Educational assortative mating and its effect on the quality and stability of relationships

Dissertation for the degree of Doctor of Philosophy
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1. Introduction

Since scientists noted that there is a tendency for people to select partners non-randomly, studies focused on the question of “who chooses whom”, and perhaps more importantly, its consequences (Mare 1991; Kalmijn 1998). A wide range of topics have been linked with partner selection, such as fertility (Nomes and Van Bavel 2016), economic inequality (Schwartz 2013), labour supply (Gihleb and Lifshitz 2016), subjective well-being (Wu 2021), migration (Mu and Yeung 2019), time use (Miller 2020), incarceration risks (Andersen 2018), and even offspring well-being in native Amazonian societies (Godoy et al. 2008). In this dissertation, my aim is to contribute to this scientific effort of understanding assortative (non-random) mating patterns, to examine potential mechanisms which shape partner selection, and to highlight its possible effects on relationship quality and stability.

My work is inspired by the paper of Van Bavel published a few years ago in which he proposed that a new, so-called “education-specific mating squeeze” can be at play in Europe (Van Bavel 2012: 129-133). While the original marriage squeeze theory focused on the available number of partners in a desired age group, Van Bavel expands the thought process to education: individuals might experience a shortage of partners (a mating squeeze) if the available number of potential partners of a given level of education is low. In light of the fact that women begun to increasingly outnumber men in higher education all around Europe (Vincent-Lancrin 2008), women who want to find a partner with equal or higher educational attainment (or men who want someone with a lower education) might face this new form of mating squeeze.

Although Van Bavel outlines many possible consequences of the education-specific mating squeeze such as changes in marriage timing and fertility behaviour, I am primarily concerned with two areas in my work: the alteration of partner selection patterns, and its implications for relationship quality and divorce. First, the asymmetry in education and the squeeze implies the emergence of new mating trends and primarily, a departure from unions in which men have a higher level of education than women (Van Bavel 2012: 133). Second, new assortative mating patterns might increase the number of separations and divorces, as many theories (which will be expanded upon) link
women’s downward partnering with lower relationship quality and higher union instability (for example Parsons 1940, 1942, 1943, 1955a, 1955b; Becker 1973, 1974, 1985, 1991; Van Bavel 2012: 143). Examination of these topics principally add to the growing and much needed knowledge on how relationships are established, maintained and ended.

While these themes have already been explored in a number of western (Pearlin 1975; Lee and Ono 2008; Nomes and Van Bavel 2017; De Hauw, Grow and Van Bavel 2017) and non-western nations (Kollamparambil 2019; Liao and Paweenawat 2018; Pesando 2019, 2021) as well, in this regard, Hungary has only received major attention two decades ago by Bukodi (2000, 2002, 2004, 2005), who extensively studied partner selection in the case of Hungarian marriages and cohabitations, and in the studies of Pilinszki (2012, 2013, 2014), who focused on the effects of non-random mating on future plans of separation. Therefore, using census-based and representative survey data, my work also provides a timely update on assortative mating patterns in Hungary, and a new look into its linkage with the quality and the stability of Hungarian relationships.

Albeit the dissertation focuses on two demographic outcomes of a fairly new societal process, it contributes to classical areas of sociological research as well. In social stratification and mobility research, partnering is interpreted similarly to the relationship between the status of the parents and their children (Vukovich 1962a; Sorokin 1927: 179; Hout 1982). Additionally, relationships may show the frequency of interactions and social borders between certain societal groups and the degree of acceptance and equality between their members, making it an indicator of societal openness, particularly in societies with more rigid social boundaries (Kalmijn 1998; Bukodi 2000; Amit and Ostermann 2015). Therefore, results of this dissertation also shed light on the social structure, mobility, inequality and closedness of Hungarian society.

Regarding the dissertation’s structure, in chapter 2, I begin with a detailed overview of the main theoretical approaches and empirical results of assortative mating to understand how the relative status of the individuals affect partner selection and the quality and stability of the relationships. As it will be seen, preference-based theories and empirical results either highlight interdependent
arrangements in which men have a socioeconomic advantage as most beneficial for the couple, or emphasize similarity as a crucial factor in long-term happiness and stability. Complementing individual preferences, other theoretical viewpoints stress the composition of the relationship market as an important determinant of partnership formation, maintenance and dissolution as individuals face an abundance or scarcity of potentially better partners which influence their decisions. Finally, the normative environment has to be considered as well, as it can motivate the formation and continuity of conforming partnerships, and hinder norm-breaking arrangements.

As the dissertation focuses on Hungary, chapter 3 will focus on the unique Hungarian context of relationships. Hungary is historically characterized by a high but declining marriage rate paired with an increasing divorce rate, with the recent decade showing the return of marriages and diminishing divorce numbers. The normative environment in Hungary is an especially complex matter: while research on the general value structure of Hungarians indicate a continual traditional sentiment, regarding relationships, there is divide between belief and behaviour, as both traditionality and progressive attitudes are present. Additionally, as assortative mating highlights the relative position of men and women, the increasing presence of women in tertiary education and employment shows changes in the general relation of the genders in the Hungarian society.

After stating the main hypotheses in chapter 4, chapter 5 to 7 will revolve around the main empirical analyses of partner selection and the exploration of how assortative mating plays a role in relationship quality and the dissolution of partnerships. In advance, findings on partner selection show that a female advantage in relationships is becoming more prevalent in Hungary and Europe and that it is related to women’s growing educational attainment, and also, models shed light on the growing importance of education in partner selection amongst Hungarians. The general results on relationship quality and stability mainly show the expected positive effect of a male advantage or educational similarity for women, while men seem to be not affected by educational assortative mating. Additionally, some results imply that a larger male advantage is related to greater positive effects for women. As the final part of my work, in chapter 8, I will discuss the main findings of the dissertation and interpret them in
light of the main theories. Also, I will assess the possible future areas of interest regarding assortative mating.

2. **Theories of partner selection**

According to the theory of the education-specific mating squeeze, women’s emerging educational advantage in a given population influences assortative mating, which results in changing mating patterns and an increase in the number of unions where women partner downwards (Van Bavel 2012: 133-138). Consequently, these unions might be more likely to be lower quality and less stable due to men’s lower relative position being a negative factor (Van Bavel 2012: 142-144).

To understand and examine the proposed mechanism by Van Bavel, in this chapter, I provide a comprehensive overview of the complex theoretical framework of partner selection and the main ideas about why the relative socioeconomic position of the partners can affect how the relationship itself functions. The main theories highlight three complementary processes (which are also mentioned in the theory of the education-specific mating squeeze): an individual’s preferences for certain qualities, the structure of the relationship market on which people look for potential partners and the influence of social groups on choices (Kalmijn 1991, 1998). As a result of the interplay between these factors, relationships are formed which can be categorized into different groups (Kalmijn 1998; Henz and Mills 2017). A relationship is homogamous if the partners have similar social status or other attribute (heterogamous if not), while hypergamy implies a male, and hypogamy a female relative advantage (Bukodi 2000; Katrnak 2008; Nomes and Van Bavel 2017; Tóth and Szelényi 2018).

2.1. **Preference-based theories**

Individual preferences mean that people look for certain qualities in potential partnership candidates. From the numerous possible criteria, socioeconomic attributes such as income, wealth, occupation, prestige and education are often emphasized because they influence the status and well-being of the individual.

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1 This chapter is a revised section of my paper published in Szociológiai Szemle (Erát 2019). I thank Zsolt Spéder, Viktor Berger and Attila Pirmajer for their valuable inputs.

2 The interpretation of the theories and previous empirical results will focus on heterosexual couples. For results regarding same-sex partnerships, see Verbakel and Kalmijn 2014.
and the couple due to the pooling of resources (South 1991; Kalmijn 1998; Bukodi 2002), as a “good match” has the opportunity to substantially improve someone’s long-term status position. The importance of more social qualities (such as worldview and attitudes) is also often noted, as selection based on these traits are often found because they ease the formation and maintenance of partnerships (Kalmijn 1998; Bukodi 2002).

As it will be seen, preference-based theories offer a relatively simple line of thought: individuals seek out partners with certain attributes they prefer which shape mating patterns, and importantly, the fulfilment of these preferences are beneficial for the quality and stability of the relationship. However, theories disagree on which form of partnership is sought after by individuals and which is most beneficial for the longevity of the relationship. The main battle line is drawn between theories which favour hypergamy and those which emphasize the importance of homogamy. This dichotomy is also present in the theory of the education-specific mating squeeze (Van Bavel 2012: 143). Van Bavel notes that a departure from hypergamy towards hypogamy might increase union dissolution rates in a given country as hypergamy is often perceived as the most stable arrangement type, while also, the increasing number of homogamous unions may counteract this at the aggregate level, as homogamy is expected to be a more stable union type than hypogamy.

2.1.1. Gender-specific roles and interdependence
The most commonly employed preference-based theories focus on the traditional, complementary gender-specific roles within a partnership. A common theme of these approaches is that the members of a couple are dependent on each other: men are mostly seen as the main breadwinners and the persons responsible for the family’s standard of living who rarely participate in household tasks, while women are primarily involved in childrearing and housework with no or less income than their partners. As these theories were mostly conceived in an era which was dominated by traditional family roles, they are generally applicable in a setting where traditional familial behaviour and thinking are prominent, while their usage in a less traditional societal context might raise questions.
2.1.1.1. Parsons’s approach

Many social scientists who argue for the advantages of traditional, hypergamous unions often build upon the classical writings of Parsons. In his work on the subject, Parsons was primarily concerned with the American family, the functions of marriage in a society, role division in the relationship and also, the factors that lead to a lower level of happiness and higher probability of union dissolution. His main argument is that the family is a unit in which there are gender-specific complementary functions that stem from bio-social evolution, and individuals seek out (prefer) relationships in which they can conform to these socially assigned roles. As gender-specific roles create mutual dependence in a socio-economically hypergamous relationship, competition and tension between partners are less likely compared to other arrangements, which in turn increases the stability and quality of the relationship and the level of solidarity amongst the partners.

According to Parsons, kinship structures are primarily based on marriages (defined as legitimized sexual relationships) and births (Parsons 1940: 77). Marriages are solidary, in the sense that they appear as units in a society as its members (the couple and their offspring) are treated as equals regardless of the apparent differences in age, gender, and other qualities (Parsons 1940: 77). These conjugal families are characterized by the pooling of resources and their isolation and economic independence from the rest of the family (Parsons 1943: 183-184). Parsons considers this unit as the normal household type, centred around the married couple and their children: its main functions are to socialize children to be fully functional members of society, and to aid the stabilization of the adult personalities of the population (Parsons 1955a: 16-17, 19-20).

Although the couple pools its resources, the main determinant of the family’s status is the socioeconomic position of the husband (Parsons 1942: 96). First, there is a direct status effect that results from the prestige of the husband’s occupation. Second, it indirectly influences the status of the family by providing the main source of income. As husbands primarily function as providers and breadwinners, they are mostly responsible for the so-called instrumental roles (Parsons 1955a: 12-13).
While men are designated as providers, women are mostly responsible for duties concerning childrearing and housework, which Parsons considers a sort of pseudo-occupation (Parsons 1942: 96). This expressive function is mainly responsible for the integration of family members into the family system and for the mitigation and management of strains on the family (Parsons 1955b: 45-46; 1942: 95). Parsons notes that while women are increasingly present in the workplace, they do not in fact take over instrumental functions. Most women with male-like levels of income are not married and as such do not have to occupy themselves with the usual familial roles (Parsons 1955a: 13-14; Parsons 1940: 94). As the homemaker and housewife roles were still dominant amongst American women in the first half of the twentieth century, Parsons concludes that the function of women within a family is still mainly expressive: the role of a wife, a mother, a homemaker, but not that of a woman with a career similar to men.

Parsons comments that the division of instrumental and expressive roles are generally common in families and family-like small groups, but the main question is why instrumental roles are primarily masculine and expressive roles are mainly feminine (Parsons 1955a: 23). This may be principally attributed to the bio-social nature of role differentiation. Childbearing and the nursing of children are biologically linked to women, and this establishes the wives' role as a mother and housewife early on. As men generally cannot perform these functions (or do them as adequately as women), they concern themselves with other tasks which are the time and energy consuming instrumental functions of paid work (Parsons 1942: 94-97; Parsons 1955a: 23). This pre-determined division of roles is crucial for partner selection. Men and women seek out relationships in which they do not have to go against their bio-socially assigned roles: women do not aim to be the main providers and they look for a man who they perceive as someone who can guarantee their and the household’s long-term well-being, and men do not take on expressive roles but look for a woman who is willing to do them.

Because men and women perform complementary gender-specific roles, a mutual dependence forms between them as they need the other person to do the tasks outside their determined boundaries (Parsons 1943: 192-193). This mutual dependence is further enhanced by the relative isolation of the nuclear family from other relatives and non-members (Parsons 1955a: 19-20). In addition
to the positive effects of interdependence, solidarity inside the family is also increased by the lack of competition between husband and wife (Parsons 1940: 79). As the achievements and individual efforts of the spouses are separated, the likelihood of jealousy, a sense of inferiority and conflicts originating from overlapping roles decreases (Parsons 1943: 193).

To summarize, it can be derived from the Parsonian perspective that partner selection that supports the formation of the instrumental-expressive role divide is common and is the most beneficial for relationship quality and stability, as these socio-economically hypergamous unions provide the necessary levels of interdependence and lack competition. According to Parsons, the reason for the general increase in divorce rates is the changing nature of masculine and feminine roles, which decreases overall mutual dependence between the genders and increases intra-relationship competition (Parsons 1955a: 24-25). As women generally approach similar levels of status to men (most notably in education), they may begin to be less dependent on a provider and more able to leave an unsatisfactory relationship (as interdependence does not tie them down) and have a career and income comparable to men, thereby not needing or outright competing with them.

As noted in the introduction of this section, while Parsons' theoretical approach presents a framework for the study of relationships and the family, in many ways it has limited applicability. First, it is heavily time- and place-dependent, as Parsons mainly aims to describe the post-war state of the American family, therefore, certain elements of his theory, notably the isolation of the family and the dominance of single-income households are mainly specific to the United States. Also, the single-income family was not as prevalent in the fifties and sixties in Europe as in the USA. For example, in the eastern bloc, the entrance of women into the labour market was encouraged/mandated by the state, thus resulting in less single-earner families. An additional critique of Parsons' theory is its focus on urban, middle-class families. As Parsons notes, in rural societies, the operation of the farm could not be limited to an individual, hence, both members of the relationship jointly hold the occupational status (1942: 94-95).
Aside from the problem of limited applicability, theoretical concerns also arise with the Parsonian framework. Oppenheimer emphasizes that the employment of women is increasingly widespread and advantageous to families as a unit, and households without a working wife are increasingly rare and disadvantaged in the USA, causing a possible shift in preferences (Oppenheimer 1977: 390). Also, while woman’s higher social status relative to the man might put additional strain on the family, a much lower status may also have a negative effect, as status consistency is essential for the family due to them being treated as a unit (Oppenheimer 1977: 390-391). To alleviate this problem, women might develop their career, eliminating the strain stemming from status inconsistency (Oppenheimer 1977: 391-393).

Furthermore, Oppenheimer acknowledges that while the probability of conflict is highest in relationship where both members are career-oriented, she argues that this does not necessarily come from competitiveness itself (Oppenheimer 1977: 393-395). As paid work demand high levels of time investment, partners may have difficulties managing the relationship, their children and the household, increasing the level of stress without the presence of competition. Finally, Parsons presumes that people from different occupations or under different employment are in direct competition. Oppenheimer comments that possible competition and its negative effects are dependent on specific occupations and working environments, not on the simplified non-working/working divide that Parsons focuses on (Oppenheimer 1977: 393-394).

2.1.1.2. An economic perspective

Apart from the Parsonian perspective, one of the most often applied theoretical frameworks for the study of relationship formation, quality and dissolution is the specialization theory proposed by Gary Becker. As specialization theory has its origin in economics, it primarily sees relationships as units producing goods. The theory has many similarities to Parsons’s approach: relationships are formed because individuals want to maximize their gains by forming a union in which they can specialize in certain tasks and be supported by someone in a complementary role. Even though its main points and the possible hypotheses derived from it are nearly identical to Parsons' theory, it is important to discuss in detail how this
more economic viewpoint understands assortative mating, as the theory’s internal logic differs from Parsons’ more sociological line of thought.

From an economic perspective, time spent working on the marketplace and on other non-market activities generate goods, which can mean a wide variety of human actions and aims (having children, prestige, health, recreation, companionship and love) that are mostly produced and consumed by the household (Becker 1973: 816, 1991: 21-34). Time spent producing these goods is crucial. As individuals spend more time with market- or non-market activities, the return for their time investment increases, which is analogous to the process of someone gaining experience in their line of work. Therefore, a person is motivated to invest his or her time in a single group of activities to maximize the gain in goods, for example in household-oriented tasks or in income-generating paid roles depending on individual predisposition (Becker 1991: 27-28). Following this logic, if the couple wants to maximize its efficiency at producing goods (again emphasizing the multiple meanings of the term), specialization in the allocation of time would be the best strategy. As partners focus on different roles, they continually increase the gains from their investment which is consumed by the couple, resulting in a mutually beneficial relationship (Becker 1991: 30).

So far, Becker’s theory could be considered a non-gendered version of Parson’s approach in an economic disguise. Presuming that the time investments of the members of the couple are perfect substitutes for each other, variations in time allocation would only be the result of different skillsets, experiences and other similar factors (Becker 1991: 30-33). However, in line with Parsons, Becker’s reasoning is that a couple’s division of labour between market and non-market activities is partly due to intrinsic biological differences (Becker 1991: 37-38). Becker states that women are more willing to spend time and energy taking care of children, which stems from their early and uneven time investment on their part in the production of the offspring - simply, childbirth and nurturing in the early months require women to a greater degree than men. This implies that women’s and men’s time in a household are not perfect substitutes: due to gender-specific intrinsic advantages and disadvantages, women can produce more goods investing their time in child-rearing and household activities, while men’s allocation of time is more fruitful on the market (Becker 1991: 38-39). In
time, the biological differences gain a social component too, as parents socialize
their children according to the expectation of a gender-based division of labour in
their future, making certain investments in life more attractive to them (Becker
1991: 39-43)\(^3\). All in all, specialization theory implies interdependence inside a
relationship as women traditionally rely on breadwinning men, while men depend
on women to rear children as well as to maintain the household.

The above detailed reasoning points at the fundamental Beckerian
argument for relationships: every person who enters a partnership expects to
increase their gains through specialization compared to remaining single (Becker
1973: 814-816), and presumes that the value of the potential improvement by
beginning a relationship is higher than the costs of searching on the relationship
these gains, differences are considered optimal when traits are substitutes, and
likeliness is better when they are complements (Becker 1973: 825-828, 833,
1974: 11-12, 1991: 114). As detailed above, the importance of hypergamy
regarding employment, wage, and work-related investments is apparent,
whereas similarity is desired for certain cultural and personal traits (Becker 1973:
822, 826-827; Becker, Landes and Michael 1977: 1146). While the maximization
of gains fuels the positive effects of hypergamy along market-oriented skills, the
homogamy of cultural traits (meaning personal qualities, like physical
attractiveness and individuals’ attitudes and norms) facilitate the initial
establishment of the relationship where specialization can take place with
continual long-term investment.

According to specialization theory, multiple factors can contribute to a
decline in relationship quality and stability. Supposing that the main aim of a
relationship is to maximize gains, the thought of separation appears if the
individual thinks that he or she would be better off single (Becker 1991: 332).
Similarly to Parsons, Becker reasons that the gain from a partnership is mainly
reduced by the rising labour force participation of women (Becker 1985: 34-35,
1991: 55-56, 353-356): if women are employed in greater numbers and their

\(^3\) It is important to note that while the division of labour is partly due to biological differences, Becker does
not imply the possible exploitation of women by men as being unrealistic. If men have full power over all
household output and only provide a small amount to women, men impose the division of labour rather than
it being a matter of efficiency for both members of the relationship (Becker 1991: 61-62).
wages approach the level of men’s, they are more inclined to invest in market skills and spend more time at work, reducing their specialization in non-market roles. This decline in specialization lessens the gains from a relationship for both genders, thereby decreasing its quality and increasing the risk of breaking up. Also, for women, dissolution becomes a feasible alternative in the absence of dependency on men. Furthermore, due to the increasing rate of relationship failures, women become even more reluctant to invest in relationship-specific skills or commodities (expecting a possible separation in the future), contributing to the overall decrease in specialization (Becker, Landes and Michael 1977: 1142-1152). Becker also emphasizes the importance of the growth of the welfare state, which led to a decrease in the dependence of children on their mothers, again, reducing women’s motivation to specialize in non-market-oriented skills as their necessity and value decreases (Becker 1991: 356-357).

Becker’s second line of thought regarding relationship dissolution is related to insufficient information during partner selection. After a certain amount of time following relationship formation, partners may realize that they are not as well matched and therefore, remaining in the relationship is less advantageous than to be single (Becker 1991: 328, 340-341), resulting in the termination of the partnership.

From an economic perspective, a potential factor against dissolution can come from relationship-specific investments. By definition, dissolution is a less attractive alternative because these capitals lose most (or all) their value if the relationship ends (Becker 1991: 330). These include specialized knowledge and skills, economic investments, information and importantly, children (Becker, Landes and Michael 1977: 1152). In the case of children, it is easy to see that after separating, the likelihood of considerably less contact for one parent with his or her children is a major argument for staying together.

While Becker provides an extensive framework akin to that of Parsons’ for relationships and their workings, the specialization theory received a

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4 This notion of female independence is a highly popular hypothesis examined in the general divorce literature, often called the independence hypothesis. It states that women who are in a better economic situation can afford to leave an unsatisfying relationship, and are also less pressured to enter a partnership (e.g. Preston and Richards 1975; Booth et al. 1984; Espenshade 1985; Lee and Ono 2008).
considerable amount of criticism (again, similarly to the Parsonian approach), as many of the later discussed theories evolved as alternatives to the proposed mechanisms described by Becker. A common reservation is that Becker's model does not consider the influence of social groups, as the normative and cultural environment of a relationship can overwrite an individual's aim to maximize his or her gains in favour of conforming to certain norms (Foster 1993; Brines 1994).

As in the case of Parsons, Oppenheimer again notes that the period Becker considers “traditional” was in fact not, as the “baby-boom” era was characterized by the rapidly increasing rate of women’s employment in the USA thereby causing Becker to mistakenly link any divorce-related change with women’s employment (Oppenheimer 1994: 302-303). Additionally, the specialization model does not analytically distinguish between non-marriage and the delay of marriage. As the theory only views the changes in marriage trends as a change in the desirability of marriage and not as a postponement phenomenon, it draws overly pessimistic conclusions (Oppenheimer 1994: 304).

Questions also surround the model’s view on the tradeability of housework, as breadwinners are able to exploit their spouses while they have relatively low stakes in a marriage as their investments are easily transferrable (Brines 1994). Consequently, investments in housework and childrearing are risky and unattractive to many (Oppenheimer 1994: 316-317), as they are specific to a certain relationship. As Oppenheimer warns, models emphasizing the benefits of extreme specialization also disregard the realities of life, such as the possible unemployment of husbands, long-term illnesses and the constantly changing needs of family members (1994: 318). In reality, a high degree of role specialization for independent nuclear families might leave a household vulnerable, as it is unable to adapt to risks and the changing needs. For example, an early loss of the main breadwinner can seriously affect the remaining family’s economic situation, while the loss of the caretaker/homemaker early on carries the risk of family break-up (Oppenheimer 1997: 447-448). Finally, Becker's analysis of the rising divorce rates is one sided. It is true that women’s employment can carry positive and negative consequences, but as men have been “almost invisible” in analysis, it should not be concluded that women’s
entrance into work can wholly explain the trends seen in the USA (Oppenheimer 1994: 315-322).

2.1.2. Arguing for homogamy

While Parsons’ and Becker’s approach is used in many empirical studies, other theories evolved parallel or in response to them. These alternative viewpoints are less focused on bio-social determination and the immediate maximization of gains and emphasize the continual processes that result in stable, happy, long-term relationships. They all directly or indirectly propose that homogamy may be the best arrangement for both partners instead of hypergamy and a strict, traditional division of roles.

2.1.2.1. Exchange and bargaining theory

Parallel to Becker’s rather strict argument for hypergamous relationship, a more relaxed consideration of the intra-couple exchange process emerged from sociology and psychology called the exchange and bargaining theory. Although some conceptualize exchange and bargaining independently, due to their similar theoretical nature and corresponding ideas, I present them together.

Exchange theory in the social sciences developed thanks to the works of Thibaut and Kelley (1959), Homans (1961) and Blau (1964). Similarly to Becker, they utilize a framework that focuses on the two-sided rewarding process between individuals which involve the exchange of resources (Emerson 1976: 336). In this scenario, a person seeks better exchange relationships and avoids non-rewarding ones (Levinger 1979: 171). Bargaining theory poses that this mutual exchange process is done from individually occupied bargaining positions determined by the individual’s socioeconomic standing (Pollak 2005; Lundberg and Pollak 1996; Manser and Brown 1980; Kai and Lommerud 2000; Bittman et al. 2003; Sayer and Nicholson 2006; Cooke 2006).

The crucial difference is in what hypergamy-favouring viewpoints and exchange/bargaining theory sees as a beneficial, rewarding partnership. Contrary to the arguments of Parsons and Becker, the exchange/bargaining theory posit that couples survive and thrive because they create a symmetric exchange relationship of resources from similar bargaining positions with the expectation of future returns (Huston and Burgess 1979: 12-17; Edwards 1969:
These resources are evaluated and ranked by individuals according to their importance, which defines the costs and rewards of the process (Edwards 1969: 519-520; Levinger 1979: 176-177). As a relationship develops through successful bargaining and exchange, relationship-specific norms that regulate the exchange emerge, individuals invest more into the partnership and also take responsibility for their partner's equal benefit as well. This means that the maximization of gains is accompanied by the need for equality and reciprocity, which helps in the maintenance of symmetry and therefore, the quality and stability of the partnership. This focus on long-term exchange rather than one-time economic decisions is important (Emerson 1976), as short-term choices might be based solely on pure reward maximization, the need to actually maintain the partnership (as opposed to getting the best out of it instantly) could make a symmetric, homogamous relationship a more favourable arrangement.

Asymmetry in exchange and bargaining can develop due to many factors: (1) a power inequality caused by a difference in either the costs, gains or initial bargaining positions; (2) hidden rewards from a third party outside of the dyadic exchange; (3) different evaluation of the same resource; (4) faulty communication and (5) inadequate assessment of the exchange relation (Edwards 1969; Huston and Burgess 1979: 6, 19; Levinger 1979: 184-185). As opposed to symmetric positions, the non-beneficial nature of asymmetry may present itself in two ways. First, the partnership might break up, stop developing or regress to a less committed state as individuals do not continue the ongoing disadvantageous exchange and therefore retreat from investing more into the partnership. Second, as non-symmetric exchange mostly develops from unequal bargaining positions, a person may realize that he or she does not have as much of a say in the day-to-day decisions and general resource allocation, resulting in dissatisfaction.

All in all, a deviation from equality, which can be presumed to be more common in non-homogamous unions bears negative consequences for relationship quality and stability in this framework. It should be noted, however, that someone may stay in a partnership defined by asymmetric exchange as finding a new partner is difficult or they might argue that their current relationship is the sole source of some specific (for example children) reward (Huston and
Burgess 1979: 19-20), which is a similar concept to the relationship specific capital seen in the case of Becker.

2.1.2.2. Equity theory

Another, more recent formulation of the exchange/bargaining process also became popular under the name of equity theory in the study of assortative mating. Equity theory was initially proposed as a general theory for interpersonal partnerships, and was later applied to intimate relationships (Sprecher and Schwarz 1994: 23-34).

The four main assumptions of equity theory posit that (Hatfield, Utne and Traupmann 1979: 11-43; Hatfield et al. 1985: 91-95) (1) in the dating period, couples who feel that their relationship is equitable are more likely to develop a serious relationship; (2) individuals in equitable relationships are more content than those who feel they receive far more or far less than they deserve, which causes distress; (3) as inequity causes distress, the couple tries to reorder their relationship into an equitable one or move to dissolve their union to relieve the distress; (4) amongst committed relationships, equitable ones are found to be the most stable. In this theoretical framework, however, the assessment of whether the relationship is equitable depends on the subjective evaluation of the exchange rather than objective measurements suggested by the general exchange/bargaining theory (Hatfield, Utne and Traupmann 1979: 102-108). Also, equity is not only subjectively evaluated between members, but in comparison to reference groups such as other relationships as well (Sprecher and Schwarz 1994: 16-17).

If a person perceives inequity in the relationship, two actions can be taken. First, he or she may employ strategies to restore equity, which are reactive behaviours to ease and nullify the distress caused by inequity (Van Yperen and Buunk 1994: 94). According to Hatfield, Utne and Traupmann, following a cost-benefit calculation, equity can be re-established by restoring actual equity or psychological equity (1979: 103-120). Restoring actual equity means that an individual alters either his/her own or his/her partner’s relative gains. This can result in numerous actions from an over-contributing partner: becoming less attentive to his or her appearance, less hard working, etc., while an
undercontributing partner could pay more attention to his or her looks or find a better paying job. An alternative method is to restore the psychological equity (Hatfield, Utne and Traupmann 1979: 103, 120-123). This means that an individual deliberately changes his or her perception of the exchange situation, convincing him or herself that the relationship is indeed equitable. For example, a person might exaggerate the amount of emotional or monetary support he or she receives, or understate his or her contribution to the relationship. The other option is to dissolve the relationship to stop the individual distress caused by inequity.

In summary, equity theory proposes that a relationship is formed around equity, which is most probable (but due to the subjective evaluation, not exclusive) in homogamous unions, while inequity causes distress, lowering relationship quality and increasing the probability of dissolution. While the theory proposes a causal direction, namely that inequity is the source of distress, Hatfield et al. notes that this causation cannot be automatically assumed, as feelings of dissatisfaction from other sources can lead to perceiving the relationship as inequitable (1985: 108-109).

2.1.2.3. Homophily theory

The last theoretical approach that argues for the positive effects of homogamy originates from the study of social networks and segregation. Homophily theory, which is a general concept for non-romantic and romantic partner preferences, represents a (refreshing) departure from economics-inspired theories, as it has a unique perspective on partnerships that mainly focuses on individual preferences.

Homophily is the principle that individuals have a higher propensity to associate with partners who have similar characteristics (McPherson and Smith-Lovin 1987: 370; McPherson, Smith-Lovin and Cook 2001; Skopek, Schulz and Blossfeld 2011). Homophily may be the result of two separate processes: individual preferences and structural conditions (Schaefer 2012), the latter being, in our case, the composition of the relationship market.

Choosing a similar partner can be based on a wide range of characteristics. Lazarsfeld and Merton distinguishes between status and value
homophily: status homophily is based on formal, informal and ascribed dimensions of status, while value homophily refers to values, attitudes, behaviours and beliefs (1954: 18-66). It should be noted that the latter is often related to the former (McPherson, Smith-Lovin and Cook 2001).

Regarding status homophily, race, physical attractiveness, ethnicity, education, occupation and social class similarities are the most significant in strong ties such as cohabitations and marriages (see McPherson, Smith-Lovin and Cook 2001 for an overview; Simon, Aikins and Prinstein 2008). This is due to the role of an individual’s network position: people who are structurally similar to each other are more likely to engage in issue-related interpersonal communication, resulting in a more influential relationship (McPherson, Smith-Lovin and Cook 2001). Value homophily plays an important part at the beginning of a relationship, as a similarity of attitudes, beliefs and values leads to attraction and interaction between individuals, while behavioural similarities support the longevity of a given partnership (McPherson, Smith-Lovin and Cook 2001). A possible complicating factor is whether objective homophily or subjective similarity is worth considering if the available data permits both (Rogers and Bhowmik 1970).

Why are homogamous relationships that are based on homophily more advantageous? A general explanation is that these relationships are more rewarding (Schaefer 2012) as reciprocity is more common, and also, that similarity reduces interpersonal strain (Newcomb 1961, cited by Schaefer 2012). The strain-reducing effect is often presumed to be the result of better communication between similar individuals (Rogers and Bhowmik 1970), which is related to the previously mention role of network positions, as similar positions come with similar problems, situations and viewpoints, facilitating positive behaviours such as empathy and understanding. On the contrary, in the absence of similarity, relationships are more unstable and are more likely to end (McPherson, Smith-Lovin, and Cook 2001), as reciprocity is not as frequent, communication is impaired, and the general strain on the relationship is higher. In his work, Rosenbaum notes that attitude similarity may not always lead to attraction, but dissimilarity certainly leads to repulsion, as inconsistency
introduces certain conflict-inducing dynamics into a relationship, thus causing dissolution (1986).

As proposed by Simpson and England, homophily may extend to the wider roles within a relationship and not just certain attributes (1981). According to Simpson and England’s role homophily approach, the similarity of roles builds solidarity, which in turn increases relationship quality and stability, as it enhances communication and companionship, and mutual interests that help maintain the partnership may be more abundant in the case of these couples. Role homophily theory (more) directly opposes the reasoning of the approaches that focus on gender-specific roles and interdependence, as it considers sex-role differentiation a negative phenomenon, since it leads to a lack of mutual understanding and impedes companionship.

Turning to critiques of the homophily theory, a potential theoretical issue is the unspecified level of assessment concerning similarity. The aptly named earlier approach to partner selection, the complementary hypothesis suggests that while on social characteristics homogamy is most common, on more detailed and infrequently measured emotional and motivational attributes, complementarity is dominant (Winch, Ktsanes and Ktsanes 1954). Another important critique regarding homophily theory comes from Schaefer, which highlights that homophily may largely be due to certain structural constraints (2012), and in fact there is a preference for heterophily. While higher valued individuals can fulfil their preference for the highest available partner (forming homophily on the highest tiers of society), lower valued individuals turn to similar actors to form a relationship as they are not attractive for higher valued partners. As such, while a preference for heterophily exists, an endogenous sorting process creates mostly homophilous relationships.

2.1.3. A matter of when?

So far, the presented approaches highlighted the possible importance of assortative mating along socioeconomic and cultural traits for the formation, functioning and stability of a relationship. While there is a difference in whether a particular theory favours hypergamy or homogamy along certain attributes, generally, the role of time as a possible negator of any effect has to be
considered. Assuming that a relationship progresses through certain stages in time, it should be addressed if similarity or dissimilarity along certain qualities may be of a higher priority during the initial or later phases of a couple’s life.

A popular approach of this question in the literature of assortative mating is Murstein’s stimulus-value-role (SVR) theory, which considers relationship formation as a three-stage process (for an extended discussion, see Murstein 1970, 1974, 1980, 1987). SVR theory assumes a so-called “open field” scenario, where the structural limitations of the relationship market and the influence of social groups are non-present or minimal, and relationships depend purely on individual preferences.

According to Murstein, in the stimulus stage of establishing a relationship, individuals are drawn to each other by attributes that are easy to assess and interaction begins if someone is considered adequate along these qualities (1970). Through interaction during the stimulus stage, individuals measure each other up by their own system of values, and if the partner is deemed satisfactory, a relationship may begin. At this early stage, previously introduced concepts, such as specialization, symmetry of exchange, equity or homophily may come forth, as participants weight the costs, benefits, assets and rewards of continuing interaction.

The second stage of relationship formation is the value stage (Murstein 1970). In the value stage, the attributes of partners are evaluated in varied, face-to-face interpersonal contact and discussion. As a result, individuals are able to develop more positive and intimate connections, since they are able to assess each other thoroughly. If partners find mutual values, they validate each other’s self-concept, and are more likely to engage in similar activities, strengthening their ties. In the value stage, the similarity of cultural attributes (which were highlighted in most previously detailed theories) plays the most important part, as dissonance regarding these qualities imply a greater risk of discontinuation of the interaction process.

The final stage before establishing a serious relationship is the role stage (Murstein 1970). Role fit refers to the matching of the broader behaviour of partners, where actors consider the behaviours they want in a future serious
partner or spouse, and as in the previous stages, mutual role fit results in the continuing of the relationship. In short, Murstein’s SVR theory suggests that early on partnership formation, quality and dissolution (or to be precise, the discontinuation of interaction) depend on apparent qualities and socioeconomic attributes, while individuals considering long-term commitment rely on cultural and more complex role-related attributes. This means that, depending on what stage the couple is in, socioeconomic homogamy or heterogamy may gain or lose significance.

Similar to the SVR theory, the winnowing hypothesis conceptualizes the progress from cohabitation to a committed long-term marriage as a series of transitions (Blackwell and Lichter 2000). Blackwell and Lichter thought of cohabitations as trial marriages, in which individuals employ less strict criteria to select potential partners, and then examine these already chosen candidates to transition to marriage. While early on enjoying each other’s company may be sufficient, marriage involves substantial levels of long-term economical and emotional investments, in which Blackwell and Lichter propose that homogamous unions are the most advantageous, as it minimizes the chance of mismatch along multiple measurements (Blackwell and Lichter 2004). All in all, this implies that the effect of homogamy and heterogamy on relationship quality and stability may depend on the level of commitment as well.

2.1.4. Previous empirical results

As the presented theories provide convincing arguments, a considerable number of previous empirical works attempted to examine which arrangement (hypergamy, homogamy or hypogamy) is the most beneficial for relationship quality and stability. Although educational assortative mating is the main focal point of the empirical analyses in this dissertation, I consider other measures such as income, occupation, employment and subjective equity to provide a comprehensive overview. As the detailed presentation of all previous results would be hard to follow, I will focus on the main findings and takeaways.

2.1.4.1. Relationship quality

Empirical studies vary in the measurement of relationship quality. Some used negative (stress, dissatisfaction, distress), positive (happiness, satisfaction,
contentment), and general (quality, happiness in life) aspects of quality as dependent variables of the analyses.

Several studies found some level of connection between higher relationship quality and hypergamy. Early examinations in the 70’s and 80’s on U.S. samples showed that women’s occupational superiority and/or higher educational was associated with higher marital stress, lower marital and life satisfaction for men and women, especially if respondents were career-oriented (Pearlin 1975; Richardson 1979; Hornung and McCollough 1981).

Later results highlighted some peculiarities. For instance, Vannoy and Philliber found that occupational homogamy or hypergamy was not related to higher levels of marital quality, but hypogamy was a negative factor (1992). In a study contrasting how women’s higher relative income affects marital happiness for white and African American respondents, it was revealed that the detrimental influence of women’s income superiority was multiplied by women’s traditional attitudes (Furdyna, Tucker and James 2008). Another interesting finding was noted in a study of Japan and the U.S. (Lee and Ono 2008). Men reported lower marital quality if their wives’ income were larger than their own or if they were employed, but men who had a spouse with a very high income (more than 70% of total household earnings) reported high levels of happiness.

Other studies that focus on relationship quality verify homogamy as more advantageous than hypergamy, and works based on the previously presented equity theory provide a strong argument. Hatfield et al. (1982), and later Utne et al. (1984) used the same U.S. sample and similar methods to test the equity hypothesis. Results showed that men and women in subjectively equitable relationships were more content and sexually satisfied, while those who overbenefited were less happy, with underbenefited partners being the least satisfied. In equitable partnerships, individuals were also found to be more loving and closer, and having higher levels of overall life satisfaction.

Buunk and Van Yperen studied Dutch cohabiters and married persons over ten years, focusing on gender differences (1989). Overall, equity was related to continuously high relationship quality, but women were happy to overbenefit as well, while men were most satisfied in partnerships when they were equitable
in the exchange during the examined period. Sprecher confirmed these results on a longitudinal sample of U.S. university students: both men and women were more satisfied with and committed to a relationship when they were in a more equitable position rather than under or overbenefiting, especially later on in the relationship (Sprecher 2001). Finally in the line of works supporting homogamy, Vaijayanthimala, Kumari and Panda looked at how socioeconomic assortative mating affects marital satisfaction for working women in India (2004). Regarding education and occupation, their results showed that women in heterogamous unions were less satisfied compared to women in homogamous relationships.

Multiple recent empirical works showed support for both hypergamy and homogamy to some degree. Vannoy and Cubbins on a Russian sample demonstrated that for dual earner couples, those in which partners had a similar income or men earned more reported the highest marital quality, but those in which the wife earned much more than her husband were the least satisfied (2001). In an extensive study of 28 nations, Treas, van der Lippe and Tai noted that full-time housewives were significantly happier (with their life) over full-time employed ones: however, the difference was modest, with the authors concluding that neither a conservative (traditional gender roles) or liberal feminist (fulfilment in work) viewpoint can be reinforced based on the findings (2011).

Wiik, Keizer and Lappegard used a representative sample from eight European nations\(^5\) to examine factors that affect the individuals’ satisfaction with their relationship and future breakup plans (2012). From multiple independent variables, it was shown that respondents in a homogamous relationship, and to a greater degree respondent with higher educated partners were more satisfied and less likely to think about breaking up. Lastly, Hori and Kamo’s examination of four East Asian societies\(^6\) revealed that even in relatively similar nations, results can be very different: in Taiwan, full-time housewives were more satisfied with their relationships than working women, while in China, the opposite was true, and in Japan and South Korea, no effect was found (2017).

\(^5\) Bulgaria, France, Germany, Hungary, Norway, Romania, Russia and the Netherlands.

\(^6\) China, Japan, Taiwan, South Korea.
2.1.4.2. Stability

Compared to relationship quality research, peer-reviewed studies that considered assortative mating as a factor in the dissolution of relationships were more abundant. The dependent variables of these works were more similar as well: nearly all of them examined divorces or in general, separations.

A large number of papers found that socioeconomic hypergamy is beneficial for the stability of relationships. Studies based on U.S. samples published from the 1970’s to the 1990’s found that a higher male income was associated with lower divorce risks, while women’s part-time or full-time employment, higher relative income, higher contribution to the household and more time spent outside of the home were related to a higher probability of dissolution (Cutright 1971; D’Amico 1983; Spitze and South 1985; Greenstein 1990; De Rose 1992; Hiedemann, Suhomlinova and O’Rand 1998; Heckert, Nowak and Snyder 1998).

Early employment or income focused research was corroborated later on. On a sample of Finnish marriages, Jalovaara found that higher female income was related to a higher divorce risk (2001), interpreting the results as a sign of female independence. In the Netherlands, Poortman and Kalmijn differentiated between full-time, part-time and non-employed women, finding that only full-time work (granting the highest level of independence) increased the risk of divorce, but this difference decreased through cohorts (2002). However, the researchers note that there was an apparent asymmetry according to the panel data: the low number of couples in which women had higher education levels, income and working hours were generally not significantly more likely to dissolve. In the U.S., Schoen et al. (2002) and Teachman (2002) found that women’s employment and higher relative education increased the risk of dissolution of marriages, particularly unhappy ones. In Sweden and Germany, Henz and Jonsson’s (2003), Guiping and Vikat’s (2004) and Cooke’s (2006) studies also revealed the higher risk of separation for the less economically dependent women.

Turning to studies from the last decade, Frimmel, Halla and Winter-Ebmer used a sample of all Austrian marriages between 1971 and 2007 (2013). Compared to educationally homogamous unions, couples where the husband
had higher education were 17% less likely to divorce, but hypogamous marriages were 26.4% more prone to end. Blossfeld found similar results for Germany as well (2014). The higher relative education of German women in traditional marriages increased divorce risks, especially for hypogamous couples where women had the advantage, while hypergamy was associated with the lowest odds of divorce.

A minority of studies found that homogamy is the key for the stability of a relationship. In the U.S., Tzeng found that for first marriages, educational heterogamy was related to an elevated risk of divorce (1992). For U.S. and Dutch cohabitations, Brines and Jones (1999) and later, Kalmijn, Loeve, Manting (2007) noted that compared to marriages, the longevity of cohabitations was mostly dependent on equal-power sharing arrangements. Based on Finnish census data, Jalovaara (2003) noted that educationally homogamous marriages were the most stable, regardless of the level of educational attainment. Recently, Maenpaa and Jalovaara (2014) found that higher and more similar educational levels were linked with an increase in stability for both men and women in cohabitations, and only couples facing larger dissimilarities in favour of women were more likely to separate in the observed period.

2.2. Opportunities on the relationship market

Perhaps the simplest part in an attempt to link assortative mating with relationship quality and stability is to consider partnering opportunities. As previously discussed, an individual may choose someone based on his or her preferences, but ultimately, everyone is limited by the pool of available partners (Kalmijn and Flap 2001). The theories of the relationships market focus on how these constraints affect relationship formation, quality and longevity. Changes in these limitations are also the focal point of the theory of education-specific mating squeeze, where the market is altered by women’s changing educational attainment (Van Bavel 2012).

As Winch conceptualized it decades ago, partner selection is a phenomenon where an individual chooses a preferred partner from a “restricted segment of the population”, which he named the “field of eligibles” (1958: 14; Kerckhoff 1964). Similarly, Huckfeldt posits that interaction is shaped by the
social composition of the “relevant environment” (1983). Regarding sexual partners, Laumann et al. speaks in similar terms about sexual networks and their social structure (1994). In short, partner selection is limited by the structural conditions of the so-called relationship market which operates by the logic of numbers, as the term encompasses the number and quality of potential mates with whom the individual has a chance to meet (Kalmijn 1994, 1998; Bukodi 2002).

To formally define it, the relationship market is the physical and symbolical meeting place of men and women willing to enter a union, who are generally in a geographic and social proximity to each other (Stevens 1991; Cabré 1993; Birkelund and Heldal 2003; Esteve and Cortina 2006). The relationship market can also be understood - in more demographic terms and without physical or social restriction - as the part of the population who are at risk of entering a relationship. Theories of this market consider three main aspects: the relative size of the various social groups in a society which facilitates or hinders homogamy or heterogamy, the geographical distribution of the potential mates, as cities and rural villages, economically advanced and underdeveloped counties, and even districts have different number of eligible partners, and finally, the social structure of the spaces individuals inhabit on a daily basis.

An often-employed approach for the understanding of the workings of the relationship market is the macrostructure theory of Blau (1977). Blau defines the macrostructure of societies as “the multidimensional space of social positions among which people are distributed and affect their social relations” (1977: 30). While status-related attributes might act as barriers or entryways into certain social relationships, the size of the societal groups has the most substantial effect. Blau elaborates that logically, smaller groups tend to have more intergroup connections as a small group size facilitates more interaction with outsiders, and conversely, members of large groups are more likely to have homogeneous social networks (1977: 35-40).

While Blau offers a compelling argument, some scholars note that for relationships specifically, the composition of local relationship markets are more important, as people at risk of getting into a relationship spend most of their time
in these spaces (McFarland 1975; Kalmijn and Flap 2001; Kalmijn 1998). These include neighbourhoods, workplaces, family networks, voluntary associations, and most notably, education. With the advent and spread of online dating sites and applications such as Tinder (Berger 2019), the internet can also be thought of a relationship market, with theoretically lower geographical limitations than the “conventional” markets.

So far, we have established how the structural conditions of society shape partner choices through the pool of potential partners, and it is implied that education has become a major relationship market in recent decades due to the educational expansion. But what is the connection between relationship markets, assortative mating and the quality and stability of relationships? Again, the key concept is the opportunity to find partners with certain characteristics.

Research into the connection between opportunities and relationship stability most prominently emerged in the literature of social psychology along the works of Levinger (1965, 1976). Levinger noted that there are certain attractions and barriers that influence the outcome of a relationship. Staying with a partner generally entails certain rewards, like social status, sexuality and psychological support, whereas leaving someone might mean loss of status, wealth and added stress (Levinger 1976). While individuals weigh these factors, they also have attractions (meaning benefits and costs) to eligible alternatives on the relationship market - as such, if the attraction to the alternative overshadows the current relationship, its quality and stability declines, leading to a separation. It is safe to assume that this is more probable as the relationship market increasingly provides more possible and better alternatives.

A different formulation of this theory, the macrostructural opportunity perspective similarly highlights that the oversupply of eligible partners means that the individual is confronted regularly with the possibility of a more fitting partner, eroding the satisfaction with the current relationship and increasing the risk of dissolution. Although often used in tandem with the Beckerian approach (for example South, Trent and Shen 2001), the term “more fitting” is not constrained when discussing alternatives, barriers and opportunities: it could mean a more similar or different person for the individual, thus, this theory can be employed
along with any preference-oriented theory discussed earlier. Additionally, South and Lloyd argued that the level mobility in a society may reflect a weak border between social groups, thus possibly linking high levels of mobility with high levels of interaction and access to alternatives, and consequently, elevated levels of relationship dissolution as more opportunities are considered (South and Lloyd 1995).

In conclusion, the relationship market determines who someone can meet to form relationships, and what potentially better alternatives an individual meets during his or her life in a relationship. While this macrostructural oriented approach is easy to understand, it is difficult to clearly distinguish its effect from other, preference or norm-based influences.

2.2.1. Empirical results on the role of the relationship market

The role that alternatives on the relationship market have in establishing, maintaining and dissolving partnerships has received considerable attention in recent years. These works generally focused on overall gender imbalances (for example in birth cohorts), or the gender distributions in smaller, specific subgroups like occupations or categories of educational attainment.

In a general study, Esteve, García-Román and Pernanyer examined 56 countries based on census data, seeking to assess how women’s increasing prevalence in tertiary education affects mating patterns (2012). Their results revealed that educational homogamy retains dominance in most nations, but as the proportion of higher educated women grew, so did the number of hypogamous unions: with the surplus of highly educated women, they were less likely to be able to marry men of equal or higher education. This process, which results in a trend of homogamy paired with the increasing level of hypogamy has been recently observed in nations such as Hungary, the Czech Republic and Slovakia (Katrnak 2008); Belgium (Nomes and Van Bavel 2017); Britain (Krzyzanowska and Mascie-Taylor 2014); Austria (Frimmel, Halla and Winter-Ebmer 2013); Switzerland (Becker and Jann 2017); Finland (Maenpaa 2015); Sweden (Dribe and Nystedt 2013); the United States (Rose 2005; Schoen and Cheng 2006); India (Borkotoky and Gupta 2016; Lin, Desai and Chen 2020);

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7 The results for Britain may be biased, as the study focused on fertile couples.
Brazil (Ganguli, Hausmann and Viarengo 2014); and sub-Saharan African nations (Pesando 2019, 2021). Conversely, a later and slower educational expansion could lead to the endurance of hypergamy next to homogamy, as the case of China shows in Hu and Qian’s paper (2019): educational homogamy was at a similar level between 2010 and 2015, with hypergamy being the second largest group (30-32%), followed by relative low levels of hypogamy (13-14%), due to women not attaining an overall educational advantage (yet).

Certain conditions on the relationship market could also result in a process of societal closure. In Germany, Grave and Schmidt conducted a thorough assessment of West and East German educational assortative mating, using twelve (1976-2005) microcensus waves (2012). In both parts of the country, homogamy increased, especially in the younger age groups, from 56% in 1976 to 65% in 2005 in the west, and from 69% to 72% in the east. Both in West and East Germany, the authors observed societal closure, however, differences arose stemming from dissimilar educational compositions. In the former, Germans with low or high levels of education increased their probability to marry someone with similar education over time, while the middle groups tended to marry outside their educational level. In the latter, the probability of homogamy increased only at lower educational levels, while it was stable for technical/university educated persons. Similarly, Norway also saw a rise in overall homogamy due to the increasing homogamy of lower educated persons (Bratsberg et al. 2019).

In Spain, Esteve and Cortina found a decreasing overall level of homogamy except for the tertiary educated Spanish respondents, as they saw a huge increase (4-17% for men, 2-19% for women) in the levels of homogamy with the growing proportion of tertiary educated persons (2006). In Japan, census data from 1980 to 2010 unveiled the decreasing proportion of homogamous and hypergamous couples, with homogamy only growing amongst highly educated individuals (Fukuda, Yoda and Mogi 2019). In South Korea, educational homogamy had a strong and non-declining presence, especially for higher educated Koreans, as more than 90% of tertiary educated women married men with similar education (Kye and Mare 2012). This (at least partially) relationship market driven process could lead to increasing societal gaps and economic
inequality, as Mare warns (2016). In a direct study, Frémeaux and Lefranc found that assortative mating is responsible for 3-9% of all inequality in annual earnings, and 10-20% in household potential earnings in France (2019).

Other works considered that a probable alternative for highly-educated women who face shortages of available men with similar or higher education would be to stay single or postpone partnering, instead of entering a hypogamous relationship. In a multi-country examination done by De Hauw, Grow and Van Bavel (2017), models suggested that highly educated women chose to partner down rather than to stay single, resulting in the previous noted pattern where women most likely form partnerships with men who are at most as educated as they are. For tertiary educated men however, data showed that they were less likely to partner with women of any educational level. The authors suggested that this was the result of well-educated men (with high relationship market value) waiting (or screening) for the best possible alternative, as they face a relationship market abundant with highly educated partners. In a similar study focusing on Belgium, Nomes and Van Bavel suggested that aside selectivity (as highly educated women might be less interested in marrying), highly educated women who wanted to get marry might face a disadvantage due to the scarcity of similarly educated men, and as a result, might postpone marriages (2017).

Some results argue that highly-educated women might indeed choose singlehood instead of marrying down. In a recent study done on 27 European nations, Hamplová found that women working in male dominated fields were more likely to forgo union formation instead of marrying down as a consequence of their high level of personal resources which makes them more independent and a better match (as they have a high level of resources) and perhaps due to abundant alternatives encountered day-to-day in their occupation as well (2020).

Recent studies highlighted the peculiarities of using dating apps to meet potential partners. In their study, Neyt, Vandenbulcke and Baert (2018) examined 3,600 “swipe decisions” (where users swipe left to pass a potential partner, and right to accept him or her) from the most popular dating app, Tinder. The authors found gender-specific differences. Heterosexual female users were far more likely to rate a profile positively if the potential partner had higher relative
education (by 92.2%), while both men (by 10.1%) and to a greater degree women (by 45.4%) were less prone to like a profile if the candidate had lower relative education.

A number of studies linked the available number of alternatives on the relationship market and the stability of partnerships. South and Lloyd found that the risk of marital disruption increased for men with the proportion of employed, but unmarried women in the geographic area (1995). Their interpretation of the results suggests that men who encounter a higher number of better (socioeconomically at least) partners might be more inclined to leave their current marriage. Later, South, Trent and Shen similarly found that couples are more likely to divorce if there was an unusual surfeit of men or women in their area (2001), as both husbands and wives were more likely to find attractive alternatives depending on the sex ratio. Also, women in male-dominated (and presumably, higher status) occupational fields were more likely to divorce, suggesting the effect of encountering alternatives. Rapp et al. noted that (evidently) alternatives decrease stability through unique interactions: if the individual reduces social interaction with possible alternatives or shares these contacts with his or her spouse, the risk of divorce decreases (2015). Yu and Kuo, however, explain that the decrease in women’s union stability stemming from being in a male-dominated field might be because of differences in the occupations themselves, as more masculine occupations in the U.S. had less regular work schedules, which women particularly found stressful (2021).

Finally, a study done by Stanik and Bryant suggested that there might be a connection between alternatives and relationship quality as well (2013). According to their analyses based on a sample of African American couples, wives and husbands with higher marital quality and sexual satisfaction were less likely to think they had acceptable alternatives on the relationship market.

2.3. Societal influence

As previously mentioned, relationship formation, dissolution, and anything in between does not only depend on individual preferences and their level of fulfilment or the abundance/scarcity of available partners. Relationships and the interaction between the partners are embedded in certain social groups, and on
a grander scale, society itself. The main reason to consider the influence of these third-parties is that through beliefs and standards about sex roles, norms prescribe what roles men and women should/could play in a relationship, and they determine how others react to certain partnership behaviours (Ridgeway 2011: 127-135).

These expectations and reactions partly shape selection and the stability and quality of partnerships. Although it is not the specific aim of this dissertation to compare the effects of certain countries or groups, the impact of norms on relationships cannot be ignored when formulating the working hypotheses (Teachman 2002). In the theory of the education-specific mating squeeze, Van Bavel also hinted at the importance of the normative environment and its changes on multiple occasions: an adherence to the norm of hypergamy might lead to highly educated women exploring older, more distant or ethnically different relationship markets or perhaps stay single (2012: 133-134); but most importantly, the negative, separation-inducing effect of increasing hypogamy is partly related to enduring traditional gender norms contradicting structural opportunities (2012: 135).

2.3.1. Doing gender

One of the most popular theories employed to explain the effect of norms upon partnerships is the “doing gender” approach, first spelled out by West and Zimmerman (1987). The doing gender theory thinks about gender in an interactionalist way, which means that it is not an individual’s natural quality, but rather a feature of social interactions and situations, and persons organize their activities to reflect and express their gender (West and Zimmerman 1987). This line of thought builds upon Goffman’s theory regarding gender display (Goffman 1976: 69-75). Goffman presumes that when individuals interact with others, they believe that each one of them possesses an “essential nature”, such as masculinity and femininity, which can be understood from signs given by them. These essential qualities mean that during interactions, men and women are expected to act in a fundamentally masculine and feminine way, while at the same time their partners in the interactive process look for these culturally determined gender displays. Doing gender credits the establishment of essential gender displays to three societal processes (West and Zimmerman 1987): (1)
socialization, during which members of a society start to self-regulate along
gender ideals that are deemed normal and natural in a given culture; (2) allocation
of resources and time, where people plan their current and future actions based
on female and male social categories (essentially, what is womanly and manly to
do); and finally (3) legitimation, as gender based social arrangements become a
legitimized way of life and daily conduct. As a side note, the allocation of
resources and time can also be seen from a structuralist viewpoint as a way in
which individuals accommodate to restrictions and opportunities presented to
them by a gender-based societal hierarchy (Eagly and Wood 1999).

In this doing gender context, individuals are judged by how they display
their gender's essential qualities: if they step outside the gender boundaries set
by culture, they might experience role conflict, which is defined as an increased
level of interpersonal conflict and stress which would not be present if they were
not “out of place” (West and Zimmerman 1987; Eagly and Wood 1999). If a
society regards staying at home and being a housewife as quintessentially
feminine, then employed women with a certain level of income will receive
negative feedback from their social circles, which can be also expected for men
who cannot fulfill the masculine breadwinner role (Tichenor 2005). This
mechanism can be true in the case of a more modern society as well, in which
non-egalitarian traditional couples may face judgemental looks. Also, partners
may try to hold each other accountable for holding up the dominant norms
(Tichenor 2005).

Tichenor notes that even if a couple interacts with each other and with the
outside world in a way that matches the culturally determined essential gender
displays, they are aware of the reality if they are not fulfilling these roles, thereby
creating dissatisfaction with the relationship (2005). Also, compensatory
behaviour may emerge as a way of alleviating added stress and unhappiness
(Cooke 2006). As Kaukinen explains, these strategies may mean redefining
economic provider roles: for example, advantaged women may defer to the
judgement of their partner more often as to display traditionality (2004).
2.3.2. A gender revolution?

While norms and role expectations clearly exert influence over relationships, they are also non-static, which means that certain attributes that reflect conformity to or deviance from the prevailing normative structure can have changing effects. One of the most important such attribute is the relative status of the couple (Blossfeld and Timm 2003), which is coincidentally linked with the main theme of this work. Theories diverge on why normative change happens, but in social sciences four main narratives emerged: the economic, the organizational, the political and the cultural.

The economic narrative primarily attributes the increasing gender equality of women in society to efficiency (Blau, Brinton and Grusky 2006: 8-11). From an economic perspective, labour-market practices are considered inefficient if they discriminate against women, because gender-based selection is costly, as it ignores capable workforce in favour of selecting men who might not necessarily be as qualified or as available. Change in the relative status of men and women are linked to this realization: as women increasingly anticipate similar payoff to their efforts as men do, they are inclined to invest in work-related skills (primarily in education), bringing the status of men and women closer in time, which eventually normalizes the participation of women in the labour market. The organizational narrative is similar to the economic one. Bureaucratic practices increasingly attribute competence to educational attainment and skills rather than sex and may begin to punish sex-based decisions, further motivating women to participate in the labour market (Blau, Brinton and Grusky 2006: 13-14). While economic and organizational narratives emphasize efficiency, the political narrative focus on explicit legislative action aimed at reducing gender inequality and promoting the acceptance of working women, which more directly forces the change in gender relations (Blau, Brinton and Grusky 2006: 18).

Our main interest for the current dissertation will be the fourth, cultural narrative (Blau, Brinton and Grusky 2006: 24-25). This narrative argues that due to the increasingly widespread non-traditional views, men and women are turning similar in terms of responsibilities and roles, while traditional male breadwinner/non-working housewife relationships are becoming norm violating. The cultural narrative is distinct from the economic and organizational ones in the
sense that it implies a change in the general attitude and values towards gender roles and equality rather than emphasizing efficiency, but is similar to the political narrative which may be partially motivated by cultural changes. In short, through cultural changes, a society can minimise gender differences (Zentner and Eagly 2015), and alter the expectations towards men and women. But if norms which affect relationships change in time, where are we headed in terms of expectations from men and women in a relationship?

An optimistic outlook comes from Goldscheider, Bernhardt and Lappegard’s “two-part gender revolution” theory (2015). The first part of this gender revolution was a departure from the strict, gender-based division of the public and private spheres of life established during the age of industrialization. As men became primarily active outside the home, the private sphere transformed into a nearly exclusively female area: the place of housework, child-rearing and family life in general. During this period, women who aimed to enter public life generally suffered the negative effects of breaking norms. The first part of the revolution was the fact that women departed from this divisive arrangement of life in increasing numbers by participating in the labour force and in higher education. As a general consequence, while women’s average status position improved in relation to men, the family as an institution weakened, as marriages declined, divorces rose, and cohabitation became a viable alternative. This first stage generally happened between the sixties and the nineties, when women became increasingly concerned with their future labour force participation and position and gained direct control over their reproductive functions enhanced by the emergence of feminist movements and rising female educational enrolment (Goldin, Kats and Kuziemko 2006; Oláh, Kotowska and Richter 2018: 46-48). It is apparent that this part of the revolutionary process formed the basis of the Parsonian and Beckerian approach discussed earlier, which generally demonized the increasingly equal position of women.

An important idea from the two-part gender revolution narrative is that these predicted negative effects of female absolute or relative status increase are, in fact, transitional phenomena rather than a permanent state. While the first half of the revolution saw the weakening of the family and a rise in relationship instability, the second part (which is still ongoing) implies the increasing
involvement of men in the private sphere (Goldscheider, Bernhardt and Lappegard 2015; Oláh, Kotowska and Richter 2018: 55-56). This change is driven by multiple factors.

First, women’s participation in the labour force became expected and a central part of their life (and not just a pseudo-occupation, as Parsons put it earlier), which changed gender norms and reduced the opportunity for men to meet non-working women. Second, macro-economic changes made it more advantageous for a couple to have two incomes, thus broadening the female gender role to encompass financial responsibilities previously attributed exclusively to men (Oláh, Kotowska and Richter 2018: 48). Third, as a result of the previous two factors, pressure mounted on men to assume family-oriented tasks and roles, partly because women gained power to renegotiate female-male relations. A noteworthy addition by Cherlin suggests that the spreading of these new roles does not only depend on norm violation costs, but on the overall level of education, as more educated societal groups are more likely to adopt equality-oriented values (2016).

All in all, the second part of the gender revolution sees the establishment of a more egalitarian gender ideology (Goldscheider, Bernhardt and Lappegard 2015), which in turn, influences the kind of status-relations individuals prefer and society accepts, possibly predicting a rise in the acceptance and beneficial nature of homogamous (or more equal) unions. Similarly, based on the analysis of fertility changes, Esping-Andersen and Billari predicts a “return to family”, as gradually, egalitarianism becomes the norm for gender relations, forming a new equilibrium after a period of normative uncertainty caused by the transformation of women’s roles (2015).

Although the two-part gender revolution approach foresees a return to a stable, yet different partnership-oriented period, some scholars disagree with the viewpoint that men will increasingly participate in the private sphere. As such, Paula England labelled the gender revolution process “uneven and stalled” (England 2006, 2010).

According to England, the trends of the nineties revealed a certain asymmetry in the change of gender norms, which limited the possibility of
establishing new, truly egalitarian gender relations (2006: 253-257). This uneven change is caused by the still strong gender-based allocation of household and family tasks paired with the resistance by men to take on traditionally female roles, while women were quick to adopt male responsibilities. England elaborates that primarily in childcare, the unchanging and rigid culturally assigned roles overburden women who entered the labour market, thereby (as there is a finite amount of time in a day) preventing them to further improve their status position compared to men (2006: 254).

From this interpretation of England, the questions of why men refuse to adapt as much as women and why widespread cultural changes are absent arise. It is possible that men are more stigmatized if they adopt female roles, and more generally, men and culture itself devalues feminine roles (England 2006: 255; 2010) while masculine tasks and positions are respected and rewarded. This is also apparent, as England notes, from the fact that the desegregation of fields of study or workplaces generally mean women moving into traditionally male areas, while men refrain from entering female fields and workplaces. Even then, women might choose more “female intensive” subfields (England 2010).

To summarize, according to England, the gender revolution is halted, therefore, while women take on increasingly time and energy consuming roles, men generally refuse to change as feminine roles are still devalued by society. Based on this, it cannot be expected that the added instability and lower marital quality traditionally associated with non-normative couples - in the case of more egalitarian homogamous or female-led hypogamous partnerships - diminishes over time, rather, it is a stable phenomenon caused by the unchanging gender norms and continued cultural disapproval of such relationships (Brines 1994; Schwartz and Han 2014; Maenpaa and Jalovaara 2014). Irrespective of the direction that norms and attitudes towards gender roles and relationships as a whole are headed, it is important to point out that there might be considerable cross-country differences regarding the adoption of any new norms and behaviours, depending on overall social conditions and the general resistance to change (Cavalli-Sforza and Feldman 1981: 39; Palloni 2001: 95-96). It is reasonable to say that certain countries may become early
adopters and promoters of egalitarian values and, therefore, non-traditional relationships, while some nations may resist this change for a longer period of time. As diffusion theory predicts, social change is only achieved when attitudes and behaviours become prevalent, as more and more people adopt them through social contact, regardless of their social position (Casterline 2001: 3-6; Palloni 2001: 68-70). This, once again, implies that as homogamous relationships or partnerships in which there is a notable female advantage become common, the supposed negative effect linked to them gradually weakens then disappears, depending on the possible rate of spread in the given country or community (Schwartz and Han 2014; Theunis et al. 2018).

Finally, some theories argue that we can also expect a general reluctance towards relationships as a whole due to changes in norms. Beck notes that the demands from the modern labour market for a mobile, individual working unit is hardly compatible with the commitments needed for the maintenance of a relationship, as balancing individual goals and sharing one’s life with someone else becomes difficult (Beck and Beck-Gernsheim 1995: 6, 54-55). Additionally, though primarily employed to assess changes in fertility, an overarching demographic viewpoint on the decline of relationships (primarily marriages) can also be found in the famous second demographic transition (SDT) theory of Lesthaeghe and van de Kaa (Lesthaeghe 2010). The SDT theory explains the sub-replacement level fertility, the rise in singlehood, cohabitations and divorces and the decline in marriage rates with the so-called “Maslovian preference drift” (Lesthaeghe 2010). What this change in people’s preferences mean is that with the rising level of economic well-being, individuals shift towards “higher order” non-material needs such as self-realization and freedom of expression, instead of material ones like economic security and shelter, commonly associated with relationship formation and traditional institutions such as the Church and the State (Lesthaeghe 2010).

2.3.3. Societal influence and gender norms in empirical studies

Turning to empirical studies, it is a difficult task to untangle preference or relationship market related processes from those of societal influence and gender norms. For example, the results presented in the preference chapter might be interpreted from another perspective: hypergamy might be more advantageous
because of an unmeasured positive reinforcement from a traditional society and close social circles, while homogamy might be more beneficial because of a more egalitarian macro-level context. Similarly, the attraction of certain alternatives might depend on what a given society’s gender norms define as a better match. In light of these considerations, I limit my overview to results that directly consider societal or normative based arguments.

Verified the general notion that women’s changing position is related to normative changes, Esteve et al. (2016) demonstrated that women’s increasing educational attainment and the decline of hypergamy resulted in a shift towards egalitarian norms. Respondents from countries with a marked female educational advantage were less likely to think that women’s higher relative earnings might cause trouble for the partnership and that women’s employment negatively affects children. However, the generalization of this association should be avoided, as results were mostly based on descriptive analyses.

In China, where women similarly gained a substantial educational advantage over men as in Europe, traditional gender norms still persist, pushing men and women towards hypergamy or homogamy in an increasingly disadvantageous relationship market (Qian and Qian 2014). According to Qian and Qian’s data, this resulted in highly educated women postponing or even forgoing marriage (which alternative routes were also envisioned by Van Bavel regarding the education-specific mating squeeze), as they could not find suitable partners, and also because men did not see women’s higher resources as advantageous as men do in other, more egalitarian nations. In an earlier study examining Japanese marriages, a similar “later and less marriages” pattern for highly educated women was also observed, resulting from the difficulty of managing a career while simultaneously adhering to traditional gender roles (Raymo 2003: 99).

Another factor could be that while women might have an objectively better socioeconomic position than their partners, in a traditional setting, they might still try to self-enforce traditional gender roles in their behaviour. According to Tichenor who examined the power dynamics of hypogamous marriages in the U.S. (measured by income), this is indeed the case (2005). The results showed
that women’s greater relative income did not translate into a non-traditional balance of power, but rather, spouses still attempted to maintain the male dominance arrangement. This was done by a two-part process: partners constructed identities matching the traditional male breadwinner - female caretaker arrangement, and then reflected these in day-to-day decision making and general behaviour.

Several studies focused on how norms might affect relationship quality. In their longitudinal study, Amato and Booth found an interesting difference between women and men in the U.S: wives who adopted less traditional gender role attitudes generally saw a decline in marital quality, while men who became more egalitarian reported an increase in time (1995). The authors interpreted this result as a sign that the increasing prevalence of egalitarian norms put pressure on women, while for men, it lessened it. The positive effect of men’s more egalitarian involvement in the U.S. was confirmed later as well, as in a related study, men’s involvement with childcare increased relationship quality for both partners (Carlson, Hanson and Fitzroy 2016).

An interesting way of how gender norms could affect relationship quality comes from the perception of unfairness. In an early study, Greenstein observed that traditional women perceived objective inequalities subjectively as fair, increasing their marital quality (1996). Minnotte et al. looked at how work-to-family conflict and its linkage with relationship satisfaction might be influenced by this observation (2010). Their findings suggests that while most women’s relationship quality decreased with higher work-to-family conflict, this effect is much stronger for women with egalitarian attitudes. According to Minotte et al., this is because traditional women were more likely to accept the added burden of housework on top of paid work (perceiving them as fair), while egalitarian women were more prone to negotiate a higher involvement in housework from men, resulting in conflicts and lower relationship quality.

Similarly, Pollitt, Robinson and Umberson, examined the association between gender role conformity and marital quality (2017). Their result clearly showed the way how norms affect heterosexual couples: both women and men who were more gender conforming (in physical appearance and in interests and
hobbies) reported less unfairness and inequality in their relationship (regardless of objective inequality) compared to more egalitarian-oriented respondents. Through the lower perception of unfairness, respondents in gender conforming relationships were more satisfied with their partnerships.

Some works also focused on how the outcome of the relationship is influenced by societal norms. In a comparative study between the U.S. and West Germany, results suggested that the traditional, specialization-based relationships were the least likely to end in a nation where norms and institutions support it (Cooke 2006). In these nations (West Germany in the paper), any departure from the male breadwinner, female caretaker roles (either by women earning relative more or men doing more housework) increased the risk of dissolution. Conversely, in the U.S. where egalitarian and individualistic norms were more widespread, a homogamous, equal arrangement was found to be most beneficial for stability.

Schwartz and Han noted that the often-measured instability-inducing effect of educational hypogamy might be on the decline (2014). While formerly, women’s higher relative education greatly increased marital instability, this effect diminished, eventually leading to the conclusion that hypergamy and hypogamy were no different, while homogamy emerged as the most stable form. According to the authors, this means that expectations of male status dominance have weakened, signing the change in social norms.

Finally, in a recent study, Theunis et al. examined whether the regional distribution of educationally hypogamous couples might affect how assortative mating is related to divorce in Belgium (2018). While general results showed that homogamy was the least unstable arrangement followed by hypogamy and hypergamy, their results indicated that not just the overall gender norms and expectations, but even the regional context matters. Hypogamous marriages were more likely to divorce than homogamous ones if the said region had a relatively low number of hypogamous marriages, reflecting the lower prevalence of gender-egalitarian norms. Opposed to this, if a region had a high proportion of hypogamous couples (and supposedly, more egalitarian attitudes), their dissolution risks was not different.
2.4. **Summary of the theories and previous results**

To conclude, the process of socioeconomic assortative mating is a rather complex phenomenon encompassing individual desires, opportunities and societal norms. In this chapter, I discussed the main theoretical approaches of assortative mating, with a focus on how the possible types of arrangements may affect the quality and stability of relationships.

Considering the prominent theories, the battle-lines are drawn between two ideas: either more traditional, socioeconomically hypergamous relationships are of higher quality and stability, or homogamous ones. To this date, I know of no line of thought in the relevant literature that accentuates socioeconomic hypogamy (partnerships in which women have an advantage over men) as the most beneficial arrangement for both partners. From all the discussed perspectives and results, the following points are worth noting for the current dissertation:

A. Socioeconomic assortative mating is the propensity of individuals to form partnerships non-randomly along attributes such as education, status, or occupation. It is the result of three complementary processes: an individual’s preferences, opportunities presented on the relationship market and societal norms.

B. Assortative mating has been linked with many sociological and demographical outcomes, one of which relationship quality and stability. The main question of this field of study is how socioeconomic homogamy, hypergamy or hypogamy affects the relationship. The most often employed theoretical approaches to the question can be divided into two groups: those which argue for hypergamy, and those in favour of homogamy.

C. Parsons and Becker argued for the formation of hypergamous relationships and their higher quality and stability compared to other arrangements. The former stated that a bio-socially determined gender-specific division of tasks is present in relationships (and individuals enter into a partnership to fulfil them), as men occupy instrumental (breadwinning) and women expressive (home-making and child-rearing) roles. As both partners are interdependent because they complement each other in these roles, the relationship is better and more stable in the absence of competition and role-overlap. The latter
approached the subject from a more economic standpoint: as individuals aim to maximize their gains, they enter relationships which allow them to specialize in certain tasks, increase their overall gains and acquire a better position compared to staying single. This maximization of goods and specialization fuelled interdependence holds a couple together and increases the partnership’s quality. Both Parsons and Becker view women’s increasing socioeconomic status and employment as detrimental: as it creates an overlap between gender-specific roles and diminishes interdependence, it lowers the quality of the partnership through conflicts and increases the risk of separation.

D. Theories favouring homogamy departed from the concepts of bio-social determination and maximization of gains, and focus on long-term interactive processes. The exchange and bargaining theory states that homogamous unions create symmetric bargaining positions, which facilitate the fair exchange of goods within a relationship, increasing its quality while decreasing its instability, which are incentives for individuals to seek out these partnerships. Equity theory similarly reaches this conclusion, although notes that the evaluation of “fair” exchange is subjective. Homophily theory posits that individuals have a propensity to associate with similar partners because reciprocity, solidarity and better communication are more probable in a homogamous union.

E. Some theories highlight that the role of time should be considered too. In this regard, the SVR theory and the winnowing theory emphasize that the importance of matching along an attribute changes as the relationship progresses towards a more mature state.

F. Empirical studies were mixed on the connection between assortative mating and relationship quality. While several works highlighted that women’s better relative position is associated with lower satisfaction and therefore hypergamy might be the most advantageous, some note that homogamy and equity in general can be more beneficial. Also, studies suggested that traditional and/or career-oriented individuals might be more sensitive to assortative mating’s effects.

G. Examinations of assortative mating as a determinant of relationship dissolution were more concordant. A large number of papers found
hypergamy as the most beneficial arrangement for relationship stability, while a minority of works found homogamous couples more stable in the long-term. Some results also suggest that mechanisms in marriages and cohabitations might be different, as cohabitations might be more equality-oriented.

H. The relationship market influences who someone ends up with, as the macrostructure of the society determines the probability of interactions. Most theories suggest that relationship quality and the risk of dissolution is dependent on whether someone encounters more and possibly better alternatives than their current partner.

I. Previous results clearly show that the relationship market influences mating patterns and relationship outcomes. Highly educated women are facing a shortage of at least equally educated men, and therefore, hypogamy is on the rise. Some results suggest that the homogamy of certain groups due to the abundance of available partners might contribute to societal closure and economic differences. Also, opportunities might play a role in the postponement of relationship formation, as highly-educated women might choose singlehood instead of marrying down, and men who face an abundance of good alternatives might postpone marriage. Scholars also note that men and women are more likely to be less satisfied and more prone to divorce if they face and interact with a large number of eligible alternatives.

J. Finally, through normative expectations based on the prevailing gender related norms, society influences relationships. If the individuals do not “do gender” and conform to prescribed societal rules, negative consequences might arise from the outside and inside as well. Although some theories claim that gender-related norms are changing, there is a debate whether a more equal normative structure will ever be reached, and if so, how soon.

K. While discerning the effect of societal norms from preference-based or opportunity-related mechanisms is difficult, studies highlighted that societal norms do play a part in relationships. Some general works showed that women’s increasing educational advantage is often related to a change towards more egalitarian attitudes in several nations, but this is not always the case. Women’s emerging educational advantage in traditional societies results in them postponing or forgoing marriages, as they cannot partner according to the normative expectations or are unable to manage
expectations from a career and from traditional gender roles at the same time. Scholars noted that egalitarian norms might put additional strain on women, reducing marital quality. Gender norms clearly affect perceived unfairness in the relationship: traditional women are less likely to view objective unfairness negatively while egalitarian ones are more attuned to it, resulting in a higher risk of conflicts. The normative context also plays a part in dissolutions, as hypogamous couples do not have a higher divorce risk in regions where hypogamy is prevalent.
3. **The Hungarian context**

Hungary has a unique demographic and sociological profile, which lays out the background for the primarily studied phenomena of the dissertation: relationship formation, maintenance and dissolution. Therefore, before progressing further towards the empirical analyses, the Hungarian context of relationships has to be outlined first. For this reason, the main objective of this chapter is to guide the formation of the hypotheses for the dissertation, and to provide a framework for understanding the possible findings of later analyses.

In light of the previously discussed theories and results, I explore three main contextual themes. First, I will look into partnership formation and dissolution in Hungary. Next, by using multiple peer-reviewed theoretical works and smaller scale survey results, I provide insights into the cultural aspects of relationship in Hungary, and more generally, how traditional or non-traditional the normative environment in Hungary is. Third, as women’s socioeconomic position and particularly their level of educational attainment is principally important for the dissertation, I will investigate how Hungarian women’s education, employment and income transformed in time. Finally, I will review previous results on assortative mating in Hungary.

3.1. **Marriages and divorces**

Starting with the crude indicators, figure 1 shows the number of marriages and divorces per 1,000 population. From the highest point in 1920, when more than thirteen marriages were established per 1,000 population, it fell to less than four by the beginning of the 2010’s. However, the desire to marry saw a noticeable growth in recent years, as the number of marriages rose to just under seven per 1,000 population by 2020. Divorces followed these changes naturally. Looking at the simple trend, it can be seen that from 1900, the number of divorces per 1,000 total population increased quite steadily, with a peak around the late 1980’s followed by a stagnation and a slow decline until the recent years in 2020.

While the crude rates of marriages and divorces are informative, more precise indices could potentially be more of use. In figure 2, the total first marriage rate (TFMR) of women showed a gradual decline since the sixties, but with a recent upturn. In 1960, all women were expected to marry by the age of 50, but
the same was true for only 39% of them in 2010-2011. By 2016-2019, marriage again became a life event expectable for the majority of women (65% in 2018 and 88% in 2019).

**Figure 1: Number of marriages and divorces per 1,000 total population, Hungary**

Regarding divorces, the total divorce rate (TDR) is much more telling than the crude data, as it indicates the proportion of marriages that are expected to end with a divorce if the observed period’s divorce rate would remain the same. In Hungary, the TDR more than doubled (from 0.18 to 0.46) between 1960 and 2010, and afterwards generally stayed the same with a decline until 2019 (0.38). This implies a radical change since the 1960’s: while previously, less than a fifth (and presumably, lower before that) of all marriages were expected to end with a divorce, nowadays (2019), around 40% of them are.

Source: Hungarian Central Statistical Office (KSH).
Figure 2: Total divorce rate and women's total first marriage rate, Hungary

Source: Hungarian Central Statistical Office (KSH).

Apart from the changing trends, marriages and divorces happen progressively later in the life course of Hungarians. According to table 1, since 1960, the mean age at first marriage steadily increased by more or less seven-eight years for both genders, from 25.8 to 32.8 for men, and 22.4 to 30.1 for women. Also, men and women divorced seven years older, and the average duration of these dissolved marriages rose by nearly four years between 1980 and 2019 (from 10.6 to 14.3 years).

To summarize, in Hungary, we can see a decline in marriages and the TFMR of women with an upturn since the early 2000’s and a rise in the number of divorces and the TDR, with both marriages and divorces happening increasingly later in life. Several works in the last decades attempted to provide explanations for these fluctuations.
Table 1: Mean age at first marriage, divorce, and average marital duration, Hungary (years)

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean age at first marriage</th>
<th>Mean age at divorce</th>
<th>Avg. yrs. married before divorce</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>1960</td>
<td>25.8</td>
<td>22.4</td>
<td>38.1</td>
</tr>
<tr>
<td>1970</td>
<td>24.5</td>
<td>21.6</td>
<td>37.2</td>
</tr>
<tr>
<td>1980</td>
<td>24.5</td>
<td>21.8</td>
<td>36.2</td>
</tr>
<tr>
<td>1990</td>
<td>24.7</td>
<td>22.0</td>
<td>37.2</td>
</tr>
<tr>
<td>2000</td>
<td>27.2</td>
<td>24.7</td>
<td>38.6</td>
</tr>
<tr>
<td>2010</td>
<td>31.4</td>
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<td>42.1</td>
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<tr>
<td>2011</td>
<td>31.8</td>
<td>29.1</td>
<td>42.6</td>
</tr>
<tr>
<td>2012</td>
<td>31.9</td>
<td>29.2</td>
<td>42.7</td>
</tr>
<tr>
<td>2013</td>
<td>32.3</td>
<td>29.5</td>
<td>43.1</td>
</tr>
<tr>
<td>2014</td>
<td>32.5</td>
<td>29.7</td>
<td>43.7</td>
</tr>
<tr>
<td>2015</td>
<td>32.4</td>
<td>29.6</td>
<td>44.2</td>
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<tr>
<td>2016</td>
<td>32.5</td>
<td>29.7</td>
<td>44.5</td>
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<td>2017</td>
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<tr>
<td>2018</td>
<td>32.8</td>
<td>30.1</td>
<td>45.1</td>
</tr>
<tr>
<td>2019</td>
<td>32.8</td>
<td>30.1</td>
<td>45.3</td>
</tr>
</tbody>
</table>

Source: Hungarian Central Statistical Office (KSH).

Regarding historical trends of marriages, the works of Csernákné provide some highly detailed insights (1991, 1996). In the pre-war period, Hungary was a country characterized by a very high number of marriages, which primarily happened at younger ages. This marital behaviour was disrupted by the world wars, as the mass enlistment and loss of men inhibited relationships from being formed. However later on, the post-war periods were characterized by visible upturns in marriage numbers, as couples held their postponed marriages.

After World War II, multiple spikes and downturns can be observed, all of which were related to economic, societal, and family policy changes (Csernákné 1996: 114). The upturn well into the mid-fifties can be explained by women’s increasing employment and opportunities, the forced elimination of unemployment by the communist regime, the growing importance of family life, and importantly, changes in family policy. The latter was crucial. In 1952, the minimum age of marriage where the partners needed their parents’ written consent was lowered from 24 years to 18 years, giving more power to the couple. As Csernákné notes, this resulted in additional marriages primarily by younger people (1996: 115).

The first great downturn in marriages started in the mid-fifties and reached its low point in 1962. This was related to two factors. First, marital behaviour normalized after the wars, and second, the sizable proportion of agrarian
population faced tremendous economic challenges as a result of forced collectivization (Csernákné 1996: 111-116). Family policies incentivizing childbearing paired with a slowly improving quality of life managed to counteract these changes, or at least, helped postponed marriages to be realized.

Another great increase in the number of marriages in Hungary was in the 1970’s, attributed to two main factors. Primarily, a large number of people born in the 1950’s entered into marriable age, as a strict policy in the 1950’s restricted abortion and caused a spike in the number of births (this generation is also called the Ratkó-children, after minister Anna Ratkó who was responsible for the ban). The secondary factor was the lowering of the legal age of marriage for women to 16, resulting in a sharp increase of marriages of young people and the lowest observed mean age at marriage for both genders (Csernákné 1996: 115-116). After this period, a general decline was visible in the number of marriages mostly attributed to the economic downturn of the country and a resulting difficulty in establishing families, bringing Hungary from a leading position in regards of marriages to a middle one (Csernákné 1996: 116). It should be noted that Hungary was not alone with this, as most European nations saw a general decline in marriage rates in this period (Csernákné 1991).

Turning to recent decades, the decline in marriages that started in the 1970’s was broken. Potential reasons for this upturn after 2010 was proposed by Murinkó and Rohr (2018) and Kapitány and Murinkó (2020) in their overview of the long-term marital trends of Hungary. First, couples finalized marriages that were postponed because of the economic recession of 2008. Second, albeit a less influential explanation is that the age at first marriage in certain lower socioeconomic groups decreased further, causing the previously visible negative trend to slow down. Also, Kapitány and Murinkó notes that the policy decisions by the Hungarian government in 2015, and later in 2019, strongly motivated couples to marry by providing substantial financial incentives (2020). Taking into consideration these viewpoints, the ups and downs of marital behaviour in Hungary mostly reflected periods of socioeconomic stability and family policy changes.
For divorces, the economic, social and policy changes presented for the fluctuations in marital behaviour hold in the case of divorces as well: the world wars and times of economic hardship were associated with higher dissolution rates of marriages. As a general notion, Tomka, and earlier, Tóth proposed that the forced, swift changes in the structure of Hungarian society through collectivization and industrialization by the communist regime, and later, the uncertainty of the regime change in the 1990’s created an environment that fostered higher divorce rates, which is also observable in many other countries of the eastern bloc (Tóth 1999; Tomka 2000). Lőcsei emphasizes that due to women entering the labour force in communist Hungary forcibly, their independence grew rapidly, and were more likely to leave unhappy marriages (Lőcsei 1978).

Additionally, the change in the relevant legal framework of divorce likewise influenced divorce decisions in multiple waves. As Tomka notes, Hungarian law made it easier to finalize divorce proceedings after 1907, when (1) it was no longer necessary to bring a divorce case in front of the higher court; after 1945, (2) no-fault divorces were allowed by a ministerial decree; (3) and after 1952, a divorce only needed a “proper and serious reason”, which effectively introduced no-fault divorces (2000). According to Csernákné, in this regard, Hungary was at the forefront in the liberalization of divorce proceedings in Europe (1991).

Opposed to these alleviations, some legal actions were aimed at reducing the divorce rates, such as the changes in family law after the divorce peak in 1987, which tried to keep “fixable” marriages working by mandatory marital conciliation hearings (Csernákné 1991; Földházi 2009). Although the stricter policies had an effect, it did nothing of importance in the long run (Csernákné 1991). Taking all the factors together, the Hungarian trend in the increasing number of divorces and TDR has been undisrupted from the 1950’s to the early 2010’s. However, since 2010, a decline was prominent (Makay and Szabó 2018). Again, as the new Hungarian family policy offers economic incentives to marry (Murinkó and Rorh 2018; Kapitány and Murinkó 2020), couples might be less inclined to divorce as to not loose these advantages.
Finally, there was also a marked change in divorces by marital duration. While for the 1980-1990’s, Csernákné explains that the increase in early divorces (less than 5 and less than 10 years into the marriage) was a driver behind the growing numbers (1991), for the 2010’s, Makay and Szabó note a sizeable and increasing portion of divorces (a third of all in 2016) after 20 years or later (2018). For both the growth in early and later divorces, Lőcsei offers a biological explanation (Lőcsei 1978). As individuals experience romance and sexuality earlier, they enter relationships and marriages without a developed personality, which later increases the risk of conflicts and dissolution. For older divorces, the increasing life expectancy may make divorcing in later life an option, as establishing a new long-term relationship (or remarriage) seems feasible. Makay and Szabó also attribute the growth of late divorces to unmarried cohabitations: more people cohabit before marrying as a trial marriage, and divorces previously happening in the first years or marriage may happen in these trial years, instead of after tying the knot (2018).

3.2. Cohabitations, living-apart-together and singles

Parallel to the above-described marriage and divorce processes, the increase in the number of non-married cohabiting unions and “living-apart together” (LAT) partnerships are also apparent in Hungary. Due to the spread of cohabitation in all age groups, the total percentage of Hungarians living in non-married cohabitations has risen from 3.2% to 13.9% for men, and from 2.9% to 12.2% (table 2) for women in the period between 1990 and 2016.

As Spéder notes, the spread of unmarried cohabitations in Hungary is a key factor of the changing demographic behaviour (2005): they challenge the dominance of marriages as the sole way of living together and create a context for births outside of marriages. From a socioeconomic viewpoint, data shows that cohabitations spread from the bottom and the top of the hierarchy as well (although for different reasons), with the middle groups displaying a slight lag behind these strata (Spéder 2005).
Cohabitations in Hungary can generally be considered as trial marriages, 
with a large portion transitioning to marriages in a few years (Spéder 2005). 
However, the time spent cohabiting before marrying is increasing, signalling 
the spread of the “alternative to marriage” type of cohabitations (Spéder 2005). 
As potential explanations, Spéder emphasizes several key points: (1) the increasing 
divorce rate countered the ideal of a “lifelong marriage” in society; (2) divorces 
helped the spread of post-divorce non-married living arrangements; (3) the 
intergenerational transition of marital behaviour, as offspring of divorced parents 
are less likely to marry; and corresponding to the notion of the second 
demographic transition, (4) the change towards more individualistic values 
(2005).

As in many countries, individuals in marriages and cohabitations show 
many differences. Using the microcensus data of 1984, Csernákné emphasizes 
that 60% of all women in cohabitations were previously married, often above the 
age of 30, with lower education and likely to be working in a blue-collar job (1991). 
A major difference compared to other nations’ cohabiting women was that 80% 
of Hungarian cohabiting women had at least one child, possibly from another 
marriage. Beginning with the 1990’s, a notable increase of young (under 29) 
cohabitators was also visible, and by 2001, nearly two-thirds of all individuals in 
unmarried cohabitations had no previous marriages - indicating a turn towards 
cohabitations as an alternative rather than a prelude to marriage (Csernákné 
1991; Spéder 2005; Pongráczné 2009, 2012; Vörös and Kovács 2013; Murinkó 
and Spéder 2015; Murinkó and Rohr 2018).

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Men</th>
<th></th>
<th></th>
<th></th>
<th>Women</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>0.7</td>
<td>1.2</td>
<td>1.2</td>
<td>1.4</td>
<td>1.9</td>
<td>3.7</td>
<td>3.5</td>
<td>4.5</td>
</tr>
<tr>
<td>20-24</td>
<td>2.6</td>
<td>8.5</td>
<td>8.8</td>
<td>10.7</td>
<td>3.7</td>
<td>13.7</td>
<td>16.9</td>
<td>19.9</td>
</tr>
<tr>
<td>25-29</td>
<td>3.9</td>
<td>14.2</td>
<td>19.6</td>
<td>22.6</td>
<td>4.1</td>
<td>14.6</td>
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<td>21.5</td>
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<td>8.6</td>
<td>16.7</td>
<td>21.3</td>
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<td>15.1</td>
<td>19.5</td>
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<td>45-49</td>
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<td>8.1</td>
<td>12.3</td>
<td>16.3</td>
<td>3.8</td>
<td>6.5</td>
<td>10.4</td>
<td>12.9</td>
</tr>
<tr>
<td>50-54</td>
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<td>7.1</td>
<td>10.4</td>
<td>12.5</td>
<td>3.2</td>
<td>5.7</td>
<td>8.5</td>
<td>10.3</td>
</tr>
<tr>
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<td>8.9</td>
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<td>4.2</td>
<td>6.3</td>
<td>7.7</td>
</tr>
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<td>60-64</td>
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<td>4.7</td>
<td>7.2</td>
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<td>3.1</td>
<td>4.5</td>
<td>5.6</td>
</tr>
<tr>
<td>65+</td>
<td>2.2</td>
<td>3.1</td>
<td>4.3</td>
<td>5.4</td>
<td>1.1</td>
<td>1.0</td>
<td>2.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>3.2</td>
<td>7.6</td>
<td>11.5</td>
<td>13.9</td>
<td>2.9</td>
<td>6.4</td>
<td>10.1</td>
<td>12.2</td>
</tr>
</tbody>
</table>

Source: Hungarian Central Statistical Office (KSH).

Table 2: Percentage of those in cohabitations by age-groups, Hungary
Compared to other forms of partnership, data is scarce on LAT-type relationships. Kapitány’s (2012) results showed that LAT couples appeared in visible numbers in the later years of the 2000’s: around six percent of all individuals aged 20-82 lived in a LAT-relationship around 2008-2009, mostly meaning persons in the beginning stages of a relationship and without children, with a minority who wants to maintain their independence and without plans to cohabit (Murinkó and Spéder 2015; Murinkó and Rohr 2018).

Apart from non-married unions, recent research focused on the case of singles as well. Utasi explains that in the early 20th century, singles were comprised of mostly men who had to take more time to accumulate the proper wealth for marriage or (to a smaller degree) a unmarried women considered to be too old to marry (Utasi 2004: 43-44). Towards the end of the 20th century, the composition of singles changed to mostly career-oriented, well-educated women who do not approach marriage as an economic necessity. Utasi’s research revealed that the main motivations behind staying single were career-orientation, caution towards marriages, bad previous experiences, parental divorces and passivity in general (Utasi 2004: 48-52). Recently, based on census data, Rövid emphasized that in 2011, 12% of the population could be categorized as single, with most of them being from the capital and more likely to have higher education (2018, 2020).

3.3. Societal norms and expectations
Assessing the attitudes, and more precisely, the cultural environment of relationships in a given country is an elaborate task which in itself could be a topic of a separate dissertation. Fortunately, a fair number of Hungarian scientific works - either empirical or theoretical - are concerned with the value orientation, norms and expectations of Hungarians. Supplementing the overview of these studies, I use newly released data by the European Values Study to demonstrate Hungary’s relative position in Europe (EVS 2021).
Figure 3: Opinions on women’s role and employment

![Graph showing opinions on women's role and employment over time across different waves of the European Values Study (EVS).]

Source: European Values Study.
Note: Data for Europe consist of nations which had respondents for Wave 2-5 of the European Values Study (Austria (N = 3,032 - 6,136), Bulgaria (N = 2,500 - 5,092), Czech Republic (N = 3,729 - 7,649), Estonia (N = 2,523 - 4,835), Finland (N = 2,172 - 3,959), France (N = 3,116 - 5,988), Germany (N = 4,111 - 9,718), Great Britain (N = 2,561 - 5,833), Hungary (N = 2,513 - 5,026), Iceland (N = 1,776 - 4,102), Italy (N = 2,751 - 7,814), Lithuania (N = 2,518 - 4,966), Netherlands (N = 2,557 - 5,978), Poland (N = 2,605 - 4,939), Portugal (N = 2,553 - 4,953), Romania (N = 2,635 - 5,351), Slovakia (N = 2,840 - 5,408), Slovenia (N = 2,372 - 4,482), Spain (N = 2,700 - 6,546) and Sweden (N = 2,202 - 4,443). Results are weighted based on the guidelines of the European Values Study (EVS 2020). Agree = agree and strongly agree.

Starting with the general value orientation of Hungarians, empirical studies tried to map the overall value structure of Hungarians on multiple occasions. Early results suggested that in the 1980’s and especially after the regime change, a pluralization of values started as traditional and non-traditional attitudes began to coexist (Füstös and Szakolczai 1994). In 1978, during the years of socialism, the values of “peace”, “nation” and “security” were found to be most dominant, which gradually weakened as the 1980’s approached. This weakening, as Füstös and Szakolczai note (1994), left a vacuum, with nothing coherent to fill the empty space left by the decades of ideological indoctrination. By 1983, prominent values were mostly centred around intellectual traits such as “sensible”, “logical” and “creative”, signalling the start of individualization and atomization. With the early
1990’s, a multi-faceted value structure emerged, with values such as “true love”, “family security”, “inner harmony”, “happiness”, “wisdom” and “financial well-being”.

Contrary to the early results which indicated a rich and varied value structure, later examinations revealed the continual importance of “peace” and “security” for Hungarians and a persistent traditional way of thinking (Füstös and Szakolczai 1999). This enduring traditionality was noted in a recent study by Tamás Keller as well (2009). While amongst younger and more educated persons, open-mindedness and rational thought were important, generally, Hungarians (still) mostly valued security and the avoidance of instability in their life. Keller elaborates that although Hungary had become more secularized and open, it is still very far from the west in regards of attitudes and norms despite its comparable level of economic development (2009). Keller concluded that Hungarians can be described as “closed” and “secularized”, with some tolerance towards non-traditional behaviours such as divorce.

Norms and expectations specific to relationships are harder to assess. As many works have emphasized, there are marked differences in gender norms between Eastern and Western Europe, and more precisely, between post-socialist and (continually) capitalist nations, as Eastern nations are generally more traditional. Based on this simple dichotomy, one may conclude that Hungary has conservative norms regarding gender roles and relationships as well, but this is not entirely valid. The problem is illustrated by Utasi, who comments that the “theory and praxis” in the case of marriages in Hungary are not always in line: many behave in a less conservative way (divorce, cohabit without marriage) while they simultaneously hold conservative opinions (1996). Similarly, Dupcsik and Tóth argues that while Hungary belongs to the more modern part of Europe in terms of behaviour, regarding attitudes, it is one of the most traditional nations (in relative and absolute terms as well) (2008). This is the key point that has to be emphasized when looking at norms and expectations related to relationships: there is a divide between belief and behaviour in Hungary.
Results from the EVS also demonstrate this peculiar duality. In some cases, Hungary seems close to the general European trends and sometimes even surpasses them in terms of non-traditionality (figure 3). Like most examined nations, the proportion of respondents believing that women want a home and children instead of a career declined substantially (76.2-52.1%). Similarly, Hungarians were less and less likely to believe that being a housewife is just as fulfilling as being employed for women (75.7-56.5%). Also, the group of respondents who agree that in the case of job scarcity, men should be prioritized shrunk down considerably (42.4-14.4%), with a recent upturn (22.8%) also seen in some other nations. The most interesting results come from opinions about income: above the general European trends, those who favour a dual-income
arrangement grew from 82.8% to 93.6%. This is supported by other results, as Pongráczné and S. Molnár (2011) showed that women’s paid work and financial contribution was increasingly seen as necessary by Hungarian respondents. Parallel to this, Murinkó found that Hungarians are also more likely to think that women’s higher relative income is detrimental to the marriage (2014). These results clearly indicate the presence of the practical necessities (women’s employment) and the holding of traditional norms (men has to earn relatively more).

Looking at childcare-related questions, results from the EVS show mostly traditional, although slightly changing opinions in Hungary. Well above the common European trend and most examined nations, an overwhelming majority of respondents thought that women (96.2-86.8%) and men (76-69%) need children in their life to be fulfilled. Also, most Hungarians (98.6-93.5%) held the opinion that children need a home with a father and mother as well. Only regarding working mothers’ effect on pre-school children can a more European-like trend be seen, as a visibly declining portion see mother’s employment as detrimental for young children (70.5-47.8%).

According to scholars, the dissonance between attitude and behaviour can be traced back to the post-war socialist regime. Pongráczné notes that while women entered the labour market in post-socialist countries earlier and in greater numbers - which could have induced a rise in egalitarianism - due to the forced and ideological nature of this change, a resistance via the holding of traditional, familistic gender attitudes formed (2005).

Dupcsik and Tóth emphasize that the embracement of familism in the socialist-era was in part intentional from the regime and partly an escape for the individuals (2008). After the second world war, from the traditional, Christian ideological elements (God, country and family), only the family survived the establishment of the communist dictatorship. While early communist ideologies viewed families as oppressive institutions, later on and especially in the Kádár-era (after 1956), the family was a tool to make individuals more concerned with their immediate surroundings and to reduce the probability of participating in a wider social or political movement. First, as families were viewed in a positive
light and the regime did not seep into family life, naturally, individuals retreated into their closer circles as a safe haven from the state. Second, compared to other nations of the eastern bloc, Hungarians could also obtain a higher quality of life by acquiring a modest amount of wealth, primarily through their families, as they could produce marketable goods via work outside of their main job, most often done with their close family members. Also, social policies favoured families when distributing certain benefits (Dupcsik and Tóth 2008). These processes led to the enduring importance of the traditional family for Hungarians, regardless of their actual practices.

Even after the regime change, there were no widespread alternatives to familism. Dupcsik and Tóth notes that this might be the because of a self-perpetuating political process (2008), as Hungarians largely embraced traditional attitudes regarding the families, even liberal political parties make no effort to challenge this as to not alienate potential voters. This is an additional factor behind the duality: without alternatives, the majority might only agree with traditional gender norms and expectations as “they are the only ones at hand” as attractive ideological alternatives are not present (Dupcsik and Tóth 2008).

Newer results on the topic also do not show a clear departure from familism. While Gregor posits that due to the economic crisis in the late 2000’s, the necessity of women’s contribution might have forced the spread of egalitarian attitudes (Gregor 2016), the subsequent political change towards the conservative, religious right in 2010 resulted in a turn towards the restoration of traditional gender roles, legitimizing the inequalities in paid and non-paid work between the genders (see Csányi 2019).

With regards to housework, corresponding to traditional gender norms, all relevant studies presented that primarily, women do all the household labour in Hungary while men are expected to be the main breadwinners (for example Pongráczné 2005; Blaskó 2005; Pongráczné and S. Molnár 2011; Makay and Spéder 2018). In her study, Blaskó showed that women’s perception of fairness (in dividing tasks) was related to their husband’s involvement in traditionally female tasks (2005). While women viewed their relationships as more equitable and less unfair if their partners made an effort in helping out in feminine tasks, an
objectively unfair sharing of household tasks did not result in elevated levels of unhappiness for women. This might be because women expected this unequal sharing due to the prevalence of traditional norms and expectations.

Finally, some recent results do suggest that expectations, particularly for men are changing in Hungary. Spéder notes that Hungarian men are beginning to face dual expectations (2011): in his study, a majority (72%) of respondents indicated that the main job of the men is to be an earner, and a not much smaller portion (65%) also believed that men should spend more time with their family than at work. Later, Makay and Spéder found that in 2016, 94 percent of all respondents between the ages of 20 and 44 agreed with the statement that the main role of men is to provide a living for their family, but 65% also said that men should prioritize family in favour of work in their lives (2018).
3.4. Women’s education, employment and income

As the theories of assortative mating generally emphasize the socioeconomic position of women, an examination of women’s education, employment and income forms the second element of the unique Hungarian context.

3.4.1. Education

**Figure 5: Educational attainment per census year, ages 15 or older**

Starting with education, figure 5 depicts the proportion of men and women (ages 15 or older) in a given educational category per census (and in the case of 2016, microcensus) year. Some trends are common for both genders: the proportion of men (60-22.4%) and women (72.7-30%) with elementary or lower education declined substantially, and secondary education became increasingly widespread (15.9-29.9% for men and 17.1-34.3% for women). Differences are visible when considering vocational and tertiary education. For men, vocational education retained its dominance throughout the years (16.7-28.7%), while it fell
behind other attainment categories despite the growing number of women with vocational education for women (6-13.9%). Lastly, the university educated saw an increase in numbers for both genders, and recently, a larger proportion of women (4.4-21.8%) held at least a BA level degree than men (7.3-18.9%).

**Figure 6: Educational attainment per census year, ages 25-34**

![Graph showing educational attainment per census year, ages 25-34]

Source: Hungarian Central Statistical Office (KSH).

Though census data on 15+ year olds is indicative, the surveyed population overlaps due to the closeness of the interview years. As a solution, figure 6 provides the educational attainment of Hungarians between the ages of 25 and 34 (dubbed as young adults).

The results show more distinct trends regarding vocational and tertiary education, but the general notion of the declining proportion of elementary educated individuals and the spread of secondary education still holds. For young adults, vocational educational followed an inverted U-shape trend, as after a small increase, their overall proportion halved for men (39.4-22.1%), and after a peak in 2001, returned to its 1980’s level for women (13.2-12.1%) by 2016. The
most important difference is in the case of the tertiary educated: although the proportion of young adult men with tertiary education more than doubled (from 10.7% to 25.9%), as highly educated women nearly quadrupled their proportion (10.3-38.4%), tertiary attainment became the most common level of education for women by 2016. Women’s advantage in tertiary education (which is in line with the European trends, see Vincent-Lancrin 2008, Varga 2017) is not just apparent in completed level of education, but in university applications and admittances too (figure 7). As data provided by the Hungarian online university application website (felvi.hu) shows, more than half of all students who applied and were admitted to any BA or higher-level course were female in every year between 2001 and 2020.

To summarize, the Hungarian trends of education show a departure from elementary or lower or vocational education towards secondary, and especially in the case of women, tertiary education. However, despite women’s increasing educational advantage, scholars noted that women are still in a disadvantaged position in higher academia. Pető explains that a sort of “invisible curriculum” funnels men and women into “masculine” and “feminine” field of study, as universities have a gendered reward structure (2018: 553). This practice led to a visible divide: the STEM fields are mostly occupied by men while the humanities are dominated by women (Lannert and Nagy 2019). As Paksi notes, women who enter (despite their disadvantages) into STEM courses are more likely to drop out party due to the masculine environment (2014). Also, a decrease in the number of female students is visible when entering into doctoral level studies, especially in the fields of economics, law, and the natural sciences (Lannert and Nagy 2019). These processes, as Lannert and Nagy points out, led to the fact that despite women’s generally higher level of education, the proportion of women in any scientific division is lower than 15% in the Hungarian Academy of Sciences (MTA) (2019).
Apart from university education creating gendered pathways and hindering women’s advancement, the persistent traditional norms regarding childbearing also disadvantage women in education. As they face the added difficulty of being the primary caretakers at home, they experience more severe work-life conflicts, a less even career progression, and a considerable handicap compared to men (Tardos and Paksi 2020). Schadt concludes that these difficulties for women in academia is also further made difficult by male superiors’ prioritization of other men when providing opportunities (2011).

3.4.2. Employment and income

Continuing with employment, figure 8 shows the percentage of the population employed in a given census year, with results showing marked changes since 1941. Early on, before the 1960’s, nearly two-thirds of all men were employed (67-64%), which started to decline, reaching a low point in 2001 (41.3%), with a
recent upturn to 52.1%. Corresponding to women’s (forced and necessitated) entry into the labour market, the proportion of women employed reached 40% in 1980 (from 24.1% in 1941). After that, the decline and subsequent improvement is visible for women too. Throughout the years, the considerable employment gap between the genders shrunk, but did not cease to exist, as it stabilized around 10% for the benefit of men. These trends are visible in the case of the working age population as well (defined as the ages of 15-64 by the OECD, shown in figure 9), although with a slightly larger (but also persistent) employment gap of 10-14%. Currently, data for 2020 (first quarter) shows that 77% of working-age men and 62.8% of working-age women are employed.

**Figure 8: Proportion of population employed by gender**

![Graph showing proportion of population employed by gender from 1941 to 2016](image)

Source: Hungarian Central Statistical Office (KSH).

In sum, women entered into the labour market in greater numbers, but a constant, visible difference in employment is present between the genders. Multiple factors can be considered as a source for changes in employment, which
include economic, social and political changes, the altering education structure of Hungary, and lastly, gender-based discrimination.

**Figure 9: Proportion of working age (15-64) population employed by gender**

Regarding economic and political changes, the decline in employment after the 1960’s can be attributed to aging and widespread retirement, and then to the economic recession of the 1980’s (Orgoványi 1997). The most transformative event regarding employment was the regime change in the 1990’s. As the changing economic structure and job market paired with the rapid privatization expelled around one million employees especially in the rural regions, the level of employment declined considerably (Orgoványi 1997; Halmos 2006). A sizeable portion of these newly unemployed persons never became employed again, which was especially true for women: during the early 1990’s, around two-thirds of unemployed women went to become inactive by retiring early or becoming a housewife (Frey 1997).
The recent economic crisis of 2008 also left its mark: around a hundred thousand jobs were lost and many were forced to reduce their work hours to part-time only (KSH 2010). However, this economic recession impacted women less negatively, as the most affected industries (car manufacturing, construction and finance) were dominated by men (Nagy and Fodor 2015).

After the recession of 2008, several social policies aimed at increasing employment. Amongst these, the expansion of workfare employment (corresponding to the idea of a work-based society) was crucial after 2011, leading to peak employment numbers (Vajda 2014; Kóti 2020). While it is intended as a transitory period, some social groups were found to be more likely to “stuck” in this workfare employment. Namely, as the number of flexible workplaces (for example with negotiable work hours) is low in Hungary, the older, those with health problems and women with smaller children are more likely to stay in this form of employment with lower wages, hindering the improvement of their social standing (see Koltai et al. 2018).

Vajda emphasizes that women can be more at risk of unemployment in times of economic uncertainty and transformations, such as the regime change or the crisis of 2008 (2014). This is due to several factors related to traditional attitudes and institutional shortcomings: women are expected to take of children and to counteract the severely lacking care system by being the caretakers of the sick and the elderly, and in turn, these added demands make them less flexible to economic changes and challenges in the workplace. Childbearing is particularly detrimental. According to Koltai and Vucskó, having a child reduces the probability of employment by 37% for women, but slightly increases it for men (2007).

The previously presented trends of educational attainment can also be linked with the topic of employment. In their study, Kertesi and Varga highlights that the educational expansion did not adequately involve the economically disadvantaged social strata, as the Hungarian educational system reproduces lower educated individuals with diminished chances of employment (2006). In an analysis done by Róbért, results revealed that the tertiary educated (whose proportion is increasing particularly for women) had a growing advantage in
finding a higher-level job (upper managerial) after attaining their education, compared to other educational levels (2002). His results also indicated that women are particularly affected by the time it takes to transition from education to work: if someone did not start to work 1-2 years after finishing his or her education, the chance of employment decreased every year. This may be due to childbearing’s negative effect or deciding on being a stay-at-home wife.

**Figure 10: Unadjusted gender pay gap of full-time employed men and women**

Source: Hungarian Central Statistical Office (KSH).
Note: The presented data is based on a revision using newer census data. Therefore, the cited values in other papers and presented data could differ to a certain degree.

Furthermore, discrimination may also play a part in the persistent employment gap between men and women. According to a recent study, women in Hungary often report discrimination related to employment (KSH 2012). Overall, 27.4% of women reported that their gender or their family status (having children) as a cause of discrimination, compared to 5.3% of men. Women in their prime childbearing and caring age (30-44) reported higher levels of discrimination than men, which was a result of increasing discrimination since the age of 20.
Also, 63% of unemployed women aged 50-64 reported that they faced discrimination when looking for a job, at dismissals, or when doing administrative work.

In addition to the differences in employment, there is a persistent gender pay gap present in Hungary. Figure 10 presents this gender pay gap, defined as the percentage difference between the gross mean income of full-time employed men and women. The pay gap shows a consistent, yet fluctuating female handicap. At its lowest point in the observed period, women earned 11% less than men (2005), while at its highest, their income was 17% lower on average (2012, 2016).

There are several components of the persistent pay gap. Borbély highlights that a larger proportion of women is employed in jobs without any skill requirement, which in turn decreases women’s average income (2011). Conversely for men, there are more men in leading, upper managerial positions, increasing their average. Just as in the case of employment, children also impact women differently. Borbély’s results showed that in every age-group, women with one child earn 12% less, and those with two earn 25% less than men with a similar number of kids (2011).

In addition to compositional and demographic differences, education, work experience and income affects the genders differently. While tertiary education is more common for women, its connection to a higher level of income is not as strong for them, as men gain more by having a tertiary degree (Vanicsek and Rigler 2007; Borbély 2011). Adamecz-Völgyi (2018) found that in the case of individuals employed in the same kind of occupation, type of company, with similar age and education, tertiary educated Hungarian women made 16% less than similarly educated men, while in other educational categories, the difference was lower, around 11%. This was also true in the case of workplace experience as well: two analyses found work experience does not pay off equally, as more experience are more likely to translate into higher income for men than for women (Galasi 2001; Vanicsek and Rigler 2007). Vanicsek and Rigler also notes that the disadvantage increases with the level of income (2007). This means that at lower percentiles, the pay gap is lower than in the higher income percentiles - notably,
the pay gap was found to be lower than 10% below the 10th percentile, and around 30% above the 90th percentile.

3.5. Research on assortative mating in Hungary

3.5.1. Trends of partner selection

In Hungary, the study of socioeconomic assortative mating patterns was mostly done by mobility and stratification researchers who were interested in how an individual's status changes when they establish long-term relationships. In this framework, homogamy can be understood as status maintenance, marrying-up as a status increase and marrying-down as a decrease. For this reason, while these works do not focus on the previously introduced terms such as “hypergamy” or “hypogamy”, they contain valuable information regarding who chooses whom.

Early studies of socioeconomic assortative mating come from two works of Vukovich, who examined the marital mobility of the three “fundamental” strata (namely intellectuals, agrarians and workers) between 1948-1960, and marital social mobility in the capital of Hungary, Budapest in 1959-1960 (1962a, 1962b). His results generally highlight the importance of the relationship market in mating. As the proportion of workers and intellectuals increased, they were more likely to marry homogamously, while simultaneously, the shrinking agrarian stratum begun to marry outwards more often as a result of the growing pool of better partnership opportunities. Vukovich also notes that in the capital - where the proportion of workers and intellectuals were higher - homogamy was more common for these groups (Vukovich 1962b). Decades later, the forced expansion of industry lead to the fact that in 1983, skilled workers were the most likely to be homogamous (Harcsa and Kulcsár 1986).

Detailed examinations also verified the common notion that heterogamous relationships dominantly form between close (in terms of socioeconomic position) partners. For instance, Andorka, Harcsa and Kulcsár found that heterogamous intellectual and managerial women often chose “other intellectual” men, and day labourers chose skilled/unskilled worker or agricultural men (1975). Similarly, Kulcsár revealed that the correlation of socioeconomic status is fairly strong in adjacent societal groups, only behind homogamous unions (1978).
Later results on socioeconomic assortative mating did not show any deviation from the pattern of homogamy paired with close heterogamy. According to the census of 2001, homogamy was highest amongst men in the industry sector, and women of the managerial and professional, industrial worker, unskilled worker and agricultural entrepreneur groups (Bukodi 2005: 227). Log-linear analyses, again, confirmed the enduring patterns of heterogamy - the closer the individuals' socioeconomic statuses were, the more likely they were to form a relationship. While there was no significant difference between cohabitations and marriages when looking at all relationships, in the case of younger couples (men younger than 35 years of age), cohabitations were found to be more likely to be homogamous (Bukodi 2005: 249-250, see table 11.1 and 11.2). By the census of 2011, a shift towards the homogamy of intellectuals was notable: Choosing someone from the same group was most notable amongst intellectual men and women for both genders, around a third of these marriages were made up of spouses with similar position (28% and 40%) (Lakatos 2015: 39-53).

Studies providing data on the focal point of the dissertation, educational assortative mating started to emerge in the early eighties, by the work of Harcsa and Kulcsár, and most importantly, Bukodi.

### Table 3: Percentage of educational homogamy by wife’s education at the time of marriage, 1983

<table>
<thead>
<tr>
<th>Husband</th>
<th>Wife</th>
<th>Grade 1-4.</th>
<th>Grade 5-7.</th>
<th>Element.</th>
<th>Vocational</th>
<th>High school</th>
<th>University</th>
<th>College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1-4.</td>
<td></td>
<td>34</td>
<td>11</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Grade 5-7.</td>
<td></td>
<td>40</td>
<td>59</td>
<td>14</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Element.</td>
<td></td>
<td>20</td>
<td>28</td>
<td>55</td>
<td>23</td>
<td>16</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Vocational</td>
<td></td>
<td>1</td>
<td>1</td>
<td>18</td>
<td>60</td>
<td>26</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>High sch.</td>
<td></td>
<td>2</td>
<td>1</td>
<td>10</td>
<td>14</td>
<td>39</td>
<td>21</td>
<td>38</td>
</tr>
<tr>
<td>University</td>
<td></td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>11</td>
<td>66</td>
<td>17</td>
</tr>
<tr>
<td>College</td>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>27</td>
</tr>
</tbody>
</table>

Source: Author's translation from Harcsa and Kulcsár 1986.
Note: Percentages are rounded by the original authors, possibly resulting in minor rounding errors.

In 1983, the Hungarian Central Statistical Office conducted the third wave of their representative mobility survey, which Harcsa and Kulcsár used to examine educational homogamy of married people (1986). More than half of married women who had 5-7. grade elementary (59%), completed elementary (55%), vocational (60%) or university (66%) level education were in a
homogamous marriage (table 3). Lower homogamy levels were found for the least educated (34%) or for those with high school diploma (39%) and college degrees (27%), which suggests that these educational groups were experiencing a relatively small relationship market and/or different marital behaviour. In addition, the patterns of heterogamy further supported previous results: as was with the earlier discussed socioeconomic groups/strata, most women chose spouses from the adjacent educational levels. All in all, the tendency for homogamy or close heterogamy was true for educational groups of 1983.

Extensive, peer-reviewed studies employing the “usual” theoretical frameworks of assortative mating were done after the turn of the century, mostly by Erzsébet Bukodi. In 2000, she examined the prevalence of educational homogamy and heterogamy in Hungary, using data from the previously mentioned mobility surveys of 1973 and 1983, in addition to a newer wave from 1992 and the 1999 Hungarian lifestyle and time use data (Bukodi 2000). To avoid potential confounding factors, Bukodi focused on new relationships by examining partnerships in which women were between 15 and 30 years old. While this is a sound methodological consideration, it does not take into account that the level of education changes during an individual’s life, as younger people, especially under the age of 20 may choose to continue their studies while being in a relationship. Therefore, the presented results in table 4 and 5 may be biased by an unknown amount.

Table 4: Percentage of educational homogamy by survey years

<table>
<thead>
<tr>
<th>Year</th>
<th>Homogamy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>69</td>
</tr>
<tr>
<td>1983</td>
<td>44</td>
</tr>
<tr>
<td>1992</td>
<td>46</td>
</tr>
<tr>
<td>1999</td>
<td>52</td>
</tr>
</tbody>
</table>

Source: Author’s translation from Bukodi 2000.
Note: Percentages are rounded by the original authors, possibly resulting in minor rounding errors.

Looking at the raw percentages, educational homogamy decreased greatly from 1973 to 1983, which turned into a slight increase towards the end of the examined period, forming a U-shape, which was already slightly visible in Harcsa and Kulcsár’s (1986) age-group examination (table 3). The crosstabulations of partners’ educational levels reveal a more detailed pattern (table 5).
Table 5: Educational homogamy by educational attainment, percentages

<table>
<thead>
<tr>
<th>Educational attainment</th>
<th>Women</th>
<th></th>
<th></th>
<th></th>
<th>Men</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary or lower</td>
<td>87</td>
<td>44</td>
<td>41</td>
<td>49</td>
<td>80</td>
<td>70</td>
<td>65</td>
<td>60</td>
</tr>
<tr>
<td>Vocational</td>
<td>17</td>
<td>58</td>
<td>62</td>
<td>67</td>
<td>21</td>
<td>30</td>
<td>35</td>
<td>46</td>
</tr>
<tr>
<td>High school</td>
<td>36</td>
<td>38</td>
<td>38</td>
<td>43</td>
<td>51</td>
<td>50</td>
<td>51</td>
<td>60</td>
</tr>
<tr>
<td>College</td>
<td>20</td>
<td>27</td>
<td>27</td>
<td>31</td>
<td>18</td>
<td>27</td>
<td>31</td>
<td>40</td>
</tr>
<tr>
<td>University</td>
<td>60</td>
<td>66</td>
<td>67</td>
<td>68</td>
<td>21</td>
<td>35</td>
<td>35</td>
<td>45</td>
</tr>
</tbody>
</table>

Source: Author’s translation from Bukodi 2000.
Note: Percentages are rounded by the original authors, possibly resulting in minor rounding errors.

Up until the 1999’s, one simple trend was visible for nearly all educational levels for both genders: homogamy increased for all categories except the lowest one (although there was a slight increase for women from 1992 to 1999). Women and men with vocational training saw a massive upwards change in homogamy - which corresponds to the results seen for more complex socioeconomic strata. In the case of women, there were nearly four times as many (67%) homogamous partnerships in 1999 than in 1973 (17%); for men, this was more than two times (46% compared to 21%). Individuals with a high school diploma saw the smallest, but still upwards change in homogamy, with more than half of the men in these groups choosing homogamously in the examined period. Finally, men with a college (18% to 40%) or a university (21% to 45%) degree saw a similarly high paced change as vocational ones did, while for women of these groups, the trend was still upwards but more modest. Also, more than two thirds of university educated women chose men from the same group consistently between 1973 and 1999.

According to Bukodi, while there was a change in the educational composition of the population possibly driving changes in educational assortative mating, detailed log-linear modelling suggested that education became a more and more important attribute for partner selection (2000). Also, the odds of distant heterogamous marriages were continuously very small in Hungary between 1973 and 1999: in 1999, a man with elementary or lower education was 2,000 times more likely to be homogamous than to marry a university educated woman (Bukodi 2000: 154, table 5.). Using a different methodology (event-history analysis), Bukodi later confirmed previous descriptive and log-linear results: single men and women mostly preferred their own educational groups, typically
amongst the lowest and highest educated, while heterogamy was higher in the middle groups (Bukodi 2002).

A comprehensive and detailed analysis done by Lőrincz examined the role of online dating markets in Hungary (2008). Using data from 12,203 survey respondents from two Hungarian dating sites, Lőrincz focused on detailed preferences to test whether similarity (homogamy) or trading (corresponding to specialization) is more dominant regarding age and level of education. Both men and women preferred age homogamy, although men disfavoured older partners to a greater degree than women, while in the case of younger partners, the opposite was true. Most relevant to the current dissertation, men and women were less likely to initiate if the potential partner had a lower education, while positive differences had no effect. From a comparative perspective, Lőrincz (2008, 2011) also showed that chat-based online dating sites foster educational heterogamy, while profile-based dating sites and in-person dating had shown no differences in the level of educational heterogamy.

Apart from the presented quantitative studies, other approaches also revealed important knowledge about the partner selection processes in Hungary. Karády examined religious and socioeconomic heterogamy in the 1930’s Budapest, showing that compared to other groups, Jewish men and women belonging to the “citizen” stratum were much less likely to marry heterogamously (with other groups moving between 30-90%, the latter one was 10-12%) (1993). Sólyom used qualitative methods to assess marital mobility in the town of Dunabogdány for the generations between 1920 and 1973 (2004). According to her results, apart from strict religion and ethnicity-based norms regarding marriage, status was also important, as one interviewee noted:

“Everyone at every time had to increase the [family’s] wealth. This was our duty, even if it meant the sacrifice of personal happiness. They said: wealth married wealth.”

(Sólyom 2004)

Generally, families forbade the formation of any socio-economically distant relationship, encouraging homogamy or marrying upwards as a method of status maintenance or upwards mobility, but this level of strictness weakened for later
generations. From another study, Őrszigethy remarks that mothers chose husbands for their daughters with an “economic eye” (1986). A common way for the spouses to circumvent the approval of close social circles and establish norm-breaking (hypogamous) partnerships was to escape and leave behind their social environment (Székely 2018: 56-63). Based on qualitative data, Molnár revealed that segregation and racism may also play a part in the level of homogamy of the lowest socioeconomic groups - as they were found to be often separated during education from their better situated peers, the chance of heterogamy may be forcefully kept low for these persons (2019: 149-150).

3.5.2. Relationship quality and divorce

Hungary specific data on the link between socioeconomic assortative mating and relationship quality is scarce, with some research done by Pilinszki. Using the third wave of the Hungarian Turning Points of the Life Course Panel Survey (Életünk fordulópontjai), he tested Becker’s specialization hypothesis (Pilinszki 2012). According to his results, women with a larger income than their partners think about separating more often, while the opposite was found to be true for men. In a later article, he returned to the question using a dyadic sample (N = 365), but failed to confirm earlier results (Pilinszki 2013). A year after, in his dissertation, Pilinszki used more refined methods to assess the determinants of separation thoughts and relationship quality, amongst them, employment, relative income and educational homogamy (2014). According to a nonrepresentative sample from 2012, for women, employment increased the probability of thinking about separating, while, again, the opposite was true for men. However, in this sample, relative income had an opposite effect: women with higher income relative to their partners were less likely to contemplate separation; while in the representative sample, women who earned as much as their husbands were the most likely to think about leaving the relationship.

In Hungarian divorce research, the relative socioeconomic status of partners is seldom studied to this date. Földházi used the first wave of the Hungarian Turning Points of the Life Course Panel Survey (Életünk fordulópontjai) from 2001 to examine the determinants of marital dissolution in the case of Hungarian women (2008). According to her results, compared to women with elementary or less education, those with vocational or secondary
level education were 36-37% more likely to divorce. An interesting result is that the increase in divorce risk were lower for tertiary educated women, with only and added 27% chance. These data suggest that Hungarian women with higher socioeconomic standing are more likely to end marriages, which is in line with the majority of results from other nations.

Newer results reinforce Földházi’s data: the Hungarian Central Statistical Office (KSH) reported that between 2000 and 2017, the proportion of women with university education doubled amongst divorced women (KSH 2019). Changes were apparent in relative education as well: while divorced individuals mostly come from homogamous partnership (as this is the most numerous category), the proportion of dissolved, educationally hypogamous marriages grew (from around 30% to 34-35%), while hypergamous ones shrunk to 1/5 of the proportion in 2000. As was in the case of many other nations, divorces were higher in more economically developed regions of Hungary, most notably, the capital and its county (Budapest and Pest County).

Other suggestive results came from the study of single individuals, most notably from the work of Irén Rövid (2018). According to her results (based on the Hungarian census of 2011), those with upper-level education were overrepresented in the population of singles, especially amongst women. This might reinforce the idea that women in better socioeconomic positions are less likely to commit (as they can sustain an acceptable lifestyle) and more inclined to leave unsatisfactory relationships.

3.6. Summary: the case of Hungary

In this chapter, my aim was to provide details on the Hungarian context of relationship formation, maintenance and dissolution, which lays the background for the formation of hypotheses and interpretation of results. Hungary proved to be a complex case, with elements of traditionality and progressivity mixing together. The following key points should be emphasized:

A. Demographic data suggest that Hungary is characterized by a high, but declining marriage and increasing divorce rate, however, the recent decade saw a marked upturn in marriages paired with diminishing divorce numbers. Similarly to many other nations, these events happen increasingly late in the
life course. Studies suggest that these trends follow economic, societal and family policy changes.

B. Non-married cohabitations are increasingly prevalent in Hungary. While most of cohabitations transform (or at least intend to) into marriages, studies show that its role as an alternative to rather than just a trial of marriage is becoming apparent. A unique characteristic of Hungary is that women in cohabitations are likely to have been married previously, and also have at least one child.

C. Alternatives to cohabiting partnerships such as living-apart-together (LAT) unions and staying single are also present. LAT relationships are mostly made up of younger individuals and those who want to maintain their independence, while singles are often highly educated, career-focused and economically independent women.

D. Results on the general value structure of Hungarians indicate the continual presence of traditional attitudes, but norms and expectations regarding relationships are difficult to assess, as there is a considerable divide between belief and behaviour. As such, Hungary is in many aspects traditional, while in others, progressive relative to other European nations. Studies linked this dissonance to the post-war communist regime, as the family became a haven from the oppressive system and a tool for achieving a better standard of living, which endured after the fall of communism. Newer results do not indicate a clear departure from familistic attitudes, although some studies emphasize the increasing expectation from men to participate in family life.

E. Hungary went through noticeable changes in its educational composition. Both genders saw the decrease of lower and the spread of secondary education, and as in many European nations, women outnumber men in applications and admittances to universities and attainment of tertiary education. Despite these trends, studies show a gendered division in academia, with men more present in the STEM filed, and women in the humanities. Women are also less likely to finish STEM courses, progress to and finish doctoral studies, and participate in the highest levels of academia partially due to the masculine environment and gender-based discrimination.

F. Although it lessened to a great degree during the observed period, an employment gap between the genders continues to exists, with a lesser proportion of women employment than men. Studies suggested that women
are more at risk of being unemployed during times of uncertainty, due to the added burden of childbearing and discrimination.

G. In tandem with the employment gap an enduring pay gap is also apparent, with women earning noticeably less than men. The gap is attributed to more women being more likely to be employed in unskilled jobs with lower wages, the lesser added benefit of work experience and education compared to men, and the added detrimental effect of children for women.

H. Studies on socioeconomic assortative mating imply a trend of homogamy, paired with heterogamy forming between partners in close social groups. Results also show that the effect of the relationship market is prominent in a regional and macrostructural sense as well. Models show that education is becoming increasingly more important in partner selection.
4. **Research questions and hypotheses**

So far, I have presented the main theoretical framework of assortative mating with previous results, and also examined the demographic and societal context of relationships in Hungary. I will form my main research questions and hypotheses for the empirical chapters corresponding to the stated aims in the introduction: to understand assortative mating patterns, to examine potential mechanisms which shape partner selection, and to highlight its possible effect on relationship quality and stability.

Driven by the ideas of Van Bavel’s theory of the educational mating squeeze (2012) and its effect on partner selection patterns, in the first set of analyses, I will aim to four explorative research questions:

1. *How does the patterns of educational assortative mating change across cohorts?*
2. *Is there a relation between women’s emerging educational advantage and the decline of hypergamy?*
3. *Did the association between the partners’ level of education grew stronger or weaker across cohorts?*
4. *Is Hungary similar to other European nations regarding mating patterns and the decline of hypergamy?*

Regarding union quality and stability, recall that Van Bavel (2012) proposed that the emergence of partnerships in which women have an advantage is important as hypogamy is related to a higher risk of dissolution and presumably, lower relationship quality. The specific theories and empirical results presented in chapter 2 however were divided on whether a male advantage (hypergamy), or equality (homogamy) is more beneficial. The conflicting Hungarian context of traditional attitudes paired with often non-traditional behaviour seen in chapter 3 also do not clearly indicate that hypergamy or homogamy should be highlighted as the supposed “best” arrangement. However, studies were nearly uniform in the fact that none hypothesised or found positive effects related to a female socioeconomic advantage in a relationship. Building on this, using hypogamy as a reference will allow the assessment of assortative mating’s proposed influence. I will mainly examine two hypotheses, which might
seem simplistic, they are the only ones which can be formulated confidently without contradicting a large part of the theoretical literature.

**Hypothesis 1:** In Hungary, compared to relationships in which women have an educational advantage (hypogamy), individuals in homogamous or hypergamous unions have higher relationship quality.

**Hypothesis 2:** In Hungary, compared to relationships in which women have an educational advantage (hypogamy), individuals in homogamous or hypergamous unions have a higher probability of staying with their partner.

Using hypogamy as a reference has an additional advantage, as the dissertation has the ability to contribute to the hypergamy versus homogamy discourse by offering the opportunity to examine whether in the context of Hungary, individuals in hypergamous or homogamous unions are more satisfied and/or stable compared to hypogamous ones. Also, separate analyses will be dedicated - when possible - to this issue.

Besides formulating the hypotheses, another topic should be discussed before moving on to the empirical chapters: the choice of relative level of education as the main variable. Apart from following Van Bavel’s paper (2012), empirical research on the subject also employed measures of occupation, prestige, income, work, status, which are likewise worth considering.

Occupation, prestige and income would offer the chance to assess highly detailed complex models, as it encompasses many different categories an individual may belong to. However, it has two main limitations: as they often change over time, the problem of when to assess them would prove difficult and highly problematic, especially for longitudinal analyses; and differentiating between who partners up and down by occupation alone would raise issues, as there is no clear hierarchy between several occupations. While data on the individual’s work status (being employed full-time, part-time or unemployed) is readily available, it provides insufficient details about the socioeconomic relations of the partners.

As a variable, the highest completed level of education offers a measurement that is sufficiently detailed, relatively time-fixed (above a certain
age) and readily available, as non-response for education-related questions is often low. Also, a uniform categorization of educational attainment is fairly easy to establish, facilitating multi-country comparisons. Finally, an additional argument for education is that it is often used in empirical works on assortative mating (see chapter 2's discussions on empirical results), because of its association with the individual’s economic outcomes and future prospects, making not only cross-country, but cross-study comparisons easier. A potential objection to this choice would be the fact that education is often related to not only socio-economic, but also cultural factors, as for example, education is linked with the consumption of cultural goods in Hungary (see Sági 2010). All in all, while no perfect measurement exists to examine the stated hypotheses, education offers the best possible approach with its usability, stability through time and comparability.
5. **Educational assortative mating in Hungary**

In this chapter of my dissertation, I will examine the trends of assortative mating in Hungary; assess whether the changes in relationship market is associated with the decline of hypergamy; look at the changing strength of association between partners’ level of education; and finally, compare Hungarian trends to other European countries. As Van Bavel’s ideas (2012) revolved around the decreasing level of hypergamy and increasing hypogamy stemming from an asymmetry in the partnering market, which in turn imply consequences regarding the patterns of relationship outcomes, the exploration of these question is crucial.

In advance, descriptive results show that Hungarians mainly choose similar partners regarding education, and also, hypergamy became less prevalent while the number of hypogamous partnerships increased. More detailed patterns also note the rarity of educationally distant couples and the increasing homogamy at the lower and upper end of the educational hierarchy. Statistical models also suggest that the association between partners’ educational attainment is growing stronger, signifying the potential rigidifying of the mating patterns in Hungary. Lastly, a European comparison also shows that the changes in assortative mating are associated with women’s emerging educational advantage not just in Hungary, but in many European nations.

For the analyses, two data sources have been used. The first of these is the (most recent) Hungarian census of 2011, provided by the Hungarian Central Statistical Office (KSH), which includes all individuals with information about their highest educational attainment, and a subsample of Hungarians living in a heterosexual cohabiting partnership (both married and non-married). For the wider European perspective, data from all nine (2002-2018) available waves of the European Social Survey (ESS) were used (European Social Survey 2020).

The ESS is a freely available representative cross-national survey conducted biennially since 2001, covering a wide range of permanent and rotating themes.

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8 This part of my dissertation is an extended version of my study published in Demographic Research (Erát 2021). I would like to thank the reviewers for their insights.

9 Hungary-specific analyses are also a part of the Hungarian research project titled „Patrimoniális tendenciák és társadalmi bezárulás: hogy gátolja a társadalmi mobilitást a ragadós padló és a ragadós plafon jelensége?”, supported by the National Research, Development and Innovation Office of Hungary under the project code K 135934.
which include basic social and demographic variables about an individual and his
or her partner.

From both samples, respondents under the age of 25 were excluded in
order to limit the number of persons who might substantially advance their
education in the future (for example, from a high school diploma to a university
degree), which could have potentially introduced considerable bias to the
presented results (table A1 in the appendix details sample sized for the ESS
data). In the other empirical chapters, less strict age boundaries will be used for
the Hungarian data, as the statistical models allow a certain degree of control
over these possible biases.

To map out the trends visible in the changes of assortative mating and the
relationship market, I employ a cohort perspective to focus on the discernible
patterns throughout consecutive, ten-year birth groups from 1920-1929 to 1980-
in the case of the census data, and 1930-1939 to 1980- for the ESS data. The
ESS sample is a result of merging all available waves to provide a sufficient
2016, 2018). Countries were omitted if they participated in less than four waves
to avoid errors caused by small sample sizes\(^{10}\). Also, the ESS sample has been
weighted based on the guidelines provided by ESS to accommodate for biases
due to population size, inclusion probability, sampling errors and non-response
errors (see European Social Survey 2014).

In order to measure the individual and relative level of completed
education, I collapsed the detailed educational categories that were available in
both samples. In the Hungarian census data, this resulted in a four-category
variable (those with completed elementary or lower, vocational, high school or
tertiary level education), while for the ESS sample, a more general three-category
variable was constructed based on the available ISCED (International Standard
Classification of Education) categorization. Those belonging into ISCED 0-2 were
coded as “primary”, those in ISCED 3-4 were designated as “secondary”, while
respondents with ISCED 5 or higher educational attainment were classified as

\(^{10}\) The omitted nations countries are: Albania, Croatia, Iceland, Kosovo, Latvia, Luxembourg,
Montenegro, Romania, Serbia and Turkey. Additionally, Israel was not included, as the analyses
only focus on Europe.
“tertiary”. Although a greater number of categories in both samples might have shed light on more subtle processes, these simple differentiations ensure proper distinction without overly fragmenting the available datasets. Creating this variable for the respondent’s partner also formed the basis for the classification of the couples into three groups: those with equal level of education (homogamous) and couples in which men (hypergamous) or women (hypogamous) had a higher educational attainment.

5.1. Trends of heterogamy and homogamy

Starting with a descriptive look at how the level of homogamy and heterogamy changed throughout the cohorts, first, I employed a simple scheme classifying couples as homogamous, heterogamous, hypogamous and finally, hypergamous. The results are presented in figure 11.

Figure 11: Heterogamy and homogamy in Hungary


Note: The dotted line represents a change in the educational classification scheme, as data was not available on the partner selection of men and women with a vocational degree in the case of the 1920-1929 and the 1930-1939 birth cohort.
The data shows that the proportion of partnerships with dissimilar levels of education grew considerably, from 29-30% in the earliest two cohorts to 48.5% in the youngest one, peaking in the cohort of 1950-1959, where around half of all relationships were heterogamous (49.3%). Accompanying the increase in heterogamy, the number of couples with equal education overall decreased from 70.8% to 51.5%. However, this decline was continuous only between the cohort of 1920-1929 and 1950-1959, and since, homogamy rose slowly but steadily.

While the general changes suggest a state of equilibrium in the number of similar and dissimilar couples, heterogamous couples underwent marked changes. Before 1950-1959, relationships in which men had an advantage were more numerous (23.5-26.5%) than hypogamous ones (5.7-20.5%), however, the steady decline of hypergamy and the rise of female-led couples resulted in hypogamous partnerships gaining a considerable lead in the youngest cohort (33.8% versus 14.7%). Therefore, educational assortative mating in Hungary shifted from a highly homogamous and hypergamous pattern to one defined by homogamy and hypogamy.

Table 6: Composition of homogamous relationships, percentages

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Elementary or lower</th>
<th>Vocational</th>
<th>Secondary</th>
<th>Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920-1929</td>
<td>81.8</td>
<td>-</td>
<td>8.6</td>
<td>9.5</td>
</tr>
<tr>
<td>1930-1939</td>
<td>77.5</td>
<td>-</td>
<td>12.5</td>
<td>10.0</td>
</tr>
<tr>
<td>1940-1949</td>
<td>47.0</td>
<td>9.8</td>
<td>25.2</td>
<td>18.1</td>
</tr>
<tr>
<td>1950-1959</td>
<td>23.8</td>
<td>26.9</td>
<td>28.1</td>
<td>21.3</td>
</tr>
<tr>
<td>1960-1969</td>
<td>16.7</td>
<td>31.6</td>
<td>27.2</td>
<td>24.5</td>
</tr>
<tr>
<td>1970-1979</td>
<td>14.2</td>
<td>27.7</td>
<td>26.8</td>
<td>31.3</td>
</tr>
<tr>
<td>1980-1989</td>
<td>19.7</td>
<td>19.2</td>
<td>29.5</td>
<td>31.6</td>
</tr>
</tbody>
</table>


Note: Data was not available on the partner selection of men and women with a vocational degree in the case of the 1920-1929 and the 1930-1939 birth cohort.

Another layer of the changing mating patterns is how the composition of each arrangement group altered in time. Looking at homogamous couples (table 6), an overwhelming majority (81.8%) in the oldest cohorts were comprised of two individuals with an elementary or lower education. Later, their proportion shrunk considerably to a low point of 14.2%, but alarmingly, saw an increase in the youngest cohort to 19.7%. Homogamous vocational educated couples saw a reverse U-shaped change, with a rapid increase between 1940-1949 and 1960-1969, where they were the most common amongst partners with similar education (31.6%), but a decline into the least common subgroup in the youngest
Two subgroups increased their proportion continuously: compared to 1920-1929, couples where both partners have a secondary education nearly quadrupled their size by the youngest cohort (8.6-29.5%); and tertiary educated homogamous partnerships increased similarly from 9.5% to 31.6%, making them the most common amongst the homogamous arrangement.

Regarding hypergamous couples (table 7), two overall trends should be noted. First, distant hypergamy (couples where the partners are not from adjacent educational categories) declined visibly, as elementary or lower educated women became less likely to partner with secondary (42-7.8%) or tertiary educated men (23.2-0.7%), and women from the vocational group rarely paired with tertiary men to begin (2.2-2.9%). Second, while the proportion of elementary or lower -vocational (35.5-33.7%) and the secondary - tertiary (34.7-30.4%) educated couples stayed relatively stable, vocational - secondary partnerships became prominent as well by the three youngest cohorts (9.7-24.4%).

**Table 7: Composition of hypergamous relationships (Women - Men), percentages**

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Elementary or lower - Vocational</th>
<th>Elementary or lower - Secondary</th>
<th>Elementary or lower - Tertiary</th>
<th>Vocational - Secondary</th>
<th>Vocational - Tertiary</th>
<th>Secondary - Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920-1929</td>
<td>-</td>
<td>42.0</td>
<td>23.2</td>
<td>-</td>
<td>-</td>
<td>34.7</td>
</tr>
<tr>
<td>1930-1939</td>
<td>-</td>
<td>42.9</td>
<td>15.5</td>
<td>-</td>
<td>-</td>
<td>41.6</td>
</tr>
<tr>
<td>1940-1949</td>
<td>35.5</td>
<td>17.8</td>
<td>4.0</td>
<td>9.7</td>
<td>2.2</td>
<td>30.7</td>
</tr>
<tr>
<td>1950-1959</td>
<td>49.4</td>
<td>11.1</td>
<td>1.7</td>
<td>14.2</td>
<td>2.5</td>
<td>21.1</td>
</tr>
<tr>
<td>1960-1969</td>
<td>40.4</td>
<td>7.4</td>
<td>0.9</td>
<td>23.7</td>
<td>3.6</td>
<td>24.0</td>
</tr>
<tr>
<td>1970-1979</td>
<td>32.0</td>
<td>6.0</td>
<td>0.7</td>
<td>27.1</td>
<td>4.1</td>
<td>30.1</td>
</tr>
<tr>
<td>1980-</td>
<td>33.7</td>
<td>7.8</td>
<td>0.7</td>
<td>24.4</td>
<td>2.9</td>
<td>30.4</td>
</tr>
</tbody>
</table>


Note: Data was not available on the partner selection of men and women with a vocational degree in the case of the 1920-1929 and the 1930-1939 birth cohort.

The general notion of more distant partnerships becoming rarer in a category applies to hypogamous relationships too (table 8). Secondary - elementary or lower (67-8.4%) and tertiary - elementary or lower (9.6-1.3%) couples became rarer in younger cohorts, while tertiary - vocational relationships seem to be an exception from this trend (4.2-11.4%). The most dominant forms of hypogamy were couples where the female has a secondary and her partner has a vocational degree (30.7-38.9%), and where highly educated women partner with secondary educated men (23.4%-29.4%), while the other “near” group (vocational - elementary or lower) became less prevalent (20.6-10.6%).
Table 8: Composition of hypogamous relationships (Women - Men), percentages

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Vocational - Elementary or lower</th>
<th>Secondary - Elementary or lower</th>
<th>Secondary - Vocational</th>
<th>Tertiary - Elementary or lower</th>
<th>Tertiary - Vocational</th>
<th>Tertiary - Secondary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920-1929</td>
<td>-</td>
<td>67.0</td>
<td>-</td>
<td>9.6</td>
<td>-</td>
<td>23.4</td>
</tr>
<tr>
<td>1930-1939</td>
<td>-</td>
<td>76.8</td>
<td>-</td>
<td>7.5</td>
<td>-</td>
<td>15.7</td>
</tr>
<tr>
<td>1940-1949</td>
<td>20.6</td>
<td>25.6</td>
<td>30.7</td>
<td>3.0</td>
<td>4.2</td>
<td>15.8</td>
</tr>
<tr>
<td>1950-1959</td>
<td>12.4</td>
<td>9.1</td>
<td>49.6</td>
<td>1.3</td>
<td>9.2</td>
<td>18.5</td>
</tr>
<tr>
<td>1960-1969</td>
<td>10.4</td>
<td>6.0</td>
<td>49.1</td>
<td>0.9</td>
<td>12.2</td>
<td>21.3</td>
</tr>
<tr>
<td>1970-1979</td>
<td>10.5</td>
<td>6.2</td>
<td>43.9</td>
<td>1.0</td>
<td>12.9</td>
<td>25.4</td>
</tr>
<tr>
<td>1980-</td>
<td>10.6</td>
<td>8.4</td>
<td>38.9</td>
<td>1.3</td>
<td>11.4</td>
<td>29.4</td>
</tr>
</tbody>
</table>

Note: Data was not available on the partner selection of men and women with a vocational degree in the case of the 1920-1929 and the 1930-1939 birth cohort.

Based on these descriptive results, it can be said that in Hungary, individuals mostly form relationships with similarly educated partners followed by women partnering down, while the previously prevalent phenomenon of hypergamy gradually declined. Also, heterogamous partnerships generally involve partners from adjacent educational groups, with more distant partnering becoming increasingly rare - confirming previous results (Bukodi 2003). A potential process of societal closure was also visible, as homogamy is increasing at the lower and upper end of the educational hierarchy.

According to Van Bavel’s theory (2012), the outlined patterns of educational assortative mating are not independent of the varying composition of the relationship market. While in an earlier chapter (3.4.1.), I briefly discussed the changes in the educational composition of Hungarian men and women, I will now reiterate the key points from the introduced cohort perspective and turn towards answering the second explorative question of how women’s educational advantage is related to the decline of hypergamy.

Unsurprisingly, the results are very similar to the ones seen in chapter 3.4.1, with dissimilarities attributable to the different time perspective (figure 12). The proportion of elementary or lower educated men (65.1-15.1%) and women (85.8-12.1%) declined greatly, and vocational education again shows the distinctive inverted U-shaped trend, with both genders peaking at 1950-1959 (42.2% for men) and 1960-1969 (23.6% for women), returning to near 1940-1949 levels by the youngest cohort.
While vocational education involved more men, secondary education became prominent for both genders. Throughout the cohorts, secondary educated men (16.3-37.1%) and women (9.5-37.4%) grew into the most numerous groups in the cohort of 1980 and above. Lastly, a great difference is visible in the case of tertiary education, as the proportion of men with at least a BA degree remained relatively stable (18.6-21.5%), while women became particularly involved in university education, which increased their proportion sevenfold (4.7-35.4%).

Figure 12: Educational attainment per cohorts

Note: Data was not available on the partner selection of men and women with a vocational degree in the case of the 1920-1929 and the 1930-1939 birth cohort.

It is easy to see how these changes in the relationship market are related to assortative mating patterns. As men and women move towards secondary and tertiary education, elementary or lower educated persons are devalued as partners because they face a market where most individuals have higher relative resources, while simultaneously allowing the upper-levels to partner amongst
themselves. This is reflected in the previously detailed trends: homogamy increased amongst the lowest and highest educated, and distant partnerships became rare. The asymmetry in the case of tertiary education also shows its effect. Tertiary educated men, facing an abundance of similarly educated women, can manifest their homogamic tendencies easier, while women more simply exhaust the supply of highly educated men, turning to the nearest available group of men with secondary education.

The above-mentioned examples are specific manifestations of Van Bavel’s original thoughts of how the educational mating squeeze alters partner selection (2012). To assess the more general notion that hypergamy is on the decline as a result of women’s emerging educational advantage, I simplified the complex data presented in the previous figures and tables into two indices. The first of these indicators, the H-index shows the prevalence of hypergamy, simply defined as

\[ H = A - B \tag{1} \]

where \( A \) notes the proportion of hypergamous and \( B \) the proportion of hypogamous couples in a given cohort. If the H-index is lower than 0, it means that hypogamous couples outnumber hypergamous ones amongst non-homogamous couples. The second called the index of female educational advantage (also called the F-index, introduced by Esteve, García-Román and Permanyer 2012) is calculated as

\[
F_{\text{census}} = \frac{\frac{p_f^4(p_m^4 + p_m^5 + p_m^3) + p_f^3(p_h^4 + p_h^5) + p_f^2p_h^4}{1 - \frac{p_f^4p_m^4 + p_f^3p_m^5 + p_f^2p_m^3 + p_f^1p_m^1}{p_f^4 + p_f^3 + p_f^2 + p_f^1}}}{p_f^4 + p_m^4 + p_f^3 + p_m^3}
\]

and

\[
F_{\text{ESS}} = \frac{p_f^3(p_m^4 + p_m^2) + p_f^2p_m^1}{1 - \frac{p_f^4p_m^4 + p_f^3p_m^2 + p_f^2p_m^1 + p_f^1p_m^1}{p_f^4 + p_m^4 + p_f^3 + p_m^3}}
\tag{2}
\]

where \( p_f^e \) and \( p_m^e \) note the proportion of women (f) and men (m) in educational category \( e = 1, \ldots, 4 \) for four, or \( e = 1, \ldots, 3 \) for three categories. This index represents the probability that from a randomly chosen male and female in a cohort, the latter has a higher level of education - with 0.5 indicating an equal probability. It should be emphasized that the F-index is calculated for all respondents and not only for those who are in a partnership to properly reflect relationship market conditions.
The substantial change in the educational attainment of men and women, and therefore the relationship market is more apparent when looking at the index of female educational advantage (F-index) in figure 13. As the F-index takes into consideration all educational levels, it simply shows the probability that from a randomly chosen men and women of a cohort, the latter has the higher level of education. In the oldest cohort, the value of F was 0.24 (signalling a substantial male advantage), but it steadily increased until reaching 0.63 in the youngest cohort. This implies, taking all levels of education into consideration, women overtook men in terms of education markedly without signs of slowing down. The second, H-index displays the difference in the proportion of hypergamous and hypogamous couples in a given cohort, shedding light on the previously seen spread of hypogamy. In the cohort of 1920-1929, there were 17.8% more
hypergamous couples, which through a continuous decrease, fell to the opposite end (-19%).

While the descriptive data presents an evident association, to formally show the relation between women’s educational advantage and the decline of hypergamy, figure 14 visualizes the previously presented values of the F-index and the H-index on a scatterplot. A linear trend line and simple Pearson’s correlation statistics indicated a strong, significant linear negative association between the two ($r = -0.97$, C.I.: -0.99 - -0.78, $p < 0.001$).

**Figure 14: Association of the F-index and H-index in Hungary**


Note: Data was not available on the partner selection of men and women with a vocational degree in the case of the 1920-1929 and the 1930-1939 birth cohort. The bar indicates the 95% confidence interval.

But what does this relationship imply? To answer the question posed earlier, women’s increasing educational advantage is associated with a decline in educational hypergamy, confirming Van Bavel’s idea of the role women’s education have in the transformation of mating patterns (2012). The strength of
the association hints at the fact there was no apparent resistance to the structural constraints imposed by the relationship market either from individuals (through preferences) or the society itself (which was seen in the case of China for example, see Qian and Qian 2014), which would have been a realistic explanation if the two indices were not as strongly related as presented here.

5.2. Changing association

Verifying the ideas of the education-specific mating squeeze (Van Bavel 2012), in my empirical exploration of the changing Hungarian mating patterns, so far, I found that Hungary is becoming a country dominated by homogamy and hypogamy, relationships are mainly established between adjacent groups, and women’s increasing educational attainment is related to the decline of hypergamous unions.

The last explorative question left unanswered is whether the association between the partners’ educational attainment is growing stronger or weaker. A strengthening association implies that the previously presented mating patterns are becoming more set in place and that the formation of relationships is becoming less random, while a weakening one suggests increasing unpredictability. Using data from the aforementioned 2011 Hungarian census, I will examine this question using log-linear and log-multiplicative models.

Log-linear models are generalized linear models for count data, used to model cell counts in contingency tables (Agresti 2019: 193-195). These models are commonly used in the study of social mobility, as they offer an opportunity to test assumptions net of the effect of marginal distributions - in our case, the changing relationship market. In the analyses, I will focus on a three-way table which classifies respondents based on level of education, partner’s level of education, and birth cohort, allowing the testing of certain independence and association patterns (Agresti 2019: 197). This table is defined as

\[ i \times j \times c(3) \]

Where \( i \) is the education of the respondent, \( j \) is the education of his or her partner, and \( c \) indicates the birth cohort. In this three-way table, \( n_{ijc} \) is the number of individuals in \( c \) cohort, where the respondent belongs to group \( i \), and their
partner to group \(j\). Following Bukodi (2004), I will fit four models corresponding to four supposed association patterns. The first of these is defined as

\[
\log(\mu_{ijc}) = \lambda + \lambda_i^R + \lambda_j^P + \lambda_c^C \quad (4)
\]

Where \(\mu_{ijc}\) is the expected number of observations in a given cell of the three-way table, \(\lambda\) is the overall effect, and \(\lambda_i^R\), \(\lambda_j^P\), \(\lambda_c^C\) are the main effects the respondent’s education \((R)\), the partner’s education \((P)\), and the cohort’s \((C)\). As there is no interaction between any main effect, this model (also called the total independence model) suggests that there is no association between the partners’ level of education, and/or the birth cohort.

The second, conditional independence model presumes that there is an association between the respondent’s education and cohort, and their partner’s education and cohort, but no association between the respondent and partner’s education. It is expressed as

\[
\log(\mu_{ijc}) = \lambda + \lambda_i^R + \lambda_j^P + \lambda_c^C + \lambda_{ic}^{RC} + \lambda_{jc}^{PC} \quad (5)
\]

Where \(\lambda_{ic}^{RC}\) is the interaction of the respondent’s level of education and cohort, and \(\lambda_{jc}^{PC}\) is the interaction between the partner’s level of education and cohort membership. If the conditional independence model would be the best fitting, it would imply that any observed change is due to the cohort-specific educational distributions and not because of the association between partners.

Moving on, the third fitted model, commonly known as constant social fluidity model (CNSF, see Erikson and Goldthorpe 1992) is

\[
\log(\mu_{ijc}) = \lambda + \lambda_i^R + \lambda_j^P + \lambda_c^C + \lambda_{ic}^{RC} + \lambda_{jc}^{PC} + \lambda_{ij}^{RP} \quad (6)
\]

Compared to (5), (6) contains an additional parameter \(\lambda_{ij}^{RP}\), representing the association between the respondent’s and his or her partner’s educational level, but it presumes that the strength of this connection does not vary by cohorts. Finally, the fourth fitted model is the so-called unidiff, or log-multiplicative layer effect model (LMLEM) proposed by Xie (1992) and Erikson and Goldthorpe (1992). This model is defined as

\[
\log(\mu_{ijc}) = \lambda + \lambda_i^R + \lambda_j^P + \lambda_c^C + \lambda_{ic}^{RC} + \lambda_{jc}^{PC} + \beta_c\psi_{ij} \quad (7)
\]
where the newly introduced $\psi_{ij}$ parameter corresponds to the association between the respondent’s and partner’s education independent of cohort membership, while $\beta_c$ represent the varying strength of this association by cohorts. The interpretation of the unidiff/LMLEM model focuses on the $\beta_c$ parameter: setting the first cohort as a reference group signified by 1, values under 1 represent a weakening, while values above 1 imply a strengthening association.

To identify the best fitting model from (4) to (7), I will compare them based on the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC) and the dissimilarity-index (D). The AIC and BIC is calculated as

$$AIC = -2 \log(L) + 2k; \quad BIC = G^2 - df \times \log(n)$$

with $L$ indicating the likelihood statistic, $k$ the number of parameters, $G^2$ the likelihood-ratio statistic, $df$ the degrees of freedom, and $n$ the total number of observations. Although the BIC and AIC are commonly used as a tool for model comparison, the dissimilarity-index represents a more practical approach of model fit. With a value between 0 and 1, the index “represents the proportion of sample cases that must move to different cells for the model to achieve a perfect fit” (Agresti 2019: 206-207). It is calculated simply as

$$D = \sum |n_i - \mu_i| / 2n$$

Where $n_i$ is the observed cell counts, $\mu_i$ is the model’s fitted counts, and $n$ is the total number of observations.

Recall that each of the four fitted models corresponds to a supposed pattern of association: total independence, where there is no relationship between partners’ education and birth cohort; conditional independence, where the respondent’s and partner’s education are not related but they are associated with the birth cohort; constant social fluidity, where partners’ education is related but the strength of association is not different by cohorts; and finally, the unidiff/LMLEM model where the association is implied to change across cohorts.

A potential factor that could bias the results is the unavailability of data on vocational educated individuals in the oldest two cohorts. While the previous
methods (acknowledging the shortcoming) could handle this missing information, log-linear and log-multiplicative analyses are especially sensitive to empty cells, which can result in biased models. To remedy this, I will fit models based on the original educational categorization omitting the two oldest cohorts, and separate models using a simplified (merging vocational educated persons with the secondary educated) categorization scheme which includes all birth cohorts.

Table 9: Fit statistics of the log-linear and log-multiplicative models, 1940-1949 to 1980-

<table>
<thead>
<tr>
<th>Model</th>
<th>Deviance</th>
<th>d.f.</th>
<th>AIC</th>
<th>BIC</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total independence</td>
<td>1,111,216</td>
<td>69</td>
<td>1,112,140</td>
<td>1,112,166</td>
<td>0.293</td>
</tr>
<tr>
<td>Conditional independence</td>
<td>947,264</td>
<td>45</td>
<td>948,236</td>
<td>948,319</td>
<td>0.262</td>
</tr>
<tr>
<td>Constant social fluidity</td>
<td>11,357</td>
<td>36</td>
<td>12,347</td>
<td>12,451.5</td>
<td>0.023</td>
</tr>
<tr>
<td>Unidiff/LMLEM</td>
<td>5,839</td>
<td>32</td>
<td>5,775</td>
<td>5,376</td>
<td>0.019</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total independence</td>
<td>1,249,125</td>
<td>69</td>
<td>1,250,054</td>
<td>1,250,080</td>
<td>0.303</td>
</tr>
<tr>
<td>Conditional independence</td>
<td>964,746</td>
<td>45</td>
<td>965,722</td>
<td>965,805.5</td>
<td>0.262</td>
</tr>
<tr>
<td>Constant social fluidity</td>
<td>12,486</td>
<td>36</td>
<td>13,481</td>
<td>13,585.4</td>
<td>0.024</td>
</tr>
<tr>
<td>Unidiff/LMLEM</td>
<td>6,232</td>
<td>32</td>
<td>6,168.6</td>
<td>5,768.8</td>
<td>0.019</td>
</tr>
</tbody>
</table>

Note: Models only fitted from the cohort of 1940-1949 to 1980-

Table 10: Fit statistics of the log-linear and log-multiplicative models, simplified categorization scheme

<table>
<thead>
<tr>
<th>Model</th>
<th>Deviance</th>
<th>d.f.</th>
<th>AIC</th>
<th>BIC</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total independence</td>
<td>1,347,316</td>
<td>52</td>
<td>1,348,046</td>
<td>1,348,069</td>
<td>0.288</td>
</tr>
<tr>
<td>Conditional independence</td>
<td>818,436</td>
<td>28</td>
<td>819,214</td>
<td>819,288.8</td>
<td>0.229</td>
</tr>
<tr>
<td>Constant social fluidity</td>
<td>12,833</td>
<td>24</td>
<td>13,619</td>
<td>13,702.7</td>
<td>0.023</td>
</tr>
<tr>
<td>Unidiff/LMLEM</td>
<td>3,959</td>
<td>18</td>
<td>3,923.2</td>
<td>3,696.8</td>
<td>0.013</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total independence</td>
<td>1,322,050</td>
<td>52</td>
<td>1,322,769</td>
<td>1,322,793</td>
<td>0.295</td>
</tr>
<tr>
<td>Conditional independence</td>
<td>801,482</td>
<td>28</td>
<td>802,249</td>
<td>802,324</td>
<td>0.229</td>
</tr>
<tr>
<td>Constant social fluidity</td>
<td>10,234</td>
<td>24</td>
<td>11,010</td>
<td>11,093.2</td>
<td>0.022</td>
</tr>
<tr>
<td>Unidiff/LMLEM</td>
<td>3,262</td>
<td>18</td>
<td>3,226.7</td>
<td>3,000.6</td>
<td>0.010</td>
</tr>
</tbody>
</table>

Note: Simplified models are based on a simplified categorization of primary, secondary and tertiary educated persons.

Table 9 and table 10 contains the relevant fit statistics of models fitted separately by genders. In all instances, the models presuming no association between any variables (total independence) or between the partners’ education (conditional independence) show a considerable lack of fit with high levels of dissimilarity. The real question comes down to whether the supposed association is non-changing across cohorts (constant social fluidity) or not. Based on the AIC, BIC and D statistics, it can be said that in all samples, the unidiff/LMLEM
specification provides the best fit compared to all other examined models. This implies that in Hungary, there is an association between partners’ level of education, and that its strength varies by birth cohorts.

**Figure 21: Association between partners’ educational attainment**

![Graph of association between partners' educational attainment](image)

Source: Hungarian Central Statistical Office (KSH), census of 2011. Respondents aged 25 or older. N = 3,890,063 for data from the cohort of 1940-1949 and onwards. N = 4,252,122 for the full simplified sample. Note: Simplified models are based on a simplified categorization of primary, secondary and tertiary educated persons. The bars represent the 95% confidence interval. All parameters except the 1930-1939 cohorts’ result in the simplified models for both genders are statistically significant (p < 0.001).

Recall that unidiff models have a $\beta_c$ component, representing the changes in the association of the partners’ education. Figure 21 presents the progression of this parameter, with the earliest available cohorts (1940-1949 and 1920-1929) set to 1 to serve as a reference. The models clearly indicate that the association of educational attainments grew stronger relative to the earliest cohort. Considering the models with the original categorization and the reference of 1940-1949, both men and women experienced a continuously strengthening association, reaching an unidiff value of 1.34 for men, and 1.36 for women.
The models using an older reference cohort but a simpler three-by-three educational categorization also showed an increase, although a less steady one. Compared to 1920-1929, the association in the cohort of 1930-1939 was not significantly different for both genders. However, the years of 1940-1949 to 1960-1969 saw a rapid strengthening to 1.28 (women) and 1.41 (men). Finally, in the youngest two cohorts, there is a small but visible gender difference: while men continued the trend of strengthening association (to 1.49 in 1980-), women saw no changes in the unidiff parameter (1.36), suggesting a similarity in the level of association in these cohorts.

Altogether, evidence based on the log-linear and log-multiplicative models suggest that in Hungary, the mating patterns are becoming less and less random, giving way to more “expected” forms of assortative mating. In practice, this means that individuals from a given educational groups are becoming less likely to access certain kinds of partners. Although the current dissertation is not focused on social mobility, it should be noted that as a relationship is an opportunity to maintain, increase, or decrease status through the pooling of resources, a strengthening association between partners’ education could be a factor in increasing social gaps and inequality, as some works have already noted (see Boertien and Permanyer 2019; Breen and Salazar 2011; Pesando 2021).
5.1. A look at Europe

Thus far, I examined Hungary-specific trends regarding the relation between the restructuring relationship market and the decline of hypergamy, and the changing level of association between the partners’ educational attainment. Recall that in section 2.2.1., I mentioned that the processes of women’s growing educational advantage and/or the decline of hypergamy was observed in other multi-country (Katnáková 2008; Esteve, García-Román and Permanyer 2012) and country-specific studies from Europe, namely from Belgium (Nomes and Van Bavel 2017); Britain (Krzyzanowska and Mascie-Taylor 2014); Austria (Frimmel, Halla and Winter-Ebmer 2013); Switzerland (Becker and Jann 2017); Finland (Maenpää 2015); Sweden (Dribe and Nystedt 2013); Germany (Grave and Schmidt 2012); Norway (Bratsberg et al. 2019) and Spain (Esteve and Cortina 2006).

While these studies provide a general sense of the European processes, due their different methodologies, data sources and analytical goals, they are difficult to use for the purpose of addressing whether Hungary is a follower of a common European pattern or an outlier case. For this reason, I will use data from 27 nations provided by the ESS and the previously introduced methods to answer the third explorative question. It should be (again) noted that the indices had to be altered in a way to be applicable to multi-country analyses, and results will be based upon a simplified educational categorization (primary, secondary and tertiary).

Starting with the changes in mating patterns, figure 15 and figure 16 depicts the H-index for 27 nations. Overall, in Europe, hypergamy declined visibly from an H-value of 15.2% to 8.5%, indicating that hypogamous couples outnumber hypergamous partnerships in the youngest European cohorts. While the values of H are different due to the simpler categorization scheme, the ESS data still shows the declining prevalence of hypergamy in Hungary - with values slightly above the European trend.
Figure 15: The H-index in Europe, overview

![Graph showing the H-index in Europe over time. The graph includes data for Europe, Hungary, and other nations, indicating trends and changes in the H-index across various decades.]

Note: Data for Hungary may differ from census data due to the difference in the categorization scheme. Data for Europe has been weighted for population size differences.

Compared to other countries, it seems that the decline of hypergamy in Hungary is not a unique development, as all of the other 26 nations had seen relationships with a female advantage emerge. However, some differences are worth mentioning. At the lower end, Lithuania (-4.8%), Estonia (-2.4%) and Ukraine (-0.6%) already had more hypogamous than hypergamous couples in the oldest examined cohort, while at the upper end Germany (37.1%) and Switzerland (36.6%) had a distinctively high proportion of hypergamous couples early on. By the youngest cohort, only four out of the 27 countries had more relationships with a male educational advantage: Germany (6.7%), Switzerland (4.8%), Slovakia (3.5%) and Austria (2.5%). Opposed to this, Poland (-24.5%), Estonia (-21.8%) and Portugal (-20.3%) had seen the largest female advantage in relationships, as De Hauw, Grow and Van Bavel (2017) noted it in their earlier results too.
Figure 16: The H-index in Europe, detailed

![Graph showing the H-index in Europe, detailed for various countries and time periods.](image)

Note: Data for Hungary may differ from census data due to the difference in the categorization scheme. Data for Europe has been weighted for population size differences.

Just as the trends of educational assortative mating were not exclusively Hungarian, the changing structure of the relationship market is also a common process. In figure 17 and 18, the F-index shows an overall increase from 0.37 to 0.58, signalling a turn towards a solid female educational advantage in Europe. Based on the simpler categorization, the Hungarian trend shows a similar picture in this instance as well, following Europe closely with a value of 0.36 in the oldest, and a 0.57 in the youngest cohort.
Although countries like Germany (0.21), the Czech Republic (0.22), Austria (0.22) and Switzerland (0.22) had a visible male advantage ($F < 0.50$) early on, all nations followed the general trend of increasing female educational advantage. By the youngest cohort, only the Swiss (0.49) displayed a minor remaining male lead, while the highest F-index values were observed in Slovenia (0.69), Estonia (0.68), Poland (0.67) and Finland (0.67).
As the general trends in assortative mating and female educational advantage were present in other European countries, it is not a surprise that the negative linear association between the two is also apparent outside of Hungary. Although country-specific examinations (as previously seen for Hungary) would be ideal, that is outside the limitations of the current dissertation. Therefore, I created a merged figure containing all cohort-specific F-index and H-index values per the 27 countries. Figure 19 presents the scatterplot of the two indices, considering all European nations and cohorts together (left), and Hungary compared to the pooled dataset (right). Pearson’s correlation suggests a strong, significant negative linear association for the pooled data ($r = -0.91$, C.I.: $-0.93$ - $-0.88$, $p < 0.001$) and separately for Hungary in this instance as well ($r = -0.98$, C.I.: $-0.99$ - $-0.82$, $p < 0.001$). This means that the two indices are indeed connected in the negative way that Van Bavel (2012) theorized, and also...
corroborates what Esteve, García-Román and Permanyer (2012), and Esteve et al. (2016) found in earlier analyses. Additionally, the results reinforce the idea that Hungary is not a special case, but rather a follower of phenomena seen all over Europe.

**Figure 19: Association between the F-index and H-index in Europe**

![Diagram showing the association between F-index and H-index in Europe](image)


Note: Data for Hungary may differ from census data due to the difference in the categorization scheme. Data for Europe has been weighted for population size differences.

Lastly, considering the current state of the growing female educational advantage and the decline of hypergamy, I focused on the youngest cohort (those born in or after 1980) of all countries on figure 20, with the values for the oldest available cohort also represented as a reference. As it became visible during the examination of the merged figure, the correlation between the F-index and H-index held for both the oldest \( r = -0.77, \text{C.I.: } -0.89 \text{ - } -0.56, p < 0.001 \) and the youngest \( r = -0.71, \text{C.I.: } -0.86 \text{ - } -0.47, p < 0.001 \) cohort.
The purple area, which I named “area of female advantage”, bordered by a vertical and horizontal lines highlights the space in which the oldest or youngest cohort of a given country has a female educational advantage (F > 0.5) and hypogamy has also overtaken hypergamy (H < 0%). With four exceptions, all countries fell into this area by the cohort of 1980-, with the countries, including Hungary, following the previously noted negative linear trend. While most show a considerable difference between the position of the oldest and the youngest cohort, it should be emphasized that the oldest examined cohort of Estonia was already in the highlighted area of female advantage, making it unique in this regard.
Based on previous trends and the data for the youngest cohort, Slovenia, Cyprus, Estonia and Poland are amongst the leading nations regarding overall female advantage. At the other end of the spectrum, from the four countries that are still not in the area of female advantage, Switzerland stands out, as men still have a slightly higher average level of education, paired with a higher number of hypergamous unions. In the other three cases (Austria, Germany and Slovakia), although women already have an educational advantage (F > 0.5), married and non-married relationships do not yet reflect this clearly (H > 0%).

Turning back to the question at the beginning of this chapter about Hungary’s relative place in Europe, it can be said that the Hungarian trends of declining hypergamy and increasing female educational advantage is a common European pattern. This result verifies previous works done by Esteve, Permanyer and García-Román (2012), Esteve et al. (2016), and De Hauw, Grow, and Van Bavel (2017). Compared to the other 26 nations, Hungary could be considered close to more hypergamous countries with the 8th highest H value in the oldest, and the 6th highest in the youngest cohort; while it is more in the middle-back of the pack when considering the F-index, having the 13th highest F in the oldest, and the 19th highest in the youngest cohort. Additionally, the strong negative association of women’s gains in education and the decline of hypergamy is not a unique development, but a part of an overall European transformation, which could be perhaps dubbed as the “end of hypergamy”, as Esteve et al noted (Esteve et al. 2016).

The results also highlight some peculiarities, which should be addressed in future studies. Particularly interesting are the cases of Switzerland, Germany, Austria and Slovakia, who seem to diverge, or rather, lag behind the common European trend. To this date, no publication offered possible explanations, but other works also identifies their distinctiveness (see Esteve, García-Román, and Permanyer 2012; Esteve et al. 2016; De Hauw, Grow, and Van Bavel 2017).
5.2. Summary

In this chapter, my aim was to explore the educational assortative mating trends in Hungary, to assess whether the decline of hypergamy is associated with women’s educational advantage, to examine the changing strength of association between partners’ level of education, and finally, to compare Hungary to other European nations. In general, the results of the descriptive analyses and the statistical models corroborate previous works (Bukodi 2003 for Hungary, and Esteve, García-Román and Permanyer 2012; Esteve et al. 2016; and De Hauw, Grow and Van Bavel 2017 for Europe), and most importantly, verify Van Bavel’s ideas about how the asymmetric changes in educational attainment led to the increase of hypogamy and the decline of hypergamy (2012).

Answering the first question, educational assortative mating in Hungary transformed from a pattern defined my high levels of homogamy accompanied by hypergamy to one where hypergamy became the least common as hypogamy increased steadily. A detailed examination of the couples suggested that the lowest and highest educated individuals increasingly partner within their group, and that heterogamous partnerships are most often found between partners from adjacent educational categories.

These changes were related to macrostructural processes, just as Van Bavel theorized (2012). The composition of the relationship market transformed greatly throughout the examined cohorts, as women gained a substantial educational advantage over men, mainly due to their higher participation in tertiary education. This emerging female advantage resulted in an asymmetry on the relationship market, facilitating the formation of partnerships where women have a higher education compared to their partners, leading to the decline of hypergamy, answering the second question.

The log-linear and log-multiplicative analyses related to the third question suggested that the association between partners’ education is strengthening across cohorts. This implies that mating patterns are becoming less random, giving way to more „expected” arrangements, as individuals from a given educational group have restricted access to certain parts of the relationship market.
Lastly, looking at the broader European context, data from 26 other countries showed that the patterns and transformations seen in the case of Hungary is not a unique, outlying process but rather a widespread phenomenon in Europe. While a few nations seem to lag behind (notably Germany, Austria, Switzerland and Slovakia), results imply that most countries of Europe nowadays have a female educational advantage and more hypogamous than hypergamous unions. Responding to question number four, it can be said that relative to other countries, Hungary is a follower of the common European process, taking its place in the middle of the pack.

These results outline potential future areas of interest. First, as partner selection is a possible path of intragenerational social mobility, it would be interesting to see how the interplay of decreasing intergenerational social mobility paired with more rigid partner selection patterns affect social inequality. Second, as a greater proportion of the population has a tertiary education year-by-year, an analysis based on detailed upper educational categories (for example, BA, MA and PhD) or perhaps disciples or institutions could reveal yet unseen processes. Third, rather than considering the macrostructural composition as an indicator of the relationship market, it would be interesting to see whether a person in a given educational category deviates from the “expected” choices if exposed to more peculiar markets - for example, if a highly educated single person moves to a rural area. Fourth, the European results highlighted some nations (Austria, Germany, Switzerland and Slovakia) as late adopters of certain trends. As other studies also highlighted their less conforming nature, country-specific analyses should aim to uncover reasons behind this phenomenon.

Although the results are based on multiple waves of representative survey programmes, the limitations of this chapter should also be mentioned. Primarily, as I have looked at the trends through cohorts, certain biases (such as cohort or education-specific mortality, relationship formation and dissolution) might be present in the findings. Second, the structure of the relationship market and the relative completed educational attainment of couples were assessed with a simple four and three-way categorization, which might hide finer details and developments. Third, calculations assume that an individual primarily chooses a partner from his or her cohort group, which would mean that the opportunities are
static for someone looking for a partner, meaning that he or she would ignore newly entering younger or still present older members of the relationship market. Also, while education is linked with overall socioeconomic status, several other factors, such as income, occupation and prestige also have an effect, therefore, education-based arguments need further verification with the usage of other indicators to achieve a better understanding of assortative mating and its implications. Finally, as I focused solely on the effects of the relationship market, specific changes in preferences and societal norms were ignored, despite the three being interrelated. Thus, an analysis focusing on modelling the determining factors of these trends with would elaborate more on the nature of these changes, and should be the subject of future investigation.
6. Assortative mating and relationship quality

Continuing on with the empirical analyses, in this section of my work, I examine how the relative education of the partners affects the quality of the unions themselves. According to hypothesis 1, I presume that compared to hypogamous persons, individuals in homogamous and hypergamous partnerships have a higher relationship quality. This presumption is based on Van Bavel’s (2012) ideas about the consequences of the education-specific mating squeeze, the detailed theories highlighting hypergamy or homogamy as better for relationship quality (chapter 2.1.), and the unique Hungarian context of a conflicting normative environment (chapter 3). Additionally, I explore whether a possible ordering - as some theories suggested - between hypergamy or homogamy can be established based on the to be presented models.

Before I turn to the discussion of the methods and results, the concept of relationship quality warrants a brief elaboration. Formally, relationship quality can be defined as the individual’s subjective evaluation of his or her relationship along multiple dimensions (Spanier 1979). These dimensions are not clearly defined, as it can include happiness, harmony, adjustment, satisfaction, disagreements and instability (Johnson et al. 1986; Gödri 2001). Some approaches also consider certain behaviours, such as communication, and manifestations of affection, agreement and commitment (Johnson 1995). While relationship quality is multidimensional, most surveys employ a single-item measure to better understand it. These simple scales are easy to use and facilitate comparison between multiple studies, but they also oversimplify the complex nature of relationships, making it hard to measure peculiarities and disfunctions (Spanier 1979). The other side of the coin is that while detailed multi-item measurements are more adequate, due to their complexity, they are seldom used in representative studies.

Unsurprisingly, an unknown interviewer for a survey study asking questions in person about someone’s partnership might not always get entirely truthful answers, which raises the question of reliability. This issue was brought up in the relevant literature as early as the 1960s, mainly in the works of Edmonds. Edmonds defined the process of conventionalization as the
individual’s proclivity to present his or her relationship in an overly positive manner to conform to societal norms (1967). This tendency to overrate a relationship might pose a serious problem, but studies (for example, Fowers and Applegate 1996) revealed that conventionalization is in fact another aspect of relationship quality, as satisfied persons tend to overrate, while unhappy individuals underrate. All in all, simple measurements of relationship quality carry usable information, albeit results based on them should be interpreted carefully as they may hide more complex phenomena.

6.1. Cross-sectional perspective

To begin my examination, first, I will take a look at the effect of assortative mating on relationship quality from a cross-sectional perspective, which is often done in peer-review studies (for recent examples, see Wiik, Bernhardt and Noack 2009; Wiik Keizer and Lappegard 2012). This approach comes with a substantial advantage as it only requires a simple database containing a relevant dependent variable and a set of independents. Compared to (as it will be seen) longitudinal approaches, it also offers easily interpretable results based on a higher number of respondents, as the detrimental effects of panel attrition is not present and the probability of missing data is generally lower.

6.1.1. Data and methods

For the cross-sectional analyses, I used data from the first (2001-2002) and fourth wave (2012-2013) of the Hungarian Turning Points of the Life Course Panel Survey (Életünk fordulópontjai, ÉF), conducted by the Hungarian Demographic Research Institute (KSH-NKI), with a representative sample of more than 16,000 respondents (Spéder 2003). This survey programme is part of the international Generations and Gender Survey (GGS), aimed at collecting data on topics related to family, work, relationships and everyday life (see Gauthier, Cabaco and Emery 2018).

Respondent in the ÉF were asked to subjectively evaluate their satisfaction with their relationship on a scale from zero to ten, with ten indicating
total satisfaction\textsuperscript{11}, which forms the dependent variable of the analyses. As the main independent variable is the relative education of the partners, individuals under the age of 23 who are more likely to continue their studies, those without a cohabiting partner, non-heterosexual couples and respondents with missing data on the selected variables were omitted. All in all, the final analytical sample consisted of 5,621 men and 6,253 women.

Table 11: Sample characteristics of the cross-sectional models, means and percentages

<table>
<thead>
<tr>
<th>Variables</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>46.22</td>
<td>44.25</td>
</tr>
<tr>
<td></td>
<td>(13.31)</td>
<td>(13.25)</td>
</tr>
<tr>
<td>Parents still together</td>
<td>88.3</td>
<td>86.9</td>
</tr>
<tr>
<td>Separated parents</td>
<td>11.7</td>
<td>13.1</td>
</tr>
<tr>
<td>No previous divorce</td>
<td>87.5</td>
<td>88.7</td>
</tr>
<tr>
<td>Had a divorce</td>
<td>12.5</td>
<td>11.3</td>
</tr>
<tr>
<td>Not religious</td>
<td>31.8</td>
<td>23.2</td>
</tr>
<tr>
<td>Religious, belongs to a church</td>
<td>13.5</td>
<td>16.8</td>
</tr>
<tr>
<td>Religious, own way</td>
<td>54.8</td>
<td>60</td>
</tr>
<tr>
<td>Length of the relationship (mean)</td>
<td>19.45</td>
<td>20.68</td>
</tr>
<tr>
<td></td>
<td>(13.44)</td>
<td>(13.90)</td>
</tr>
<tr>
<td>Age at the start of the relationships, under 20</td>
<td>4.7</td>
<td>25.0</td>
</tr>
<tr>
<td>Age at the start of the relationship, 20-31</td>
<td>79.4</td>
<td>65.1</td>
</tr>
<tr>
<td>Age at the start of the relationship, 32 or older</td>
<td>15.9</td>
<td>9.9</td>
</tr>
<tr>
<td>Married</td>
<td>83.3</td>
<td>84.8</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>16.7</td>
<td>15.2</td>
</tr>
<tr>
<td>Number of children (mean)</td>
<td>1.76</td>
<td>1.81</td>
</tr>
<tr>
<td></td>
<td>(1.12)</td>
<td>(1.09)</td>
</tr>
<tr>
<td>Daily financial problems</td>
<td>3.9</td>
<td>3.7</td>
</tr>
<tr>
<td>Monthly problems with finances</td>
<td>15</td>
<td>14.4</td>
</tr>
<tr>
<td>Manageable financial situation</td>
<td>81.1</td>
<td>81.9</td>
</tr>
<tr>
<td>Respondent currently working</td>
<td>66.6</td>
<td>51.4</td>
</tr>
<tr>
<td>Respondent not working</td>
<td>33.4</td>
<td>48.6</td>
</tr>
<tr>
<td>Partner currently working</td>
<td>52.8</td>
<td>64.1</td>
</tr>
<tr>
<td>Partner currently not working</td>
<td>47.2</td>
<td>35.9</td>
</tr>
<tr>
<td>Elementary or lower education</td>
<td>20.7</td>
<td>30.9</td>
</tr>
<tr>
<td>Vocational training</td>
<td>40</td>
<td>21.3</td>
</tr>
<tr>
<td>Secondary education</td>
<td>22.8</td>
<td>30.7</td>
</tr>
<tr>
<td>Tertiary or higher education</td>
<td>16.5</td>
<td>17</td>
</tr>
<tr>
<td>Homogamous</td>
<td>51.8</td>
<td>50.8</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>26.2</td>
<td>23.3</td>
</tr>
<tr>
<td>Hypogamous</td>
<td>23</td>
<td>24.9</td>
</tr>
<tr>
<td>1949</td>
<td>33.4</td>
<td>29.1</td>
</tr>
<tr>
<td>1950-1959</td>
<td>21.3</td>
<td>20.8</td>
</tr>
<tr>
<td>1960-1969</td>
<td>22.2</td>
<td>21.8</td>
</tr>
<tr>
<td>1970-1979</td>
<td>23</td>
<td>28.3</td>
</tr>
<tr>
<td>Relationship satisfaction (mean)</td>
<td>8.87</td>
<td>8.51</td>
</tr>
<tr>
<td></td>
<td>(1.52)</td>
<td>(1.89)</td>
</tr>
<tr>
<td>Total unweighted number of respondents</td>
<td>5,621</td>
<td>6,253</td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 and wave 4 youth sample.

Note: Values in parentheses under means indicate the standard deviation. Data has been weighted except if otherwise indicated.

\textsuperscript{11} The original question was: Look at CARD NO. 1. Use it to indicate how satisfied you are with your marriage/partnership. Please evaluate the relationship from 0 to 10, where 0 means that you are not at all satisfied and 10 that you are fully satisfied.
The characteristics of the sample after weighting is detailed in table 11. It can be said that most respondent were above the age of 40, and had spent approximately 20 years in their current relationship. Most men and women had an intact parental family and no prior divorce experience, and they were generally religious in their own way (not actively following a specific denomination) or non-religious. Respondents most commonly started their partnerships between the ages of 20 and 21, and only around 15% of men and women were not married. Also, an average of 1.7-1.8 children were present in these unions. Concerning socioeconomic variables, the majority of individuals and their partners were working at the time of the survey, were in an agreeable financial situation, but only less than a fifth of men and women had tertiary education. Looking at the prevalent type of arrangement, most respondents was in an educationally homogamous partnership.

Regarding the average satisfaction with the relationship, it can be said that both genders generally indicated that they were highly satisfied (8.87 for men and 8.51 for women), however, an important difference should be highlighted. As men were on average more satisfied with a lower standard deviation (1.52 vs 1.89), this indicates that men are more homogeneous compared to women in terms of satisfaction, possibly making it more difficult to detect what affects relationship quality for them.

Although studies often treat subjective relationship satisfaction measured on a 0 to 10 scale as a continuous variable (see the previously cited article by Wiik, Keizer and Lappegard 2012, which used the same variable presented here), I opt to consider it as a categorical response variable measured on an ordinal scale for the cross-sectional analyses. For this reason, I primarily fit proportional odds (PO) ordinal logistic regression models (Korosteleva 2019: 72-73). These models focus on cumulative probabilities, which are defined as

\[ P(y \leq j) = \pi_1 + \pi_2 + \cdots + \pi_j \]  

Where \( y \) is the response variable (satisfaction with the relationship) with ordered categories \( J \) and their respective probabilities \( \{\pi_1, \pi_2, \ldots, \pi_j\} \). Thus, \( P(Y \leq j) \) refers to the probability of belonging to specific category \( j \) or a lower one. The cumulative logit is then written as
\[
\text{logit}[P(y \leq j)] = \log \left( \frac{P(y \leq j)}{P(y > j)} \right) = \log \left( \frac{P(y \leq j)}{1 - P(y \leq j)} \right) \tag{11}
\]

Which is the log-odds of the cumulative probabilities of belonging to group \( j \) or a lower category, and being in a category higher than \( j \). The advantage of this modelling strategy comes forwards when the final form is considered

\[
\text{logit}[P(y \leq j)] = \alpha_j + \beta_1 x_1 + \cdots + \beta_k x_k j = 1, \ldots, J - 1 \tag{12}
\]

Although each cumulative probability has a separate intercept parameter \( \alpha_j \), \( \beta \) are not dependent on the \( j \) categories, allowing the efficient estimation of a given independent variable’s effect. As Agresti explains, the common effect for \( \beta \) is warranted by the underlying assumption that the ordinal variable’s categories represent the intervals of a latent continuous variable (for an elaboration, see Agresti 2010: 53-56).

**Figure 22: Relationship satisfaction before and after merging categories**

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 and wave 4 youth sample. Note: Data has been weighted except if otherwise indicated.
Unsurprisingly, proportional odds models (hence their name) assume that the log-odds do not depend on the outcome category, meaning that an effect is consistent throughout all the categories of the dependent variable (Hosmer, Lemeshow and Sturdivant 2013: 297-298). To test if a given variable has a proportional or non-proportional effect, I also fit partial proportional odds models where I conduct a series of Wald-tests to see possible differences in the coefficients (particularly for the main independent), made easy by the “ologit” package for STATA by Williams (2006). The models were also fitted with the “MASS” package (Venables and Ripley 2002) for R (R Core Team 2021) to check for possible differences between software.

As the models are based around probabilities of group membership, a potential source of error is the fact that only a small number of men and women rated their level satisfaction to be at the lower ends of the given scale, which makes model fitting difficult as certain combinations (for example, a hypergamous woman who rated her level of satisfaction with a 3) are rare or even non-existent, inhibiting the comparison of the PO and PPO models. Figure 22 illustrates this problem. As a remedy, I merged the original eleven categories to form four new ones while retaining the variable’s ordinality. The new categories are the groups of respondents who were “not satisfied” (5 or lower), “somewhat satisfied” (6 or 7), “satisfied” (8 or 9)” or “absolutely satisfied” (10) with their relationship.

6.1.2. Independent variables

Apart from the main independent variable of relative educational attainment, several additional factors (as indicated in table 11) were included in the regression analyses as controls to avoid false conclusions, with the added benefit of providing an insight into other processes. These can be arranged into three groups: individual background variables, followed by relationship-specific and socioeconomic factors.

Starting with the individual background variables, gender, age, parental separation, previous divorce experience and religious affiliation were selected. Regarding gender, along which I divided the sample, many works suggest that “his” and “her” relationship are different (Bernard 1972, 1976; Corra et al. 2009). As previously noted, relationship quality is a subjective evaluation along multiple
dimensions, but the exact nature of these aspects differs for men and women. According to Bernard (1972, 1976), women enter into partnerships with different expectations than men, with a larger emphasis on intimacy and feelings, and therefore are more likely to express frustration, unhappiness and negative emotions. Recent empirical results confirmed this assumption (Birditt et al. 2012; Lorber et al. 2015), and others showed that women are more expressive about the negative aspect of their partnership (Levinger 1965; Rhyne 1981; Cleek and Pearson 1985). Besides gender, age is also a common control factor, as some studies showed that in younger ages, interaction patterns between partners are different and less frequent, which may influence relationship quality (Amato 1996; Corra et al. 2009).

The next individual variable is parental separation. While relationship quality is influenced by how partners communicate and solve problems, the skills used in these daily interactions are in part a result of socialization and the observation of the parents (Amato and DeBoer 2001). Persons with separated parents have less time to learn the necessary partnership skills and are likely to demonstrate and repeat damaging behaviours. Also, Amato and DeBoer (2001) notes that the process of parental separation shows that unions are dissolvable, resulting in a less future-oriented outlook and lower investment in relationships for the individual. Empirical results confirm these theories (Booth and Edwards 1990; Amato 1996), with some findings emphasizing the particularly negative effect in the case of women (Whitton et al. 2008). In the models, parental separation was included as a dichotomous variable, indicating whether the respondent’s parents had ever separated or not.

Moving on, previous divorce experience is suspected to have a negative effect on relationship quality due to selection and the lack of institutionalization (Glenn and Weaver 1977; Cherlin 1978). The former argues that those who are divorced form a particular segment of the population who are less able to maintain long-term relationships, while the latter states that societal norms about step-families and other remnants of personal relations from the previous partnership are not clear, therefore, they create an excessive number of interactions which strain the new relationship. Findings from multiple studies showed that divorced persons indeed had lower relationship quality, more conflicts and less
interactions with their partner (Hobart 1991; Booth and Edwards 1992; Buunk and Mutsaers 1999). Similarly to parental separation, previous divorce experience was also included as a dichotomous variable.

The last of the more individual-related factors is religious affiliation. During partner selection, religion plays an important part in certain societies, and can also affect relationship quality (Erát 2017). The dynamic of the couple is altered if an individual is characterized by intrinsic religiosity as these persons base their decisions and behaviour on religious teachings often resulting in a higher level of attention to the needs of their partner (Allport and Ross 1967; Dudley and Kosinski 1990). Empirical tests of the theory generally verified this assumption (Dudley and Kosinski 1990; Anthony 1993; Myers 2006). Religiosity was added to the models as a three-category variable, making distinction between those who are not religious, religious but in their own way, and those who are religious and follow the teachings of their denomination.

The second group of control variables consists of attributes that can be linked to the relationship itself. They include the age at the start of the relationship, the length and the type of the partnership, and also the number of children in it. To elaborate, it is often noted that marriages contracted at young ages are more unstable, most likely as a consequence of mistaken expectations towards marriage and the partnership (Oppenheimer 1988; Lehrer 2008). Likewise, marriages in later ages might be more unstable, as individuals face the need to partner more urgently, which might cause them to reconsider their expectations of a partner and settle for a sub-optimal match (Becker, Landes and Michael 1977).

The time spent in the relationship also has a strong connection with the subjective evaluation of its quality, as many theories pose that an initial high level is followed by a decline (Gottman 1993; Brehm et al. 2001; Huston et al. 2001) or stagnation (Aron et al. 2002); while others emphasize an increase in later years due to partners having more time for each other (Rollins and Cannon 1974; Levenson, Carstensen and Gottman 1993). Studies generally found a decline (Karney and Bradbury 1997; Lindahl, Clement and Markman 1998; Kurdek 1999) in quality over the years, although some pointed at the considerable variability

Apart from the time spent with someone, the type of relationship has been consistently found to be defining. Most theories highlight that cohabitations are a special segment of relationships with a lower level of commitment, weaker interpersonal relations and lesser institutionalization than marriages (Bennet, Blanc and Bloom et al. 1988; Nock 1995; Liefbroer and Dourleijn 2006). The works of Skinner et al., Brown, and Brown, Manning and Payne showed that cohabitations were more likely to experience a rapid decline in relationship quality during the early years of the partnership (Skinner et al. 2002; Brown 2003, 2004; Brown, Manning and Payne 2015). The length of the relationship was included in the models as a linear and quadratic term as well, while relationship type was defined as a dichotomous variable, separating married and non-married cohabiting individuals.

When looking at relationship quality, many theories pose that children have a negative effect on the couple, and early studies even described birth as a crisis-inducing event which affects family life often for the worse (Lemasters 1957; Dyer 1963), as children become a source of additional conflict (Veevers 1980; White, Booth and Edwards 1986). Others, however, see children as a positive indicator of relationship quality, as individuals generally choose to have children with someone they regard as a good long-term companion (Becker, Landes and Michael 1977). While empirical studies of the effect children have on relationship quality are scarce, some showed that they were a negative factor (Lupri and Frideres 1981; Glenn and McLanahan 1982; White, Booth and Edwards 1986). In all models, the number of children ever born to a given respondent was included as a continuous variable.

The final group of independent variables is related to the socioeconomic status of the respondent and the couple. First, the subjective evaluation of the household’s financial situation and the couple’s employment offer a look into the overall socioeconomic environment in which the relationship functions day by day. Financial strains stemming from low combined income or unemployment are external stress-factors, which can negatively impact relationship quality through
an increased level of conflict and the unique dynamics of poverty (Conger et al. 1994; Bodenmann, Lederman and Bradbury 2007). Financial hardships are often found to be linked with lower relationship satisfaction, mainly in the case of women (Conger et al. 1990; Aytac and Rankin 2009; Hardie and Lucas 2010; Kelley, LeBaron and Hill 2018). The household’s subjective financial status was included as a three-category variable, indicating if the person felt that they had a manageable financial situation, or if they experienced monthly or daily problems. Also, a dichotomous variable indicated if the respondent or his or her partner were working at the time of the survey.

The final socioeconomic control variable is the respondent’s level of educational attainment. Individual education is closely related to socioeconomic outcomes, therefore, many previously presented theories argue that women’s gain in education is worth looking at when studying relationship quality. However, as Harkonen and Dronkers noted (2006), education can also be looked at from the opposite perspective: it improves social and cultural skills, provides a better matching opportunity and enhances relationship skills (Amato 1996; Hoem 1997; Ono 1998), possibly increasing the quality of a partnership. The respondent’s highest level of education was categorized as seen in the previous chapter, defining those with at most completed elementary, vocational, high school or tertiary education. Including this variable is essential for the reliability of the results on relative education, as it negates any effect coming from individual education, allowing the main independent to assess the importance of relative differences.

6.1.3. Results

Starting with a simple descriptive look at how educational assortative mating is related to relationship quality, table 12 shows the proportion of respondents in the four satisfaction groups by relative education and gender. In the case of men, differences are minimal between the relationship types. Only slightly more men in hypogamous relationships were not satisfied (5.8% versus 5.4% and 4.9%) compared to the other categories, while hypergamous men seem to be more likely to be absolutely satisfied by a similarly small amount (51.1% versus 50.5% and 50.7%). A simple bivariate chi-square test of association confirms the
unrelatedness of assortative mating and relationship satisfaction for men \( (X^2 = 1.96; p = 0.924) \).

### Table 12: Satisfaction group membership by gender and relative education, percentages

<table>
<thead>
<tr>
<th>Satisfaction group</th>
<th>Men</th>
<th></th>
<th></th>
<th></th>
<th>Women</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Homogamy</td>
<td>Hypergamy</td>
<td>Hypogamy</td>
<td>Homogamy</td>
<td>Hypergamy</td>
<td>Hypogamy</td>
<td></td>
</tr>
<tr>
<td>Not satisfied</td>
<td>5.4</td>
<td>4.9</td>
<td>5.8</td>
<td>9.4</td>
<td>9.8</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>Somewhat satisfied</td>
<td>9.3</td>
<td>8.8</td>
<td>9.1</td>
<td>10.1</td>
<td>10.9</td>
<td>12.9</td>
<td></td>
</tr>
<tr>
<td>Satisfied</td>
<td>34.9</td>
<td>35.1</td>
<td>34.4</td>
<td>37.1</td>
<td>30.1</td>
<td>38.7</td>
<td></td>
</tr>
<tr>
<td>Absolutely satisfied</td>
<td>50.5</td>
<td>51.2</td>
<td>50.7</td>
<td>43.4</td>
<td>49.2</td>
<td>37.9</td>
<td></td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 and wave 4 youth sample.

Note: Data has been weighted except if otherwise indicated.

For women, differences were more notable, especially at the upper end of the scale. Nearly half of all women living in a hypergamous relationship were absolutely satisfied with it (49.2%), while it was somewhat lower for homogamous women (43.4%). Women who had a higher level of education than their partners were the least likely to rate their satisfaction the highest possible (37.9%). The bivariate chi-square test confirms that for women, an association between relationship satisfaction and assortative mating is present \( (X^2 = 46.57; p < 0.001) \).

Turning towards the multivariate assessments, table 13 and 14 presents the fitted ordinal models for men and women respectively. For both genders, model 1 shows the effect of assortative mating alone, while model 2 to 4 introduces the individual (model 2), relationship-specific (model 3) and socioeconomic controls (model 4). Regarding the main independent variable, the PO models’ estimates did not substantially differ from the alternative PPO models’, as assortative mating did not have a dissimilar (for example, non-significant, changing from a positive to a negative or perhaps much larger or smaller in magnitude) effect per the levels of the dependent variable\(^\text{12}\). Looking at model comparisons, I performed a likelihood-ratio test and calculated the AIC difference between the fitted models (model 4) and the same model without the assortative mating variable to see whether the addition of the main independent variable improves the model fit. For men, the tests suggest that adding it has no extra benefit, while for women, both tests imply that a better fit is obtained with the main independent variable.

\(^{12}\) The detailed PPO models are available from the author.
Looking at the detailed estimates, results show that compared to men living in a hypogamous union, homogamous or hypergamous men do not report significantly different levels of satisfaction with their partnership - as implied by the descriptive results in table 12 too. This inconsequential nature of relative level of education for men persists throughout all models (model 1 to model 4).

For women however, the case is quite different. In the simple bivariate model (model 1), results showed that compared to women in hypogamous unions, those in homogamous and hypergamous partnerships were more likely to achieve higher levels of satisfaction. For the former, model 1 estimates an added 24%, and for the latter a 43% probability of higher satisfaction compared to hypogamy. While the point-estimates do indicate that hypergamy might be more beneficial, taking into account the overlapping confidence intervals of the odds ratios, this is only indicative.

The more complex models (model 2 to 4) with the previously presented set of controls did not estimate the effect of assortative mating for women differently, as the odds ratios for both homogamous (1.20-1.21) and hypergamous (1.41-1.42) women stayed relatively the same. Based on all the presented models, it can be concluded that homogamy and hypergamy is related to higher levels of subjective satisfaction with the relationship for women even when controlling for individual, relationship-specific and socioeconomic factors, while for men, it has no discernible effect. These results partially confirm hypothesis 1.

Concerning the control variables, the model estimates most often corroborate previous assumptions regarding their effects. From the individual-level attributes, parental divorce decreased the probability of being more satisfied compared to having parents who stayed together for women by around 14%, but had no detectable influence for men. On the contrary, previous divorce only had a negative influence for men, but the introduction of relationship-specific variables negated its effects, suggesting that previous divorce primarily affects relationship quality through altering the properties of the next relationship (for example its length, type, and the number of children involved). Religiosity seemed to act similarly for both genders: compared to those who are not religious, religious
individuals following a church were more likely to be more satisfied (O. R. = 1.25 for men and 1.46 for women). Men and women who described their religiosity as more personal ("on my own way") were also more likely to be more satisfied in model 2 and 3, however, after controlling for socioeconomic factors, this effect was no longer statistically significant at the conventional level.

Most similarities between the genders emerged with the introduction of the relationship-specific dependent variables. While the age at the start of the relationship and the number of children involved did not have any notable effect, the length and the type of the relationship did. According to the model estimates, with a yearly increase in the duration of the partnership, satisfaction with it decreased (O. R. = 0.98 for both), but the significance of the quadratic term indicated that this decrease weakened as years passed (O. R. equals approximately 1.001 for men and women), possibly turning into an increase in the later periods of the relationship. The type of the partnership showed the expected effect, as relative to those who were married, cohabiting individuals were less likely to have higher levels of satisfaction. This effect was especially strong for men (O. R. = 0.50), but was notable for women too (O. R. = 0.72).
Table 13: Determinants of relationship satisfaction, men

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O. R.</td>
<td>C. I. (95%)</td>
<td>O. R.</td>
<td>C. I. (95%)</td>
</tr>
<tr>
<td>Relative education (Ref.: hypogamous)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homogamous</td>
<td>1.04</td>
<td>0.92</td>
<td>1.18</td>
<td>0.97</td>
</tr>
<tr>
<td>Hypermagamous</td>
<td>1.00</td>
<td>0.86</td>
<td>1.16</td>
<td>0.92</td>
</tr>
<tr>
<td>Age</td>
<td>0.98</td>
<td>1.01</td>
<td>0.99</td>
<td>0.98</td>
</tr>
<tr>
<td>Birth cohort (ref.: 1940)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950-1959</td>
<td>0.83</td>
<td>0.68</td>
<td>1.02</td>
<td>0.86</td>
</tr>
<tr>
<td>1960-1969</td>
<td>0.89</td>
<td>0.68</td>
<td>1.18</td>
<td>0.83</td>
</tr>
<tr>
<td>1970-1979</td>
<td>1.13</td>
<td>0.81</td>
<td>1.58</td>
<td>1.08</td>
</tr>
<tr>
<td>Separated parents (Ref.: still together)</td>
<td>0.96</td>
<td>0.81</td>
<td>1.14</td>
<td>1.01</td>
</tr>
<tr>
<td>Previous divorce (Ref.: no divorce)</td>
<td>0.77</td>
<td>**</td>
<td>0.66</td>
<td>0.91</td>
</tr>
<tr>
<td>Religiosity (Ref.: non-religious)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious, follows church</td>
<td>1.34</td>
<td>**</td>
<td>1.13</td>
<td>1.59</td>
</tr>
<tr>
<td>Religious, own way</td>
<td>1.15</td>
<td>*</td>
<td>1.03</td>
<td>1.29</td>
</tr>
<tr>
<td>Age at the start of the relationship</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger than 20</td>
<td>0.99</td>
<td>0.75</td>
<td>1.32</td>
<td>0.98</td>
</tr>
<tr>
<td>32 or older</td>
<td>1.11</td>
<td>0.86</td>
<td>1.42</td>
<td>1.15</td>
</tr>
<tr>
<td>Relationship length, years</td>
<td>0.97</td>
<td>*</td>
<td>0.95</td>
<td>0.99</td>
</tr>
<tr>
<td>Relationship length, years²</td>
<td>&gt;1.00</td>
<td>***</td>
<td>&gt;1.00</td>
<td>&gt;1.00</td>
</tr>
<tr>
<td>Not married (Ref.: married)</td>
<td>0.50</td>
<td>***</td>
<td>0.42</td>
<td>0.59</td>
</tr>
<tr>
<td>Number of children</td>
<td>1.01</td>
<td>0.96</td>
<td>1.07</td>
<td>1.01</td>
</tr>
<tr>
<td>Subjective household finance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly problems</td>
<td>1.45</td>
<td>*</td>
<td>1.04</td>
<td>2.02</td>
</tr>
<tr>
<td>Managing</td>
<td>2.07</td>
<td>***</td>
<td>1.52</td>
<td>2.82</td>
</tr>
<tr>
<td>Respondent working (Ref.: not working)</td>
<td>1.09</td>
<td>0.93</td>
<td>1.27</td>
<td></td>
</tr>
<tr>
<td>Partner working (Ref.: not working)</td>
<td>0.96</td>
<td>0.85</td>
<td>1.09</td>
<td></td>
</tr>
<tr>
<td>Education (Ref.: tertiary)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary or lower</td>
<td>1.40</td>
<td>**</td>
<td>1.14</td>
<td>1.72</td>
</tr>
<tr>
<td>Vocational</td>
<td>1.30</td>
<td>**</td>
<td>1.11</td>
<td>1.52</td>
</tr>
<tr>
<td>High school</td>
<td>1.04</td>
<td>0.89</td>
<td>1.21</td>
<td></td>
</tr>
</tbody>
</table>

X² (model 4) = 236.7***, N = 5621
Nagelkerke R² (model 4) = 0.05
AIC (model 4) = 12075.6
AIC difference (model 4 versus nested) = -3.67 (no improvement)
Likelihood-ratio test (model 4 vs nested) = 0.33

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 and wave 4 youth sample.
Note: Data has been weighted except if otherwise indicated. The AIC difference and the likelihood-ratio test shows whether the model that includes relative level of education is significantly better than the one without it. An AIC difference above 4 indicates substantial evidence for the inclusion of the added relative level of education variable (see Burnham and Anderson 2004). p. < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.
Table 14: Determinants of relationship satisfaction, women

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O. R.</td>
<td>C. I. (95%)</td>
<td>O. R.</td>
<td>C. I. (95%)</td>
</tr>
<tr>
<td>Relative education (Ref.: hypogamous)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homogamous</td>
<td>1.24 ***</td>
<td>1.11 1.39</td>
<td>1.20 **</td>
<td>1.07 1.34</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>1.43 ***</td>
<td>1.25 1.65</td>
<td>1.41 ***</td>
<td>1.23 1.63</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at the start of the relationship (Ref.: 20-31 years old)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger than 20</td>
<td>0.97</td>
<td>0.84 1.12</td>
<td>1.01</td>
<td>0.88 1.17</td>
</tr>
<tr>
<td>32 or older</td>
<td>1.18</td>
<td>0.89 1.58</td>
<td>1.25</td>
<td>0.93 1.68</td>
</tr>
<tr>
<td>Relationship length, years</td>
<td>0.97 **</td>
<td>0.95 0.99</td>
<td>0.98 * 0.96</td>
<td>0.99</td>
</tr>
<tr>
<td>Relationship length, years²</td>
<td>&gt;1.00 ***</td>
<td>&gt;1.00 &gt;1.00</td>
<td>&gt;1.00 * &gt;1.00</td>
<td>&gt;1.00 &gt;1.00</td>
</tr>
<tr>
<td>Not married (Ref.: married)</td>
<td>0.67 ***</td>
<td>0.58 0.79</td>
<td>0.72 ***</td>
<td>0.62 0.84</td>
</tr>
<tr>
<td>Number of children</td>
<td>0.96</td>
<td>0.91 1.01</td>
<td>0.98</td>
<td>0.93 1.04</td>
</tr>
<tr>
<td>Subjective household finance (Ref.: daily hardships)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly problems</td>
<td>1.18</td>
<td>0.84 1.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing</td>
<td>2.26 ***</td>
<td>1.63 3.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent working (Ref.: not working)</td>
<td>0.84 **</td>
<td>0.75 0.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner working (Ref.: not working)</td>
<td>1.15</td>
<td>1.00 1.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (Ref.: tertiary)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary or lower</td>
<td>0.94</td>
<td>0.78 1.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
<td>1.02</td>
<td>0.87 1.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>0.89</td>
<td>0.78 1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X² (model 4)</td>
<td>320.09***</td>
<td>6253</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke R² (model 4)</td>
<td>0.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIC (model 4)</td>
<td>13497.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIC difference (model 4 versus nested)</td>
<td>12.84 (good)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood-ratio test (model 4 vs nested)</td>
<td>16.84***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 and wave 4 youth sample.

Note: Data has been weighted except if otherwise indicated. The AIC difference and the likelihood-ratio test shows whether the model that includes relative level of education is significantly better than the one without it. An AIC difference above 4 indicates substantial evidence for the inclusion of the added relative level of education variable (see Burnham and Anderson 2004). p. < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.
Finally, socioeconomic factors seemed to be more influential in the case of men than for women. Men were more likely to be satisfied when they only faced monthly financial problems (O. R. = 1.45) or had a manageable financial situation (O. R. = 2.07) compared to having daily hardships - while only the latter was true for women (O. R. = 2.26). The models also showed that for women, employment decreases satisfaction (compared to being non-employed, O. R. = 0.84). Conversely, if their partner is employed, women are more likely to be more satisfied (O. R. = 1.15), although this effect is significant only at the 0.10 level.

Turning back to the main question, so far, hypothesis 1 seems to be confirmed only for women, and regarding the possible ordering, point-estimates suggest that hypergamy is indeed more beneficial than homogamy. However, a more detailed alternative specification of assortative mating could shed light on finer differences between hypogamy, homogamy and hypergamy. Taking advantage of the four-group categorization scheme, in model 5 for both genders, I further separate non-homogamous couples into a total of four categories: distant hypergamy/hypogamy, where partners were two or more educational categories away; and near hypergamy/hypogamy, where the couple were from adjacent educational groups. Table 15 details the fitted models. Again, the alternative partial proportional odds models did not differ substantially from the chosen PO models. Also, the control variables’ effects did not change in a degree worth noting, and therefore, I refrain from interpreting them again.

Similarly to the models based on the simpler specification, the estimates of the detailed models suggest that assortative mating only has a detectable effect on relationship satisfaction of women, and that hypergamous and homogamous women are more satisfied with their partnership compared to hypogamous ones. However, the detailed relative education variable shows an interesting pattern. Compared to women in distant hypogamous unions, those who were in a homogamous partnership were more likely to be more satisfied (O. R. = 1.31), but the point-estimates suggest that close hypergamy (O. R. = 1.52) and especially distant hypergamy (O. R. = 1.72) were more beneficial. There were no significant differences between close and distant hypogamy, suggesting

\[13\] The detailed PPO models are available from the author.
an overall negative effect for relationship quality. Based on these point-estimates, it could be concluded that as the distance between partners increase to the benefit of the male partner, women are increasingly more likely to be satisfied with their partnership, confirming theories highlighting hypergamy as the most advantageous arrangement. However, caution should again be advised as confidence intervals interlap, due to the limitations stemming from the fairly low number of distant partnerships (see chapter 5.2).

Table 15: Determinants of relationship satisfaction, detailed models

<table>
<thead>
<tr>
<th>Variables</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative education (Ref.: hypogamous, distant)</td>
<td>O. R.</td>
<td>C. I. (95%)</td>
</tr>
<tr>
<td>Hypogamous, close</td>
<td>0.89</td>
<td>0.71 - 1.29</td>
</tr>
<tr>
<td>Homogamous</td>
<td>0.94</td>
<td>0.72 - 1.24</td>
</tr>
<tr>
<td>Hypergamous, close</td>
<td>0.96</td>
<td>0.67 - 1.18</td>
</tr>
<tr>
<td>Hypergamous, distant</td>
<td>0.82</td>
<td>0.56 - 1.22</td>
</tr>
<tr>
<td>Age</td>
<td>1.00</td>
<td>0.98 - 1.01</td>
</tr>
<tr>
<td>Birth cohort (ref.: -1940)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950-1959</td>
<td>0.87</td>
<td>0.70 - 1.08</td>
</tr>
<tr>
<td>1960-1969</td>
<td>0.87</td>
<td>0.66 - 1.15</td>
</tr>
<tr>
<td>1970-</td>
<td>1.18</td>
<td>0.83 - 1.66</td>
</tr>
<tr>
<td>Sep. par. (Ref.: still together)</td>
<td>1.02</td>
<td>0.86 - 1.21</td>
</tr>
<tr>
<td>Prev. div. (Ref.: no divorce)</td>
<td>1.01</td>
<td>0.82 - 1.23</td>
</tr>
<tr>
<td>Religiosity (Ref.: non-religious)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious, follows church</td>
<td>1.25</td>
<td>** 1.05 - 1.49</td>
</tr>
<tr>
<td>Religious, own way</td>
<td>1.11</td>
<td>. 0.98 - 1.24</td>
</tr>
<tr>
<td>Age at the start of the relationship (Ref.: 20-31 years old)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger than 20</td>
<td>0.99</td>
<td>0.74 - 1.32</td>
</tr>
<tr>
<td>32 or older</td>
<td>1.15</td>
<td>0.90 - 1.48</td>
</tr>
<tr>
<td>Relationship length, years</td>
<td>0.98</td>
<td>* 0.96 - 0.99</td>
</tr>
<tr>
<td>Relationship length, years²</td>
<td>&gt;1.00</td>
<td>*** &gt;1.00 - &gt;1.00</td>
</tr>
<tr>
<td>Not married (Ref.: married)</td>
<td>0.50</td>
<td>0.43 - 0.60</td>
</tr>
<tr>
<td>Number of children</td>
<td>1.01</td>
<td>0.96 - 1.07</td>
</tr>
<tr>
<td>Subjective household finance (Ref.: daily hardships)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly problems</td>
<td>1.45</td>
<td>** 1.04 - 2.02</td>
</tr>
<tr>
<td>Managing</td>
<td>2.06</td>
<td>*** 1.51 - 2.81</td>
</tr>
<tr>
<td>Resp. wr. (Ref.: not working)</td>
<td>1.09</td>
<td>0.93 - 1.27</td>
</tr>
<tr>
<td>Part. wr. (Ref.: not working)</td>
<td>0.96</td>
<td>0.85 - 1.08</td>
</tr>
<tr>
<td>Education (Ref.: tertiary)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary or lower</td>
<td>1.38</td>
<td>** 1.12 - 1.69</td>
</tr>
<tr>
<td>Vocational</td>
<td>1.29</td>
<td>** 1.10 - 1.50</td>
</tr>
<tr>
<td>High school</td>
<td>1.05</td>
<td>** 0.90 - 1.23</td>
</tr>
</tbody>
</table>

X² 238.38***, N = 6253  321.54, N = 6253
Nagelkerke R² 0.05  0.06
AIC 12077.9  13500.2
AIC difference (fitted vs nested)  -5.9 (no improvement)  10.3 (good)
Likelihood-ratio test (fitted vs nested)  0.73  18.28**

Note: Data has been weighted except if otherwise indicated. The AIC difference and the likelihood-ratio test shows whether the model that includes relative level of education is significantly better than the one without it. An AIC difference above 4 indicates substantial evidence for the inclusion of the added relative level of education variable (see Burnham and Anderson 2004). p. < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Model estimates are from proportional odds ordinal logistic regression models.
The next part of the analytical process was to inspect the main models (returning to model 4) for possible interactions. Amongst others, I explored whether the effects of assortative mating for both genders interacted with time-related variables (age, age at marriage and relationship length, birth cohorts), background characteristics (divorced parents, previous divorce), or perhaps relationship-specific attributes (type of the relationship, number of children). No interaction showed a meaningful level of association.

As a final step, to assess the robustness of the main models (model 4 and 5), I examined whether employing different dependent variables (the original 0-10 as an ordinal or continuous variable), modelling strategies (OLS linear model) or altering the samples used (to include only working age individuals (25-55) and/or respondents only from the first wave would result in different conclusions\.14

Concerning the dependent variable and alternative modelling strategies, results using the unchanged, 0 to 10 ordinal scale yielded very similar results for women in the case of the simple (homogamous: O. R. = 1.20\**; hypergamous: O. R. = 1.43\***) and the detailed assortative variable too (hypogamous, close: O. R. = 1.15; homogamous: O. R. = 1.34\*; hypergamous, close: O. R. = 1.59\***; hypergamous, distant: O. R. = 1.75\**), while for men the effects of relative education remained insignificant. Again, it should be emphasized that conclusions based on this original specification of the dependent variable could not be checked for serious violations of the proportional odds assumptions, which would have rendered the results questionable. Using a simpler OLS linear regression, homogamous (B = 0.21\**) and hypergamous (B = 0.32\***) women had higher relationship satisfaction, and the detailed assortative mating variable again showed the distance-based pattern visible in the ordinal models (hypogamous, close: B = 0.06; homogamous: B = 0.26\*; hypergamous, close: B = 0.36\***; hypergamous, distant: B = 0.46\**). For men, assortative mating in the OLS linear models were again not an influential determinant of relationship satisfaction. All in all, it can be noted that the same conclusions can be drawn

\textsuperscript{14} All models are available from the author.
from multiple different modelling strategies, corroborating the results for hypothesis 1.

Regarding the samples used, three key patterns emerged from the alternative models. First, the simple three-way assortative mating variable (used in model 4) always affected relationship satisfaction similarly, regardless of sample size. Second, the more detailed relative education variable was shown to be sensitive to sample size. As the restricted samples had a lower number of distant relationships estimates became inaccurate with wide confidence intervals. Third, while the majority of the control variables’ effects were unchanging throughout the samples, in the restricted ones, work, partner’s work and religions were often shown to have a lesser or even insignificant influence.

While the cross-sectional analyses seem conclusive, they are of course not without limitation. First, a larger sample size to verify the pattern suggested by the point-estimates would be beneficial. A larger sample would also enable the examination of even more detailed categories, such as all possible combinations of a four-by-four educational contingency table. Second, the main dependent variable is a simple measure of relationship quality based on a single variable, which can be an oversimplification of a highly complex phenomenon. This limitation of the dependent variable could potentially mask finer processes or interactions. Altogether, further studies with larger samples and more refined measurements of satisfaction are needed, for which the presented analyses could serve as a starting point.

6.2. A longitudinal approach: trajectories of relationship quality

While the results of the cross-sectional models show visible differences per status arrangement (for women at least), their results have to be interpreted in light of their cross-sectional limitations. Mainly, examining the relationships of more than ten thousand individuals all of whom are at a different point in their own and their partnership’s life is difficult, even when accounting for a large number of potentially influential factors. However, compared to a cross-sectional analysis, a longitudinal approach might uncover more details about how assortative mating

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15 The presented results are a revised version of my original article published in Demográfia (Erát 2019). I thank Professor Daniel Nagin for his help regarding the methodology of my work.
plays a role (or perhaps, has no role) in the individual’s relationship satisfaction as it takes into account more than a one-time measurement in a multi-year relationship. This more complex way of looking at differences in relationship quality might make it easier to evaluate hypothesis 1, providing a fuller picture.

6.2.1. Theories of longitudinal changes

Where is the quality of a relationship headed? What can a newly formed couple expect? These questions have been raised by theoretical and empirical studies since the 1960s, with diverging answers and results. One of the most popular approaches, the disillusionment model, states that partners fall in love with an idealized version of each other which is hard to maintain as time goes on, therefore, as fantasies meet reality, relationship quality decreases over time (Waller 1938; Brehm et al. 2001; Huston et al. 2001). The same decline is predicted by the so-called emergent distress model, mainly because the number of conflicts and problems in a relationship increases as it progresses, which (especially in the absence of good conflict management skills) results in negative behaviours (Gottman 1993; Huston et al. 2001). Another theory proposes that the early honeymoon phase is defined by emotionality, care for each other and optimism, all of which is gradually worn down by everyday life causing a decline in quality (Aron et al. 2002). Several studies verified these theoretical models, as they found evidence for decreasing relationship quality over time (Karney and Bradbury 1997; Lindahl, Clement and Markman 1998; Kurdek 1999; Niehuis et al. 2015).

As opposed to a decline, others predict long-term stability. The enduring dynamics and the perpetual problems models are both based on the assumption that partners get to know each other well during the dating phase and there are no illusions (Huston and Houts 1998; Huston et al. 2001). This stability might not necessarily mean a high quality, but rather an unchanging situation: couples face the same problems, with the same relationship dynamics and with similar outcomes. Another line of though (the aptly named accommodation model) merges the concept of decline with stability, proposing that as the relationship encounters hardships relationship quality declines, but partners have the opportunity to overcome these problems and return to the original level of
satisfaction with good relationship-management skills (Caughlin and Huston 2006).

While there is no consensus about where a relationship is headed in terms of its quality, theories are mostly concerned with new partnerships and its early years and not older couples. In general, it can be presumed that relationship quality is higher for older couples due to selection (if we accept that lower quality partnerships end earlier), but some propose that the complexity of roles that an individual has to fulfil decreases with age and the focus shifts to personal relationships, increasing their quality (Rollins and Cannon 1974). Some noted that a certain kind of socio-emotional selectivity might also be in play in older age suggesting that as time goes on, older individuals actively narrow down their social circles focusing more on close connection and their romantic relationships (Levenson et al. 1993; Carstensen, Fung and Charles 2003).

But what if all these theories are not contradictory, but complementary? It is easy to see how some couples experience a decline, others an increase or stability, or even, as the saying goes, the “ups and downs”. If there is heterogeneity in the experiences of couples, then the question can be rephrased from where is a relationship’s quality headed to what are the dominant patterns of relationship quality.

In recent years, several studies tried to tackle the issue of heterogeneity. For example, Anderson, Van Rizyn and Doherty studied 706 married individuals between 1980 and 2000, concluding that only 3.6% of all couples showed a declining trend, while the majority experienced a high and stable, a fifth of them a low and stable, and a tenth of all respondents a U-shaped change in relationship quality (2010). In another study, Birditt et al. examined 320 married couples across 16 years, finding differences in the number and trajectories of groups between women and men (2012). Most women followed a U-shaped or a slightly decreasing trajectory, with 25% having a high-quality marriage, and only a minority (7%) reporting a strong decrease over the years. In the case of men, 92% had a high or medium, but otherwise stable relationship, and less than a tenth had a U-shaped curve. A lower level of heterogeneity was found by Foran et al. in the case of 447 new German parents, suggesting that country-specific
differences may be present between couples (2013). Nearly 90% of all men and women had a stable, high-quality relationship, and only every tenth person followed a declining trend. Similarly, Lorber et al. concluded that the early decline in relationship quality was restricted to a selective group of women and men (2015).

In summary, the theories and empirical work show a conflicting image, as results based on overall averages present a general decline in relationship quality, while studies aimed at the examination of the heterogeneity in trends revealed that in fact only a selective group of individuals follow a pattern of decline. Based on this, an ideal examination of longitudinal patterns should focus on distinctive trends, while simultaneously testing certain factors that might influence the probability of belonging to one (or more) of these trend-groups. This is when the chosen approach in this part of the dissertation, group-based trajectory analysis comes into play.

6.2.2. Data and methods

To measure longitudinal changes, a data source containing multiple assessment of the previously introduced subjective satisfaction variable from the same respondent was needed. For this reason, I again used data from the Hungarian Turning Points of the Life Course Panel Survey (Életünk fordulópontjai, ÉF), conducted by the Hungarian Demographic Research Institute (KSH-NKI). This time, the sample was restricted to individuals who participated in all waves from wave 1 (2001-2002) to wave 4 (2012-2013). A total number of 8,103 respondents were originally included in this panel sample, indicating that around 50% of the initial sample dropped out due to panel attrition. By selecting those who were continuously in the same relationship with non-missing data on satisfaction, the sample size reduced to a total of 3,295 individuals. Table 16 details their attributes.

Generally, the sample resembles the one used for the cross-sectional analyses: most respondents had intact parental families, had no previous divorces, were non-church going, were married, had children, seldom experienced financial problems and most had vocational training with less than a fifth having tertiary education. However, in some respect, differences were
visible. Notably, the average relationship length at wave 1 was slightly longer, and interviewees indicated a slightly higher average satisfaction with their partnership.

Table 16: Sample characteristics of the longitudinal trajectory models, means and percentages

<table>
<thead>
<tr>
<th>Variables</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>47.44</td>
<td>44.06</td>
</tr>
<tr>
<td></td>
<td>(12.64)</td>
<td>(11.78)</td>
</tr>
<tr>
<td>Parents still together</td>
<td>91.8</td>
<td>89.6</td>
</tr>
<tr>
<td>Separated parents</td>
<td>8.2</td>
<td>10.4</td>
</tr>
<tr>
<td>No previous divorce</td>
<td>90.4</td>
<td>91.1</td>
</tr>
<tr>
<td>Had a divorce</td>
<td>9.6</td>
<td>8.9</td>
</tr>
<tr>
<td>Religious, belongs to a church</td>
<td>13.8</td>
<td>17.1</td>
</tr>
<tr>
<td>Not religious or not following church</td>
<td>86.2</td>
<td>82.8</td>
</tr>
<tr>
<td>Length of relationship at wave 1(mean)</td>
<td>21.33</td>
<td>21.17</td>
</tr>
<tr>
<td></td>
<td>(12.87)</td>
<td>(12.39)</td>
</tr>
<tr>
<td>Age at the start of the relationships, under 20</td>
<td>3.5</td>
<td>24.9</td>
</tr>
<tr>
<td>Age at the start of the relationship, 20-31</td>
<td>84.6</td>
<td>68.2</td>
</tr>
<tr>
<td>Age at the start of the relationship, 32 or older</td>
<td>11.9</td>
<td>6.9</td>
</tr>
<tr>
<td>Married or plans to marry</td>
<td>95.3</td>
<td>95.7</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>4.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Number of children at wave 1 (mean)</td>
<td>1.89</td>
<td>1.92</td>
</tr>
<tr>
<td></td>
<td>(0.99)</td>
<td>(0.97)</td>
</tr>
<tr>
<td>Had a child born between wave 1 and 4</td>
<td>14.5</td>
<td>11.6</td>
</tr>
<tr>
<td>No new child born between wave 1 and 4</td>
<td>85.5</td>
<td>88.4</td>
</tr>
<tr>
<td>Indicated a financial hardship in at least one wave</td>
<td>8.1</td>
<td>6.8</td>
</tr>
<tr>
<td>No financial hardships between wave 1 and 4</td>
<td>91.9</td>
<td>93.2</td>
</tr>
<tr>
<td>Respondent working, number of waves (mean)</td>
<td>2.35</td>
<td>2.07</td>
</tr>
<tr>
<td></td>
<td>(1.64)</td>
<td>(1.60)</td>
</tr>
<tr>
<td>Respondent's partner working, number of waves (mean)</td>
<td>1.95</td>
<td>2.44</td>
</tr>
<tr>
<td></td>
<td>(1.56)</td>
<td>(1.64)</td>
</tr>
<tr>
<td>Elementary or lower education</td>
<td>18.3</td>
<td>23.8</td>
</tr>
<tr>
<td>Vocational training</td>
<td>39.3</td>
<td>20.6</td>
</tr>
<tr>
<td>Secondary education</td>
<td>25.4</td>
<td>37.2</td>
</tr>
<tr>
<td>Tertiary or higher education</td>
<td>17.0</td>
<td>18.3</td>
</tr>
<tr>
<td>Homogamous</td>
<td>52.0</td>
<td>49.8</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>24.1</td>
<td>24.6</td>
</tr>
<tr>
<td>Hypogamous</td>
<td>23.9</td>
<td>25.6</td>
</tr>
<tr>
<td>-1949</td>
<td>38.8</td>
<td>27.9</td>
</tr>
<tr>
<td>1950-1959</td>
<td>28.6</td>
<td>29.7</td>
</tr>
<tr>
<td>1960-1969</td>
<td>18.6</td>
<td>23.2</td>
</tr>
<tr>
<td>1970-</td>
<td>14.0</td>
<td>19.1</td>
</tr>
<tr>
<td>Relationship satisfaction (mean)</td>
<td>9.07</td>
<td>8.69</td>
</tr>
<tr>
<td></td>
<td>(1.29)</td>
<td>(1.70)</td>
</tr>
<tr>
<td>Total unweighted number of respondents</td>
<td>1,526</td>
<td>1,850</td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, longitudinal sample.
Note: Values in parentheses under means indicate the standard deviation. Data has been weighted except if otherwise indicated.

These minor differences can be attributed to two things: first, the previous sample contained new, primarily young respondents from the fourth wave of the ÉF, and second, selection biases, as the sample only contains individuals who were with the same person for all four waves, which together span a total of ten to eleven years. Therefore, the sample is biased by factors that facilitate the long-
term maintenance of the relationship (hence the slightly higher average quality),
decrease the risk of separation (which will be explored in the following chapter),
and also, qualities that increase the probability of response through the
successive panel waves such as mortality differences, not being in a cohabiting
relationship, financial hardships, lower levels of educational attainment and fewer
children (see Bartus 2015; Makay 2016).

As previously mentioned, to examine the trajectories of relationship quality
and to look for distinct groups amongst these individual trends, I employed group-
based trajectory analysis (GBTA, for an extended discussion, see Nagin 2005;
2014). Formally, GBTA is an application of finite mixture models aiming to identify
clusters of respondents with similar trajectories, with estimates based on
maximum likelihood estimation (Nagin 2005: 24). This method is applicable to
scales, continuous variables, binary indicators and poisson dependent variables
as well. Following the explanation of Nagin (2014), an individual sequence of
measurements is defined as:

\[ Y_i = y_{i1}, y_{i2}, y_{i3}, \ldots, y_{it} \]  (13)

Where \( i \) denotes the individual, and \( t \) indicates a time of measurement from
a total of \( T \) periods. If \( P(Y_i) \) represent the probability of this sequence, the goal is
to estimate a set of parameters that maximizes this probability (Nagin 2014: 208).
These parameters define the shape of trajectories (in the case of a scale
dependent, up to a cubic parameter) and also, the probabilities of group
membership.

If there are no differences between the progression of satisfaction between
individuals, only one trajectory is estimated. However, GBTA presumes that
individual differences are present, which are not expressed as a continuous
variation around the mean trajectory, but rather as a finite set of distinct groups
\( J \), denoted with \( j \). Let \( P^j(Y_i) \) define the probability of \( Y_i \) given group membership \( j \)
and \( \pi_j \) be the probability that a random person belongs to group \( j \). With
aggregating the conditional likelihood functions, the unconditional probability of
the data \( Y_i \) is formed (Nagin 2005: 23-45)
\[ P(Y_i) = \sum_{j} \pi_j p^j(Y_i) \quad (14) \]

The name finite mixture model comes from the fact that the equation sums across a finite number of discrete groups \( J \), and that the population is assumed to be composed of a mixture of unobserved groups (Nagin 2014: 209). As in the case of standard growth curve models, for given \( j \), conditional independence is assumed over \( T \) periods for sequential realizations of the elements of \( Y_i \) (defined in 13). Therefore

\[ p^j(Y_i) = \prod_{t=T}^{T} p^j(y_{it}) \quad (15) \]

where \( p^j(y_{it}) \) is the probability distribution function of \( y_{it} \), given membership in \( j \). While conditional independence is assumed (Nagin 2005: 26-27), serial dependence will be expressed through the group-based specifications of \( p^j(y_{it}) \). Finally, the likelihood for the entire sample is the product of the individual likelihood functions of the \( N \) individuals of the sample

\[ L = \prod_{i=1}^{N} P(Y_i) \quad (16) \]

While the above presented equations define the general form, for the dependent variable of relationship satisfaction which is a scale with boundaries of 0 and 10, a more specific form is used. For example, in the case of using relationship length as a time variable with a cubic form, the equation looks like

\[ y_{it}^* = \beta_{0j} + \beta_{1j} length_{it} + \beta_{2j} length_{it}^2 + \beta_{3j} length_{it}^3 + \epsilon_{it} \quad (17) \]

Where \( length_{it} \), is the length of the relationship, \( length_{it}^2 \) is its squared, and \( length_{it}^3 \) is the cubed form, \( \epsilon_{it} \) is the disturbance, and \( \beta_{0j} \), \( \beta_{1j} \), \( \beta_{2j} \), \( \beta_{3j} \) are the parameters defining the shape. In the case of scale variables with boundaries, the model focuses on \( y_{it}^* \), which is a latent variable measuring the satisfaction of individual \( i \) at time \( t \). This latent variable is linked to the observed one in the datasets

\[ y_{it} = S_{\text{min}}, \text{if } y_{it}^* < S_{\text{min}} \quad (18) \]
\[ y_{it} = y^*_it, \text{if } S_{min} \leq y^*_it \leq S_{max} \] (19)

\[ y_{it} = S_{max}, \text{if } y^*_it > S_{max} \] (20)

Where \( S_{min} \) is the minimum, and \( S_{max} \) is the maximum possible score on the scale (Nagin 2005: 30-31). A continuous dependent would be a special case where there are no set boundaries. It is important to emphasize that a separate set of time parameters are estimated for each group \( j \), which has a great degree of flexibility as for example, a given group may experience a linear decline in satisfaction, while another might follow a U-shape.

Continuing on, group membership probabilities are calculated as (Nagin 2005: 41)

\[ \pi_j = e^{\theta_j} / \sum_{j=1}^J e^{\theta_j} \] (21)

Where the group membership probability, \( \pi_j \) is linked to a set of parameters, \( \theta_j \). As the probabilities of group membership sum up to 1, only \( J - 1 \) estimates are required. This can be generalized to include a set of individual-level predictors, which therefore influence group membership probabilities. As Nagin explains, the predictors take part in the estimations of the trajectories and individuals are never assumed to be members of a given trajectory group when estimating the effects of certain independent variables, counteracting classification errors (2005: 97-98). For example, for a two-group model, a binary logit function is used to model the effects of predictors

\[ \pi_1(x_i) = \frac{e^{x_i\theta}}{1 + e^{x_i\theta}} \] (22)

Which generalizes to the multinominal logit model in the case of three or more trajectory groups. Throughout my analyses, the model fitting process is done with the program “traj” in STATA, written by Jones and Nagin (2012). As the number and shape of the trajectory groups are defined manually, a crucial element of GBTA is model selection (Nagin 2005: 61-92). First, the Bayesian Information Criterion (BIC) is again employed in the model choosing
process, as it allows a simple comparison of the possible specifications, defined as

\[ BIC = \log(L) - 0.5k \log(N) \] (23)

where \( L \) is the model’s maximized likelihood, \( N \) is the sample size, and \( k \) (determined by the order of polynomials used and the number of groups) is the number of parameters. Larger (less negative) BIC values indicate a better fit (Nagin 2005: 64)\(^{16}\). Second, more practical measures include using the posterior group membership probabilities. The posterior probability (PP) is defined as the individual’s probability of belonging to a trajectory group given his or her specific sequence. PP is calculated as

\[ \hat{P}(j \mid Y_i) = P(Y_i \mid j) \hat{\pi}_j / \sum_j (Y_i \mid j) \hat{\pi}_j \] (24)

PP is the basis of group membership - every individual has a probability of belonging to every group, however, they are assigned to the one for which they have the highest PP. Therefore, it is reasonable to use it as the second measure of model fit besides the BIC. The average posterior probability of group membership (AvePP) is simply the average of the PP for each individual in the given group. Nagin recommends that a 0.7 probability should be a minimum for all groups (Nagin 2005: 88). Third, based on the AvePP of group \( j \), the odds of correct classification (OCC) can be calculated too

\[ OCC_j = \frac{AvePP_j / 1 - AvePP_j}{\hat{\pi}_j / 1 - \hat{\pi}_j} \] (25)

For the OCC, Nagin recommends that an OCC ≥ 5 is indicative of high assignment accuracy (Nagin 2005: 89). The fourth and final measure of model fit is the difference between the model’s estimation of group membership probability, \( \hat{\pi}_j \), and the actual proportion of the sample assigned to a given group, \( P_j \). Greater differences indicate a lack of model fit.

\(^{16}\) For example, in the case of discrete data, as the first term in the equation reflects the logarithm of the model’s likelihood function, a perfect fit would be indicated by a likelihood of 1 (reflecting a 100% percent probability of the actual data based on the model’s estimated parameters), with a natural logarithm of 0. Worse model fits are reflected in lower likelihood values, with the log-likelihood becoming more negative (Nagin 2005: 64-66).
To summarize, GBTA offers a highly flexible way of identifying a finite number of distinct trajectory groups with differing trajectory shapes. Based on the above-described details, the model fitting process is the following:

1. Determine the number of distinct trajectory groups and find the best fitting trajectory shapes via specifications of the time variable.
2. Evaluate the adequateness of the models.
3. Examine how the predictors influence group membership probabilities.

So far, the modelling strategy seems clear. The relationship satisfaction of respondents is measured in multiple panel waves forming individual trajectories, from which the GBTA approach identifies distinct groups and risk factors, thereby shedding light on common developmental paths of relationship quality and what influences the probability of belonging to one. However, the selected panel dataset has one major shortcoming: the heterogeneity of the relationship length in the first wave.

Although the estimation process itself is not hindered as the time between waves is identical, the number of observations is not the same for all the relationship years. Consequently, estimated trajectories are based on the averages of the multiple similarly-shaped paths in a given year of the relationship, and curves are fitted to these average-points. While this provides interpretable modelling results, it has two drawbacks. Mainly, the number of respondents who have a relatively new or old relationship (under five or over forty years) is low, making the fitted trends less accurate in these years. As a partial solution to this problem, I limited the span of relationship time to a maximum of 45 years in wave 4, after which the number of respondents for each gender dipped below one hundred.

The second issue is that the proper implementation of time-varying dependent variables would require all respondents to be in the same year of their relationship and give information about these attributes at the same time. As this is not the case, several time-varying independent variables had to be operationalized in a different way, as table 16 already suggested. Religious affiliation was collapsed into a simple dichotomous variable for parsimony, and age was omitted, as it is an alternate time variable to relationship length,
introducing errors to the modelling process if left in. Regarding relationship type, the previous distinction of married and non-married individuals was reworked into a variable indicating those who are already married already or plan to marry, and those who only cohabit. In the case of children, a separate dichotomous measurement was added, which signalled if the respondent had a new child born during the observed period. For the subjective financial situation of the household, respondents and their partners’ employment, variables were added that count the number of waves in which hardships and non-employment were indicated.

6.2.3. Results from the GBTA models

Table 17: GBTA model selection

<table>
<thead>
<tr>
<th>Model</th>
<th>Gr. 1</th>
<th>Gr. 2</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BIC</td>
<td>AIC</td>
<td>Log-likelihood</td>
<td>BIC</td>
</tr>
<tr>
<td>Single group models</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>-8104.90</td>
<td>-8096.94</td>
<td>-8093.94</td>
<td>-11683.12</td>
</tr>
<tr>
<td>Q</td>
<td>-8095.92</td>
<td>-8085.31</td>
<td>-8081.31</td>
<td>-11664.51</td>
</tr>
<tr>
<td>C</td>
<td>-8099.57</td>
<td>-8086.31</td>
<td>-8081.31</td>
<td>-11668.19</td>
</tr>
</tbody>
</table>

Two-group models

| L     | L     | -7822.49 | -7806.57 | -7800.57 | -11146.09 | -11129.60 | -11123.60 |
| L     | Q     | -7816.45 | -7797.88 | -7790.88 | -11140.12 | -11120.88 | -11113.88 |
| L     | C     | -7819.53 | -7798.31 | -7790.31 | -11141.15 | -11119.16 | -11111.16 |
| Q     | L     | -7821.36 | -7802.79 | -7795.79 | -11142.81 | -11123.57 | -11116.57 |
| Q     | Q     | -7815.94 | -7794.71 | -7786.71 | -11136.64 | -11114.64 | -11106.64 |
| Q     | C     | -7819.12 | -7795.24 | -7786.24 | -11138.09 | -11113.35 | -11104.35 |
| C     | L     | -7824.73 | -7803.51 | -7795.51 | -11146.06 | -11124.06 | -11116.06 |
| C     | Q     | -7819.27 | -7795.39 | -7786.39 | -11139.80 | -11115.06 | -11106.06 |
| C     | C     | -7822.26 | -7795.73 | -7785.73 | -11141.10 | -11113.61 | -11103.61 |

Source: Hungarian Turning Points of the Life Course Panel Survey, longitudinal sample.
Note: AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion.
Models with three groups were ignored for the presented analyses, as the estimated group sizes were consistently below 0.10. L = Linear; Q = Quadratic; C = Cubic.

Starting with model selection, table 17 shows the possible specifications of the single group and two-group models. From the single group models which assume one general trajectory for all respondents, the quadratic specification showed the best fit for both men and women. This indicates that relationship satisfaction is not a linearly progressing (either decreasing or increasing) phenomenon, but rather a changing one in time. Figure 23 shows the estimates with confidence intervals.

The single group estimates indicate that men and women experience a decline in satisfaction after the beginning of the relationship. While both genders start at a similar level of satisfaction which declines until the 20-25th year of the
relationship, women experience a relatively steeper decrease. After the low-points, men seemingly return to their original satisfaction levels by the 45th year, while women do not.

**Figure 23: Relationship satisfaction trajectories, single group models**

Source: Hungarian Turning Points of the Life Course Panel Survey, longitudinal sample. Dotted lines indicate the 95% confidence intervals.

As previously noted, traditional growth curve modelling would focus on deviations from the average, single group trends presented on figure 23. However, based on the comparison of possible models (table 17), GBTA identified two distinct groups for both genders - a “medium” and “high” for men, and a “low” and “high” for women. Table 18 details the estimates and fit statistics of these models, of which all confirmed the adequacy of the models (AvePP, OCC, size differences). Overall, the results seem to be in line with previous results which highlighted the dominance of U-shaped trajectories (Birditt et al. 2012), the minority of declining trends, and the high proportion of high and stable paths (Anderson, Van Rizyn and Doherty 2010; Foran et al. 2013; Lorber et al. 2015).
In the case of men, the sample was split nearly evenly between two groups. Those belonging to the “medium” group (53.1% of all men), who experienced a lower starting average satisfaction with a decline until the 20-25th year of the relationship, after which satisfaction recovered to a certain degree. Compared to the “medium” group, however, men following the “high” trajectory (46.9%) had much higher levels of initial satisfaction and a steeper recovery after the 20-25th year. Figure 24 depicts these trajectories.

Table 18: GBTA two-group model estimates for relationship satisfaction

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Coef.</th>
<th>C. I. (95%)</th>
<th>Parameter</th>
<th>Coef.</th>
<th>C. I. (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>Intercept (medium)</td>
<td>9.14</td>
<td>***</td>
<td>Intercept (low)</td>
<td>9.04</td>
<td>***</td>
</tr>
<tr>
<td>Linear (medium)</td>
<td>-0.05</td>
<td>**</td>
<td>Linear (low)</td>
<td>-0.09</td>
<td>***</td>
</tr>
<tr>
<td>Quadr. (medium)</td>
<td>0.001</td>
<td>***</td>
<td>Quadr. (low)</td>
<td>0.001</td>
<td>**</td>
</tr>
<tr>
<td>Intercept (high)</td>
<td>12.23</td>
<td>***</td>
<td>Intercept (high)</td>
<td>11.93</td>
<td>***</td>
</tr>
<tr>
<td>Linear (high)</td>
<td>-0.09</td>
<td>**</td>
<td>Linear (high)</td>
<td>-0.09</td>
<td>***</td>
</tr>
<tr>
<td>Quadratic (high)</td>
<td>0.003</td>
<td>**</td>
<td>Quadratic (high)</td>
<td>0.002</td>
<td>***</td>
</tr>
<tr>
<td>Est. size (medium)</td>
<td>53.1</td>
<td>***</td>
<td>Est. size (low)</td>
<td>46.7</td>
<td>***</td>
</tr>
<tr>
<td>Est. size (high)</td>
<td>46.9</td>
<td>***</td>
<td>Est. size (high)</td>
<td>53.3</td>
<td>***</td>
</tr>
</tbody>
</table>

N 1526  N 1850
BIC -7815.94  BIC -11136.64
AvePP (medium) 0.88  AvePP (low) 0.89
AvePP (high) 0.86  AvePP (high) 0.88
OCC (medium) 6.48  OCC (low) 9.23
OCC (high) 6.95  OCC (high) 6.43
Act. size (medium) 53.2  Act. size (low) 45.4
Act. size (high) 46.8  Act. size (high) 54.6

Source: Hungarian Turning Points of the Life Course Panel Survey, longitudinal sample.
Note: AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion. AvePP = Average Posterior Probability. OCC = Odds of Correct Classification. Act. size = Percentage of respondents assigned to given group based on highest posterior probability.

Contrary to men, women’s estimated trajectories seem to be more divergent (figure 25). Women in the “low” group (46.7%) had a relatively low average satisfaction to begin with, which declined steeply until the 30-35th year of the relationship. For them, only a mild increase was visible until the end of the observed period. Women’s “high” trajectory was found to be the opposite, with a very high starting satisfaction, and earlier lower point (20-25th year) and a visible recovery in later periods.

So far, it is clear that the recent empirical works focusing on the heterogeneity of relationship quality trajectories rightly assumed that behind simple averages in fact hide distinctive paths. Although both Hungarian men and...
women showcased differences, this was most notable in the case of women where the gap between the two groups was the widest.

**Figure 24: Relationship satisfaction trajectories of men**

![Graph showing relationship satisfaction trajectories for men with confidence intervals]

Source: Hungarian Turning Points of the Life Course Panel Survey, longitudinal sample. Dotted lines indicate the 95% confidence intervals.

After establishing the possible groups an individual may belong to, the next step is to assess which selected individual, relationship-specific or socioeconomic risk factors affect the probability of group membership. For women, the designated reference group was the “low” trajectory, and results indicate a higher or lower probability of belonging to the “high” quality path. For men, the “medium” group was selected as a point of reference. Table 19 presents the estimates and standard errors.

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The models again show a familiar picture. For men, homogamy or hypergamy did not affect the probability of being in the “high” trajectory group. This implies that assortative mating is not an influential factor for men even when considering a longer progression of subjective satisfaction with the relationship as well. For women, however, both homogamy and hypergamy were significant. Women in homogamous partnerships were 35% more likely to follow a “high” trajectory, while women who were hypergamous were 69% more probable to do the same compared to women in hypogamous unions. Corroborating the cross-sectional results, hypothesis 1 seems to be confirmed only for women. Also, while the positive effect seems to be larger for hypergamy than for homogamy, the standard errors caution against definitively stating that one is less beneficial than the other for women.
Regarding the control variables, results are in line with the ones seen in the cross-sectional models. From the individual-level variables, parental separation reduced the likelihood of following the “high” trajectory for women (O. R. = 0.60) and for men too (O. R. = 0.61), although for the latter, the effect was only significant at the 0.10 level. Church-following religiosity was again a strong predictor of satisfaction, as religious men were 74% more likely, and similar women were 47% more probable to follow the “high” trajectory compared to the respective references.

When considering long-term relationship satisfaction instead of satisfaction in a given point in time, being unmarried or without planning to marry remained an obvious indicator of low relationship quality: men in this group were 80%, while women were 56% less likely to be in the “high” trajectory group compared to married individuals or those planning to marry in the future.
From the socioeconomic variables, the respondent’s and partner’s work had different effects for men and women. Generally, men who indicated that they worked in more waves were more likely to follow the “high” trajectory (by 22% per wave). For women, while their employment had no effect, their partners’ employment increased their likelihood of being in the “high” trajectory group (by 15% per wave). These two results together may imply that the fulfilment (or at least appearing so) of the male breadwinner role might be important for relationship quality in the long run.

Interestingly, education had an unexpected effect. Compared to men with tertiary education, those with elementary or lower (3.86 times) or vocational education (2.22 times) were much more likely to be in the “high” group. Taking into account the patterns of male educational attainment and the sample characteristics, I believe that this effect is due to the bias of the sample towards older relationships: as lower levels of education were more present for men born in earlier cohorts and only individuals with an intact partnership were included in the sample, they might form a selective group of respondents with a relationship in the later stages defined by higher relationship quality. For women, education had no discernible influence over long-term relationship satisfaction.

Just as with the cross-sectional models, additional insights about how assortative mating affects long-term relationship quality could have been found with further models employing the detailed relative education variable and/or interactions. However, sample size limitations prevented any reliable estimation, therefore is omitted from the dissertation.

6.3. Summary

In this empirical chapter of my dissertation, my goal was to examine hypothesis 1, which states that compared to individuals in hypogamous relationships, those in homogamous and hypergamous partnerships have a higher relationship quality. My hypothesis was based upon Van Bavel’s (2012) ideas about the negative implications of hypogamy for relationship quality and stability, the theoretical notions which emphasize the benefits of hypergamy and/or homogamy, and the unique Hungarian context of traditional norms paired with less-traditional behaviour.
Relationship quality was assessed through the individual’s satisfaction with the relationship. From both a cross-sectional and longitudinal perspective, hypothesis 1 was only verified for women, as results suggest that compared to women in hypogamous unions, those in homogamous or hypergamous relationships are more likely to be more satisfied and to follow a higher long-term satisfaction trajectory. These results were still present when controlling for a multitude of individual-level, relationship-specific and socioeconomic variables.

Regarding a possible order of relationship types in terms of how much additional satisfaction they might imply, the point-estimates suggested that for women, hypergamy is better than homogamy. The detailed, distance based alternative measures also shed light on the fact that for women, a greater relative male educational advantage in the relationship might result in proportionally higher levels of satisfaction. These results have to be considered in light of overlapping confidence intervals stemming from a low sample size, and therefore require further confirmation from studies based on larger samples, but also, they suggest that Parson’s approach and Becker’s specialization theory (see chapter 2.1.2.) could be closer to the truth in the case of Hungarian relationships.

Apart from the main independent variable, several other individual, relationship-specific and socioeconomic attributes have been considered during the modelling processes. From variables linked to the individual, religious affiliation (especially traditional church-going mentality) was shown to increase relationship satisfaction for both genders, confirming the theories which suggested that religious partners have a better relationship dynamic (Allport and Ross 1967; Dudley and Kosinski 1990; Anthony 1993; Myers 2006). Parental separation negatively impacted relationship quality according to the ordinal and GBTA models for women and only the latter for men, reinforcing the theories of Amato and DeBoer (2001), as these persons might have different relationship skills or a lower level of commitment.

From the relationship-specific group of variables, the duration and type of the relationship has consistently been highly influential for both women and men. The cross-sectional models showed that the suspected decline in relationship quality after its start is a reality (Brehm et al. 2001; Huston et al. 2001; Gottman
1993), while the significant quadratic term exposed that this effect declines year by year. This was supported by the GBTA models, as it revealed that trajectory groups were quadratic (U-shaped) and half of them were consistently high quality, verifying the heterogeneity present in recent literature (Anderson, Van Rizyn and Doherty 2010; Birditt et al. 2012; Foran et al. 2013; Lorber et al. 2015). Also, the difference between married and non-married Hungarian women and men supports the presented theories and findings, as non-married individuals were less satisfied and less likely to belong to the highly satisfied group or follow a high-quality trajectory path (Bennet, Blanc and Bloom et al. 1988; Nock 1995; Liefbroer and Dourleijn 2006). This result can also be expected because of the traditional Hungarian attitudes, as institutionalization might play a significant role in the satisfaction-deficit of these individuals along with commitment-related differences.

Finally, from the included socioeconomic controls, the subjective financial situation of the household was highly influential for both men and women in the cross-sectional models, but not in the longitudinal approach. The results of the former models support the discourse surrounding the negative impact of financial strains, poverty and financial conflicts within the partnership (Conger et al. 1994; Bodenmann, Lederman and Bradbury 2007; Hardie and Lucas 2010; Kelley, LeBaron and Hill 2018). The respondent’s and the partner’s employment were also important for both genders, however, in differing ways. For women, employment decreased relationship quality in the ordinal model, while a working partner increased satisfaction in the ordinal model and also made belonging to the high-quality trajectory group more probable. For men, however, employment was only related to a higher probability of following the high male trajectories. These results highlight the importance of men’s employment, which might signify that a more traditional arrangement is beneficial for both genders. Furthermore, a look at the negative impact of women’s employment found in the cross-sectional models also deserves attention: the result possibly hints at the beneficial arrangement of working men paired with non-working women, but a more probable possibility is that while the family needs women’s income, household and child-rearing tasks continue to simultaneously burden women (as society expects traditional roles to be fulfilled), and this multi-layered weight of tasks and
duties is detrimental to their perception of relationship quality. The last socioeconomic variable, education, showed significance in some cases, but did not present any consistent results to interpret meaningfully.

6.3.1. Addendum: Exploring more trajectories

During the fitting process of the GBTA models, I noted that three-group models were ignored because the third trajectory group for both genders was very small (8% for women and 4.6% for men), which caused the estimation process with risk factors to be unreliable. However, for the discourse revolving around the heterogeneity of relationship quality development, the three-group models might provide some insights, as shown in figure 26 and figure 27.

**Figure 26: Relationship satisfaction trajectories of men, three group models**

![Graph showing relationship satisfaction trajectories for men.](image)

Source: Hungarian Turning Points of the Life Course Panel Survey, longitudinal sample. Dashed lines indicate 95% confidence interval.

For men, two quadratic trajectories remained, complemented by a new, linear path. In the three-group models, there was a “high” trajectory (38.7%)
where men continually rated their relationship very high on average, rarely below 9.75. Men belonging to the second, “medium” group (56.8%) evaluated their partnership satisfactory high early on, with a slightly visible decline until the 30th year followed by an upturn in later years. However, the new, linear trajectory group showed a distinct developmental trend: men in this group very not really satisfied with their relationship to begin with, and they experienced a steady decline throughout the relationship, ending at a very low point. These results confirm the findings of Anderson et al. (2010), Birditt et al. (2012) and Lorber et al. (2015), as the negative decline trend is only the case for a small percentage of the whole sample.

Figure 27: Relationship satisfaction trajectories of women, three group models

For women, the three-group model was similar, as 35.5% of all women followed a “high” quadratic, 56.5% a “medium” and quadratic, and only a minority, 8% a “low” linear declining trend. As with the two-group models, differences
between the genders were mostly based on stability: both the “high” and the “medium” trend were more stable for men, whereas the “low” declined more steeply in the case of women. These results once again confirm the previous results of Anderson et al. (2010), Birditt et al. (2012), and Lorber et al. (2015). All in all, it can be said that the development of relationship quality is a diverse phenomenon, with many distinct trajectories still worth examining.
7. The role of assortative mating in the dissolution of relationships

In this last part of my empirical analyses, I turn towards the question of how educational assortative mating affects the risk of relationship dissolution. According to my hypothesis (hypothesis 2), compared to hypogamous partnerships, men and women in homogamous or hypergamous unions are less likely to leave their partner. Again, it should be emphasized that the hypotheses are founded upon Van Bavel’s (2012) thoughts on the effects of hypogamy, the detailed theories (chapter 2.1.), and the Hungarian context (chapter 3).

7.1. Data and methods

For the analysis of the relation between relationship dissolution and the relative education of the partners, I used the previously introduced Hungarian Turning Points of the Life Course Panel Survey (Életünk fordulópontjai, ÉF), conducted by the Hungarian Demographic Research Institute (KSH-NKI). As the retrospective data for previously divorced individuals did not contain the level of education for former partners, I opted to construct the necessary individual histories of relationship development based on data from the four panel waves between 2001-2002 (wave 1) and 2012-2013 (wave 4). Several limitations early on in the data analysis became apparent, which should be highlighted.

First, between the first (2001-2002), and the second (2004-2005) wave, the nature of the questionnaire made it impossible to determine whether a non-married cohabitation ended with a separation or as a result of the death of one member. Due to this flaw, the inclusion of non-married partners living together (or only those who decided to marry between the first and second wave) in the analyses would have caused severe biases as separations would have been mixed with widowhoods, therefore, I decided to only focus on married couples in the main models.

Second, throughout the four waves panel attrition was quite large, as from the original 16,363 respondents slightly less than half (8,103) were present in the fourth wave, which inflates the number of right-censored observations. As in many panel surveys, attrition was related to the inability to contact a previous
respondent due to several factors such as death or refusal to continue participation in the study (Bartus 2015; Makay 2016). Importantly, in his detailed analyses Bartus revealed that separation and divorce were related to a higher probability of non-participation in the panel waves of the employed sample (2015). Therefore, compared to the available demographic data from Hungary regarding separations and divorces, Bartus concluded that the data is biased, as it underestimates the number of divorces, and the available weighting variables are not effective in countering this bias. All in all, the sample and the number of observed events (separations) might be affected by biases stemming from data collection errors and panel attrition, and therefore, any possible results should be interpreted in light of these circumstances.

Table 20: Sample characteristics of the relationship dissolution models, means and percentages

<table>
<thead>
<tr>
<th>Variables</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>49.39</td>
<td>46.66</td>
</tr>
<tr>
<td></td>
<td>(13.37)</td>
<td>(13.55)</td>
</tr>
<tr>
<td>Parents still together</td>
<td>8.7</td>
<td>10.1</td>
</tr>
<tr>
<td>Separated parents</td>
<td>91.3</td>
<td>89.9</td>
</tr>
<tr>
<td>No previous divorce</td>
<td>9.6</td>
<td>8.3</td>
</tr>
<tr>
<td>Had a divorce</td>
<td>90.4</td>
<td>91.7</td>
</tr>
<tr>
<td>Not religious</td>
<td>29.3</td>
<td>21.4</td>
</tr>
<tr>
<td>Religious, belongs to a church</td>
<td>15.0</td>
<td>19.4</td>
</tr>
<tr>
<td>Religious, own way</td>
<td>55.6</td>
<td>59.2</td>
</tr>
<tr>
<td>Age at the start of the marriage, under 20</td>
<td>3.5</td>
<td>26.1</td>
</tr>
<tr>
<td>Age at the start of the marriage, 20-31</td>
<td>84.7</td>
<td>67.4</td>
</tr>
<tr>
<td>Age at the start of the marriage, 32 or older</td>
<td>11.9</td>
<td>6.4</td>
</tr>
<tr>
<td>Cohabited before marrying</td>
<td>17.0</td>
<td>16.1</td>
</tr>
<tr>
<td>Did not cohabit before marrying</td>
<td>83.0</td>
<td>83.9</td>
</tr>
<tr>
<td>No prior cohabitation experience with another partner</td>
<td>97.7</td>
<td>98.3</td>
</tr>
<tr>
<td>Had prior cohabitation experience with another partner</td>
<td>2.3</td>
<td>1.7</td>
</tr>
<tr>
<td>Had at least one child</td>
<td>94.6</td>
<td>94.7</td>
</tr>
<tr>
<td>Childless</td>
<td>5.4</td>
<td>5.3</td>
</tr>
<tr>
<td>Elementary or lower education</td>
<td>20.8</td>
<td>31.7</td>
</tr>
<tr>
<td>Vocational training</td>
<td>37.8</td>
<td>19.8</td>
</tr>
<tr>
<td>High school diploma</td>
<td>24.9</td>
<td>32.9</td>
</tr>
<tr>
<td>Tertiary education</td>
<td>16.5</td>
<td>15.7</td>
</tr>
<tr>
<td>Homogamy</td>
<td>53.1</td>
<td>50.9</td>
</tr>
<tr>
<td>Hypergamy</td>
<td>25.1</td>
<td>27.2</td>
</tr>
<tr>
<td>Hypogamy</td>
<td>21.9</td>
<td>21.9</td>
</tr>
<tr>
<td>-1949</td>
<td>44.0</td>
<td>37.2</td>
</tr>
<tr>
<td>1950-1959</td>
<td>25.5</td>
<td>24.5</td>
</tr>
<tr>
<td>1960-1969</td>
<td>19.6</td>
<td>21.2</td>
</tr>
<tr>
<td>1970-</td>
<td>11.0</td>
<td>17.2</td>
</tr>
<tr>
<td>Total number of separations</td>
<td>237</td>
<td>333</td>
</tr>
<tr>
<td>Total unweighted number of respondents</td>
<td>4094</td>
<td>4540</td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.
Note: Values in parentheses under means indicate the standard deviation. Data has been weighted except if otherwise indicated.
Having omitted individuals under the age of 23 and/or with no responses on the independent variables or those without a determinable year of outcome, a total of 8,634 individuals living in a cohabiting marriage were included in the sample used for the analyses. As detailed in table 20, the samples of men and women were slightly older than the samples used in the cross-sectional or trajectory models. Most commonly, men and women in this sample married between the ages of 20 and 31, and most married respondents had an intact family, no previous cohabitation experience with another partner or a divorce, were religious in their own way, did not cohabit before marrying and had a child. Again, less than a fifth of both genders had tertiary education, and most were in a relationship in which spouses had a similar level of education. Corresponding to the previously mentioned underestimation of separation events, only 570 individuals living in marriages separated from their partner at some point during the study.

To examine the differences in the dissolution of marriages by relative level of education, I turn to the commonly used methods of survival analysis: the estimations of Kaplan-Meier survival curves and Cox regressions. The Kaplan-Meier estimator of survival (where survival is defined as an intact marriage where the spouses continue to cohabit) is a nonparametric method proposed by Kaplan and Meier (1958). It is simply defined as

$$S(t) = \prod_{t_i \leq t} \left(1 - \frac{d_i}{n_i}\right)$$

where $n_i$ is the number of subjects at risk time (a time where a dissolution can occur) $t_i$, and $d_i$ is the number of individuals who dissolved their marriages at time $i$. Taken together, the method estimates the probability of survival $S(t)$ at a given time, which is used to construct the survival curves of individuals in specific assortative mating groups (Hosmer, Lemeshow and May 2008: 17-44). To supplement results from the visual comparison of the curves, I also employ logrank tests, which tests the null hypothesis that there is no difference between the groups in the probability of dissolution at any given time point (see Bland and Altman 2004).
Although the Kaplan-Meier estimations and the logrank tests could be stratified along multiple variables, a modelling strategy which allows the simultaneous assessment of the main independent and other control variables is required for the proper testing of the hypotheses. Therefore, I employ Cox proportional hazards regressions in the case of the main models (Hosmer, Lemeshow and May 2008: 67-132; Moore 2016: 55-73). In this method, hazard, $h(t)$, is defined as the probability of someone dissolving his or her relationship at time $t$, given his or her survival until time $t$. The model takes the constant or baseline hazard (which depends on time) and the effect of the independent variables to model the hazard

$$h(t) = h_0(t) * \exp(\beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_n x_n) \quad (26)$$

where $h_0(t)$ is the baseline hazard, and $\beta_n x_n$ are the effects of the independent variables. Taking the logarithms of both sides, we obtain

$$\ln \left( \frac{h(t)}{h_0(t)} \right) = \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_n x_n \quad (27)$$

Where the left part of the equation in the parentheses is the hazard ratio. Interpretation of the model will centre around $\exp(b_n)$, which is the instantaneous relative risk of the dissolution event.

The main assumption of the proportional hazards Cox model is that the differences in hazard are proportional, or in other words, constant at all time points. To verify this assumption, I rely on covariate-specific and global tests of proportionality which utilize the relation of the residuals and time to test the null-hypothesis that a variable and/or the model is correct (see Moore 2016: 94-99). All presented models were fitted using the “survival” package in R (Therneau et al. 2021), while visualizations were created with the “survminer” package (Kassambara 2021).

7.2. Independent variables

As in the case of the models examining relationship quality, several control variables were included in the survival models as well. Variables related to employment and subjective financial status were not included this time, as data on these factors could not be determined precisely for the entire length of the
relationship before and during the panel waves. Also, earlier approaches seen in the group-based trajectory analyses (counting the number of waves of employment or financial strain) could not be used, as not all respondents were included in all waves. On the flip side, some other factors relevant to the study of separation were added.

Reasons to include most individual background variables (age, gender, parental separation, previous divorce experience, religious affiliation) in the models were the same as in the case of earlier relationship quality models. Age-specific interaction patterns can affect the quality of the relationship (Amato 1996; Corra et al. 2009), and they can also indirectly influence the probability of separation for this reason. Age is also a factor when considering the relationship market: older individuals do not face the same number of available partners as younger ones, making the dissolution of a relationships riskier as the number of alternatives are lower. For gender, previous studies have shown that there is not just “his” and “her” relationship, but “his” and “her” separation as well, as the significance and the strength of socioeconomic variables affecting the probability of separation vary between men and women (Kalmijn and Poortman 2005).

Regarding parental separation, the earlier detailed mechanisms of the person not acquiring sufficient relationship skills and having a less future oriented outlook in partnerships, having witnessed their fragility, can also be applied to separation (Amato and DeBoer 2001). Furthermore, the selection effect (those who divorce are less able to maintain relationships) and the lack of institutionalization (absence of clear norms and excess interaction) also clearly affect the probability of separation in the case of respondents with divorce experience (Glenn and Weaver 1977; Cherlin 1978). Concerning religious affiliation, empirical results suggest that church attendance is related to lower risk of divorce (Glenn and Supancic 1984; Bahr and Chadwick 1985; Vaaler, Ellison and Powers 2009; Tuttle and Davis 2015), possibly due to the beneficial effect religion has on the behaviour of partners and traditional, disapproving attitudes towards separation.

As a crucial individual-level factor in the case of relationship dissolution, previous cohabiting experience with another partner was included in the models.
According to the main theories, the experience of non-marital cohabitation and/or sexual relations can increase future (with another partner) divorce risk, as an individual learns about intimacy outside of marriage and alternatives to formalized marital relations, therefore, as Teachman puts it, his or her “belief in the permanence of marriage erodes” (Teachman 2003: 445; Kahn and London 1991; Axinn and Thornton 1992; Axinn and Barber 1997). This suspected erosion has been confirmed by recent studies as well (Stanley, Whitton and Markman 2004; Rosenfeld and Roesler 2018). In the models, non-marital cohabitation experience was measured by a dichotomous variable, which indicated that a respondent had previously lived together for at least three months with a partner, not counting his or her current marriage.

While the concepts of how the individual background variables influence the outcome of a relationship are generally the same as the ones highlighted in previous chapters, the theories linking the presence of children and separation (which in the case of relationship quality was suspected as either a conflict-inducing negative factor or an indicator of a satisfactory partnership) differ substantially. Based on Levinger’s perspective, empirical studies typically view children as a barrier to separation and a guarantee for partners to stay in their current relationship (Levinger 1965, 1976; Kanoy and Miller 1980). Children provide happiness but also obligations for the individual, therefore, a parent is inclined to stay in the current partnership if it is deemed advantageous for the child. Empirical results in recent years typically verified the stabilizing nature of children in a marriage, with some results suggesting that this effect is especially strong in the early years after birth (Waite, Haggstrom and Kanouse 1985; Previti and Amato 2003; Földházi 2008; Xu, Yu, and Qiu 2015; Ma, Rizzi and Turunen 2019). As the database enables to pinpoint the precise date when the first child entered the marriage, I included the presence of children as a time-varying dichotomous variable. This was done by restructuring the dataset to separate childless periods from those with at least one child for all individuals (see Therneau et al. 2021 for the technicalities).

For age at marriage, it is often noted that marriages contracted at young ages are more unstable, most likely as a consequence of mistaken expectations towards marriage and the partnership (Oppenheimer 1988; Lehrer 2008).
Likewise, marriages in later ages might be more unstable, as individuals face the need to partner more urgently which might cause them to reconsider their expectations of a partner and settle for a sub-optimal match (Becker, Landes and Michael 1977).

While non-married individuals are omitted from the main models, premarital cohabitation, an important risk factor according to multiple studies in the U.S. and Europe (White 1987; Booth and Johnson 1988; Bennett, Blanc, and Bloom 1988; Thornton 1991; DeMaris and Rao 1992; Földházi 2008 for Hungary), is included. Theories generally attribute the additional risk of dissolution to selection effects, as individuals who are less compatible often choose to cohabit first than marry right away (Brien, Lillard and Stern 2006; Földházi 2008). Some newer empirical results however suggest that the negative effect of cohabiting before marrying is declining (Reinhold 2010), due to cohabiting becoming a more widespread phenomenon.

The final (and only socio-economic) control variable included in the model was the individual’s level of education. Again, it should be noted that the concepts discussed in the theoretical chapters also apply to individual level of education. Contrary to Parsons’ and Becker’s negative perspective, higher education can be associated with higher relationship stability through better communication skills and more advantageous matching (Amato 1996; Hoem 1997; Ono 1998). Empirical results are conflicting in this matter. Földházi found that higher education is linked with an increased probability of divorce in Hungary (2008), while Rootalu (2010) revealed a positive, stability inducing effect. Also, Harkonen and Dronkers (2006) showed considerable variation between countries, as in some places education had a negative, while in others a positive or even insignificant effect. In a more recent article, Harkonen and Boertien discussed that lesser educated women were more likely to divorce (2014): since these women were more likely to have a lower socioeconomic status, they had fewer barriers in their life against separation (for example, home-ownership) and more risk factors, such as parental divorce, presence of step-children and economic stressors.
7.3. Descriptive results

Table 21: Marriage outcomes by relative education, percentages

<table>
<thead>
<tr>
<th>Marriage type</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intact</td>
<td>Ended</td>
</tr>
<tr>
<td>Homogamous</td>
<td>94.6</td>
<td>5.4</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>94.5</td>
<td>5.5</td>
</tr>
<tr>
<td>Hypogamous</td>
<td>92.8</td>
<td>7.2</td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.

Starting with a simple descriptive assessment of the dissolution of marriages, table 21 shows the proportion of individuals who ended their marriage by relative level of education. According to this simple comparison, individuals in hypogamous marriages were more likely to dissolve their union compared to those who were homogamous or hypergamous. This difference is especially pronounced in the case of hypogamous women with a nearly two times higher percentage (11.1% compared to 6.5% and 5.8%), while it was less visible in the case of men (7.2% versus 5.4% and 5.5%).

Turning towards to the more refined Kaplan-Meier estimates, figure 28 and figure 29 shows the survival curves for men and women, respectively. For men, those in homogamous and hypergamous marriages had a very similar progression of the probability of survival until the 40th year, after which no dissolution was observed. Opposed to this, hypogamous men seemed to have a steeper decline of survival, with dissolution happening at a greater rate. The results of the logrank test in table 22 show that this difference is indeed statistically significant, and as the observed and expected number of dissolutions differ to the greatest degree in the case of hypogamous men (shown by the partitioned values as well), they might be the reason behind the significant difference between the curves.
In the case of women, homogamous and hypergamous individuals also exhibited similar levels of steepness in the decline of the probability of having an intact marriage, with homogamous women having some later dissolutions. Hypogamous women, though, were much more clearly different than men: their probability of staying together with their spouses declined more sharply and to a lower level than the other two types of arrangements. This notion is more clearly supported by the logrank test, as there was a statistically significant difference between the curves, and the greatest difference between the observed and expected values was visible for hypogamous women.
Figure 29: Survival curves of married women (Kaplan-Meier)

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4. The bars indicate the 95% confidence interval.

Table 22: Logrank tests of difference in the survival of marriages

<table>
<thead>
<tr>
<th>Marriage type</th>
<th>Men</th>
<th></th>
<th></th>
<th>Women</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Expected</td>
<td>(O - E)^2 / E</td>
<td>Observed</td>
<td>Expected</td>
<td>(O - E)^2 / E</td>
</tr>
<tr>
<td>Homogamous</td>
<td>117</td>
<td>125.8</td>
<td>0.6</td>
<td>151</td>
<td>172.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>56</td>
<td>63.6</td>
<td>0.9</td>
<td>72</td>
<td>95.4</td>
<td>5.8</td>
</tr>
<tr>
<td>Hypogamous</td>
<td>64</td>
<td>47.6</td>
<td>5.7</td>
<td>110</td>
<td>64.8</td>
<td>31.6</td>
</tr>
<tr>
<td>Logrank test (X^2)</td>
<td>7.2*</td>
<td></td>
<td></td>
<td></td>
<td>40.1***</td>
<td></td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.
Note: O = Observed, E = Expected.
p . < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.

So far, descriptive results suggest that hypogamy may be detrimental to the stability of marriages for men and women, while homogamy and hypergamy appears to be stability-inducing. Although the number of observed dissolution events were very low in some categories (hence the very wide confidence intervals), survival estimates (figure 30 and figure 31) and logrank tests (table 23) based on the detailed assortative mating categories are also telling.
In close and distant hypogamous partnerships, men displayed a lower probability of survival, while homogamy and hypergamy again seemed to be the more stable union type. It should be noted however, that distant hypergamous men seem to have a swifter decline between the 10th and 20th year compared to close hypergamous or homogamous men. Logrank tests confirm the existence of differences between the survival curves, although only at the 0.10 level, with hypogamous (either close or distant) men displaying the highest difference between the observed and expected numbers of dissolutions.
Differences between women were more notable. The distinction from the simpler classification is again visible (similarly to men), as hypogamous women exhibited lower probabilities of survival, with a steeper decline as well, especially for distant hypogamous women. From the more stable groups, while homogamous and close hypergamous women showed similar patterns, distant hypergamy for women seemed to be especially related to more stable marriages. Logrank tests for women’s survival curves also confirm a statistically significant difference, with relatively high difference between the observed and expected dissolution for hypogamous women.

To summarize, descriptive results and simple logrank tests show that men and women in homogamous and hypergamous marriages are less likely to experience the dissolution of their relationship, while hypogamy is seemingly related to a higher level of instability - supporting hypothesis 2. Results based on
the detailed assortative mating variables also show the pattern that was visible in the case of relationship quality for women, as their spouse’s higher relative advantage increases the stability of their partnership apparently to a greater degree.

Table 23: Logrank tests of difference in the survival of marriages, detailed

<table>
<thead>
<tr>
<th>Marriage type</th>
<th>Men</th>
<th></th>
<th></th>
<th>Women</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Expected</td>
<td>(O - E)^2 / E</td>
<td>Observed</td>
<td>Expected</td>
<td>(O - E)^2 / E</td>
</tr>
<tr>
<td>Homogamous</td>
<td>117</td>
<td>125.8</td>
<td>0.6</td>
<td>151</td>
<td>172.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Hypergamous, close</td>
<td>47</td>
<td>52.5</td>
<td>0.6</td>
<td>64</td>
<td>78.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Hypergamous, distant</td>
<td>9</td>
<td>11.1</td>
<td>0.4</td>
<td>8</td>
<td>16.4</td>
<td>4.3</td>
</tr>
<tr>
<td>Hypogamous, close</td>
<td>51</td>
<td>38.7</td>
<td>3.9</td>
<td>87</td>
<td>54.0</td>
<td>20.2</td>
</tr>
<tr>
<td>Hypogamous, distant</td>
<td>13</td>
<td>8.9</td>
<td>1.9</td>
<td>23</td>
<td>10.8</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Logrank test (X^2) 7.5 44.3***

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.
Note: O = Observed, E = Expected.

p . < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

7.4. Results from the proportional hazards models

Turning from the descriptive and simple comparative methods to more detailed models, table 24 and table 25 shows the previously introduced proportional hazards (Cox) models for men and women. For both genders, I fitted four models separately, moving from assessing the effect of relative education without any controls (model 1), towards the introduction of individual background (model 2), relationship-specific (model 3) and finally, socioeconomic (model 4) independent variables. Although the proportional hazards test is only displayed for the final, full models, no models for men and women violated this key assumption. It should be noted that the AIC-difference and the likelihood-ratio test suggest that the inclusion of the assortative mating variable improves model fit for women (for model 4), while for men, this was not the case.

Mirroring the results of the Kaplan-Meier estimates, model 1 shows that homogamous and hypergamous men were less likely (by around 33% and 37%, respectively) to experience the dissolution of their marriage compared to those in hypogamous unions. However, this effect becomes non-significant in models 2 to 4. This is because from model 2 and onwards, birth cohort was introduced as a control variable. As its effect was non-proportional, stratifying the model along the cohorts was needed: this method assumes that birth cohorts do affect the
probability of dissolution, but it is of no direct interest, therefore, the model sets a
different baseline hazard for each stratum but estimates common coefficients for
all other variables, resolving the issue of non-proportionality but providing no

Consequently, the observed differences between homogamous, hypergamous and hypogamous men were the results of a cohort-specific bias. At
wave 1 of the panel survey, men belonging to older cohorts were more likely to
have marriages which have already survived a lengthy period, making their
dissolution less likely during the observed period. Also, as previous results on the
trends of assortative mating revealed, these marriages were also less likely to be
hypogamous. Taken together, these effects are behind the descriptive
observations and results of model 1 for men.

As was in the case with the relationship quality models, regarding marital
dissolutions, women again diverge from men. According to model 1 (and
corresponding to the Kaplan-Meier estimates), women in homogamous
marriages were 45%, while those in hypergamous unions were 58% less likely to
experience the dissolution of their marriage compared to hypogamous women.
In model 2, this effect weakens due to the controlling of the previously explained
cohort-specific biases. With the inclusion of relationship-specific (model 3)
variables and education (model 4), the estimates for relative education again
change slightly, suggesting an interplay between the effect of assortative mating
and these variables. In the final model, the effect remains statistically significant:
homogamous (by 27%) and hypergamous (by 28%) women were less likely to
end their marriage compared to hypogamous ones, confirming *hypothesis 2*. Both
the point-estimates and the confidence intervals suggest that hypergamy had no
additional benefits stability-wise over homogamy.

Regarding the individual-level control variables, most effects were
consistent with the literature. Compared to younger respondents, both genders
were less likely to separate at older ages. This was especially the case for men
(H. R. = 0.27) and women (H. R. = 0.31) who were 50 years old or older. While
parental separation seemed to have a negative effect only in the case of women
(a 62% increase in the risk of dissolution, corroborating Földházi’s (2008) findings

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of a 60% additional risk), previous divorce and/or previous cohabiting experience greatly diminished the stability of marriage regardless of gender. Previously divorced men were 2.23 times, while women were 2.14 times more likely to experience another marital dissolution compared to those in their first marriages. A previous non-marital cohabitation experience came with an added 88% risk for men, and 75% for women, compared to those without it. While for relationship quality, religiosity was often found to be influential, this was not the case for marital dissolutions. The stability-inducing effect of church-following religiosity was only notable for women (H. R. = 0.76), although only at p < 0.10.

Similarities between the genders again emerged when looking at the relationship-specific independents. Premarital cohabitation increased dissolution risks by 57% for men and 44% for women. Importantly, the presence of children, which was introduced as a time-varying variable had a strong stabilizing effect on marriages. As this positive influence was non-proportional (time dependent), I included period-based indicators in the models, which aid in the mapping out when children’s effect becomes insignificant. Based on these indicators, it can be noted that having at least one child early (0-4 years) in the marriage (which often coincides with them being infants or at least under the school age) greatly lowers the risk of dissolution, with a 95% lower probability for men, and 97% for women compared to those who were childless in the same period. Later on, in the 5-14th years of the marriage, having at least one child still reduced dissolution risks considerably (79-81% lower relative probability), while after the 15th year of the marriage, children lose their influence over dissolution.

It should be highlighted that in the case of age at marriage, women displayed an unexpected result which contradicts the literature and previous results as well (Földházi 2008). While men who married at older ages were more likely to experience marital dissolution (H. R. = 1.57), women who married early on were less probable (H. R. = 0.71), compared to the reference group. This contradiction for women might stem from the previously described selectivity and sample-specific issues of the analyses.
Table 24: Marital dissolution models for married men

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
<th>Model 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H. R.</td>
<td>C. I. (95%)</td>
<td>H. R.</td>
<td>C. I. (95%)</td>
<td>H. R.</td>
<td>C. I. (95%)</td>
<td>H. R.</td>
<td>C. I. (95%)</td>
</tr>
<tr>
<td>Relative education (Ref.: hypogamous)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homogamous</td>
<td>0.67</td>
<td>**</td>
<td>0.53</td>
<td>0.96</td>
<td>0.93</td>
<td>0.73</td>
<td>1.18</td>
<td>0.95</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>0.63</td>
<td>**</td>
<td>0.47</td>
<td>0.83</td>
<td>1.04</td>
<td>0.77</td>
<td>1.39</td>
<td>1.07</td>
</tr>
<tr>
<td>Age (ref.: -29 years)</td>
<td>50-</td>
<td></td>
<td>0.32</td>
<td>**</td>
<td>0.15</td>
<td>0.66</td>
<td>0.31</td>
<td>**</td>
</tr>
<tr>
<td>Birth cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Stratified</td>
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<tr>
<td>Separated parents (Ref.: still together)</td>
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<td>0.88</td>
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<td>0.63</td>
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<td>0.91</td>
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</tr>
<tr>
<td>Previous divorce (Ref.: no divorce)</td>
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<td>1.91</td>
<td>***</td>
<td>1.32</td>
<td>2.76</td>
<td>2.32</td>
<td>***</td>
</tr>
<tr>
<td>Non-marital cohabitation experience (Ref.: None)</td>
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<td></td>
<td>2.23</td>
<td>***</td>
<td>1.42</td>
<td>3.49</td>
<td>1.89</td>
<td>**</td>
</tr>
<tr>
<td>Religiosity (Ref.: non-religious)</td>
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<td></td>
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<td></td>
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<tr>
<td>Religious, follows church</td>
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<td>1.06</td>
<td>0.73</td>
<td></td>
<td>0.49</td>
<td>1.08</td>
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<tr>
<td>Religious, own way</td>
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<td></td>
<td>0.78</td>
<td>1.22</td>
<td>1.04</td>
<td></td>
<td>0.83</td>
<td>1.3</td>
</tr>
<tr>
<td>Age at the start of the relationship (Ref.: 20-31 years old)</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Younger than 20</td>
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<td>0.79</td>
<td>1.79</td>
<td>1.19</td>
<td></td>
</tr>
<tr>
<td>32 or older</td>
<td></td>
<td></td>
<td>1.59</td>
<td>*</td>
<td>1.03</td>
<td>2.44</td>
<td>1.57</td>
<td>*</td>
</tr>
<tr>
<td>Premarital cohabitation (Ref.: Did not cohabit)</td>
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<td></td>
<td>1.46</td>
<td>**</td>
<td>1.14</td>
<td>1.87</td>
<td>1.45</td>
<td>**</td>
</tr>
<tr>
<td>Has a child, 0-4 yrs. of the marriage (Ref.: none)</td>
<td></td>
<td></td>
<td>0.05</td>
<td>***</td>
<td>0.03</td>
<td>0.09</td>
<td>0.05</td>
<td>***</td>
</tr>
<tr>
<td>Has a child, 5-14 yrs. of the marriage (Ref.: none)</td>
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<td></td>
<td>0.21</td>
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<td>0.13</td>
<td>0.35</td>
<td>0.21</td>
<td>***</td>
</tr>
<tr>
<td>Has a child, 15-24 yrs. of the marriage (Ref.: none)</td>
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<td>0.57</td>
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<td>0.21</td>
<td>1.57</td>
<td>0.57</td>
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</tr>
<tr>
<td>Has a child, 25+ yrs. of the marriage (Ref.: none)</td>
<td></td>
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<td>1.11</td>
<td></td>
<td>0.15</td>
<td>8.12</td>
<td>1.09</td>
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</tr>
<tr>
<td>Education (Ref.: tertiary)</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary or lower</td>
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<td></td>
<td>0.98</td>
<td></td>
<td>0.66</td>
<td>1.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
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<td></td>
<td>0.62</td>
<td>1.19</td>
<td></td>
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<td>High school</td>
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<td></td>
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<td></td>
<td>0.69</td>
<td>1.34</td>
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</tr>
<tr>
<td>N (with periods and time-splits)</td>
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</tr>
<tr>
<td>Wald-test (model 4)</td>
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<td></td>
<td>211.2***</td>
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<td></td>
</tr>
<tr>
<td>Concordance (model 4)</td>
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<td></td>
<td>0.75</td>
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<td></td>
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<tr>
<td>Proportional hazards test (model 4)</td>
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<td></td>
<td>13.72</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>AIC (model 4)</td>
<td></td>
<td></td>
<td>4434.3</td>
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</tr>
<tr>
<td>AIC-difference (model 4 vs. nested)</td>
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<td>-2.87</td>
<td>(no improvement)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Likelihood-ratio test (model 4 vs. nested)</td>
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<td></td>
<td>1.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.

Note: Data has been weighted except if otherwise indicated. The Wald-test shows the overall fit of the model compared to the null. Concordance shows the predictive accuracy of the model based on the comparison of predicted and observed survival (see Harrell 2001; Therneau and Atkinson 2020). The proportional hazards test indicates whether the model fulfils the proportional hazards assumption required for the modelling process. The AIC difference and the likelihood-ratio test shows whether the model that includes relative level of education is significantly better than the one without it. An AIC difference above 4 indicates substantial evidence for the inclusion of the added relative level of education variable (see Burnham and Anderson 2004). p . < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.
Table 25: Marital dissolution models for married women

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
<th></th>
<th>Model 3</th>
<th></th>
<th></th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H. R.</td>
<td>C. I. (95%)</td>
<td>H. R.</td>
<td>C. I. (95%)</td>
<td>H. R.</td>
<td>C. I. (95%)</td>
<td>H. R.</td>
<td>C. I. (95%)</td>
<td>H. R.</td>
<td>C. I. (95%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative education (Ref.: hypogamous)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homogamous</td>
<td>0.55</td>
<td>***</td>
<td>0.45</td>
<td>0.66</td>
<td>0.71</td>
<td>***</td>
<td>0.59</td>
<td>0.86</td>
<td>0.74</td>
<td>**</td>
<td>0.61</td>
<td>0.89</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>0.42</td>
<td>***</td>
<td>0.33</td>
<td>0.54</td>
<td>0.61</td>
<td>***</td>
<td>0.48</td>
<td>0.77</td>
<td>0.67</td>
<td>**</td>
<td>0.53</td>
<td>0.86</td>
</tr>
<tr>
<td>Age (ref.: -29 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-49</td>
<td>0.59</td>
<td>**</td>
<td>0.42</td>
<td>0.83</td>
<td>0.59</td>
<td>**</td>
<td>0.42</td>
<td>0.82</td>
<td>0.59</td>
<td>**</td>
<td>0.42</td>
<td>0.83</td>
</tr>
<tr>
<td>50-</td>
<td>0.28</td>
<td>***</td>
<td>0.14</td>
<td>0.57</td>
<td>0.27</td>
<td>**</td>
<td>0.13</td>
<td>0.55</td>
<td>0.27</td>
<td>***</td>
<td>0.13</td>
<td>0.56</td>
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<tr>
<td>Birth cohort</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Separated parents (Ref.: still together)</td>
<td>1.57</td>
<td>***</td>
<td>1.26</td>
<td>1.94</td>
<td>1.6</td>
<td>***</td>
<td>1.29</td>
<td>1.99</td>
<td>1.62</td>
<td>***</td>
<td>1.31</td>
<td>2.02</td>
</tr>
<tr>
<td>Previous divorce (Ref.: no divorce)</td>
<td>1.66</td>
<td>**</td>
<td>1.19</td>
<td>2.32</td>
<td>2.09</td>
<td>***</td>
<td>1.47</td>
<td>2.99</td>
<td>2.14</td>
<td>***</td>
<td>1.49</td>
<td>3.05</td>
</tr>
<tr>
<td>Non-marital cohabitation experience (Ref.: None)</td>
<td>1.96</td>
<td>***</td>
<td>1.26</td>
<td>3.05</td>
<td>1.73</td>
<td>*</td>
<td>1.1</td>
<td>2.72</td>
<td>1.75</td>
<td>***</td>
<td>1.11</td>
<td>2.75</td>
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<tr>
<td>Religiosity (Ref.: non-religious)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious, follows church</td>
<td>0.72</td>
<td>*</td>
<td>0.54</td>
<td>0.96</td>
<td>0.76</td>
<td></td>
<td>0.57</td>
<td>1.02</td>
<td>0.76</td>
<td></td>
<td>0.57</td>
<td>1.02</td>
</tr>
<tr>
<td>Religious, own way</td>
<td>0.86</td>
<td></td>
<td>0.71</td>
<td>1.04</td>
<td>0.93</td>
<td></td>
<td>0.76</td>
<td>1.12</td>
<td>0.92</td>
<td></td>
<td>0.76</td>
<td>1.12</td>
</tr>
<tr>
<td>Age at the start of the relationship (Ref.: 20-31 years old)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger than 20</td>
<td>0.70</td>
<td>***</td>
<td>0.57</td>
<td>0.87</td>
<td>0.71</td>
<td>**</td>
<td>0.57</td>
<td>0.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32 or older</td>
<td>1.39</td>
<td></td>
<td>0.79</td>
<td>2.45</td>
<td>1.37</td>
<td></td>
<td>0.78</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premarital cohabitation (Ref.: Did not cohabit)</td>
<td>1.41</td>
<td>**</td>
<td>1.14</td>
<td>1.73</td>
<td>1.44</td>
<td>***</td>
<td>0.78</td>
<td>2.4</td>
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</tr>
<tr>
<td>Has a child, 0-4 yrs. of the marriage (Ref.: none)</td>
<td>0.03</td>
<td>***</td>
<td>0.01</td>
<td>0.05</td>
<td>0.03</td>
<td>***</td>
<td>0.01</td>
<td>0.05</td>
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<td></td>
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</tr>
<tr>
<td>Has a child, 5-14 yrs. of the marriage (Ref.: none)</td>
<td>0.19</td>
<td>***</td>
<td>0.13</td>
<td>0.3</td>
<td>0.19</td>
<td>***</td>
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<td>0.31</td>
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<td></td>
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</tr>
<tr>
<td>Has a child, 15-24 yrs. of the marriage (Ref.: none)</td>
<td>0.55</td>
<td></td>
<td>0.17</td>
<td>1.75</td>
<td>0.55</td>
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<td>1.76</td>
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</tr>
<tr>
<td>Has a child, 25+ yrs. of the marriage (Ref.: none)</td>
<td>1.47</td>
<td></td>
<td>0.36</td>
<td>5.99</td>
<td>1.54</td>
<td></td>
<td>0.38</td>
<td>6.32</td>
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<tr>
<td>Education (Ref.: tertiary)</td>
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</tr>
<tr>
<td>Elementary or lower</td>
<td>0.71</td>
<td></td>
<td>0.51</td>
<td>0.99</td>
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</tr>
<tr>
<td>Vocational</td>
<td>1.03</td>
<td></td>
<td>0.78</td>
<td>1.36</td>
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</tr>
<tr>
<td>High school</td>
<td>0.82</td>
<td></td>
<td>0.65</td>
<td>1.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N (with periods and time-splits)</td>
<td>18.649</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Wald-test (model 4)</td>
<td>314.6***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Concordance (model 4)</td>
<td>0.74</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportional hazards test (model 4)</td>
<td>25.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>AIC (model 4)</td>
<td>6691.16</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>AIC-difference (model 4 vs. nested)</td>
<td>5.78 (good)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood-ratio test (model 4 vs. nested)</td>
<td>9.78***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.

Note: Data has been weighted except if otherwise indicated. The Wald-test shows the overall fit of the model compared to the null. Concordance shows the predictive accuracy of the model based on the comparison of predicted and observed survival (see Harrell 2001; Therneau and Atkinson 2020). The proportional hazards test indicates whether the model fulfills the proportional hazards assumption required for the modelling process. The AIC difference and the likelihood-ratio test shows whether the model that includes relative level of education is significantly better than the one without it. An AIC difference above 4 indicates substantial evidence for the inclusion of the added relative level of education variable (see Burnham and Anderson 2004). p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.
As the final and only socioeconomic variable, education did not have any importance for men, while for women, elementary or lower educated persons (H. R. = 0.71) and at the p < 0.10 level, those with a high school diploma (H. R. = 0.82) were less likely to dissolve their marriage. To summarize, the proportional hazards models support hypothesis 2 for women, but not for men, as the previously detailed differences between men were due to cohort-specific biases, and also, no visible added advantage of hypergamy could be detected.

While model 1 to model 4 for both genders employed the simple educational assortative mating variable, using the more detailed, distance-based measure might again shed light on more sophisticated patterns. Table 26 shows the results of these models (model 5) for both genders. For men, the likelihood-ratio test and the AIC-difference again indicates that the inclusion of the detailed assortative mating variable did not improve the fit of the model, while for women, it signifies the opposite. As the general results for the control variables do not differ from those in models 4, I do not interpret them again.

Previously, the point-estimates of the models of relationship quality suggested that compared to hypogamous unions, a greater male advantage is related to higher relationship satisfaction. The picture regarding marital stability is a little bit different. Compared to distant hypogamous women, those who are hypogamous but closer (H. R. = 0.69) were less likely to experience the end of their union. Homogamy seems to increase marital stability to a greater degree (H. R. = 0.54), which is nearly identical to the effect of close hypergamy (H. R. = 0.54). Finally, distant hypergamy was shown to decrease the risk of dissolution to the highest degree compared to the reference group for women (H. R. = 0.44). These results suggest a pattern corresponding to the previously shown detailed Kaplan-Meier estimates: a departure from hypogamy towards distant hypergamy increases marital stability for women, providing suggestive evidence for hypergamy being a more favourable arrangement. It should be noted, however, that the confidence intervals are very wide due to the low number of dissolutions paired with the rarity of distant unions, which cautions against using the point-estimates as strong evidence for a possible ordering of hypergamous and homogamous relationships.
Table 26: Marital dissolution models, detailed

<table>
<thead>
<tr>
<th>Variables</th>
<th>Men</th>
<th></th>
<th>H. R.</th>
<th>C. I. (95%)</th>
<th></th>
<th>Women</th>
<th></th>
<th>H. R.</th>
<th>C. I. (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative education (Ref.: hypogamous, distant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypogamous, close</td>
<td>0.70</td>
<td>0.42</td>
<td>1.03</td>
<td>0.69</td>
<td>*</td>
<td>0.48</td>
<td>0.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homogamous</td>
<td>0.68</td>
<td>0.42</td>
<td>1.10</td>
<td>0.54</td>
<td>***</td>
<td>0.38</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypergamous, close</td>
<td>0.76</td>
<td>0.45</td>
<td>1.29</td>
<td>0.54</td>
<td>**</td>
<td>0.36</td>
<td>0.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypergamous, distant</td>
<td>0.82</td>
<td>0.38</td>
<td>1.76</td>
<td>0.44</td>
<td>*</td>
<td>0.22</td>
<td>0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (ref.: 29 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-49</td>
<td>0.66</td>
<td>0.42</td>
<td>1.03</td>
<td>0.59</td>
<td>**</td>
<td>0.42</td>
<td>0.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-</td>
<td>0.31</td>
<td>0.15</td>
<td>0.65</td>
<td>0.27</td>
<td>***</td>
<td>0.13</td>
<td>0.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birth cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated parents (Ref.: still together)</td>
<td>0.92</td>
<td>0.66</td>
<td>1.28</td>
<td>1.61</td>
<td>***</td>
<td>1.29</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous divorce (Ref.: no divorce)</td>
<td>2.30</td>
<td>***</td>
<td>1.53</td>
<td>3.47</td>
<td>***</td>
<td>1.51</td>
<td>3.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-marital cohabitation experience (Ref.: None)</td>
<td>1.89</td>
<td>**</td>
<td>1.19</td>
<td>3.01</td>
<td>1.77</td>
<td>*</td>
<td>1.12</td>
<td>2.78</td>
<td></td>
</tr>
<tr>
<td>Religiosity (Ref.: non-religious)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious, follows church</td>
<td>0.73</td>
<td>0.49</td>
<td>1.08</td>
<td>0.76</td>
<td></td>
<td>0.57</td>
<td>1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious, own way</td>
<td>1.05</td>
<td>0.84</td>
<td>1.32</td>
<td>0.92</td>
<td></td>
<td>0.76</td>
<td>1.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at the start of the relationship (Ref.: 20-31 years old)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger than 20</td>
<td>1.2</td>
<td>0.79</td>
<td>1.82</td>
<td>0.71</td>
<td>**</td>
<td>0.57</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32 or older</td>
<td>1.56</td>
<td>*</td>
<td>1.01</td>
<td>2.42</td>
<td>1.33</td>
<td>0.76</td>
<td>2.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premarital cohabitation (Ref.: Did not cohabit)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has a child, 0-4 yrs. of the marriage (Ref.: none)</td>
<td>1.47</td>
<td>**</td>
<td>1.15</td>
<td>1.88</td>
<td>1.44</td>
<td>***</td>
<td>1.17</td>
<td>1.78</td>
<td></td>
</tr>
<tr>
<td>Has a child, 5-14 yrs. of the marriage (Ref.: none)</td>
<td>0.05</td>
<td>***</td>
<td>0.03</td>
<td>0.09</td>
<td>0.03</td>
<td>***</td>
<td>0.01</td>
<td>0.05</td>
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</tr>
<tr>
<td>Has a child, 15-24 yrs. of the marriage (Ref.: none)</td>
<td>0.21</td>
<td>***</td>
<td>0.12</td>
<td>0.35</td>
<td>0.19</td>
<td>***</td>
<td>0.13</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>Has a child, 25+ yrs. of the marriage (Ref.: none)</td>
<td>0.56</td>
<td>0.20</td>
<td>0.154</td>
<td>0.57</td>
<td></td>
<td>0.18</td>
<td>1.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (Ref.: tertiary)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary or lower</td>
<td>0.95</td>
<td>0.63</td>
<td>1.43</td>
<td>0.75</td>
<td></td>
<td>0.53</td>
<td>1.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
<td>0.87</td>
<td>0.63</td>
<td>1.21</td>
<td>1.09</td>
<td></td>
<td>0.82</td>
<td>1.44</td>
<td></td>
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<tr>
<td>High school</td>
<td>0.97</td>
<td>0.69</td>
<td>1.35</td>
<td>0.86</td>
<td></td>
<td>0.68</td>
<td>1.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N (with periods and time-splits)</td>
<td>16,579</td>
<td></td>
<td></td>
<td>18,649</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald-test (model 4)</td>
<td>213***</td>
<td></td>
<td></td>
<td>319***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concordance (model 4)</td>
<td>0.75</td>
<td></td>
<td></td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportional hazards test (model 4)</td>
<td>13.71</td>
<td></td>
<td></td>
<td>26.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIC (model 4)</td>
<td>4436,467</td>
<td></td>
<td></td>
<td>6691,012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIC-difference (model 4 vs. nested)</td>
<td>-5.03</td>
<td></td>
<td></td>
<td>5.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood-ratio test (model 4 vs. nested)</td>
<td>2.97</td>
<td></td>
<td></td>
<td>13.92**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.
Note: Data has been weighted except if otherwise indicated. The Wald-test shows the overall fit of the model compared to the null. Concordance shows the predictive accuracy of the model based on the comparison of predicted and observed survival (see Harrell 2001: Therneau and Atkinson 2020). The proportional hazards test indicates whether the model fulfils the proportional hazards assumption required for the modelling process. The AIC difference and the likelihood-ratio test shows whether the model that includes relative level of education is significantly better than the one without it. An AIC difference above 4 indicates substantial evidence for the inclusion of the added relative level of education variable (see Burnham and Anderson 2004). * p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Estimates are from cox proportional hazards models.
In the next part of the analytical process, I inspected the main models (model 4) for possible interactions between assortative mating and the other control variables. No interpretable result has been found for men or women. Again, it should be noted that the relatively low number of dissolution events hinder the discovery of any more complex interaction-based effects.

7.5. A descriptive look at the dissolution of cohabitations

So far, the presented main models examined the effects of educational assortative mating on the survival of marriages. As pointed out in the discussion about the data and methods used, cohabitations could not be included in these models as between wave 1 and wave 2 of the Hungarian Turning Points of the Life Course Panel Survey, there was not any accurate way to pinpoint the cause of dissolution, such as separation or perhaps the death of the partner. In this section, I attempt to provide some estimates for individuals who were in cohabitations at the start of the survey (wave 1).

Table 27: Outcome of cohabitations by relative education, percentages

<table>
<thead>
<tr>
<th>Cohabitation type</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intact</td>
<td>Ended</td>
</tr>
<tr>
<td>Homogamous</td>
<td>81.6</td>
<td>18.4</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>77.5</td>
<td>22.4</td>
</tr>
<tr>
<td>Hypogamous</td>
<td>80.2</td>
<td>19.8</td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.

As all dissolutions are attributed to separations between wave 1 and wave 2, I minimized the risk of falsely identifying deaths as breakups by restricting the age of the sample. Therefore, the estimates only include non-married cohabiting respondents aged 23 or above (as done previously) and under the age of 50. The resulting sample consists of 477 men and 577 women, with an observed number of dissolutions of 94 for the former, and 85 for the latter. As the number of observations and dissolution are very small for a detailed testing with multiple controls, I only rely on descriptive methods and logrank tests to examine the influence of relative education for cohabitations.

First, a view at the observed number of separations (table 27) for men and women suggest minor differences for the former, while for the latter, homogamy appears to be related to a higher level of stability (11.6% of homogamous women separated versus 15.6% and 21.5%). Looking at the survival curves for cohabiting
men (figure 32) in homogamous, hypergamous or hypogamous relationships, this lack of difference is more visible. Men in all types of arrangements experience a decline in stability until the 20th year of the relationship, after which separations were rarely observed. Corroborating the visual similarities, the logrank test (table 28) confirmed that no difference in the case of men exists according to the data. These results imply that hypothesis 2 does not hold for cohabiting men.

**Figure 32: Survival curves of cohabiting men (Kaplan-Meier)**

![Survival curves of cohabiting men](image)

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4. The bars indicate the 95% confidence interval.

Compared to the indifference between men, women show some notable variation in the survival estimates (figure 33). Although based on a relatively low number of respondents and observed dissolutions, homogamy seems to be the most stable form of union for cohabiting women, followed by hypergamy, and finally, hypogamy. These results suggest that hypothesis 2 holds for married and cohabiting women, and hypergamy seems to be no better for non-married women than homogamy. The logrank test (table 28) confirms that there is a statistically significant difference between the curves, with hypogamous cohabiting women...
having the largest difference between the observed and expected number of separations.

**Figure 33: Survival curves of cohabiting women (Kaplan-Meier)**

![Survival curves of cohabiting women](image)

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4. The bars indicate the 95% confidence interval.

**Table 28: Logrank tests of difference in the survival of cohabitations**

<table>
<thead>
<tr>
<th>Marriage type</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Expected</td>
</tr>
<tr>
<td>Homogamous</td>
<td>45</td>
<td>47.8</td>
</tr>
<tr>
<td>Hypergamous</td>
<td>24</td>
<td>23.1</td>
</tr>
<tr>
<td>Hypogamous</td>
<td>25</td>
<td>23.2</td>
</tr>
<tr>
<td>Logrank test (X^2)</td>
<td>0.4</td>
<td></td>
</tr>
</tbody>
</table>

Source: Hungarian Turning Points of the Life Course Panel Survey, wave 1 to wave 4.

Note: O = Observed, E = Expected.

p. < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001.
7.6. Summary

In this chapter, I examined how assortative mating is related to relationship dissolution. Based on the possible consequences of the education-specific mating squeeze (Van Bavel 2012), the main theories and the Hungarian context, I theorized that educational homogamy and hypergamy is related to a lower risk of dissolution (hypothesis 2).

Throughout my analyses, descriptive methods and statistical models have been employed. While the descriptive data suggested that both married men and women benefit from homogamy and hypergamy in terms of stability, the models revealed that this is only the case for women, mirroring the results of the relationship quality analyses. Therefore, hypothesis 2 was only found to be true for women.

Regarding the comparison of homogamy and hypergamy, the simple three-category assortative mating variable suggested that there is no difference in their effects, while the point-estimates of the detailed, distance-based models revealed that distant hypergamy is the most advantageous for married women for stability, with close hypogamy having the weakest positive effect, and close hypergamy with homogamy being in the middle. These point-estimates only provide suggestive evidence for hypergamy’s additional positive effect when looking at married women, as confidence intervals overlap.

Cohabitating, non-married individuals could not be included in the main models due to errors in data collection. Separate, descriptive analyses done on an age-restricted sample of cohabiters showed an insignificant effect for men, while for cohabiting women, educational homogamy might be the most advantageous type of union. Therefore, results of cohabiting women confirm hypothesis 2, which correspond to the results of Brines and Jones (1999), Kalmijn, Loeve and Manting (2007) and Maenpaa and Jalovaara (2014).

Several other control factors emerged as having an influence on the risk of dissolution, mostly confirming the main theories and previous results of the field. Regarding the individual-level controls, dividing the sample by gender proved to be fruitful, as women and men had a different number of variables affecting their risk of separation, confirming the notion of “his” and “her”
separation (Kalmijn and Poortman 2005). Age presented an evident effect as older women and men were less likely to separate, possibly because they are in relationships which survived a given time, and/or perhaps they face a much smaller and restricted market of alternative partners.

Parental separation also had the suspected connection with marital instability, although only for women, which could indicate that the mechanisms of learning inadequate relationship skills and witnessing the dissolving of a marriage (Amato and DeBoer 2001) might be especially strong for women. In the case of both genders, previous cohabitation with a former partner and divorce experience reduced the stability of their current partnership, indicating the presence of the previously detailed eroding belief in marriage in the former case (Teachman 2003: 445; Kahn and London 1991; Axinn and Thornton 1992; Axinn and Barber 1997), and the selection or lack of institutionalization effect in the latter (Glenn and Weaver 1977; Cherlin 1978).

From the relationship-specific variables, age at marriage, premarital cohabitation and children were of high importance for both men and women. Age at marriage carried a somewhat unexpected influence: while compared to the reference group, both men and women in marriages begun in older age were more likely to separate, women who married under the age of 20 were less likely to separate than most. This result is in direct contradiction with other Hungarian studies (for example, Földházi 2008). There might be two possible explanations: first, because the sample is biased due to the difficulties discussed above, anomalies may emerge, and second (assuming the sample is not too biased), women in these marriages might especially be economically dependent on the existence of the partnership, therefore, they may face additional constraints when attempting to separate.

Premarital cohabitation was proposed to have a negative effect, as it indicates a less than ideal matching (Brien, Lillard and Stern 2006), which was reinforced by the models for both genders, confirming the long-standing literature on the matter (White 1987; Booth and Johnson 1988; Bennett, Blanc, and Bloom 1988; Thornton 1991; DeMaris and Rao 1992; Földházi 2008 for Hungary). Finally, having at least one child in the early to middle years of the marriage was
the strongest factor against marital separation, but in the later years of the marriage, it had no significant effect. Considering that the early years of marriage frequently coincide with having younger children, this is a strong case for not only the positive influence of children, but especially young children on marital stability, as proposed by relevant theories (Waite, Haggstrom and Kanouse 1985; Previti and Amato 2003; Földházi 2008; Xu, Yu, and Qiu 2015; Ma, Rizzi and Turunen 2019).

Both the results of the main models and the descriptive examination of cohabiters have to be interpreted in light of the limitations of the sample. As panel attrition was quite large and the number of observed dissolution events were low, results might be biased by an unknown amount, with confidence intervals often being fairly wide. These limits of the analyses highlight the further need of prospective or retrospective studies in Hungary on partnership formations and dissolution.
8. **Summary and conclusions**

In this dissertation, my aim was to contribute to the understanding of the patterns and effects of educational assortative mating using census-based and representative survey data from Hungary. While results shed light on processes related to the social structure, mobility, inequality and closedness of the Hungarian society, the main focal points of the dissertation were derived from Van Bavel's work (2012) on the education-specific mating squeeze in Europe, which states that as women gain an increasing educational advantage, relationships change in many ways as well.

From the possible consequences of this new mating squeeze, in my work, I was principally interested in the link between women’s educational advantage and the decline of hypergamy, and the differences between homogamy, hypergamy and hypogamy in terms of relationship quality and stability, as theories propose that homogamy and hypergamy are related to higher quality and lower risk of dissolution, while the opposite is true for hypogamy. As unions with a female educational advantage are becoming more prevalent across Europe, focusing on and verifying these assumed mechanisms for Hungary expands needed scientific knowledge on how relationships are created, maintained, and in some cases, ended. Additionally, my work provides a timely update regarding Hungarian mating patterns, and in general, discusses novel insights on the determinants of relationship quality and stability.

8.1. **Theories and context**

To understand how assortative mating influences partner selection, I provided an overview and interpretation of the three main theoretical considerations: the individual’s preferences, the quantity and quality of the available partners on the relationship market, and societal impact through the dominant norms.

Theories of individual preferences suggested that persons seek out partners with certain socioeconomic qualities which shapes partner selection patterns. While a fulfilled preference increases the relationship’s quality and stability, preference-based viewpoints emphasized that unfulfillment is a negative factor when considering the longevity of a union. However, theories were divided
on whether socioeconomic hypergamy or homogamy could be the “best” arrangement for the couple.

Classic viewpoints of preferences such as the Parsonian and Beckerian approach highlighted hypergamy as the most advantageous union type due to the positive effect of interdependence. The former argued that when men occupy instrumental and women expressive roles, relationships function better as solidarity is formed while competition and role-conflict is minimized. The latter, from a more economic perspective, posited that the specialization of men in breadwinning tasks and women in home-making and child-rearing roles enables the couple to increase their overall gains shared in the household, acquiring a better position compared to staying single or being in a non-specialized partnership. Critiques of these theories noted their limited generalizability outside of the USA’s post-war period, the lack of considering dual-employment and not the divergence from hypergamy as a source of stress, and the vulnerability and inflexibility of gender-based role separation and specialization to certain real-life risks.

Opposite to the classical approaches, theories favouring homogamy argued that the symmetry found in homogamous unions facilitate the fair (which can be a subjective viewpoint) exchange of goods through bargaining from a comparable position. Also, similar tasks and roles which are more probable in homogamous unions create reciprocity, solidarity and better communication, increasing relationship quality and stability. Empirical results on relationship quality were not uniform, as there is evidence for the positive nature of hypergamy and homogamy too, while studies on the dissolution of unions leaned towards hypergamy.

I interpreted the effect of the relationship market, which was defined as the number and quality of potential partners, through Blau’s macrostructure theory: as the structure of the society shapes patterns of interactions, larger groups tend to have more homogeneous social networks, affecting partner selection. Theories linked the relationship market and the longevity of unions through the role of potential alternatives, as an abundance of eligible partners reduce relationship quality and acts as an attraction to leave the current partner. Empirical results
generally showed that macrostructural changes were followed by altered mating patterns, notably the rise of hypogamy due to women's entrance into tertiary education in greater numbers, and also, several studies verified the negative effect of alternatives for quality and stability.

As relationships are embedded in social groups and society itself, norms and expectations about gender-roles shape partner selection and outcomes. In this gendered context, theories implied that partners are judged based on their gender conformity, as non-conforming individuals experience an elevated level of external and internal pressure, increasing dissatisfaction with the union. While some theoretical viewpoints saw gender norms departing from the traditional breadwinner men and caretaker women roles, others noted an asymmetry as women enter male spheres but men are not increasingly involved in traditionally feminine roles. Studies managed to uncover a relation between the decline of hypergamy and the spread of egalitarian attitudes in Europe, while in more traditional societies, highly educated women postponed marriage, stayed single or even engaged in compensatory behaviour with their partners to avoid non-conformity. More traditional arrangements were also found to be more satisfactory and less likely to end in traditional contexts, while they exhibited no benefits in a more egalitarian environment.

Apart from the theories, as the dissertation focused on Hungary, I also explored the unique Hungarian context of relationship formation, maintenance and dissolution. Demographic changes in Hungary saw a decrease in the otherwise high marriage rates (with a recent upturn), increasing divorce numbers (with a recent downturn), the postponement of first marriage to later ages, and the spread of non-married cohabitation and singlehood. The normative environment exhibited a peculiar duality: while in many aspects, Hungary can be considered a traditional country regarding gender norms as the family is the focal point for most Hungarians, results also indicated more egalitarian attitudes, especially in the case of women's employment.

Regardless of the duality of the normative environment, empirical data showed that the relative socioeconomic position of men and women were changing in Hungary: while a gap in employment and pay were persistent, women
increasingly outnumbered men in higher education. Previous results in Hungary on assortative mating were not different from the wider European data, as research implied that homogamy is the most dominant arrangement type, with heterogamous unions forming between adjacent, but rarely amongst distant socioeconomic groups.

8.2. Main results

Based on the supposed effects of the education-specific mating squeeze, the theories of assortative mating, related previous results and the Hungarian context, I examined four explorative research questions and two hypotheses using quantitative methods with census-based and/or representative survey data.

Regarding the first question (how does the patterns of educational assortative mating change across cohorts?), Hungarian census data showed that educational hypogamy overcame hypergamy steadily, taking the second place behind homogamy which was continually the most common type of arrangement. Data from more detailed compositional tables suggested that amongst homogamous unions, the partnership of two tertiary-educated persons became the most frequent, while the previously widespread union of two individuals with elementary or lower education decreased, with a slight (but cautionary) recent upturn. In the case of hypergamous and hypogamous couples, distant unions where the partners are not from adjacent educational groups were found to be rare and becoming even scarcer.

For the second explorative question (is there a relation between women’s emerging educational advantage and the decline of hypergamy?), I supplemented the descriptive census data with the construction of two indices seen in the literature, the index measuring the prevalence of hypergamy and the index of female educational advantage. The examinations uncovered that that the educational attainment of Hungarian men and women developed asymmetrically as women entered into tertiary education in much greater proportions, which led to the development of a stable female educational advantage. Confirming the base ideas about the education-specific mating squeeze, the visual examinations and correlation statistics indicated that this
restructuring of the educational composition was related to the decline of hypergamy visible in Hungary.

To assess the third research question regarding the trends of educational assortative mating in Hungary (*did the association between the partners’ level of education grew stronger or weaker across cohorts?*), I employed log-linear and log-multiplicative models commonly used in the literature. The comparison of several models uncovered a visible and strengthening association between the partners’ level of education, which implied that educational mating patterns are becoming less random and more predictable and rigid in Hungary. In practice, this suggested that in given educational categories have increasingly fixed partnering opportunities.

Turning from Hungary-specific analyses to a wider, European perspective, I employed data from the European Social Survey to examine whether the results seen for Hungary are unique or perhaps part of a more widespread phenomena (*is Hungary similar to other European nations regarding mating patterns and the decline of hypergamy?*). All of the included 27 nations exhibited similar patterns to Hungary, as hypergamy declined in favour of hypogamy, which was associated with women’s emerging educational advantage in Europe. Only four nations were seen as outliers, as by the youngest examined cohort (born in 1980 or later) Switzerland, Austria, Germany and Slovakia still had a slightly higher prevalence of hypergamy than hypogamy. Therefore, it can be concluded that Hungary follows the common change seen in Europe.

After the examination of the research questions which revolved around the trends of educational assortative mating, I focused on specific hypotheses regarding how the relative educational attainment of the couple affects the individual’s relationship quality and stability, using data from the Hungarian Turning Points of the Life Course Panel Survey which allowed to control for a wide range of individual background, relationship-specific and socioeconomic variables. Throughout the analyses, I chose respondents in hypogamous unions as the reference group as no theory highlighted hypogamy as the most advantageous type of arrangement, with the added advantage that this decision
allowed the comparison of the effect of homogamy and hypergamy as well, aiding the discovery of a possible ordering between them.

_Hypothesis 1_ stated that compared to persons in hypogamous unions, those in homogamous or hypergamous partnerships have higher relationship quality. I addressed this hypothesis using a cross-sectional approach in the form of ordinal logistic regression models, and from a longitudinal perspective employing group-based trajectory analysis. Both methods yielded similar results. In the case of the cross-sectional models, women in homogamous or hypergamous unions were constantly found to be more satisfied with their relationship compared to hypogamous women, while for men, relative education had no effect with or without controls. Regarding the trajectory analysis, data indicated that both men and women had two separate quadratic (declining but increasing later on) trajectories which described the progression of relationship quality throughout the years of the union: a “medium” and “high” quality for men, and a “low” and “high” quality for women. For women, results showed that those in homogamous and hypergamous partnerships were more likely to follow a “high” relationship quality trajectory characterized by a high and only slightly varying level of satisfaction, while assortative mating had no effect for men in this instance as well. Consequently, _hypothesis 1_ was only confirmed for Hungarian women.

_Hypothesis 2_ presumed that men and women in homogamous or hypogamous partnerships are more likely to stay with their partner compared to those in hypogamous unions. During my examination of relationship dissolution, I employed descriptive methods and Cox proportional hazards regressions. Due to limitations of the sample, I looked at marriages and cohabitations separately, and for the latter, only descriptive analyses were available as a result of the lower number of respondents. Results presented a familiar picture: homogamy and hypergamy was related to a significantly lower risk of marital dissolution compared to hypogamy, but only in the case of women. Analyses without controls suggested a similar effect for men too, but controlling for cohort-specific biases (amongst others) negated this early result. The descriptive examinations of cohabiting individuals similarly hinted at the positive effect of homogamy and (to a lesser degree) hypergamy for women, while for men, no difference was visible.
In summary, *hypothesis 2* was only verified for married and cohabiting Hungarian women, but not for married or cohabiting men.

Apart from testing *hypothesis 1 and 2*, an additional focus was on whether there is an order between the possible arrangements, as other empirical works suggested that compared to hypogamy, hypergamy increases relationship quality and stability to a greater degree than homogamy does. To examine this notion, I looked at the estimates of models using the base relative education variable (which only defines homogamy, hypergamy and hypogamy), and when possible, a more detailed variable which distinguishes between close (from adjacent educational categories) and distant (from non-adjacent categories) forms of hypergamy and hypogamy.

Point-estimates from the cross-sectional and trajectory models using the simpler relative educational variable suggested that hypergamy provides a greater increase in relationship quality than homogamy for women. Additionally, point-estimates from the cross-sectional models employing the detailed assortative mating variable revealed a pattern for women: as the distance between partners increased to the benefit of the male partner, women were increasingly more likely to be satisfied with their partnership. As the confidence intervals of the estimates overlapped, results on the possible ordering of relationship arrangements are only suggestive.

A view at the dissolution of married or cohabiting respondents proved to be slightly different. Point-estimates did not show any difference between the stability-inducing effect of homogamy and hypergamy for married women, while cohabiting women seemed to be less likely to separate in homogamous unions. The detailed models for the married sample also showed that the effect of homogamy and near hypergamy was very similar, while distant hypergamy emerged as the most beneficial arrangement. Together, the point-estimates suggest that hypergamy is better for relationship quality and stability for women, while hypergamy does not seem more beneficial for cohabiting women. It should again be noted while point-estimates suggest some patterns, the overlapping confidence-intervals highlight a need to be cautious about taking these results as evidence for or against this possible ordering.
8.3. Contributions of the dissertation

As the presented dissertation contains a detailed overview of the literature of assortative mating, a discussion on the peculiarities of the Hungarian context of partnering paired with analyses of mate selection patterns and a look into how relative education affects relationship quality and stability, my work contributes to the wider scientific discussion about how relationships are established, maintained and ended.

8.3.1. On who chooses whom

In the paper by Van Bavel introduced early on, he noted that women’s emerging educational advantage shapes assortative mating (2012: 133-136), reflected in the rise of educationally hypogamous unions. My results are amongst the first to clearly confirm this hypothesis for Hungary using census-based data while also reinforcing previous works on European trends as well (Esteve, García-Román and Permanyer 2012; Esteve et al. 2016; De Hauw, Grow and Van Bavel 2017). The presented data also supports Blau’s (1970) macrostructure theory, as interactions and therefore the prevalence of certain relationship arrangements are linked with their relative sizes.

If we consider the contextual facts that (1) Hungarian women outnumber men in university applications and admittances; (2) a stable female educational advantage is present and (3) that the partner selection patterns are rigidifying without any signs of a return to hypergamy due to structural constraints or normative expectations (as in the case of China, Qian and Qian 2014), I believe that Hungary is heading towards a stable pattern dominated by homogamy and hypogamy, while hypergamy further declines. Apart from the study of partner selection, these results bear future importance mainly from a normative and stratification perspective.

Regarding norms, due to women’s growing macrostructural and intra-relationship advantage (or lessening disadvantage), the normative environment in Hungary might be forced to shift. As an educational advantage is related to the emergence of female breadwinners (Esteve et al. 2016), macro-level gender norms and expectations are tested. Optimistically, this might bring about the second part of the two-part gender revolution (Goldscheider, Bernhardt and
Lappegard 2015): women complete their entrance into the traditionally masculine environment while the expectation from men to participate in historically feminine tasks rise, the latter process hinted at by Spéder several years ago (2011). From a more pessimistic viewpoint, as Hungary exhibited partially progressive and traditional attitudes decades ago as well, the gender revolution might stall and remain uneven (England 2006, 2010), establishing a normative structure where women have to fulfil traditional expectations and also be present as dependable providers, solidifying and worsening the already present system of dual burden on women (Blaskó 2006). As the latter scheme is the one supported by recent state social policy (see Csányi 2019), women in hypogamous relationships might face especially high levels of work-family and family-work conflict, which brings about added stress in the relationship.

From a stratification perspective, as some presented theories put it, educational assortative mating imply the union of two individuals with a specific set of resources, and are representative of the openness of a given society (Vukovich 1962a; Sorokin 1927: 179; Hout 1982). As the proportion of homogamous couples with elementary or lower and at the upper end, with tertiary education is rising and distant heterogamy is becoming rarer, trends might indicate a progression toward societal closure through partnering choices. Paired with research noting that in Hungary, absolute and relative parent-child mobility is decreasing since the 1970s (Róbert and Bukodi 2004; Bukodi and Goldthorpe 2010), a process entailing intergenerational and intragenerational (partnering) mechanisms can be outlined17: persons are increasingly likely to have the same education as their parents, and they are prone to partner with someone homogamously, forming a partnership where children are likely to remain immobile - and the cycle repeats. Interpreting the growing population of immobile and simultaneously homogamous persons as a sign of social closure which influences an individual’s opportunities, well-being (Chan 2017) and health (Bartley and Plewis 2007), the detailed mating patterns hold particular importance.

17 A paper exploring this proposed mechanism is in development with Ákos Huszár and Katalin Füzér, I thank them for their insights regarding the matter.
Apart from normative and stratification interests, the findings on who partners with whom can also be applied in fields of study including but not limited to: decisions regarding fertility (Bartus 2018), mortality differences (Ariyo and Jiang 2021), studies of partner choice considering specific marriage markets (Gullickson 2018), employment (Visser and Fasang 2018), examinations of household division of labour (Miller 2020) and migration (Choi and Mare 2012). While the discussion of all these topics is outside of the bounds of this dissertation, in general, they shed light on the importance of studying educational assortative mating patterns and changes in trends.

8.3.2. Understanding the effect of educational assortative mating

The descriptive, cross-sectional and longitudinal analyses were concerned with the examination of how hypergamy, homogamy and hypogamy affects the subjective level of satisfaction with the relationship and the risk of dissolution. As there is a considerable divide between theoretical approaches whether educational hypergamy or homogamy is the “ideal” arrangement (defined as having the most positive effect), my work contributed by providing new results and insights, furthering the discussion. From the results, it is certainly clear that in the Hungarian context, both hypergamy and homogamy is more advantageous for quality and stability than hypogamy - at least for women. This result verifies both traditional theories such as the Parsonian and Beckerian and more equality-oriented viewpoints that highlight the importance of similarity, while simultaneously lending support for Van Bavel’s ideas about the negative effect of hypogamy (2012).

From a Parsonian understanding (Parsons 1940, 1942, 1953, 1955a, 1955b), women in hypergamous relationships are more likely to fulfil expressive roles while their partners are occupied with instrumental tasks, forming a high level of interdependence between them, which in turn increases relationship quality and stability as role conflicts and competition are low or absent. From a Beckerian point of view (1973, 1974, 1985, 1991), these women experience high levels of additional gains and in general, long-term stability and certainty, allowing them to specialize more in non-paid work, making it a more satisfactory union for them. The detailed models implied that a greater degree of hypergamy is even better for both quality and stability, further supporting these theories.
At the same time, women in educationally homogamous unions fare well too. From an exchange and bargaining perspective (Huston and Burgess 1979; Edwards 1969; Levinger 1979) their objective and subjective position compared to their partners are more likely to be equal, and in light of the resulting similarity, symmetry, reciprocity and equality in decision-making (Hatfield, Utne and Traupmann 1979; Hatfield et al. 1985), they are more satisfied and less prone to leave their union. Also, as education encompasses not just socioeconomic but cultural factors as well, their similar characteristics might foster better communication due to the similarity of problems, situations and viewpoints, with roles that are negotiated and not bio-soc ally determined (McPherson and Smith-Lovin 1987; McPherson, Smith-Lovin and Cook 2001; Skopek, Schulz and Blossfeld 2011; Simpson and England 1981). Homogamy was especially beneficial for cohabiting women, which, in light of the spread of cohabitation in Hungary (Spéder 2005), is of high importance.

From the perspective of alternatives on the relationship market, for women who are increasingly facing a shortage of men with at least as much as education as themselves, both hypergamy and homogamy are an objectively good choice. Also, as an excess of men with lower education is becoming reality, similar or better alternatives are becoming rare in the potential pool of partners, further increasing satisfaction and stability for these women (Levinger 1965, 1976; South and Lloyd 1995; South, Trent and Shen 2001).

The results that both educational hypergamy and homogamy is advantageous for women compared to hypogamy can - and should be - also be understood in light of the prevalent normative context of Hungary. In chapter 3.3, the main conclusion was that Hungary is in many aspects traditional while in others, a progressive nation, especially regarding women’s need to contribute to the income of the household. Due to this duality, women both in hypergamous and in homogamous unions “do gender” (West and Zimmerman 1987), as their roles are conforming: they fulfil either traditional or more egalitarian expectations, while hypogamy emerges as a clear non-normative type of arrangement. If gender norms change due to the spread of educational hypogamy and the growing number of female breadwinners, these effects could possibly diminish and even reverse, as seen in countries where norms and institutions do not
support traditional arrangements (Cooke 2006). During the analyses, the absence of cohort interactions did not verify this assumption, but perhaps, newer datasets would be more enlightening.

But why does educational hypergamy and homogamy only have a positive effect (relative to hypogamy) for women, but not for men? From a methodological perspective, men’s relationship quality was higher and more homogeneous (indicated by a lower standard deviation) compared to women, making it more difficult to detect differences. Also, fewer male separations were included in the dissolution models, similarly making comparisons less likely to show the theorized effects.

Supposing that the lack of significant influence of relative education for men are not due to methodological reasons, several theoretical explanations exist. First, dividing the analyses along the two gender was explained by the notion of “his” and “her” relationship and divorce, implying gender differences in the perception of the relationship itself (Bernard 1972, 1976; Levinger 1965; Rhyne 1981; Cleek and Pearson 1985; Kalmijn and Poortman 2005). If Hungarian men are less sensitive to the negative aspects of the relationship or when assessing socioeconomic factors such as relative education, this could explain the gender-specific findings.

Second, men and women might be different in what qualities they look for in a potential partner. Studies (for example, Sprecher, Sullivan and Hatfield 1994) note that socioeconomic status is more important for women, while for men, more physical qualities, for which variables were not included, are vital. Simply, the lack of effect just indicates that men do not care about their partners’ education relative to theirs.

Third, for Hungarian men, perhaps all three union types are advantageous to some degree, making relative differences minimal. Men in hypergamous unions fulfil the Parsonian and Beckerian ideal of gender-specific role specialization and adhere to traditional norms, making it a positive factor in quality and stability. Homogamous men face an equal arrangement with higher levels of reciprocity, better communication, equity and shared interests, similarly resulting in higher satisfaction and lower risk of dissolution. For men in hypogamous
unions, all the theorized negative effects can be countered by having a higher educated partner (who is still doing the majority of housework, see for example Pongráczné 2005; Blaskó 2005; Pongráczné and S. Molnár 2011; Makay and Spéder 2018) who can contribute to the household income to a greater degree and lessen the economic stress on the individual, and also who is a good match on the relationship market who willingly partnered down.

Fourth and finally, perhaps relative education does not capture the socioeconomic differences for which Hungarian men are sensitive to, as for example, previous results highlighted that Hungarians oppose a female income advantage (Murinkó 2014). More direct measures such as occupation, income or prestige might have been better at detecting effects for men too, however, their limited availability in the used datasets hindered any meaningful exploration in this regard.

8.4. Future questions

The presented results on educational assortative mating patterns and its effects on relationship quality and stability outline future areas of interest worth exploring in the years to come.

In the dissertation, I was mainly concerned with how the education-specific mating squeeze proposed by Van Bavel (2012) affects partnering and relationship outcomes. Future research should focus on not just the increasing number of hypogamous couples but other possible effects, namely, changes in the relative age of the partners, as highly educated women are forced to choose from older pools of eligible partners to avoid hypogamy; the emergence of geographic and ethnic heterogamy for persons who face a shrinking relationship market; and the spread of singlehood amongst highly educated women (Van Bavel 2012: 133-134).

Demographers, and in general fertility researchers should play close attention to how the rise of hypogamy is related to changes in fertility intentions and the number of children born. If hypogamy is continually related to lower partnership quality and higher levels of relationship dissolution, this might translate into a lower number of planned and realized births (Van Bavel 2012: 133-134).
148), especially where gender-norms and the division of household labour is more traditional, such as Hungary.

Data presented in my work concerning the rise in tertiary homogamy and the spread of upper education in general can also prove to be an important starting point when studying a more nuanced aspect of stratification. As the proportion of university educated population grows, scientists need to examine intragroup mating patterns as well. In a recent study for example, Feng found that Chinese university-educated persons, especially women, chose partners based on the prestige of universities - the elite of the elite married amongst themselves (2022). Therefore, a macrostructural closure can be accompanied by the further closure of the elites as well, which needs close attention if there is a need to keep inequalities and concentration of wealth in check.

Confirmatory and continued analyses of mating patterns, be it from a multi-country approach or case studies of specific nations are also needed. Research should focus on the decline of hypergamy, and keep close attention to signs of reversals and fluctuations. The countries presented to be late adopters of the common European trend (Austria, Germany, Switzerland and Slovakia) should also be examined to uncover the reasons behind their peculiar nature. Additionally, a departure from education-specific works towards more complex measures would be beneficial in the aim to reveal a fuller picture of divides between strata or classes.

The main limitation of the relationship quality models was the simplistic nature of the dependent variable which inhibits the discovery of more subtle differences and effects. Future works should focus on employing more complex, multi-item measures which could provide further details on the effect of assortative mating. Also, comparative analyses, ideally from a pool of countries encompassing traditional and progressive nations should be conducted to examine whether Hungary is a specific case or not.

As chapter 6.3.1 revealed that there might be more than two trajectories of relationship quality, the future waves of the Hungarian Turning Points of the Life Course Panel Survey (Életünk fordulópontjai) could be analysed to reveal longer patterns and perhaps, verify the existence of other paths as well. Apart
from additional panel waves, the models could be adapted to other time measures to examine how assortative mating affects trajectories of relationship quality after the birth of the first child, period-specific economic hardships, unemployment, and so on.

Lastly, the linkage between assortative mating and the dissolution of relationship should be verified and expanded upon by longitudinal surveys with lower levels of panel attrition, which could enable the examination of more specific phenomena and interactions. For example, it would be interesting to see whether persons in first and higher-order marriages differ in how assortative mating effects them and also, whether living apar together unions react differently to the examined variables compared to marriages and cohabitations.

As a concluding thought, I encourage everyone with an interest in the subject of why do we choose someone as our short or long-term partner to invest their time and knowledge into this field of study which has an endless number of questions and relatively few clear answers. Although the dissertation took on a demographic and sociological viewpoint with quantitative analyses - corresponding to my area of expertise - other disciples and/or approaches are always welcome to provide a new opinion, perspective and understanding of one of the most complex phenomena of our lives.
9. Literature


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## 10. Appendix

### Table A1: Number of respondents in relationship in the European Social Survey sample

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
<th>In relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>10,760</td>
<td>7,591</td>
</tr>
<tr>
<td>Belgium</td>
<td>12,578</td>
<td>8,951</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>8,945</td>
<td>6,361</td>
</tr>
<tr>
<td>Switzerland</td>
<td>12,410</td>
<td>9,032</td>
</tr>
<tr>
<td>Cyprus</td>
<td>4,193</td>
<td>3,165</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>14,543</td>
<td>10,329</td>
</tr>
<tr>
<td>Germany</td>
<td>20,778</td>
<td>14,534</td>
</tr>
<tr>
<td>Denmark</td>
<td>8,545</td>
<td>6,345</td>
</tr>
<tr>
<td>Estonia</td>
<td>12,470</td>
<td>8,061</td>
</tr>
<tr>
<td>Spain</td>
<td>14,060</td>
<td>9,720</td>
</tr>
<tr>
<td>Finland</td>
<td>14,439</td>
<td>10,072</td>
</tr>
<tr>
<td>France</td>
<td>13,696</td>
<td>10,087</td>
</tr>
<tr>
<td>Great Britain</td>
<td>16,280</td>
<td>10,725</td>
</tr>
<tr>
<td>Greece</td>
<td>7,877</td>
<td>5,900</td>
</tr>
<tr>
<td>Hungary</td>
<td>12,238</td>
<td>7,861</td>
</tr>
<tr>
<td>Ireland</td>
<td>16,145</td>
<td>10,925</td>
</tr>
<tr>
<td>Italy</td>
<td>6,309</td>
<td>3,993</td>
</tr>
<tr>
<td>Lithuania</td>
<td>8,538</td>
<td>5,774</td>
</tr>
<tr>
<td>Netherlands</td>
<td>13,739</td>
<td>10,581</td>
</tr>
<tr>
<td>Norway</td>
<td>11,478</td>
<td>8,394</td>
</tr>
<tr>
<td>Poland</td>
<td>12,352</td>
<td>8,854</td>
</tr>
<tr>
<td>Portugal</td>
<td>12,970</td>
<td>9,451</td>
</tr>
<tr>
<td>Russia</td>
<td>9,840</td>
<td>6,261</td>
</tr>
<tr>
<td>Sweden</td>
<td>12,984</td>
<td>6,924</td>
</tr>
<tr>
<td>Slovenia</td>
<td>9,819</td>
<td>7,012</td>
</tr>
<tr>
<td>Slovakia</td>
<td>7,757</td>
<td>5,414</td>
</tr>
<tr>
<td>Ukraine</td>
<td>7,986</td>
<td>5,540</td>
</tr>
<tr>
<td>Europe</td>
<td>329,980</td>
<td>226,829</td>
</tr>
</tbody>
</table>

Source: European Social Survey, 1-9.
Note: Data for Hungary may differ from census data due to the difference in the categorization scheme. Data for Europe has been weighted for population size differences.
Absztrakt

A végzettség szerinti asszortatív párválasztás és hatása a párkapcsolatok minőségére és stabilitására

Kulcsszavak: párválasztás, végzettség, párkapcsolati minőség, válás, hipogámia

Jelen disszertáció témája a végzettség alapú párválasztás Magyarországon és ennek hatása a párkapcsolatok minőségére és stabilitására. A téma aktualitását az Európában, így hazánkban is megmutatkozó női végzettségi előny megjelenése és a hipogám (női előny) kapcsolatok arányának növekedése adja. A dolgozat nemzetközi és magyar viszonylatban is új eredményekkel szolgál a párkapcsolatok létrejöttéről, működéséről és felbomlásáról, és tágabb értelemben hozzájárul a rétegződési, demográfiai és normatív folyamatok értelmezéséhez.

Az egyéni preferenciák szerepét hangsúlyozó elméletek és korábbi eredmények szerint a hipogámia negatívan hat a párkapcsolat működésére, ugyanakkor megoszlanak a tekintetben, hogy a hipergámia (férfi előny) vagy a homogámia (hasonlók kapcsolata) rendelkezik-e kiemelten pozitív hatással. Ezt kiegészítve, a párkapcsolati piac elméletei szerint a társadalmi csoportok változó mérete befolyásolja az interakciókat és így a párkapcsolatok összetételét, míg a társadalom által kifejtett normatív elválasoknak való megfelelés vagy ellentmondás szintén szerepet kap a kapcsolatok létrejöttében és működésében.

A párpéldókapcsolatok magyar demográfiai és társadalmi kontextusa, ami a vizsgált jelenségek hátterét alkojja, összetett képet mutat. A demográfiai mutatókat nézve, hosszútávon csökkent a házasságkötések száma és nőtt a válásoké, ugyanakkor az utóbbi évtizedek e trendek megfordultak. A normák és értékek szempontjából egyszerre vannak jelent tradicionális, családcentrikus, valamint progresszívebbnek mondható attitűdök, kiemelten a nők munkavállalásával kapcsolatban.

A dolgozat empirikus részében a végzettség szerinti párválasztaással kapcsolatban négy kutatói kérdés, valamint a minőség és stabilitás kapcsán egy-egy hipotézis került elemzésére a 2011-es népszámlálás és két reprezentatív (Életünk fordulópontjai és European Social Survey) survey adatainak felhasználásával. Az eredmények azt mutatják, hogy (1) hazánkban a homogámia tartós dominanciája mellett nőtt a hipogám párok aránya; (2) e változás összefüggést mutat a nők folyamatosan emelkedő végzettségi előnyével; (3) a pár tagjainak végzettsége között növekvő az asszociáció; (4) a magyar folyamatok pedig Európa több országában is megvalósuló átalakulás részét képezik.

A minőség és stabilitás tekintetében a keresztmetszeti modellek, a longitudinális pályavizsgálat és a túléleselemzések tanulságai alapján a homogámia és hipergámia magasabb minőségével és alacsonyabb instabilitással hozható összefüggésbe a nők esetében, mely részen igazolja a dolgozat hipotéziseit. A részletesebb modellek mindkét elemzés során a hipergámianak a homogámiaián is túlmutató pozitív hatásra utalnak a nőknél.
Abstract

Educational assortative mating and its effect on the quality and stability of relationships

Keywords: partner selection, education, relationship quality, separation, hypogamy

In this dissertation, I examine the educational assortative mating patterns in Hungary and its effect on the quality and stability of relationships. This topic is especially relevant as women’s educational advantage and the proportion of hypogamous (female advantage) unions are growing in Europe and in Hungary as well. My work provides novel data on how relationships are established, maintained and ended, and has implications for processes related to social stratification, demography and societal norms.

Theories and previous results focusing on individual preferences highlight the negative effect of hypogamy for the relationship, while there is divide whether hypergamy (a male advantage) or homogamy (similarity) is more beneficial. Complementing the preference-based approaches, the theory of relationship markets posit that the size of societal groups affects interactions and therefore the composition of partnerships. Additionally, following or violating societal norms also plays an important role in the formation and working of a union as well.

The Hungarian context of relationships, which forms the background for the studied phenomena, shows a complex picture. While the number of marriages declined and divorces increased, the last decade saw a reversal in these trends. Regarding norms and values, in Hungary and especially in the case of women’s employment, traditional, family-oriented and progressive attitudes are present simultaneously.

In the empirical part of the dissertation, I explored four research questions regarding partner selection and two hypotheses for relationship quality and stability using data from the 2011 Hungarian census and two representative surveys (Hungarian Turning Points of the Life Course Panel Survey and the European Social Survey). The results show that (1) in Hungary, educational homogamy was continually dominant while hypergamy declined in favour hypogamy; (2) the emergence of hypogamy was related to women's growing educational advantage; (3) the association between the partners' education is strengthening; (4) and that the trends seen for Hungary are part of a change visible in many other European nations as well.

The presented cross-sectional, longitudinal trajectory and survival models showed that homogamy and hypergamy are related to higher levels of relationship quality and stability for women only, partially confirming the hypotheses of the dissertation. Detailed models also hinted at hypergamy's added positive effect compared to homogamy.
Plágiumnyilatkozat

Alulírott, ERÁT DÁVID nyilatkozom és aláírásommal igazolom, hogy EDUCATIONAL ASSORTATIVE MATING AND ITS EFFECT ON THE QUALITY AND STABILITY OF RELATIONSHIPS című disszertációm saját szellemi tevékenységem eredménye, az abban hivatkozott nyomtatott és elektronikus szakirodalom felhasználása a szerzői jogok nemzetközi szabályainak megfelelően készült, és hamisított adatok nem kerültek felhasználásra.

Pécs, 2022 év _____ hó _____ nap

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Erát Dávid