a country-specific overview shall be given for Germany, Sweden, and Finland – the countries of interest in this dissertation. Each country has own and unique characteristics regarding fertility, marriage, dissolution, or individualization, as discussed below.

The Case of Germany

Germany belongs to the countries with relatively high individualism as demonstrated in the section on individualism and collectivism above. Additionally, gender equality has increased in the recent past, according to the European Gender Equality Index, in which Germany is ranked on 11th place among countries of the European Union (EU) (European Institute for Gender Inequality, 2023b). Germany has increased its position in this ranking over time, also due to the institution and expansion of several gender policies (Ahrens et al., 2022). The biggest improvement regarding gender equality
over the last decade relates to equality in power, and in particular, in economic power (European Institute for Gender Inequality, 2023b). Germany performs particularly well regarding gender equality in health (status, behavior, access) but shows room for improvement in the section of knowledge (i.e. graduates of tertiary education, or participation in non-formal education) (European Institute for Gender Inequality, 2023b).

These trends might be reflected in family formation trends over time. Actual fertility levels, however, have been relatively constant below replacement level in entire Germany since the early 1970’s, with some more variation over time in East Germany (BiB, 2022). For instance, the total fertility rate (TFR) in East Germany increased from the mid-1970’s (1974: 1.54) to the early 1980’s (1982: 1.86) before it dropped to an all-time low of 0.8 in 1994 (Human Fertility Database, 2019). In the more recent past, the TFR for reunified Germany increased from 1.36 in 2006 to 1.6 in 2016 (Human Fertility Database (HFD), 2019b). Compared to other countries from the European Union, German fertility levels were slightly above the average in the more recent past (Eurostat, 2023). Whereas the TFR in Germany was at 1.58 in 2021, the TFR in Finland was lower (1.46) and the TFR in Sweden higher (1.67) (Destatis, 2023a).

Recent research has shown that fertility intentions are not necessarily in line with actual fertility behavior in the German context. Ideal family size, for instance, has remained remarkably constant at around 2.0 children per family over the last decades in Germany (Sobotka & Beaujouan, 2014), in contrast to the relatively low fertility levels described above. The gap between fertility intentions and actual fertility may be partly explained by the relatively large excess childlessness. For instance, one study has suggested that less than 50% of a German sample with the intention to get a child in the next two years actually realized their plans (Kuhnt & Trappe, 2016). Furthermore, around 5% of women in young adulthood intend to stay childless (Beaujouan & Berghammer, 2019; Geist & Brauner-Otto, 2017) but more than 20% do so by age 40, and this is particularly based on higher educational groups (Beaujouan & Berghammer, 2019). Accordingly, the mean age at first birth has almost consistently increased for the last decades in Germany (Human Fertility Database (HFD), 2019a), and was 30.4 years for mothers and 33.3 years for fathers in 2022 (Destatis, 2023b).

These trends are closely linked with marriage patterns since the majority of childbirths (>70%) has happened within marriage for the last decades in Germany (Andersson et al., 2017; Andersson & Philipov, 2002). Fluctuations over time in marriage counts have been observed, in particular after the German reunification marriage numbers have decreased (Destatis, 2024a). Similar to the mean age at first childbirth, the age at first marriage has increased over the last decades (Destatis, 2024b) up to 32.6 years (women), and 35.1 years (men) in 2022 (Destatis, 2023c). This might also be linked with cohabitation trends over time. Individuals from more recent Germany have more commonly started a first union as cohabitation in younger ages (30% of the men, and 45%
of the women by age 25) (Andersson et al., 2017), which are higher numbers than several decades ago (Andersson & Philipov, 2002). Within the first ten years after the cohabitation onset, the partnership is more likely to lead to marriage (51%) than to separation (40%), whereas only 17% of the marriages end up in divorce within the first ten years in Germany (Andersson et al., 2017).

The Case of Sweden

The Swedish context provides even some more room for psychological factors to determine family formation processes. Sweden is an individualistic country, in which individuals may act relatively independently from each other, according to their own preferences (Triandis, 2018). Therefore, individuals in Sweden are comparatively free in their development and in shaping their life courses. This is supported by the World Values Survey, which attests Sweden to have high secular and self-expression values (World Values Survey, 2023). Thus, Swedish men and women are relatively disconnected from religious attitudes and traditional family norms (high secularity) (World Values Survey, 2023), which may lead to lower social pressure regarding family formation processes. Additionally, high self-expression values strengthen the individual’s power over life course decisions in all domains (Inglehart & Welzel, 2005) such as marriage or fertility. Furthermore, Sweden has an outstanding position regarding gender equality among EU countries. According to the Gender Equality Index, Sweden has been ranked as top of all EU members, in particular due to high gender equality in the domain of power (e.g. political or social decision-making) (European Institute for Gender Inequality, 2024). Sweden also reaches high scores on gender equality in the field of money (economic situation, financial resources) although there is still some room for improvement (8th in the EU) (European Institute for Gender Inequality, 2024). High individual power over life decisions and high levels of gender equality may have shaped observed fertility and marriage trends in Sweden over the last decades. The total fertility rate (TFR) has fluctuated for several decades (Human Fertility Database, 2023b). For instance, the TFR has declined in Sweden since 2010 (from 1.98 in 2010 to 1.52 in 2022) (Statistics Sweden, 2023) suggesting fertility postponements, reductions, or a mix of both. Additionally, the mean age at first birth has continued to increase over time (e.g. from age 26.7 in 1975 to 31.6 in 2022) (Human Fertility Database, 2023a), with usually men entering parenthood at slightly higher ages than women (Andersson et al., 2017). Fertility postponements may be partly based on perceived uncertainties regarding economic security and the future situation, which predict lower fertility intentions in Sweden (Neyer et al., 2022) but also on the lack of a partner or the impression to be not mature enough to enter parenthood (Schytt et al., 2014). Cohort fertility, however, has been relatively stable among both
genders in Sweden with slow declines in the more recent birth cohorts (Jalovaara et al., 2019). The majority of Swedish men and women tend to reject the attitudes that fertility and partnership go hand in hand, or that childbirth would be an indicator of a high-quality partnership (J. A. Holland & Keizer, 2015). Therefore, the majority of childbirths in contemporary Sweden happens outside of marriage (Andersson et al., 2017). Since one of my chapters specifically looks at marriage, fertility, divorce, and cohabitation dissolution in Sweden, it may be important to disentangle these concepts in more detail, particularly with respect to marriage and cohabitation, which will be discussed below.

Marriage has been the dominant family form in Sweden, although trends over the past decades show increasing relevance of cohabitation (Duvander & Kridahl, 2020). Trends in family formation changed in Sweden in the 1960s, when cohabitation rates and non-marital birth rates increased and marriage rates decreased (Bradley, 1990). However, at around the turn of the millennium, marriage rates in Sweden increased again (Ohlsson-Wijk, 2011). Previous research has shown that individual attitudes towards marriage, intentions, and other individual factors shape marital behavior in contemporary Sweden (Duvander & Kridahl, 2020). Social pressure to marry is not particularly high in Sweden, and according to the Second Demographic Transition, individual values and attitudes such as love, commitment stage in life course, economic advantages, or positive attitudes towards marriage may increasingly drive marital behavior (Duvander & Kridahl, 2020). This raises a question around the reasons to get married in Sweden (Holland, 2013; Palmo, 2015).

Marriage has been considered the (most) important tie between two partners in Sweden for a long time, historically rooted in religion and tradition (Bradley, 1990). Holland (2013) has proposed four different meanings of marriage for the Swedish context: 1) family forming marriage (marriage before first childbirth); 2) legitimizing marriage (marriage shortly before or after childbearing); 3) reinforcing marriage (marriage a year or more after first but before second childbirth); and 4) capstone marriage (after completion of fertility). Family forming marriages still capture around 40% of all first marriages by age 40 in Sweden, and the proportion of legitimizing marriages tends to decrease over more recent birth cohorts (20-25%), whereas capstone marriages have become more relevant (almost 20%) and reinforcing marriages have remained stable at around 11% (Holland, 2013). However, remaining unmarried until age 40 is not unusual in contemporary Sweden (only around 50% get married by this threshold) (Palmo, 2015). The average age at first marriage increased to 36.4 years for men and 34.5 years for women in 2022 (Statistics Sweden, 2024).

Cohabitation, on the other hand, is most often the first type of partnership formation and often the predecessor to marriage (Duvander & Kridahl, 2020), starting in the early 20s (Palmo, 2015). In the past, around 50-60% of the Swedish men have started a first union as a cohabitation by the age of 24/25 years, and even larger proportions have been detected for the Swedish women (70-
80% by age 25) (Andersson et al., 2017; Andersson & Philipov, 2002). Only one third of the cohabitations end up in marriage within the first ten years but they are also more likely to lead to separation (47% within first ten years after cohabitation onset) than marriages (20% within first ten years) (Andersson et al., 2017). Cohabitation may, therefore, be considered as alternative to the unpartnered status instead of an alternative to marriage since the vast majority of new partnership unions are cohabitations (Thomson & Bernhardt, 2010).

Legal differences between marriage and cohabitation as family forms are fairly minor and even decreasing. For instance, the formal differences between cohabitation and marriage are in decline, and mainly relate to dissolution, inheritance, or childbearing and adoption (Ono & Yeilding, 2009; Palmo, 2015). Previous research has shown that marriages are more stable than cohabitations in Norway and Sweden, leading to higher dissolution risk among unmarried couples (Thomson et al., 2019). Furthermore, cohabiting couples are more likely than married couples to keep their money separate (Heimdal & Houseknecht, 2003).

Cohabitation, marriage and childbearing are strongly interrelated concepts (Palmo, 2015). For instance, most childbirths happen for couples in cohabitation but cohabitation is often followed by marriage (Palmo, 2015). Whether marriage happens before or after childbirth is influenced by SES, e.g. high education is linked with marriage before or directly after childbearing, and low education with marriage late after childbirth or no marriage at all (Palmo, 2015). No gender differences in marriage intentions have been found in recent research (Duvander & Kridahl, 2020). However, in high-educated couples, women’s attitudes count more than men’s, and vice versa in low-educated couples (Duvander & Kridahl, 2020). Education plays a fairly minor role in entry into cohabitation, though (Thomson & Bernhardt, 2010). Additionally, family relationships shape the transition from cohabitation to marriage, e.g. marriage is more likely when a woman has a good relationship with her father (Palmo, 2015).

In general, it has been observed that the meaning of marriage is changing in Sweden. Albeit difficult to detect the new meaning of marriage, it can be said that the old meaning of it, in terms of life course stages or protection of resources, is less relevant today in the Swedish context (Duvander & Kridahl, 2020).

The Case of Finland

Similar to Sweden, Finland shows relatively high levels of individualism, as discussed above. Furthermore, Finland scores high on the Gender Equality Index (8th among EU countries), in particular regarding gender equality in health (European Institute for Gender Inequality, 2023a). However, most room for improvements refers to gender equality in non-formal education, ter-
tiary students in certain fields (humanities, education, arts), and social activities such as charitable or leisure activities (European Institute for Gender Inequality, 2023a).

Finland exhibits similar trends to other high-income nations regarding the timing of various life events in early adulthood. For instance, the age at first graduation from upper secondary education in Finland closely aligns with that of other OECD countries (OECD, 2022). Additionally, the average age of initial enrollment in tertiary education in Finland, at 23 years, only slightly surpasses the OECD average of 22 years (OECD, 2022). Similar observations apply to the age of first graduation from tertiary education, which hovers around 27 years in Finland (OECD, 2017). However, many Finnish students engage in work while studying, blurring the boundary between education and entry into the workforce (Mary, 2012). Therefore, contemporary young adults in Finland may prioritize achieving economic stability before embarking on family formation, leading to delayed marriage and fertility.

Conversely, young Finns diverge from their global counterparts in the timing of certain life transitions. For example, Finns typically leave their parental homes at an average age of 21.2 years, which is more than five years below the EU average (Eurostat, 2022b). During their twenties, a higher proportion of Finns opt for cohabitation (31%) (Eurostat, 2016), compared to the OECD average of around 17% (OECD Family Database, 2016). Moreover, Finland boasts the highest average age of graduation from post-secondary non-tertiary programs among OECD countries, at 42 years, compared to the OECD average of 31 years (OECD, 2022). Unlike its Nordic counterparts such as Sweden, Finland’s population is relatively homogenous (Fadjukoff & Kroger, 2016), with a low proportion of foreign-born individuals compared to other OECD countries (OECD, 2023). Around 7% of registered individuals in Finland were born in a foreign country (Official Statistics Finland, 2023a).

These characteristics and trends may impact family formation processes of individuals as well. In the early 2000’s, positive fertility intentions were still the norm in Finland since more than 50% of young adults intended to enter parenthood (Miettinen et al., 2011; Miettinen & Paajanen, 2005). But fertility declines could be observed in the more recent past. For instance, the total fertility rate declined from 1.87 in 2010 to an all-time low of 1.35 in 2019 (Human Fertility Database (HFD), 2022; Official Statistics Finland, 2023b), alongside a continual increase in the age for first childbirth in both genders (Official Statistics Finland, 2021a). Similar to the Swedish case, economic uncertainties have been found to (partly) explain recent fertility declines in Finland, apart from lifestyle preferences and other factors (Savelieva et al., 2023). While the vast majority of births happened within marriage some decades ago (1990: 75%), this proportion has shrunk in contemporary Finland (54% in 2020) (Official Statistics Finland, 2021b). Correspondingly, the average age at first marriage has risen in recent decades (Official Statistics Finland, 2018), reaching 32 years for women and 34 for
men in 2019, slightly surpassing the OECD average (OECD Family Database, 2021). In line with increasing ages at first marriage is the decline of the first marriage rate in the last decade to below 20 per 1,000 women in Finland, and around 40% of the marriages end up in divorce (Official Statistics Finland, 2020). Similar to Sweden, relatively high proportions of young individuals starting a first union as a cohabitation have been found for Finland, compared to different European countries, e.g. 74% of the women, and 51% of the men have started with a cohabitation by age 25 in the past (Andersson & Philipov, 2002).

In addition to the country-specific details above, unique norms may shape individual preferences, intentions, and family events. Existing social norms may not be controlled by individuals, regardless of them being part of the society with such norms. Therefore, the role of social and gender norms for family formation processes shall be discussed below.

Social and Gender Norms

Social norms can be understood as non-written guidelines for each member of a social group in terms of socially accepted behavior (Cislaghi & Heise, 2018). As suggested in the sections above, each country (or even subnational region) contains its own social norms, expectations, and patterns since these social norms are linked with structural conditions. For instance, members from countries with high national wealth and ethnic homogeneity show relatively high levels of social trust, i.e. trust in other people, which is particularly distinct in the Nordic countries (Sweden, Finland) but also in Germany to some extent (Delhey & Newton, 2005). Furthermore, the trust in the welfare system is generally high in wealthy nations, as shown by previous research based on a sample from Sweden (Edlund, 2006). Existing social and gender norms within a society or a social group may, in turn, have a significant impact on individual behavior, attitudes, and decisions (Cislaghi & Heise, 2020), which may contradict one’s attitudes that describe one’s own preferences regarding any life domain (Fishbein & Ajzen, 1975). For instance, differences in social norms across societies may partly explain the gap between intended and realized fertility that has been observed in many countries (Beaujouan & Berghammer, 2019).

One specific kind of social norms relates to gender norms of a group or society, and many social norms intrinsically relate to gender since individuals often consider expectations on themselves as a man or woman (Cislaghi & Heise, 2020). Indeed, gender is one of the key determinants of social behavior and relationships (Ridgeway, 2009; Stangor et al., 1992), even more important than race, or age (Fiske et al., 1991). Gender norms refer to expectations of the behavior and attitudes of men and women within a social group or society, i.e. the focus is not on biological but on social behavior related differences
between both sexes (Cislaghi & Heise, 2020). Gender norms and other con-
cepts such as gender roles, gender socialization, or gender power relations
form the gender system of a society, and the norms represent the guidelines
and expectations that underly this system (Cislaghi & Heise, 2020).
Previous research has identified several principles regarding gender norms
(Cislaghi & Heise, 2020). First, individuals perceive existing gender norms
from early ages on, e.g. through parental nurture (Tenenbaum & Leaper,
2002). Second, gender norms are linked with gender relations that somewhat
favor men regarding power, e.g. power in organizations or in terms of sexual
harassment (women are generally more often affected as victims) (Connell,
2009; Lazar, 2005). Third, gender norms are further emphasized and transmit-
ted via institutions that reproduce existing norms and, therefore, strengthen
the legitimization of current gender differences in social behavior and rela-
tionships (Cislaghi & Heise, 2020). Fourth, gender norms are created and re-
inforced by social interactions that shape the understanding of what is re-
garded as male or female (West & Zimmerman, 1987). Consequently, gender
norms determine individuals’ life courses by shaping access to resources and
power differently, depending on one’s gender (Cislaghi & Heise, 2020). This
may result in different types and meanings of personality traits, identity di-

mensions, or leadership (skills) by gender since gender norms may prescribe
different expectations on tasks, such as responsibility and power within or-

ganizations, or the household.
Gender ideologies have often been explored regarding the work-family con-

flict, which may be of particular interest for individuals in their family for-
mation processes. Sweden and Finland have been assigned to countries with
rather egalitarian norms and attitudes, which favor men and women to be rel-
avely equal in labor market participation and household tasks such as chil-
draising (Begall et al., 2023). Contrary, Germany belongs to the more tra-
ditional societies that score relatively low on egalitarian attitudes (Begall et al.,
2023), in particular West Germany, whereas East Germany shows much lower
agreement with such traditional attitudes, similar to Sweden (Sievers &
Another typical example of gender norms relates to parenting expectations,
which has extensively been examined in recent research. For instance, a quan-
titative scale of intensive parenting attitude has been developed including
items on how challenging parenting is expected to be, the fulfillment of par-
\textit{ents}, or whether the needs of the child should always be prioritized (Liss et
\textit{al.}, 2013). Intensive parenting attitudes, i.e. strong agreement on the items that
childraising is very demanding or that children’s interest should be the center
of attention, have also been found in contemporary Sweden (Mollborn &
Billingsley, 2024). In particular, women are expected to invest a huge load of
physical and mental effort toward motherhood, which has often been called
‘intensive mothering’ (Damaske, 2013; Elliott et al., 2015; Hays, 1996; Loyal
et al., 2017). However, the actual behavior might differ from the social expectations so that mothers may be more or less stressed or relaxed regarding their motherhood expectations and behaviors (Lankes, 2022). Although men contribute to child-raising they do not worry so much about fatherhood roles, i.e. they do not experience intensive parenting to a large extent (Shirani et al., 2012). Different categories of parenting norms have been found in previous research such as children being the center of attention, stimulation of the child’s development, or the high responsibility to protect the child(ren) and follow their needs (Gauthier et al., 2021).

Previous research suggests that social norms have developed towards child-centered and time-intensive mothering and fathering but these differ between genders and social classes (Ishizuka, 2019). For instance, time investment in childcare has increased over time across countries, and higher educated individuals typically spend more time per day for childcare than low-educated groups (Dotti Sani & Treas, 2016). Moreover, parenting beliefs may also differ within social classes (Streib, 2013) since these parenting expectations may shape individual fertility decisions, career plans, and how to combine parenthood with career. For instance, the direct social surrounding may shape individual fertility intentions (Keim et al., 2009; Kuhnt & Trappe, 2016; Mönkediek & Bras, 2018) but evidence suggests that social pressure is not linked with the realization of fertility intentions, at least in Germany (Kuhnt & Trappe, 2016). Women in late pregnancy may show different levels of worrying about the upcoming years as a mother and which consequences their employment might have for their children, and these differences are also associated with psychological factors (Loyal et al., 2017).

Several positive and negative consequences are connected with intensive parenting. On the one hand, intensive parenting may foster the creativity and physical activity of the children but no evidence for positive effects on children’s health, happiness or success has been found (Schiffrin et al., 2015). On the other hand, intensive parenting attitudes may lead to high pressure for the individuals including time and financial pressure, as evidence from Germany has shown (Walper & Kreyenfeld, 2022). For the mothers, intensive parenting may take detrimental effects for health. For instance, intensive mothering indicators (e.g. being the essential parent, or childrearing is demanding) are linked with lower life satisfaction, greater depression and stress levels (Rizzo et al., 2013).

The explanations above imply that the association between psychological factors and family formation is embedded in the social context through its norms. Specific expectations on individual behavior according to the person’s gender may affect their behavior, thoughts, personality, or leadership (skills).
The Person-Situation Debate

Social context includes more than norms on a societal level. Specific situations in which individuals interact with others to whom they have different relationships, or the specific environment, shape individual behavior, thoughts, and feelings as well. Therefore, I will take a closer look at the person-situation debate, which deals with the question regarding in which association the individual with its agency and the situation stand.

In a first step, I will focus on personality consistency across different situations and life domains within the same time point, which has been debated in previous research (Diener & Lucas, 2019). In early stages of personality research, psychologists focused on finding personality trait names, and used a systematic approach to collect and represent the personality of individuals (Allport & Odbert, 1936). Therefore, the common sense was that differences in personality between individuals describe general differences between individuals, and that these characteristics are relatively consistent patterns across situations (Diener & Lucas, 2019). Therefore, personality research from the first half of the last century assumed that individual behavior can be relatively well predicted and that empirical evidence contradicts this view only due to bad data and measures (Mischel, 2009).

However, this opinion has been questioned by the book ‘Personality and Assessment’ by Walter Mischel, who claimed that the assumption of trans-situational consistency of personality could be wrong (1968). This started an intense debate on the roles of personality and situation for predicting behavior (the power of the person vs. the power of the situation) (Mischel, 2009). One key argument in this work is that personality is not consistent across different situations once one pays closer attention to the personality concept (Diener & Lucas, 2019; Orom & Cervone, 2009). Therefore, definitions that consider personality as consistent patterns of thoughts and feelings miss one important part, which is that different situations and contexts also have an influence on personality and behavior within these situations.

However, there are some (important) critics of Mischel’s elaborations. For instance, Alker (1972) has suggested that the emphasis on situation and context appears to be overrated since he argues that the situation itself is already predicted by personality, i.e. it may not be the situation that influences the personality but rather personality that shapes the situation. Other critics argued that Mischel is certainly right about situations affecting behavior, and that behaviors may differ between situations but this has never been questioned, not even by the fathers of modern personality psychology such as Gordon Allport (Hogan, 2009). Further critics relate to the consistency of personality across different life situations, which is an essential assumption in order to define a personality trait (Diener & Lucas, 2019). By definition, personality is a pattern of feelings, behaviors and thoughts (Diener & Lucas, 2019). This means that personality must contain some kind of trend across life situations, otherwise...
Mischel has reacted to the critics several times to end the debate, explaining his thoughts more specifically (Mischel, 1973, 2009). According to Mischel, his book has been misunderstood by a number of researchers (Mischel, 2009). The goal of his book was not to claim that personality is not consistent across situations (which was about to become clear at that time anyway) but that personality should be perceived as a dynamic development with changing meanings, and that, by nature, individual behavior is inconsistent over time and across situations (Mischel, 2009; Orom & Cervone, 2009). Thus, psychological research should focus on the interplay between persons and situations instead of pure personality in order to explain individual behavior (Orom & Cervone, 2009). Indeed, it has been argued that contextual factors may not fully explain behavior, but that context is as important as personality in explaining individual behavior (Diener & Lucas, 2019). However, an empirical focus on situations, psychological dynamics, individual meanings of the situation, and individual characteristics as suggested by Mischel (Mischel, 2009; Orom & Cervone, 2009) would require a chaotic amount of effort since each individual in each situation must be considered separately (Hogan, 2009). Research is almost never about very specific point predictions (Hogan, 2009), but aims for general patterns in societies (Diener & Lucas, 2019).

Based on the explanations above, the person-situation debate is highly relevant for my dissertation on psychological factors and family formation. Although family formation processes such as marriage and (to a large extent fertility) may intuitively belong to long-term planned processes (as argued in the section on SIT and IT above), the value of temporary situations should not be ignored. In particular, unplanned pregnancies may emerge from specific situations (e.g. unprotected sex). While some individuals may take the risk of an unplanned pregnancy, others may be more risk-averse in this regard. Therefore, the person-situation debate may complement very well the idea of the theory of planned behavior (TPB), which is discussed above. Both theoretical approaches together may serve as a suitable foundation for examining the association between personality and fertility since both planned (by TPB) and unplanned pregnancies (by the person-situation perspective) are captured. One limitation of the person-situation debate, however, relates to the definition of a situation (as already mentioned in the discussion on SIT and IT above), for which no agreement has yet been found (Hogan, 2009).

Family formation processes such as marriage and childbearing may be driven to a large extent by individual desires, values, and attitudes that may develop over a long time (compared to one specific situation with a length of a few minutes). In modern societies, such as Germany, Finland, or Sweden, decisions to get married or have a child are typically decisions on the couple level,
in which a number of factors and constraints play a role. Nevertheless, social constraints such as expectations on males or females to have a child are, at the very least, weakening, considering the growing individualism and pluralism of family forms in modern societies. Entering marriage is a process that may happen because of individual desires but also as a result of social factors, including the situational context.

Nature or Nurture?

In line with the person-situation debate is the question of to what extent personality is given at birth (nature) or shaped by social environment (nurture). In the middle of the last century, there was a lively discussion between sociologists and psychologists about the influence of social structures on personality, before this debate lost intensity over the next decades (Roberts et al., 2003). In the early 2000s, the debate about personality being shaped by natal and/or social factors resumed. For instance, McCrae and colleagues (2000; 1999) advocate the position that personality is endogenous, i.e. not shaped by environmental factors. The authors use the following graph to visualize their argumentation:

![Figure 3: Personality system](Source: McCrae and Costa (1999))

Figure 3 above depicts the personality system according to McCrae and Costa (1999). In their model, the personality system contains different components, which are interconnected with each other via dynamic processes. The main components are shown in the rectangles of Figure 3, labeled ‘basic tenden-
cies’, ‘characteristic adaptations’, and ‘self-concept’. The self-concept is actually a part of the characteristic adaptations but the authors consider it so important that they give it its own rectangle (McCrae & Costa Jr., 1999). The other components in Figure 3 are shown as ellipses and serve as interfaces of personality (McCrae & Costa Jr., 1999). These components are called ‘biological bases’, ‘external influences’, and ‘objective biography’. The authors claim that personality factors are endogenous, and that external factors may only alter personality via biological bases (McCrae & Costa Jr., 1999). Therefore, they admit that the social environment (nurture) may make an impact on personality but argue that this may only happen via biological factors such as brain damage or disease (McCrae & Costa Jr., 1999). In a follow-up study, the authors even excluded the arrow from external influences to biological bases, strengthening their argument that personality does not depend on social environment (McCrae et al., 2000). The authors build their argument on previous twin studies suggesting that personality may be predominantly shaped by genetics, and that the impact of environment may be small (McCrae et al., 2000). However, there are a large number of behavior genetic studies suggesting a mix of hereditability (nature) and social environment (nurture) that shape personality (Kandler & Bleidorn, 2015; Vukasović & Bratko, 2015). A previous review on behavior genetic studies of personality differences and changes has suggested that around 50% of the variation in personality are explained by genetical factors (Kandler & Bleidorn, 2015). The other half may be explained by environmental factors that are shared or non-shared with other individuals or family members within the same family, as visualized in Figure 4 below (Kandler & Bleidorn, 2015). Several studies have reported an even higher explanatory power of genetics for personality after taking random measurement errors or rater biases into account (Kandler et al., 2010; Riemann & Kandler, 2010).
Figure 4: Genetic and environmental impact on personality trait differences (explanatory power of biological and social factors for personality differences in %)
Source: Kandler & Bleidorn (2015), based on Johnson et al., 2008

Whether personality is shaped entirely by genetics, as McCrae and colleagues (2000; 1999) suggest, or by genetics and environmental factors in equal or
unequal shares (e.g. Kandler, 2012; Kandler & Bleidorn, 2015), has been debated in previous research. Therefore, Kandler and Bleidorn (2015) have proposed an integrative model that aims to explain the differences found by previous studies. Their model is based on five principles: 1) genetics explain long-term continuity of personality differences between individuals to a major extent; 2) environmental factors are more stable in mid-adulthood compared to younger and older ages; 3) genetics are particularly important for personality development and changes in the first third of the life course (childhood, adolescence, young adulthood); 4) social environment may affect personality at any time in the life course (as suggested by the section on the person-situation debate above); and 5) genetics and social environment affect personality changes in the life course via complex intercorrelations (Kandler & Bleidorn, 2015).

As demonstrated above, the question of to what extent personality or other psychological factors are shaped by genetics or environmental factors, remains open. However, it appears to be certain that genetics play an important role in personality development. Therefore, my dissertation also takes unobserved heterogeneity between siblings into account when the data allow it. The chapters based on Swedish register data contain sibling comparison analyses, which hold family background information such as genetics (nature) and for example, parenting style (nurture) constant. This approach may contribute to the discussion to what extent personality traits and leadership skills are linked with family formation outcomes, even if nature and nurture are, to a large extent, held constant.

How Individuals Shape Their Social Networks

The theoretical approaches above deal with the question of to what extent psychological and social factors may be intertwined, and how this association may drive individual behaviors such as family formation processes. It has been shown that structural and social components shape individual personality and behaviors. However, individuals themselves may also shape their social environment, at least to some extent. The most direct way individuals may do that is choosing their social networks that, in turn, may influence individuals in their behavior and attitudes (as suggested in the section on the person-situation debate above). Therefore, this section will illuminate to what extent individuals may choose their social surroundings and, in particular, to what extent personality plays a role in the choice of social networks. For this purpose, the concepts of ‘homophily’ and ‘assortative mating’ will be briefly discussed. The expression ‘homophily’ describes that individuals tend to connect with others who are similar to themselves in certain characteristics such as age, sex, ethnicity, or social status (Block & Grund, 2014; McPherson et al., 2001). Relationships with members of the social network may include marriage, friendships, co-memberships, or work relationships (McPherson et al., 2001).
There are different arguments on how homophily within social networks may emerge. First, individuals may foster social network homophily through their own behaviors. Since individuals act according to their social roles, life routines, and psychological factors, it may be more likely that they meet other people with similar roles, routines or preferences (Verbrugge, 1977). This may lead to higher mating chances, for which not only the opportunity (to meet) but also the attraction (to mate) is required (Verbrugge, 1977). Second, homophily in social networks may also emerge from underlying (social) structures, e.g. same region of residence, family ties, or institutions such as school, university, or work (McPherson et al., 2001). For instance, children at school are organized into classes according to similar ages, which will increase the chances of age homophily in earlier stages of the life course.

Homophily may relate to different sets of individual characteristics, such as values or status, with status having received greater attention in previous research (McPherson et al., 2001). For instance, strong homophily in social networks has been found regarding race and ethnicity (McPherson et al., 2001; Mele, 2022). Age homophily is fostered in childhood due to school classes being organized according to children of similar ages, which is also true for further educational paths such as studying at a university (McPherson et al., 2001). Thus, age homophily has been found to be strong in previous research, and it appears to remain relatively stable over time (Smith et al., 2014). Additionally, a tendency towards gender homophily within social networks has been documented in previous research (Block & Grund, 2014; Smith et al., 2014).

Furthermore, individuals tend to create social networks with friends from similar educational levels (Marsden, 1988), and occupational fields (McPherson et al., 2001). Homophily may also emerge in terms of behavior and attitudes, for instance towards political engagement (Huber & Malhotra, 2016). However, research on homophily in values or attitudes faces some challenges such as misperception, e.g. similarity with friends may be assumed for some attitudes although such attitudes have never been discussed (McPherson et al., 2001). Moreover, individuals share certain facets with their friends such as sense of humor, same interests, similar moral beliefs, and ethnicity (Curry & Dunbar, 2013). Friends also share similarities in substance use and academic orientations, in particular in adolescence (Hamm, 2000). Similarity in personality traits has been found among spouses and friends, albeit not to a large extent (Youyou et al., 2017). However, personality similarity has been found to be greater when personality is measured based on used language in social platforms rather than self-reports, i.e. the personality that was predicted from the frequency of used words and phrases on social platforms shows greater similarity between dyad members than personality stemming from self-reports (Youyou et al., 2017).

In a similar vein as the homophily principle, assortative mating relates to similarity between individuals, with the focus on partners of romantic relationships. The key idea of the concept of assortative mating is that individuals do
not partner randomly but based on opportunities, preferences, and constraints such as social norms (Lichter & Qian, 2019). Romantic relationships may emerge between individuals of different characteristics. However, previous research has typically found higher similarity between two partners in terms of factors that are either achieved (e.g. education, social status), or ascribed (e.g. race, age) (Lichter & Qian, 2019).

Similarities between partners may appear based on a set of reasons. First, individuals may actively choose a partner who is similar to themself in certain regards (Luo, 2017), which may be interpreted as a type of ‘self-love’ (Lichter & Qian, 2019). Second, partner market processes may lead to assortative mating, e.g. when competition for certain characteristics is high (Luo, 2017). One may think of educational homogamy as one example: individuals with high educational achievements may be very popular among potential partners, which in turn may present higher chances to mate. Third, similarity may appear based on structural constraints (Luo, 2017). For instance, it may be easier to find a partner from the same residential area or the same school, which may also bring similarities in other facets. Eventually, similarity may also evolve between partners over time (Luo, 2017).

Partners may share similarities across various facets. The highest similarity within couples is typically reached in terms of age (Luo, 2017). Similarity with regards to other characteristics has experienced greater variation over time, e.g. declines in race and ethnic similarity (Schwartz, 2013), or increases in similarity regarding SES indicators within couples from high-income countries (Luo, 2017). As one of the strongest predictor for assortative mating, previous research has focused on education, finding relatively high similarity in education between partners (Liu & Lu, 2006; Mare, 1991). Additionally, high similarity within couples has been found in terms of the partners’ attitudes (Bacon et al., 2014). Previous studies have further found moderate levels of partners’ similarity regarding various other facets such as intelligence (Van Leeuwen et al., 2008), mental health (Hoppmann et al., 2011; Maes et al., 1998), and daily life routines (Randler & Kretz, 2011).

Regarding personality, similarity between two partners has been found to be quite low (Luo, 2009; Watson et al., 2004), or moderate (Escorial & Martín-Buro, 2012; Glicksohn & Golan, 2001). The strongest associations of personality factors stem from openness, agreeableness, and conscientiousness (Escorial & Martín-Buro, 2012). Additionally, it has been shown that partners are perceived similarly in terms of their personality by raters who only saw photos of the partners’ faces (Little et al., 2006).

Consequently, individuals may actively shape their social environment, at least to some extent. Individuals may choose their partners and friends according to similarities of certain characteristics (e.g. education, age, personality), as suggested by the concepts of homophily and assortative mating. This means that individuals may actively determine the social surroundings that may also influence them in their own behaviors and decisions. Therefore, the social impact on individual life decisions may be (at least partly) shaped by the person
through formation and establishment of social networks. In the next section, I will discuss the research body on the relationship between social structures and personality in order to shed some more light on the enormous impact of the social context for psychological factors and family formation.

Social Structure and Personality

One research body that may fit my dissertation well includes studies on social structure and personality (SSP). The SSP framework examines the reciprocal association between social structure (macro level) and personality consisting of individual thoughts, beliefs, and behaviors (micro level) (McLeod & Lively, 2006; Pettigrew, 1997), covering a broad range of topics (Schnittker, 2013). Research on the relationship between social structure and personality has been addressed by early scientists, philosophers and sociologists such as Comte, Weber, or Durkheim (McLeod & Lively, 2006). This field has increasingly obtained attention over the past decades (Jokela, 2017; Parsons, 1963). However, although personality is one of the key elements of the SSP framework, personality psychology has been neglected in its considerations for a long time (Jokela, 2017). One reason may be that SSP researchers have understood the field of social psychology as being equal to psychology (Kohn, 1989). Ironically, the concept of personality and its role for SSP research has obtained greater attention among sociological social psychologists than among psychological social psychologists (Pettigrew, 1997). In general, however, SSP research has focused on the social environment as a key object and starting point for the analyses (Kohn, 1989), so that research has typically started from the macro level, which may change and affect social groups as well as individual processes (Pettigrew, 1997).

Basic Understanding of the Relationship Between Personality and Social Structure

The SSP perspective on the social structure may be visualized as in Figure 5 below. The individual with its personality, identity, and skills is the central element in this figure. Individual attitudes, beliefs, or behaviors are captured here, which may shape decision-making in life. For instance, the individual with its attitudes towards childbearing or marriage may be considered, which are important for family formation processes. The individual is embedded in a social structure that consists of different layers or levels (McLeod & Lively, 2006). The next complex layer after the individual refers to dyads. A dyad describes a relationship between two persons – the individual itself and one other. In such a dyad, the individual may still have relatively large power. For
instance, individuals may better control a conversation if there is only one additional participant (e.g. the conversation may be about diverse topics, or just joking around). Regarding family formation, the dyad may relate to a couple that may or may not end up in parenthood or marriage. Depending on the culture and the couple, both partners may have equal power regarding fertility and marriage processes, or one gender might be dominant in this regard. In general, however, a dyad no longer exists once one individual withdraws from it. The other layers refer to progressively larger structures, such as small groups (e.g. families, friendship networks), communities, organizations/institutions, or the entire social system that individuals live in. SSP research focuses on processes between the macro level structure (social system) and individuals on the micro level (McLeod & Lively, 2006).

![Figure 5: Social Structure and Personality](source: McLeod and Lively 2006)

There are three fields within SSP that consider slightly different things. First, psychological sociology examines the association between social structures and personality, mostly by sociologists using survey methods (Schnittker, 2013). The second field, psychological social psychology, mostly uses lab-based experiments by social psychologists, and focuses on psychological factors and personality taking the macrosocial impact into account (Schnittker, 2013). The third branch relates to the symbolic interactionalism, which includes research on micro-social processes based on observer or interview
methods, and examines the association between individuals and situations for instance (Schnittker, 2013).

Key Elements of the Social Structure and Personality Framework

The key elements of SSP are social structure, personality, and culture, which need to be considered together (Schnittker, 2013). A social structure is defined as a stable pattern of social relationships within a social system (Schnittker, 2013). Personality, as described in the section on psychological factors above, refers to attitudes, beliefs, or values of each person, commonly measured by the Five Factor Model (Schnittker, 2013). The term ‘culture’ includes a set of values and beliefs, as well as psychological factors, that are shared by the members of a social system and can be expressed in many different ways (Schnittker, 2013).

SSP suggests that social structures and personality interact in similar directions across nations, which is based on somewhat rigid definitions of key concepts such as culture (Schnittker, 2013). This seems controversial since cultures, in contemporary views, are considered as heterogeneous and dynamic concepts (DiMaggio, 1997). Similarly, the definition of personality suggests some stability of psychological traits (Schnittker, 2013). However, this would exclude inconsistent patterns of behavior across different situations so that the same trait (between individuals or within individuals over time) would lead to similar behavior in similar situations (Schnittker, 2013); and, as argued in the section on the person-situation debate above, this is not necessarily the case.

The Reciprocal Relationship Between Personality and Social Structure

As mentioned above, macro and micro level factors may be reciprocally associated with each other. This idea is visualized in the following figure:
Figure 6: Reciprocal relationship between different levels of the society
Source: Pettigrew 1997

Figure 6 above illustrates that individuals with their personalities, skills, or genetics on the micro level shape both the meso level (e.g. friendship networks, families) and the macro level (e.g. organizations, institutions), which is described as ‘Bottom-Up Causal Paths’. However, the macro and the meso levels influence the individual as well (‘Top-Down Causal Paths’). Furthermore, meso level factors may shape macro level institutions (Bottom-Up), and vice versa (Top-Down). Therefore, personality may shape macro level processes directly and indirectly (via the meso level), and the social structure may influence the individual directly and via the meso level factors (Pettigrew, 1997). It is important to consider both directions in the context of my dissertation on psychological factors and family formation processes, which may also be shaped by social context.

The top-down causal paths (e.g. path F) have been examined in research for a considerable time (Pettigrew, 1997), but the reversed direction has also been studied (Schnittker, 2013). For instance, similarity in the personality trait...
‘openness to experience’ is beneficial for the onset of a friendship (Ilmarinen et al., 2017).

Although sociological theories addressing the link between society and individuals existed before SSP, this research body has made important contributions to the field (Schnittker, 2013). One key advantage of SSP research is its goal to understand individuals’ psychology in order to understand behavior (Schnittker, 2013). Whereas sociological theories tend to neglect personality by considering it a byproduct of social structure, SSP assigns a higher relevance to the personality by considering it as one of the key factors for research and social processes (Schnittker, 2013).

This makes SSP an important research body for my dissertation on psychological factors and family formation processes. Although my focus is not to examine the association between the macro and micro levels, it is essential to understand both the social context and psychological factors as complements for explaining family formation. The transition to parenthood, marriage, and partnership dissolution may be determined by macro level factors (e.g. current laws, social norms) and psychological characteristics (e.g. personality, attitudes etc.). Previous research on this topic is rare but personality and policies have been found to influence individual behavior simultaneously. For instance, both political guidelines and personality factors have been associated with the sheltering-in-place rates during the Covid-19 pandemic across cultures (Götz et al., 2021).
Data and Methods

Since my dissertation examines the prospective association between psychological factors and family formation processes, longitudinal data are required that provide information on psychological concepts before family events were observed. This order is essential for all my analyses since previous research has shown that psychological factors may change after individuals enter parenthood or marriage (Bleidorn et al., 2018). Furthermore, I focus on data from high-income countries with relatively high levels of individualism since individuals from these societies are more prone to decide over family formation outcomes (e.g. due to the use of contraceptives, or liberal choices on the partner market). The following data sources meet these criteria, and in order to capture several different countries, I have chosen data from Germany, Finland, and Sweden.

Socio-Economic Panel Study

The German Socio-Economic Panel Study (SOEP) is the largest, and longest-running, multidisciplinary survey that is representative of the German population in both cross-sectional and longitudinal design (Britzke & Schupp, 2018). Therefore, the SOEP captures societal changes and trends in living conditions in Germany over time (Goebel et al., 2019). The German Institute for Economic Research has collected this data annually since 1984, and approximately 30,000 individuals from circa 14,000 households participate in each year (Britzke & Schupp, 2018). These data are not publicly available since certain restrictions apply. For instance, access to polygenetic scores needs to be granted by an ethics committee (SOEP, 2024). Data collection, however, has been conducted under ethical guidelines of research on human subjects, i.e. individuals participated voluntarily and information was anonymized. The data were used under license for one of my dissertation chapters via the Max Planck Institute for Demographic Research (contract number 4450).

The SOEP has followed the same individuals (and their children) since 1984, and the longitudinal development of this population is depicted in Figure 7 below. At first observation in 1984, respondents were either interviewed (adults), or too young for survey participation (children of participants) but followed until they reached the age of survey participation (16 years). Over time, the majority of this sample dropped out of the study due to refusal to
participate, death, migration, or non-availability under previous contact details. However, approximately 10% of the 1984 population (participants and children under 16 years in the household) have been observed in the most recently available wave in 2020 (Figure 7).

Due to the dropout cases and changing society over time, refresher samples have been added to the SOEP sample in order to increase representativity of the German population (Britzke & Schupp, 2018). Figure 8 below provides an overview of the sample structure over observation time (1984-2020) in SOEP. Sample A (West German Sample) and B (foreigners in the Federal Republic of Germany) form the original SOEP sample from 1984 onwards. However, new sub-samples have been added, such as East Germans (sample C) – included in 1990 when Germany was reunified. Furthermore, several refresher (e.g. sample F), migrant (e.g. samples M1/M2), and refugee (e.g. samples M3/M4) samples have been added over time (Britzke & Schupp, 2018; Siegers et al., 2019).
Apart from the sample, the SOEP has also adjusted the questionnaires over time. It provides data on a number of topics (e.g. health, household situation, education, or employment) (Britzke & Schupp, 2018). Furthermore, the SOEP contains partnership and family formation indicators, and – collected every four years since 2005 – personality measures. The SOEP suits my research question very well since it is representative of the adult population in Germany, including migrants (Dehne & Schupp, 2007). Additionally, it provides large longitudinal data that contain personality information according to the well-known and accepted Big Five Inventory (BFI) (Dehne & Schupp, 2007).

Finnish Educational Transition Studies

Another dissertation chapter is based on the Finnish Educational Transition (FinEdu) Studies. FinEdu is a longitudinal dataset that has collected information on young Finns who were in school in 2004 and have been followed ever since with year 2020 as most recent wave. The purpose of this study is to follow young Finns across their life stages with specific focus on educational trajectories and corresponding determinants of education-related choices (University of Jyväskylä & Helsinki Collegium for Advanced Studies, 2019). As FinEdu started data collection in 2004 when respondents were either in vocational school, secondary school or shortly before the transition between 9th grade and secondary school (University of Jyväskylä & Helsinki Collegium
for Advanced Studies, 2019), educational transitions of young Finns could have been followed from their teenager years onwards, and transitions to higher education or the labor market have been captured (University of Jyväskylä & Helsinki Collegium for Advanced Studies, 2019). Questionnaires have contained information on psychological factors, e.g. life plans, personal goals, or motivation, as a specific focus of FinEdu as determinants of educational trajectories (University of Jyväskylä & Helsinki Collegium for Advanced Studies, 2019). Data collection of FinEdu has been based on general ethical guidelines for research on human subjects at any time point. Participants were asked to sign a consent and could leave the study at any time based on their free will. Additionally, no sensitive data was collected (FinEdu, 2024).

The longitudinal dataset consists of two samples, which stem from schools in Kuopio (Eastern Finland), Espoo, and Vantaa (both in the Helsinki region). Sample 1 contains respondents from the younger birth cohorts (born around 1988) who were in the 9th Grade at the time of first observation in 2004. Once the respondents transitioned to secondary school education, new classmates have also been included in the survey. In total, 707 participants were interviewed in 2004, and have been followed over nine waves until 2020 (456 respondents). At first observation in 2004, sample 2 started with 614 individuals born around 1986. Thus, these participants were in secondary or vocational school at the first wave of FinEdu. Individuals from sample 2 have been interviewed in eight waves until 2020, when 398 respondents of this group were recorded. Participants have been interviewed via paper questionnaires, telephone, or – in case of completion of school education – via online questionnaires.

FinEdu suits my dissertation topic very well since this longitudinal dataset contains information on psychological factors (e.g. personality, personal identity) and demographic events such as marriage. As an indicator for personal identity, FinEdu has collected information on 11 items from the established Dimensions of Identity Development Scale (DIDS) in the waves 2011, 2016 and 2020. The DIDS has been developed by Luyckx, Schwartz and colleagues (2008), and relates to the identity domain of individual future life plans (e.g. ‘I worry about what I want to do with my life’, ‘I know which direction I am going to follow in my life’). All five identity dimensions mentioned above (ruminative exploration, exploration in breadth, exploration depth, commitment making, and identification with commitment) are captured in the DIDS. Marital status has also been collected in the FinEdu, which suits my dissertation chapter on identity and marital behavior particularly well.
Swedish Registers

Additionally, two of my dissertation chapters make use of the large population-based Swedish register data. Data stem from Statistics Sweden, access has been provided by Stockholm University, and in particular Martin Hällsten, and ethical approval has been received under application 2019-05799 to the Swedish ethical review authority. This dataset is rich in terms of information on demographically relevant outcomes. Using this data source, I have been able to link information from different registers for all registered individuals, which could be followed over time until death or out-migration. For instance, information on marital behavior, fertility, and education from my analyses has been taken from the administrative civil registers. Swedish tax register data have been used for drawing income information. Furthermore, this data source was the base for defining cohabitation in the analyses. The tax office has collected information on the current addresses of individuals, which is considered as the most detailed information on residential area of individuals in Swedish registers (Thomson & Eriksson, 2013). This address does not necessarily relate to one individual or family specifically but may refer to more complex buildings such as student dormitories, in which up to 1,000 different households may live (Thomson & Eriksson, 2013). Consequently, individuals from different households may report the same address to the tax office without living in cohabitation. However, previous research has argued that a man and a woman who live together with a joint child under the same reported address may be assumed to live in cohabitation (Thomson & Eriksson, 2013). I replicate this approach in order to run analyses on cohabitation dissolution depending on personality factors using Swedish register data. Multigenerational registers have been used to obtain information on family background. Full siblings, i.e. individuals with the same mothers and fathers, get particular attention in the analyses since I have aimed for sibling comparisons in my models. This allows me to control for shared background information and unobserved heterogeneity such as genetics, childhood experiences or parental background (fixed effects).

Military Conscription Data

One key data source within the Swedish register data for my purposes is the military conscription data since both leadership skills and personality information have been measured by the military service during conscription of young males. My analyses from two dissertation chapters are based on military data from the time period 1983-1997, when military conscription was mandatory for all young registered males. Only a few males were excluded from the conscription, e.g. based on health status (Ludvigsson et al., 2022).
Additionally, a few women attended the conscription but it was not compulsory for them. Indeed, the number of recruited females was very low so that no meaningful conclusions could be drawn from analyses on women. The analyses are restricted to all males who attended military conscription in younger ages (17-20 years), which covers 98% of the registered male population born between 1963 and 1979. Following this approach, I am able to examine the prospective power of leadership skills and personality in young adulthood for family formation by mid-adulthood (age 39 or higher). Previous research has shown that age 40 can be considered a reasonable threshold for childbearing and marriage since no drastic changes in marriage patterns among Swedish men (Ohlsson-Wijk, 2014), or in fertility patterns in Nordic countries, have been observed (Barclay & Kolk, 2020; Nisén et al., 2014). Dissolution processes, however, may certainly appear in later life stages so only limited conclusions may be drawn regarding this question of my dissertation.

One further significant advantage of the Swedish register data relates to the possibility to link family members with each other. In particular, siblings have gained increasing attention in demographic research since they share genetics to a large extent, which may partly explain demographic patterns (Barclay, 2018; Barclay & Kolk, 2018; Grätz et al., 2021). Furthermore, several other joint factors, such as parenting style, family formation preferences or other family background factors, may influence individuals in their family formation processes. Therefore, analyses that compare siblings to each other were conducted, which allows conclusions on how much of the found associations may be explained by unobserved heterogeneity such as childhood experiences, parental background, or genetics.

Military ConSCRIPTION Procedure

Each male born between 1963 and 1979 had to attend the Swedish military conscription, typically in the year in which they turned 18 or 19, i.e. more or less directly after completing secondary school education (Lindqvist & Vestman, 2011). Each young man had to undergo several steps during conscription, through which military aptitude of the males was tested (Carlstedt, 1998, 2000). For instance, cognitive abilities (e.g. IQ) were tested, as well as mental and physical health (e.g. physical capability, heart functioning), all of which are important factors for serving in the military (Mönstringshandboken, 2021). The conscription typically lasted one, but no more than two, day(s) (Mönstringshandboken, 2021) in one of six regional enlistment centers in Sweden (Nyberg et al., 2020). Only men with poor health were not recruited, all others had to join the military service and most of them left the army after the obligatory service (Lindqvist & Vestman, 2011).

One part of the conscription procedure relates to the psychological evaluation of the young men through interviews with psychologists (Bihagen et al., 2013;
Lindqvist & Vestman, 2011). Low non-cognitive or cognitive abilities based on psychologists’ assessments or the IQ test did not lead to exclusion from military service, but results from these tests were used to assign males to different fields within the army (Lindqvist & Vestman, 2011). Psychologists had access to the previous test results of the males, e.g. the test scores on cognitive skills that were received earlier during the conscription (Ludvigsson et al., 2022; Nyberg et al., 2020) but also to school grades, civil status, previous job experience (Lindqvist & Vestman, 2010; Nyberg et al., 2020), physical constitution, or information from the questionnaires on family, friends and hobbies of the recruits from earlier stages of the conscription (Lindqvist & Vestman, 2011; Ludvigsson et al., 2022). They had also several guidelines available on how to conduct the interviews (Nyberg et al., 2020). However, there were no specific questions formulated that each psychologist had to ask in the interviews (Nyberg et al., 2020). Details about the guidelines or methods of the psychological evaluations have not been made available to the public (Nilsson et al., 2001; Nyberg et al., 2020). However, previous studies provide information on the structure, aims, and content of the interviews (Lindqvist & Vestman, 2011; Nyberg et al., 2020), which I will summarize in the next pages of this dissertation to give the reader as precise an understanding of these interviews as possible.

Why has the Swedish Military Collected Psychological Factors of the Recruits?

Leadership skills (LS) and personality factors have been measured by the Swedish military in order to choose appropriate candidates for officer or other military positions (Lindqvist & Vestman, 2010; Ministry of Defense Sweden, 1984). Particularly with regards to officer candidates, the Swedish army look for characteristics that are considered suitable for more responsible, team-leading positions (Grönqvist & Lindqvist, 2015). For instance, previous research has shown that leaders with higher scores on positive characteristics (e.g. self-confidence, kindness) perform better on team coordination than their counterparts (Chidester et al., 1991). Furthermore, there is some evidence suggesting a positive association between social skills of a team leader and effectiveness of the team (Chidester et al., 1990).

Moreover, social skills of recruits (but also of officers) play a particular role for the Swedish military (Lindqvist & Vestman, 2011), which is uncovered in the psychological interviews. Recruits’ social relationships was one key topic of these interviews since solidarity with team members is assumed to be essential for successful and efficient performances in extreme situations such as war (Lindqvist & Vestman, 2011). The argument is that men in war situations, albeit potentially feeling anxious or nervous, may keep fighting if driven by their strong connections to their colleagues rather than hatred of their enemies
(Lindqvist & Vestman, 2011). Additionally, it has been argued that recruits may suffer when the team spirit breaks, potentially even leading to mental breakdowns (Lindqvist & Vestman, 2011).

History of Psychologists’ Interviews During Military Conscription

The extensive psychological assessment of the conscripts has been a long tradition in the Swedish military, beginning in the early 1940s with Torsten Husén, who introduced a variety of tests for the entire conscript cohort, including examinations on IQ, physical health, and psychological factors such as personality (Lindqvist & Vestman, 2010, 2011). Its development was influenced by prior experience in Germany and the U.S. (Lindqvist & Vestman, 2011). During the early stages of the psychological evaluation within the Swedish military, personality was measured based on (at that time) advanced psychometric methods in order to predict the military performance of the recruits (Lindqvist & Vestman, 2011). The reliability of the tests was measured by testing the military skills of the recruits at later stages during their service in the army (Lindqvist & Vestman, 2010). These experiences helped to establish a more detailed evaluation of recruits’ personality traits and by 1950, psychological suitability of most of the conscripted males for the army was assessed through psychological interviews (Lindqvist & Vestman, 2010). Psychological assessments for the vast majority of the males from birth cohorts that I am studying (1963-1979) were established around 1970 and remained unchanged until 1995, when only small changes were made (Lindqvist & Vestman, 2010, 2011; Ludvigsson et al., 2022).

General Information on Psychologists’ Interviews

Interviews with psychologists during Swedish military conscription typically lasted for 20-25 minutes (Bihagen et al., 2013; Lindqvist & Vestman, 2011), were semi-structured (Ludvigsson et al., 2022; Nilsson et al., 2001), and took place in separate rooms (Lindqvist & Vestman, 2010; Nyberg et al., 2020). The main goal of the interviews was to judge the ability of the males to deal with diverse mental challenges during the military service, including the extreme scenario of war (Lindqvist & Vestman, 2011), without experiencing severe damage to mental health (Nyberg et al., 2020). For this purpose, the psychological constitution of the recruits was evaluated (Carlstedt, 1998) by ascertaining their levels of stress resilience, overall military aptitude, or leadership skills (Ludvigsson et al., 2022). Furthermore, psychologists assessed the general mental health of the recruits, with 10% of them showing some mental difficulties, and 7% even to a degree that should exclude them from military
service (Nilsson et al., 2001). If the psychologist detected signs of mental health problems, the recruit had to be further tested by the conscription physician (Nyberg et al., 2020). Personality or psychological disorders were diagnosed in line with the International Classification of Diseases (ICD) of the World Health Organization (Nyberg et al., 2020).

What Did the Psychologists Measure?

The psychologists evaluated a set of psychological factors, all of which relate to the conscripts’ suitability for serving in the army (Carlstedt, 1998; Lindqvist & Vestman, 2010, 2011; Ludvigsson et al., 2022). Different psychological measures include personality factors, overall military aptitude, and leadership skills of the conscripts, which is shown in the table below.

<table>
<thead>
<tr>
<th>Psychological Assessments</th>
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<tr>
<td><strong>Personality Traits</strong></td>
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<td>(scores from 1-5 each)</td>
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<tr>
<td><em>Psychological Energy</em></td>
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<tr>
<td><em>Intensity</em></td>
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<td><em>Social Maturity</em></td>
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<td><em>Emotional Stability</em></td>
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<td><strong>Leadership Skills</strong></td>
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<td>(scores from 1-9)</td>
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<tr>
<td><strong>Military Aptitude</strong></td>
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<tr>
<td>(scores from 1-9)</td>
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*Psychological Measures from Swedish Military Data*

Measures on personality factors from the Swedish military conscription are available as scales, with scores ranging from 1 (low) to 5 (high), and include four different measures, namely psychological energy, intensity, social maturity, and emotional stability (Bihagen et al., 2013). *Psychological energy* is represented by perseverance, the capability to stay focused and to realize plans (Mood et al., 2012). *Intensity* refers to the ability to intrinsically motivate oneself without support from others, and the intensity and frequency of leisure time activities (Mood et al., 2012). *Social maturity* consists of facets such as extraversion, responsibility, independence, or having friends (Bihagen et al., 2013; Mood et al., 2012). *Emotional stability* represents facets like ability to
cope with stress, control nervousness, or anxiety (Bihagen et al., 2013; Mood et al., 2012). The latter two are of particular interest, both for the military based on the value of social skills for officers within the army (Ministry of Defense Sweden, 1984) and for the analyses of my dissertation. Therefore, I will elaborate a little more on these specific measures below.

Psychologists have rated the young males according to their social maturity, consisting of facets such as extraversion or responsibility. These social skills are not only desired among recruits (as mentioned above) but also necessary in military officer positions since one of the essential tasks of officers is to provide support for the recruits during their military service, and to keep motivation of the young men high (Larsson & Kallenberg, 2006). Individuals with high social maturity – and, in particular, high extraversion – may benefit from their social skills since extravert people enjoy spending time with others, by definition (Larsson & Kallenberg, 2006). Additionally, extravert individuals are usually talkative, easy-going and self-confident (Larsson & Kallenberg, 2006). These are all facets that may be beneficial for generating a trustful relationship between recruits and officers. Indeed, the military aims for such a trustful connection between recruits and officers since this may increase recruits’ loyalty towards their team leader as well as their willingness to take risks (Grönqvist & Lindqvist, 2015), which may be necessary in some situations. Therefore, social maturity of the military officers may help to increase the motivation and efficiency of teams, and their members.

Furthermore, the military has aimed for the evaluation of the recruits’ capability to cope with stressful situations in the army (Carlstedt, 2000). Therefore, emotional stability is also an important personality factor for military officers and soldiers (Lindqvist & Vestman, 2010; Nyberg et al., 2020). It describes the capability to stay calm and keep one’s own emotions under control, which may be beneficial in stressful military situations (Larsson & Kallenberg, 2006). This definition by the military is in line with other non-military measures (Larsson & Kallenberg, 2006). The military aims for high emotional stability among its officers since stressful situations usually need strong leadership with clear instructions (Grönqvist & Lindqvist, 2015). If individuals score low on emotional stability, they may be more prone to negative feelings such as fear or anger (Larsson & Kallenberg, 2006). These negative emotions, in turn, may also shape decisions that should instead be wisely taken.

All four personality measures from the psychological interviews (social maturity, psychological energy, intensity, and emotional stability) are based on questions about behaviors instead of attitudes (Bihagen et al., 2013; Mood et al., 2012). Moreover, these four sub-scales were a rough guideline for the psychologist to assess the overall military aptitude, with scores from 1 (low) to 9 (high) (Lindqvist & Vestman, 2011; Nyberg et al., 2020), as shown in the table below. Higher aptitude scores indicated better psychological functioning (Nilsson et al., 2001) as well as high levels of responsibility, independence, extraversion, persistence, emotional stability, and the ability and willingness
to take initiatives (Lindqvist & Vestman, 2011; Ludvigsson et al., 2022). Conversely, signs of neurotic tendencies, undemocratic values, adaptation problems, introversion, or aggressive behavior were indicators of low military suitability (Nyberg et al., 2020). Furthermore, this measure of overall military aptitude (or stress resilience) may be linked with a number of established personality factors such as neuroticism (negatively), conscientiousness (positively), or extraversion (positively), and can therefore serve as indicators for personality, according to the argumentation put forward in previous research (Falkstedt et al., 2013; Nyberg et al., 2020). Moreover, psychologists considered individual capabilities to adopt to new circumstances (e.g. the restriction of personal freedom during military service) when evaluating psychological factors of the males (Lindqvist & Vestman, 2011; Ludvigsson et al., 2022). Additionally, other information such as claustrophobia and fear of heights was regarded (Ludvigsson et al., 2022). Eventually, the psychologist had to write a formal report on all assessed facets of psychological functioning (Nilsson et al., 2001).

Additionally, leadership skills (LS) of recruits are a key measure for both my analyses and the military. LS have been evaluated separately from personality factors and military aptitude but are still strongly associated with other psychological measures (Mood et al., 2012). The leadership measure is based on a range of facets such as dominance, mental agility, or responsibility (Ministry of Defense Sweden, 1984). Additionally, young males were asked about their own skills to lead peers during the interview (Lindqvist & Vestman, 2010). The obtained scores on LS (1-9) from the conscription interview were used to select males for leadership training, which was obligatory for all men chosen for officer positions – independent to their own intentions to become an officer within the army (Ministry of Defense Sweden, 1984).

However, LS have not been measured for everybody during military conscription. The vast majority of males with a score on LS scored relatively well (with at least five on a scale from one to nine) on the cognitive tests earlier in the conscription procedure (Carlstedt, 1998), i.e. these men are within the top half of the IQ distribution (Carlstedt, 2000; Lindqvist & Vestman, 2010; Mårdberg & Carlstedt, 1998). Therefore, potential candidates for military officer positions (e.g. sergeants, lieutenants) must have been comparatively intelligent, and obtained additionally high LS scores from the trained psychologists. For instance, later sergeants must have scored 6 or higher on their LS based on the psychological interview, and lieutenants 7 or higher (Ludvigsson et al., 2022).

Regarding later career outside of the army, recruited males may benefit from performing well on the cognitive tests and receiving high scores on leadership skills. Each man that was selected to become an officer received leadership training beforehand. This specific training and the subsequent experience of serving as a military officer may be useful for the civil labor market. For instance, cognitive skills based on the conscription tests have been positively associated with the probability to hold a managerial position after military ser-
vice, at between 30 and 40 years of age (Grönqvist & Lindqvist, 2015). Additionally, the probability of completing tertiary education is positively linked with both cognitive skills as measured during conscription and having served as a higher officer within the military (Grönqvist & Lindqvist, 2015). Consequently, military officers benefit from their skills and experiences on the civil labor market, as well, which may also affect family formation processes via employment stability and available resources for family support. However, previous research has shown that high scores on emotional stability and, in particular, social maturity promote chances to enter the income elite, suggesting that social skills may be even more important for career success than cognitive skills (Bihagen et al., 2013).

Five Topics in the Interviews

As mentioned above, psychologists had to follow some guidelines without having specific questions at hand that they were required to ask (Lindqvist & Vestman, 2011; Nyberg et al., 2020). However, the interviews had to address five different topics (Lindqvist & Vestman, 2011), each of which was evaluated with a score from one to five (Lindqvist & Vestman, 2010).

First, school experience needed to be captured, i.e. school achievements, but experiences with the social environment at school and personal experiences were also of interest (Lindqvist & Vestman, 2010; Nyberg et al., 2020). For instance, the military aimed for information about whether the conscript had to repeat any class for some reason, quit a school, or even dropped out of the school system (Lindqvist & Vestman, 2010; Nyberg et al., 2020).

Secondly, interviews had to address the work experience of the men in order to evaluate their capability to adjust to the work environment (Lindqvist & Vestman, 2010; Nyberg et al., 2020). Similar to school experience, behavioral facets (instead of attitudes) were of interest, e.g. conflicts with supervisors or colleagues, being fired or ever having quit the workplace (Lindqvist & Vestman, 2010; Nyberg et al., 2020). If the recruits did not have extensive (or any) work experience, psychologists should evaluate them according to their future career plans (e.g. whether or not they have any, and how realistic they are etc.) (Lindqvist & Vestman, 2010).

Third, interviews covered leisure time (Ministry of Defense Sweden, 1984; Nyberg et al., 2020), i.e. whether the recruits followed hobbies and activities with active and passionate interest (Lindqvist & Vestman, 2010). The interviewer considered several facets of these activities, e.g. whether they indicate extra- or introversion, whether there are team sports or not, whether the activities are of great variety, or whether the recruits may adopt well to certain circumstances (Lindqvist & Vestman, 2010; Nyberg et al., 2020). This field is required to include the question of what recruits think about their own ability to lead peers, which is also a strong indicator for the psychologists when they evaluate the recruits’ leadership skills (Lindqvist & Vestman, 2010).
The fourth topic relates to family background information (Ministry of Defense Sweden, 1984) such as contacts with parents and siblings (Lindqvist & Vestman, 2010). Here, the subjective report and experience regarding home conditions of the recruits are of particular interest, i.e. the goal is to evaluate how well the males may adopt to difficult situations and to what extent they depend on their parents (Lindqvist & Vestman, 2010; Nyberg et al., 2020). One required question was how often the recruit drinks alcohol (Lindqvist & Vestman, 2010).

The last topic refers to the emotional stability of the recruits (Lindqvist & Vestman, 2010; Nyberg et al., 2020). The interviewer had further opportunity to get back to statements that were made earlier in the interview or to certain answers from test results at earlier stages of the conscription procedure (Lindqvist & Vestman, 2010). The psychologist may consider the degree of maturity and the self-knowledge of the recruits (Lindqvist & Vestman, 2010; Nyberg et al., 2020).

The five topics above indicate that the military has aimed to evaluate the recruits’ capability to function in different challenging scenarios, including the extreme one of war (Nyberg et al., 2020). Therefore, the main goal of the psychological examination has not been to examine one or several specific personality traits but rather whether men are overall able to cope with stressful times that may emerge in the army (Nyberg et al., 2020).

Reliability of Psychologists’ Assessments

In order to provide high quality assessments, psychologists had to fulfill several requirements. For instance, the educational level of psychologists increased over time so that in the 1970s, most psychologists had a bachelor degree in their field (Lindqvist & Vestman, 2010). Furthermore, they received specialized training of about four weeks at the Swedish National Service Administration for their tasks during the conscription interviews (Lindqvist & Vestman, 2010; Ludvigsson et al., 2022; Nyberg et al., 2020). The military also conducted evaluations regarding the predictive power of the recruits’ success in the army. For instance, the conscription assessments may predict the officers’ evaluation of the conscripts’ skills (Lindqvist & Vestman, 2010). Furthermore, psychologists received instructions in terms of how to guide the interview since recruits may have wished to manipulate the evaluation due to critical attitudes towards military service (Lindqvist & Vestman, 2010). Therefore, psychologists were explicitly asked to ignore the conscripts’ test results from the conscription IQ test (Nyberg et al., 2020) and their motivation for joining the army in their evaluation (Lindqvist & Vestman, 2010, 2011; Ludvigsson et al., 2022). This instruction was intended to reduce the bias that may have arisen from manipulations in the interviews by those young males.
Advantages of Psychological Interviews Over Standardized Questionnaires

Psychological interviews come along with a few advantages compared to distributing paper-and-pen questionnaires. For instance, one key benefit from conducting face-to-face psychological evaluations on the conscripts is the deselection of those unsuitable for military service (Ludvigsson et al., 2022). The military aimed to filter out men with personality disorders, and this challenge may best be addressed through interviews rather than questionnaires (Lindqvist & Vestman, 2011; Ludvigsson et al., 2022). It is argued that males with problems adjusting to their social surroundings in private life will most likely show similar problems with their teams during military service, and vice versa (Lindqvist & Vestman, 2010; Nyberg et al., 2020). Therefore, it is important to select out males unsuitable for military service due to psychological reasons (e.g. neurotics, psychopaths) (Lindqvist & Vestman, 2010). Around 1-2% of the conscripts from each cohort was prohibited from military service due to psychological or medical concerns (Carlstedt, 1998, 2000), whereas approximately 10% did not progress to actual military service (Lindqvist &
Vestman, 2011), and were probably kept as training reserves (Carlstedt, 1998). Therefore, around 90% of the conscripted males had to attend military service (Lindqvist & Vestman, 2011). Reasons to reject conscripts, such as showing low emotional stability (Lindqvist & Vestman, 2010), anti-social disorders, undemocratic values, or obsession with the military, may be better recognized in personal interviews (Ludvigsson et al., 2022), while men with those attributes and high intelligence may manipulate their answers in questionnaires relatively easily so that they will be accepted for military service (Lindqvist & Vestman, 2011).

Furthermore, one main goal of the psychological evaluation of the recruits was to find suitable candidates for all positions in the military service (Carlstedt, 1998, 2000), but particularly for more responsible positions, such as military officers (Larsson & Källenberg, 2006; Lindqvist & Vestman, 2010; Ludvigsson et al., 2022). Selecting suitable candidates for officer positions may be another reason for conducting psychological interviews since selection may be based on professional judgements instead of self-reports.

The relevance for choosing officers as wisely as possible, and the necessity of looking for suitable candidates among the recruits, may lie in the hierarchical structure of the Swedish military. Around 90% of Swedish military officers are low-level officers who leave the army after approximately one year (Grönqvist & Lindqvist, 2015). Approximately one third of each birth cohort of conscripted men receives training for the officer positions in the lower hierarchy (Grönqvist & Lindqvist, 2015). For instance, approximately 10% of the recruited males were trained for 12-18 months as non-commissioned officers in order to lead groups of platoon (Lindqvist & Vestman, 2011) or company size (30-120 recruits) (Carlstedt, 1998). However, most males who get an officer position (around 23% of the total recruits) were trained for around 10 months in order to lead smaller groups (squads) (Lindqvist & Vestman, 2011), with typically eight to ten recruits (Carlstedt, 1998). The other recruits not selected as officers (around 67%), served in the army for seven or eight months (Lindqvist & Vestman, 2011). Recruits typically began army service one or two years after the conscription, in assigned branches of the army according to psychological and physical abilities (Carlstedt, 1998).

Applied Methods

The analyses for the chapters of my dissertation are based on several statistical methods. I have run both cross-sectional and longitudinal analyses to examine the prospective association of psychological factors and family formation processes. Given that the Swedish register data provides one-time measures on personality and leadership skills from young adulthood, I have applied cross-sectional analyses on the prospective power of these measures for family formation by mid-adulthood. Additionally, event-history analyses have been run
for dissolution risks using the register data. When longitudinal data with repeated measures of psychological factors (personality, identity) have been available, I have also made use of event-history analyses that may capture time-varying variables. Therefore, I have applied survival analyses for the dissertation chapters that are based on longitudinal survey data (SOEP, FinEdu).

Linear Probability Models

In order to examine the association between psychological factors in young adulthood and the probabilities of getting married or entering parenthood, based on Swedish register data, I have conducted linear probability models (LPM). The formal equation of the LPM can be written as:

$$\Pr(Y_i = 1 | X_i = x_i) = \beta_0 + \beta_1 x_{1,i} + \beta_2 x_{2,i} + \ldots + \beta_n x_{n,i}$$ (1)

The outcome of equation (1) is the probability of a binary-coded variable of interest $Y$ (e.g. childlessness, marriage) for each individual $i$ that depends on a vector $X$ that consists of $n$ explanatories $x$. The model intercept is represented by $\beta_0$, and each explanatory $x$ is multiplied by the corresponding coefficient $\beta$. The LPM assumes that the outcome is the sum of the model intercept and the explanatories (which are multiplied by $\beta$), i.e. a linear correlation between dependent and independent variables is assumed.

Whether the LPM is an appropriate statistical approach has been the object of previous debates. Due to its feasibility in computer calculations, the LPM was a prominent model in early stages of computer technology but when technology advanced, other models such as logit and probit models have overtaken the LPM (Caudill, 1988). One of the major criticisms of the LPM is that this approach also calculates probabilities outside the defined range of 0 and 1 (Agresti, 1990; Agresti & Finlay, 1997) if values of the explanatories are large or small enough (Agresti, 1990). Furthermore, the linearity assumption may be questioned for the correlation between a probability and the respective independent variables (Agresti, 1990), the error terms are not normally distributed in the LPM (Caudill, 1988), and the homoscedasticity assumption with regards to the error variance does not hold either (Caudill, 1988). Therefore, logit or probit models may be more accurate in many cases. However, more recent research has argued that estimates from LPM and logistic regressions are typically very similar, and weaknesses of the LPM (such as violation of the homoscedasticity assumption) have no or only marginal implications in reality (Hellevik, 2009). Moreover, the LPM even shows advantages compared to logit or probit models. For instance, the interpretation of the LPM appears to be more suitable for communicating results to broader audiences (Hellevik, 2009), or some parameters may be estimated via LPM, but not via logit or probit models (Caudill, 1988). Previous research further claims that the only case in which LPM shows clear disadvantages compared to logit and
probit approaches is when the focus of the research rests on predicted probabilities (Chatla & Shmueli, 2016). Researchers must be aware of its limitations in order to apply this kind of model properly. In my dissertation chapters that contain LPM, I aim to focus on observed patterns rather than specific estimates. Thus, I interpret the findings on predicted probabilities as little as possible. Additionally, I provide estimates from logistic regression models in order to emphasize the similarity in the patterns obtained from the different statistical approaches.

**Poisson Regression Models**

Poisson regression models were applied to examine the prospective association between psychological factors and number of children, based on Swedish register data. The Poisson regression model can be written as follows:

\[
\log(E[Y_i|X_i]) = \beta_0 + \beta_1 x_{1,i} + \beta_2 x_{2,i} + \ldots + \beta_n x_{n,i} \quad (2)
\]

According to equation (2), the logarithm of the expected value of an outcome \(Y\) for each individual \(i\) depends on the vector of explanatory variables \(X\). These explanatory variables are multiplied by the corresponding coefficients \(\beta_1 \ldots \beta_n\). The sum of these products and the model intercept \(\beta_0\) result in the expected value of the outcome of interest.

Poisson regression models are typically used for counting data. I have applied this type of model in my dissertation chapters to examine the prospective association between psychological factors and the number of children by a certain age at a well-advanced stage of fertility history.

**Cox Proportional Hazard Models**

Given the nature of my dissertation topic (prospective power of psychological factors for family formation processes) and the use of longitudinal data, I have applied event-history analyses in some of my chapters. The use of this kind of statistical approach allows me to study certain risks/chances over time, e.g. the chances of having a first or a second child, the chances of getting married, or dissolution risks. One advantage that event-history (or survival) analyses reveal is that such approaches are capable of dealing with censored data, i.e. it is taken into account that not all individuals have experienced the event of interest by the end of the observation period. One prominent method within the field of event-history analyses is the Cox proportional hazards (Cox PH) model, which is shown in its general form in equation (3).

\[
h(t|X_{1}, \ldots, X_{p}) = h_0(t) \cdot \exp(\beta_0 + \beta_1 X_{1,it} + \ldots + \beta_p X_{p,it}) \quad (3)
\]

The hazard rate \(h\) depends on the time \(t\) and the set of covariates \(X_{1}, \ldots, X_{p}\). It can be formally written as the product of the baseline hazard \((h_0)\) and the expo-
nentiated sum of the model intercept $\beta_0$ and each observed value of the independent variables that is multiplied by the corresponding coefficient $\beta_1 \ldots \beta_p$ for each individual $i$ at each time point $t$. The baseline hazard $h_0$ may be of any shape, i.e. there are no assumptions on it, which makes the model flexible in terms of shapes observed from available data. The key assumption of the Cox PH model is that the hazard rates are proportional across values of the independent variables. This means, for instance, that men and women are assumed to show proportional hazard rates over time if gender is one of the independent variables in the model. Further tests using e.g. Schoenfeld residuals help to evaluate whether this assumption holds within the data.

### Piecewise-constant Hazard Models

Another commonly used method from the event-history analyses is the piecewise-constant hazard (PCH) model. This approach assumes constant hazard rates for certain time intervals (e.g. years) and may be applied when data are not detailed enough (e.g. when information is only available at the time of observation but no specific dates on marriage or childbearing are available). The PCH model can be formally written as:

$$h_{ij}(t|X_{1i}, \ldots, X_{pi}) = h_{0j}(t) \exp\{\beta_0 + \beta_1 X_{1_i t} + \ldots + \beta_p X_{p_i t}\}$$  \hspace{1cm} (4)

Equation (4) represents the general and formal version of the PCH model. The hazard rate $h$ is calculated for each individual $i$ and each time interval $j$ depending on the time point $t$ and the set of independent variables $X_1 \ldots X_p$. The baseline hazard $h_0$ varies over time in the PCH model and, therefore, depends on the considered time interval $j$. Similar to the Cox PH model, the baseline hazard is multiplied with the exponentiated sum of the model intercept ($\beta_0$) and the products of the independent variables and the corresponding coefficients $\beta_1 \ldots \beta_p$.

Cox PH models and PCH models are different in their assumptions and designs. Using Cox PH models requires detailed data but the model is also more flexible in its assumptions than the PCH. Furthermore, siblings may be compared using the Cox PH model but not the PCH model. However, both types of analyses typically reveal similar patterns.

### Additional Analyses

As additional analyses, I have also applied ordinary least squared (OLS) regression models. These models are commonly used to examine the assumed linear association between a continuous outcome (e.g. income) and a set of explanatory variables. It may serve as a first indication of whether or not an association exists before more complex models are applied (McNulty, 2021). One ad-
vantage of OLS regression models is that they allow for a more intuitive interpretation than more complex approaches (McNulty, 2021). Additionally, I have run logistic regression models as alternative to linear probability models, and patterns are very similar across both approaches.

Moreover, the chapter on identity and marriage (chapter 3) also considers a) the reversed association, i.e. to what extent identity changes based on marital status, and b) both the variable-centered (i.e. using the identity variables separately) and the person-oriented approach (i.e. latent classes are formed). Therefore, further methodological approaches are required. I have addressed these points by applying latent profile analyses, which are commonly used in research (e.g. Peugh & Fan, 2013) and represented by the following formula:

\[
\sigma_i^2 = \sum_{k=1}^{K} \pi_k (\mu_{i,k} - \mu_i)^2 + \sum_{k=1}^{K} \pi_k \sigma_{i,k}^2
\]  

(5)

As shown in equation (5), latent profile analyses explain the profile-specific variance \(\sigma^2\) for each individual \(i\) by the profile-specific and individual mean values (\(\mu\)) and the proportion \(\pi\) of all individuals in the profile \(k\). \(K\) represents the total number of profiles.
Discussion

Contributions

This thesis contributes in various ways to demographic research, which has underexplored the role of psychological factors for family formation processes. First, this dissertation aims to provide a relatively broad picture on the association between psychological factors and family formation processes, i.e. different psychological concepts (personality, identity, leadership skills) and different family formation outcomes (marriage, fertility, dissolution) are considered. This is an important strength of this thesis since it emphasizes that psychological factors are relevant for different dimensions of family formation in the studied contexts (Germany, Sweden, Finland). Linked to this strength is that my thesis underlines the relevance of the social context for the considered association. For instance, findings from my dissertation demonstrate that personality factors, which are related to social capabilities – such as extraversion, agreeableness, or social maturity – are generally positively linked with fertility across societies (i.e. Sweden, Germany). Evidence from Germany further suggests that extraversion is negatively associated with the chances to get a second child over time. The Nordic context, however, might show different patterns since Sweden and Finland have shown a strong two-child norm for a long time (Berinde, 1999; Bernhardt & Goldscheider, 2014; Duvander et al., 2019), which is reflected in cohort fertility rates close to reproduction level (2.0) in these countries (Andersson et al., 2009). This may mean that personality effects are particularly visible, or different, in higher birth parities, e.g. regarding transitions to third or fourth childbirth, which may be examined in future research. Thus, patterns of the relationship between psychological factors and family formation depend on the social and cultural context, as my dissertation has suggested, and these may differ across countries.

Second, previous studies show important limitations in terms of the time order of psychological factors and family formation processes. Psychological factors have largely been measured after the family event of interest, e.g. at the end of fertility history (e.g. Jokela, 2012; Jokela et al., 2011; Skirbekk & Blekesaune, 2014). This dissertation consistently measures psychological factors before the family event. Therefore, an important contribution to the current literature lies in the emphasis on the prospective power of psychological factors in order to explain family formation processes.
Furthermore, this dissertation contributes to current research by examining the role of SES indicators for the association between psychological factors and family formation. Three chapters of this thesis demonstrate that SES indicators (education, income) do not mediate the relationship between personality, identity, and leadership skills on the one hand, and family events (marriage, childbearing, dissolution processes) on the other. However, there are further potential mechanisms that could not be examined in this dissertation. For instance, health might take an important role as mediator and/or confounder for the relationship between psychological factors and family formation. Previous research has shown that personality factors particularly shape mental health (Strickhouser et al., 2017), but also other health indicators. For instance, conscientiousness from childhood ages is positively linked with longevity (Friedman, 2000; Friedman & Kern, 2014). This might be partly explained by certain behaviors that may promote better health outcomes such as accident control or wellness behaviors (Booth-Kewley & Vickers Jr., 1994). Furthermore, previous research has suggested that health is linked with both marital behavior and fertility. For instance, health status is positively associated with the probability to get married (Lipowicz, 2014; Waldron et al., 1996). Moreover, previous studies have suggested that health indicators such as obesity are linked with lower fertility (Barclay & Kolk, 2020; Frisco & Weden, 2013; Jokela et al., 2007, 2008).

Fourth, the high quality of Swedish register data allows me to compare (full) siblings to each other, i.e. analyses based on Swedish data control for unobserved heterogeneity and shared background information such as genetics or parental background that may affect the link between psychological factors and family formation processes. This is a strength compared to previous research that is mainly based on survey data (e.g. Jokela et al., 2009, 2011; Tavares, 2016). However, the findings of my thesis do not suggest large differences across models with and without sibling fixed effects. This means that the estimates are not driven by family background to a large extent suggesting direct effects of personality and leadership skills on family formation.

Implications for Research and Policy

The findings of this dissertation have several implications for research and policy. First, each chapter provides family demographers with a better understanding about who the individuals are that start a family in high-income societies with high individualism from a psychological perspective. Previous research has explored intensely the effects of SES indicators on family formation processes (e.g. Jalovaara & Fasang, 2020; Rapp, 2018; Skirbekk, 2008). However, this thesis shows that psychological factors also play an important role for family events and transitions, and that effect sizes stemming from psychological factors can compete with those of education or income.
For instance, the increase of extraversion by one standard deviation is associated with a 14% higher chance to get a first child among males in Germany whereas an additional year or the enrolment status is not linked with a change in fertility chances of men (study 1). Similarly, analyses of study 2 reveal that social maturity and emotional stability effects on marriage probabilities (up to 9% differences across personality scores) are larger than many estimates regarding education or income among males in Sweden. Only the extreme categories of income and education show substantially higher magnitudes (e.g. 25% lower marriage probabilities for men in the lowest income decile compared to medium income). Similar conclusions can be drawn regarding fertility and dissolution analyses from study 2.

Second, findings of this thesis strongly suggest that the link between psychological factors and family formation processes is neither mediated by SES indicators such as income or education nor by the other family transitions (e.g. marital status for fertility analyses) in the Nordic countries. This indicates a need for rethinking the association between psychological factors and family formation, and which role SES plays for this link. Psychological factors might influence marital behavior and fertility via other factors such as preferences or intentions, which might be explored in future research.

Another implication relates to the theoretical work within the research fields of demography, sociology, and others. As my dissertation, and in particular the kappa, has shown, there are several theoretical approaches that consider psychological factors for explaining behavior such as the (social) identity theory (IT), the theory of planned behavior (TPB), or the second demographic transition (SDT). However, none of these approaches explicitly formulate how the psychological concept may be linked with family formation. The TPB may be considered as the framework that is closest to this demand since it describes the pathway from personality via attitudes and intentions to fertility (Ajzen & Klobas, 2013). However, this framework does not specifically provide elaborations on which personality traits may affect which fertility intentions in which direction. Extravert individuals, for instance, may search for an increasing number of social interactions, which may be reached with a child in the household. Neuroticism, as another personality factor may be associated with fertility in different ways, as argued in this dissertation and previous research. For instance, individuals with high scores on neuroticism, i.e. they tend to get worried and nervous relatively often, may see in parenthood a chance to stabilize both their relationship to a partner (Friedman et al., 1994) and their life in general (Johns et al., 2011). These considerations are not expressed in the TPB and, therefore, specific hypotheses may not be set up based on this theory. Similarly, other theoretical approaches do not focus enough on potential effects by psychological factors on family formation. Consequently, the findings of my thesis demonstrate that commonly used theories may be extended or modified regarding the specific association between psychological factors and family formation processes.
Although this dissertation does not aim to make suggestions to policymakers, the findings of this thesis may still have implications for policies. As shown in the section on the nature vs. nurture discussion, each person has a personality with some part being changed by environment and some part being predestinated by genetics (Kandler & Bleidorn, 2015). My dissertation shows that psychological factors shape family formation processes in Germany, Sweden, and Finland. These and other countries have implemented family policies that mainly address inequalities in gender, income, or education (Ostner & Schmitt, 2008). Psychological factors have not been considered so much in family policies across countries. However, the findings of my thesis suggest that psychological inequalities such as differences in personality, identity, or skills should not be overlooked in order to develop effective family policies. For instance, (becoming) parents may require additional training or parenting preparation courses, in particular when they lack of certain skills and personality factors that may be important for parenthood such as responsibility or time managing skills. These courses may strengthen the parenting skills since individuals may learn how to handle certain situations or how to organize the daily life with a child, which may also affect their personality. If, for instance, individuals learn in such a parenting course to be more organized and to deal with responsibility for a child, they acquire higher levels of conscientiousness. Such programs about parenting skills exist and their effectiveness has been studied in previous research (Bennett et al., 2013; Irvine et al., 1999), and it has been shown that they may improve children’s outcomes (Lindsay et al., 2011). Participation is often connected with costs in both money and time, and not all individuals may manage to have these resources available. Therefore, family policies may specifically address and support individuals with low parenting skills, or personality factors that are linked with low parenting skills (e.g. potentially low conscientiousness) to attend parenting skills programs by making these resources available. However, there might be unforeseen consequences when psychological factors may be considered in political decisions. Ethical concerns regarding manipulating individuals may emerge, e.g. policies should not control psychological factors and skills of the members of the society. Furthermore, it may be an unrealistically large effort to assess all (becoming) parents according to their parenting skills professionally.

**Outlook for Future Research**

Future research may expand on the topic of this dissertation in several ways. For instance, this thesis is restricted to potential pathways between psychological factors and family formation via SES, and the role of the social context. Future studies may explore the role of intentions and attitudes, which may mediate the association that is examined in this dissertation, as suggested by the theory of planned behavior (Ajzen & Klobas, 2013). As one example, previous research has shown that personality factors are associated with
Parenthood expectations (Hutteman et al., 2013), voluntary childlessness as type of fertility intentions (Avison & Furnham, 2015; Heller et al., 1986), and childbearing motivations (Miller, 1992). Fertility intentions, in turn, are one of the strongest predictors for actual fertility behavior, according to previous research (Schoen, 2019).

Empirical evidence on potential mediation effects has shown that fertility intentions do not mediate the association between the own level of self-esteem and having a first child (Hutteman et al., 2013). However, fertility intentions mediate the relationship between the partner’s level of self-esteem and first childbirth (Hutteman et al., 2013). These findings raise some more questions that need to be addressed by future studies. For instance, it may be interesting to explore the mediation effects of fertility intentions for the personality-fertility association using other personality factors, e.g. the factors from the five factor model. Moreover, the results emphasize the role of partner’s characteristics that deserve more attention in future research as childbearing and marriage involve two partners.

Additionally, future studies may consider other cultural contexts for the association between psychological factors and family formation processes. This dissertation focuses on high-income countries with relatively high individualism including high self-expression and secular values (Germany, Sweden, Finland). Previous findings relate to similar contexts including Finland (Jokela et al., 2009; Jokela & Keltikangas-Järvinen, 2009), the U.S. (Jokela, 2012; Jokela et al., 2011), Germany (Lundberg, 2012), Norway (Skirbekk & Blekesaune, 2014), Australia (Solomon & Jackson, 2014), and Great Britain (Tavares, 2016). However, further contexts may show different patterns, e.g. regions that are labelled with relatively high self-expression values but low secular values (i.e. high traditionality) such as countries from Latin America (The World Values Survey, 2023).
Summary of Studies

Study I

*The prospective power of personality for childbearing: A longitudinal study based on data from Germany*

The link between personality and fertility is relatively underexplored. Moreover, there are only a few studies focusing on the prospective association between personality and childbearing. However, none of these studies considered the Five Factor Model (FFM), which is the most widely accepted measurement of personality. The present study fills this gap by examining the prospective association between the FFM and the hazard ratio of the first and the second childbirth in Germany. Analyses are based on recent data (2005-2017) from the Socio-economic Panel Study. Cox Proportional Hazard models are applied. Findings demonstrate that personality traits are associated with fertility. Extraversion is positively linked with the first childbirth, but is negatively associated with the second childbirth. These findings are mainly driven by males. Agreeableness is positively linked with the first childbirth across the total sample. Again, this correlation is mainly based on the findings for men, among whom a positive association between agreeableness and the second childbirth is also found. Among women, personality does not seem to be linked with the first childbirth. However, the risk of having a second child is found to be negatively associated with conscientiousness. My study adds to the current understanding of the personality-fertility association by exploring the impact of personality trait scores from the FFM on subsequent fertility behavior. However, further research is needed on the association between personality and childbearing, on the mechanisms through which personality affects fertility, and on how these links differ across cultures, among higher parities, and for births after re-partnering.
Study II

The prospective power of personality factors for family formation and dissolution processes among males. Evidence from Swedish register data

Personality plays an essential role with respect to important life outcomes such as education or career success. Although these outcomes are linked with family formation processes, the association between personality and family formation (dissolution) has been underexplored in demographic research. This study contributes to existing research by examining the prospective association between two personality factors (social maturity (SM), and emotional stability (ES)) and family formation and dissolution processes, i.e. 1) marital status, 2) fertility, and 3) partnership dissolution as both a) divorce and b) cohabitation dissolution, based on the large Swedish register data. Poisson Regression, Linear Probability, and Cox Proportional Hazard models were applied for different outcomes. Findings suggest that males with high scores on SM and ES measured at age of assignment to military service (17-20 years) are more likely to get married by age 39 and above. Regarding fertility, SM and ES show positive associations with offspring counts and negative associations with the probability of remaining childless by age 39 and above. Relationship dissolution is negatively linked with SM and ES, in particular among the lowest personality scores. Further analyses using sibling comparisons support these findings.

Study III

Identity and marriage. A bidirectional approach based on evidence from Finland

Psychological factors, such as personality traits or skills, have increasingly been studied with regards to family formation processes, such as marital behavior, in previous demographic research. Identity has received less attention as a predictor of important partnership outcomes, although identity formation belongs to the crucial developmental processes in adolescence. We aim to address this gap by examining the bidirectional association between identity and marriage using longitudinal survey data from Finland. We apply event-history analyses in order to study the prospective power of both identity dimensions (variable-centered approach) and identity clusters (person-oriented approach) on marriage risks. Furthermore, we conduct fixed effects linear regression models for examining identity development over time based on marital status. Findings suggest that identity uncertainty is negatively, and identity certainty is positively associated with marriage risks over time. Results based on cluster
analyses support these findings, i.e. committers are more likely to get married than explorers. Mixed findings with regards to identity development have emerged. Whereas identity certainty remains stable over time among married individuals, it decreases among singles. Identity uncertainty, however, has not shown different developments over time according to marital status.

Study IV

**Leadership skills and family formation among males. A study based on Swedish register data**

Leadership skills (LS) may increase individuals’ chances of ascending to a higher rank in hierarchical social structures, which can, in turn, enable them to provide greater support for a partner and, eventually, a potential child. Moreover, LS may be beneficial within a partnership, as they may be associated with a set of social skills, such as a respectful communication style. Nevertheless, research on the association between LS and family formation processes (marital behavior, fertility) is relatively scarce. We explore the prospective association between LS and marriage, as well as completed fertility, for 650,947 males from Sweden. Poisson regression and linear probability models are applied for this purpose. Additionally, we use fixed effects models to examine potential differences between within- and between-family considerations. Our findings demonstrate a positive association between males’ LS, as measured at the age of assignment to military service (17-20 years), and their probability of marrying by age 39 or older. Furthermore, among the men in our sample, we find that LS are positively linked with the number of children, and negatively linked with the probability of remaining childless. Mediation effects of income, education and parenthood/marital status for the link between LS and family formation are fairly small.


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