Who becomes a teenage parent?

Life course perspectives on selection into teenage motherhood and fatherhood trajectories in Sweden

Sara Kalucza

Department of Sociology
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Abstract

Background. The aim of the research described in thesis is to study processes of selection leading to teenage parenthood in contemporary Sweden. I ask how factors related to socio-economic position, mental health issues in youth, and family formation behaviour of previous generations directs young individuals into teenage parent trajectories. Having children as a teenager is often seen as a burden and a failure, and framed as a public health concern. This is true, even as mounting evidence points to the fact that the connections between teenage parenthood and future adverse outcomes are muddled by selection effects. This research makes a contribution to the body of knowledge by looking at how several factors influence selection processes, namely socio-economic background factors, mental health issues in adolescence and family formation patterns of the teenage parent’s own parents. Both teenage mothers and teenage fathers are considered from a life course perspective. The theoretical framework also draws on the literature relating to opportunity costs and competing alternatives.

Method. Two longitudinal data sources are utilized: register population data accessed through the Umeå SIMSAM lab and the Northern Swedish Cohort survey. In order to answer questions about both selection leading into events and trajectories, random intercept models for longitudinal data as well as sequence analysis are applied.

Results. The results show that, apart from confirming the continued importance of socio-economic factors selecting young men and women to become teenage parents and embark on teenage parenthood trajectories, mental health issues in youth are also important. Through this route, both teenage girls and boys enter into teenage parenthood in a way that does not happen with on-time parenthood. Furthermore, the results show that selection not only affects the chances of becoming a teenage parent, but also which type of teenage parent trajectory the individual follows. Moreover, the results reveal that these trajectories, and not only the event of becoming a teenage parent, are repeated over generations. The results illustrate that teenage parents are a heterogeneous group with diverse backgrounds and selection processes, and hence policy measures aimed at teenage parents should not try to offer blanket solutions.
List of original papers in the thesis

1. Kalucza, Sara. 2017. Mental health problems and social disadvantages as predictors of teenage parenthood: a register-based population study of Swedish boys and girls. *Accepted for publication, Longitudinal and Life Course Studies.*

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Introduction

Adolescence, with the transition to adulthood, is a critical juncture in life, where the stage is set for the future trajectories of many important life domains such as education and family. In this setting of adolescence, having children is often seen as a burden and a failure, and framed as a public health concern (Furstenberg, 1991; Furstenberg, 2003; Geronimus, 2004). The rationale for such framing is evidence of adverse consequences for both the teenage parents and their children (Furstenberg, 2003). In line with this, teenage parenthood is often held up alongside other ‘delinquent behaviours’ such as criminality, drug use and psychiatric diagnoses (e.g. Vinnerljung, Sundell, Löfholm, & Humlesjö, 2006) as a measure of delinquency or disadvantage (e.g. Wiborg & Hansen, 2009) in itself, or a generally ‘unsuccessful’ outcome (e.g. Olsson, Hansson, & Cederblad, 2006). The terminology of delinquency and unsuccessfulness illustrates the concern with, and undesirability of, teenage parenthood and teenage parents in contemporary western societies.

However, there is a body of literature that questions what the problems with teenage parenthood really are (e.g. Duncan, Edwards & Alexander, 2010; Furstenberg, 1991; Furstenberg, 2016; Geronimus, 2003; Geronimus 2004; Lawlor & Shaw, 2002). The notion of early childbearing and its immediate and causal connection to deepened disadvantage has been questioned for a long time. As far back as the end of the 1980s, Furstenberg, Brooks-Gunn and Morgan (Furstenberg, Brooksgunn, & Morgan, 1987) referred to the belief that early childbearing almost certainly leads to school drop-out and economic dependence as being “greatly oversimplified”. Instead, they pointed out that there is great variation in the effects of teenage childbearing. These researchers took a more nuanced approach, and argued that selection muddles our understanding of the real consequences of early parenthood. The concept of selection means that circumstances predating an event such as teenage parenthood can make individuals more or less likely to experience this event and at the same time affect its outcomes. This means that investigations taking their starting point as the moment of teenage parenthood and attempting to assess its consequences will be plagued by bias, if these selection effects are not appropriately accounted for. In order to properly account for selection mechanisms, we need to understand what they are and how they function.

Where almost all agree is that individuals who become teenage parents tend to come from more disadvantaged backgrounds, with lower parental income and education compared to their peers (e.g. Al-Sahab, Heifetz, Tamim, Bohr, & Connolly, 2012; Geronimus & Korenman, 1992; Väisänen & Murphy, 2014). This means that causal links between early parenthood and further
disadvantage will probably be tainted by selection effects, where disadvantaged starting-positions make individuals more likely to become teenage parents, as well as experiencing further disadvantage. Indeed, some research has shown that continued adverse outcomes for both parent and child can partly or completely be attributed to aspects such as socio-economic factors prior to birth (Cunnington, 2001; Furstenberg, 1991; Geronimus & Korenman, 1992; Sigle-Rushton, 2005). Furthermore, the existing knowledge about selection into teenage parenthood needs to be extended beyond the traditional measures of socio-economic factors seen in social stratification research, to aspects such as mental health and family formation trajectories.

With this question about the influence of selection, i.e. who becomes a teenage parent, and bearing in mind the importance of such selection for the understanding of the consequences for parent and child, the overarching aim of this thesis is to study processes of selection leading to teenage parenthood in contemporary Sweden. I ask how factors linked to socio-economic position, mental health issues in youth, and family formation behaviour of previous generations directs young individuals into teenage parent trajectories.

This thesis makes a contribution to the body of knowledge by looking at how several factors influence selection processes, not only the previously established important socio-economic background factors, but also the poorly studied dimension of mental health issues in adolescence. Furthermore, this thesis examines the impact of family formation patterns of young people's own parents on the family trajectories of teenage parents, broadening the study of intergenerational transmission of teenage parenthood to a wide life course trajectory approach. The research considers both teenage mothers and teenage fathers, an important contribution since the sociological study of family has had a heavy emphasis on women and motherhood, mirroring the fact that family has traditionally been the domain of women (Goldscheider, Bernhardt, & Lappegård, 2015). Studying family formation of both young men and women can give rise to new expanded knowledge on teenage fatherhood and provides opportunities for comparative analysis, but also contributes to bringing fatherhood and motherhood together as equal parts within the field of family formation. In this thesis, I recognize that men and women still face different expectations both inside and outside the domain of family formation, such as the place of men and women in family and work. To accommodate these different experiences, I study both men and women, often by running separate and combined analyses, testing for interaction effects of gender and measures of disadvantage.
Another important aspect is the inclusion of mental health issues as one potential factor selecting individuals into parenthood and young parenthood, alongside socio-economic factors. Mental health issues and their connection to young parenthood are less widely explored than socio-economic background, and previous studies have arrived at varying conclusions (For a more thorough review, see “The role of adolescent mental health”, p.11). As both self-assessed mental health issues and the prescription of psychotropic drugs have increased among young people in Sweden over the last 30 years (Socialstyrelsen, 2016), it becomes imperative that we strengthen our understanding of how mental health issues in youth affect an individual’s continuing life course.

In addition, by not only focusing on the event of becoming a teenage parent but also on the continued family formation trajectory, we can further develop our understanding of the family formation context in which teenage parenthood takes place, as well as nuance our understanding of what the teenage parenthood life course constitutes. Furthermore, I contrast these selection processes into teenage parenthood with selection into adult parenthood in order to help determine whether selection by health and social disadvantages differs between “on-time” (adult) and “off-time” (teenage) parenthood.
Theoretical approaches

The life course framework

Life course studies have, in recent decades, emerged as a substantial field within sociology (Aisenbrey & Fasang, 2010); this thesis is set within this analytical framework. The life course framework is suitable for examining early parenthood and selection processes since it recognizes how spheres of work, education, and family are closely connected, with trajectories within one dimension influencing the others. The life course framework acknowledges that individuals exist within a complex network of interdependence (Heinz, Huinink, Weymann, & Swader, 2009) where past actions and decisions of an individual are embedded within spheres such as work, family, education and leisure, all closely intertwined. On top of this, the individual exists in a political-economic, cultural and social context, which defines the structural conditions within which the individual operates (Heinz et al. 2009). Life course sociology centres on the understanding that life transitions, such as marriage and having a first child, are always a part of social trajectories, that give these transitions distinct meaning (Elder, 1998). These life transitions do not happen at random points in our life courses, but are tied to societal and cultural norms about the age (timing) and order (sequencing) they should take place (Elder, 1994).

Adolescence is a key time for many exposures, as it is a period of social-emotional, cognitive and physical change that sets the stage for future health, family and relationship experiences (Booth, Brown, Landale, Manning, & McHale, 2012). We are more sensitive to value transmission from parents during this time, in comparison to later in life where, to a greater extent, we shape our opinions and values as a result of influences from other sources (Booth et al., 2012). Adolescence, therefore, as a life period of great importance for the continued life course, since events that occur during this time can lead to on-going chains of effects. Developing issues such as mental health problems during this time can lead to cumulative disadvantage, where one type of disadvantage will in turn lead to another, which in turn leads to yet another. These trajectories of unwanted outcomes are often referred to as path dependency mechanisms and are part of a life course theory that attempts to articulate how experiences and opportunities throughout the life course manifest in adult outcomes, by setting in motion cumulative processes (Dannefer, Kelley-Moore & Huang, 2016). Such cumulative processes have been found in the study of childhood socio-economic disadvantages and health outcomes (e.g. Bauman, Silver, & Stein, 2006; Mollborn, Lawrence, James-Hawkins, & Fomby, 2014).
The social shaping of the life course and family formation

The life course of the individual is not only interconnected between life domains, and between the past and the future, but also with the trajectories of other individuals, such as parents, siblings and friends, known in life course terminology as “linked lives” (Elder, 1998). In this section I expand on some of the mechanisms through which resources in the family, both material resources such as income, and cultural capital such as education, might shape possibilities, expectations and norms.

The background and behaviours of our parents are important for our own choices since we are likely to conform to social expectations (Geronimus, 2004; Montgomery & Casterline, 1996). Parents have a special position over their children in the family hierarchy, exerting not only social influence, but doing so from a position of power (Bernardi & Klärner, 2014). For this reason, we can expect the family background of an individual to influence family formation behaviour, such as age at first child.

Socio-economic backgrounds have been a prevalent measure of disadvantage, and are most often measured in terms of parental education, and parental income and wealth. The presence of these resources can function as a support that influences the options and opportunities available to young individuals. Parental education is a mechanism through which both family formation and an individual’s own educational decisions can be influenced by parents. In families with high parental education, we can expect that parents are better able to offer educational support and encouragement, giving their children both the tools and the sense of opportunities that come with higher education. At the same time, parents with higher education might have higher expectations about the educational attainment of their children, as parental class is shown to be a strong predictor for teenage educational and occupational aspirations (Baker et al., 2014; McCulloch, 2017; Schoon et al., 2002)

Parents with more economic capital might influence the childbearing patterns of teenagers and young adults in a similar twofold way as parental education. Having access to economic capital means better opportunities to support attractive alternatives to early childbearing – such as higher education or travel, i.e. providing other opportunities for their children. This also mean that these opportunities could be used as economic leverage, since these opportunities can be withheld, providing these parents with sanctioning powers they can use to exert social pressure in order to enforce their expectations. This gives having children early a higher opportunity cost for individuals with parents who have higher economic capital, since there is a risk of foregoing other attractive opportunities. Social support can, therefore, become a vehicle for social control,
which can be offered or withheld in accordance with beliefs about the appropriate age and sequencing of, for example, childbearing (Geronimus, 2004).

Another type of support that an individual might receive from close kin, is time and emotional support. Early parenthood might be more normative in certain subpopulations (Bernardi & Klärner, 2014) or where parents themselves have experienced early parenthood. Parents and siblings in these groups might lend more emotional and time-related support to these fertility decisions. Providing support in childcare is one of the most influential forms of social support in family formation (Bernardi, 2003), and hence expectations of whether this support might be present can have lasting impacts on fertility decisions. There might also be a perceived point to early childbearing if you do not expect to live a long and healthy life, or similarly do not expect your social support network to live long and healthy lives, available to supply support. Benefits that can be gained from delaying childbearing and prolonging education and/or early labour market participation might not outweigh the health consequences of childhood exposure to social disadvantage. Such exposures might risk excess mortality and early health deterioration in family networks and partners, when living in socially disadvantaged areas (Colen, Geronimus, & Phipps, 2006; Geronimus, Bound, & Waidmann, 1999). These thought processes may not be explicit, but built into context-dependent age norms. Hence, we can expect influence to be exerted through both expectations and facilitation, to achieve expected and timely educational and career outcomes, and delay childbearing. In this way, individual fertility behaviour is culturally mediated and responsive to social control and social support (Geronimus, 2004).

In addition we learn, through social learning, both from society and from our close social networks. We use the information available to us in order to make decisions, and when additional pieces of information essential to our decision-making process are provided, social learning takes place (Bernardi 2003). Individuals have different sets of information available to them, from different sources, coming both from impersonal sources such as pamphlets and advertisements (Montgomery & Casterline, 1996) but also from observing behaviour of those around them, learning about consequences of different modes of action from experience (Bernardi & Klärner 2014).

It has been theorized that learning from role models or families happens through both adapting and learning behaviour, and through communicated aspirations by parents. Recent research suggests that the aspirations parents hold for their children are more important than their actual behaviour previously (Starrels & Holm, 2000). These aspirations do not necessarily have to be explicitly communicated, since individual emotional reactions, such as
guilt and embarrassment, can encourage individuals to comply with others’ expectations of appropriate behaviour, even when sanctions or rewards are not expected to follow (Bernardi 2003). When adaptation to other individuals is based on influences below the level of awareness, this is known as social contagion. Social contagion suggests that individuals are susceptible to automatic adaptation to other people’s behaviour and expectations, even when that undermines what might be considered “rational” behaviour (Bernardi & Klärner 2014). We learn how to form families not only from our parents but also from other people to whom our lives are linked, such as peers. Research has indeed found that individuals become more likely to become parents themselves, if their peers become parents, an effect dropping off after about two years (Balbo & Barban, 2014). These processes of social influence through social learning, social contagion and adaptation to expectations can run parallel, where children growing up in poverty-stricken neighbourhoods might both lack the parental material and social resources to encourage continued education, and socialize with peers who do not value education (Furstenberg et al., 1987).

It has been hypothesized that a combination of these mechanisms influences the intergenerational transmission of family patterns, found both in early parenthood (Kahn & Anderson, 1992) and otherwise (Fasang & Raab, 2014; Sassler, Cunningham, & Lichter, 2009). Recent research in Sweden has shown that family socio-economic characteristics only accounted for a limited part of the intergenerational transmission of age at first birth (Stanfors & Scott, 2013). In contrast, in an American context, Kahn and Andersson (1992) found that measures of socio-economic family characteristics accounted for a large portion of the intergenerational transmission of teen parenthood, especially among white women. This raises the question of whether the welfare context of Sweden buffers some of the economic effects, leaving us with mechanisms more related to social value transmission to explain the connections between family background and family formation, rather than economic resources.

**Opportunity costs and uncertainty reduction**

The notion of opportunity costs might offer additional explanatory mechanisms for selection on the basis of both socio-economic background and mental health leading to teenage parenthood, and it has previously been theorized to provide a connection between socio-economic disadvantage and births classified as unintended or “mistimed” (e.g. Wise, Geronimus, & Smock, 2017). Opportunity costs are closely related to support and social influence, since a central concept is that individuals perceive different outcomes as more or less likely due to the resources and information available to them.
The concept of opportunity costs centres on the fact that decisions made today are based not only on past experiences but also on our thoughts about the future. Gary Becker (1960) brought the economic concept of opportunity costs into the field of family research in 1960, connecting it to the cost of children to their parents. In the economic sense, the opportunity cost of a choice is that of the value foregone by rejecting the most highly valued alternative, the cost is what is sacrificed by choosing one alternative over another (Buchanan, 2008). Becker (1993) pointed out how investment in human capital, such as education and skills, can yield later returns. These investments are especially important, since human capital cannot be separated from an individual in the way that s/he might be separated from physical financial capital. Market human capital, i.e. those skills and education sought by the labour market, can be translated into later financial earnings. Hence children cost money in two separate ways: they take up time that could be spent investing in human capital for later gain, or spent in paid work for direct gain. And so, the ‘price’ of children is lower for low-income individuals, and individuals who perceive their chances of acquiring market human capital, such as education or work experience, as low. While Becker focused on the economic rationality of human behaviour, which is not a working assumption of this thesis, the notion of opportunity costs in family formation are nonetheless useful. The perceived opportunity cost of a decision might work as a mechanism influencing family decisions. An important distinction here is that the perceived cost of a decision might not be the actual cost of a decision, but depends on what sets of information are available to us. The opportunity for education and career success might be over or under valued by an individual, as might the risk and rewards of becoming a parent. Perceived opportunity costs become a link between the micro level individual motivation and perception of an individual’s own alternatives, and the macro level structural opportunities for work and education.

This idea of perceived costs was, by the late 1970s, incorporated into the theory of the value that children bring into parents’ lives, and the motivation to become a parent. The theory of the value of children to parents (VOC) was originally developed by Hoffman and Hoffman (1973) as a typology of attitudes about the “value” that individuals considered children to bring. The typology contains items in three main categories: social, emotional and economic/instrumental factors. According to Hoffman, Thornton and Manis (1978), children seem to be universally infused with the same types of values for both men and women, with or without children, and of all levels of education. These values were love, companionship and joy. However, this connection does not look the same across all parts of society. Hoffman et al., (1978) found that individuals with lower levels of education place greater importance on children bringing these values, and they hypothesize that this could be due to less well educated individuals having fewer alternative means to fulfil certain needs. This could, in turn, be
related to individuals of lower education perceiving lower opportunities in their future life and hence putting greater emphasis on what children might bring to their life, considering children to represent a low opportunity cost (Hoffman et al., 1978). This might be extended to include not only social disadvantage such as low educational attainment, but also mental health problems. I argue that mental health problems could also be perceived as a block to self-esteem yielding activities such as work and education, thus placing even more importance on family to fulfil these needs.

The notion of opportunity cost was incorporated into VOC, as an extension to cognitive theories of attitudes and intentions such as the theory of reasoned action, under the name of competing alternatives (Barber, 2001). This theoretical framework describing the value of children, and the opportunity cost involved in cases of competing alternatives, where children provide more value to individuals with fewer alternatives, has also been further developed by researchers such as Friedman, Hechter and Kanazawa (1994). They reason that, even though we do not choose paths in life as purely rational actors wishing to maximize utility, we are still rational in the sense that we strive to reduce uncertainty in our life trajectories. We strive for uncertainty reduction. Going into stable work or long term education is one way of reducing uncertainty in life, getting married is another, and having children yet another. When one or more of these certain paths is perceived as being blocked, the probability of taking another path increases (Friedman et al., 1994). This is true, according to Friedman et al. (1994), even if the chosen path is associated with negative outcomes, since we focus on minimizing uncertainty rather than maximizing utility. In accordance with these ideas, research has indicated that when the social and economic costs attached to early parenthood are high, young women take more steps to avoid pregnancy than when the costs appear to be low (Brewster, Billy, & Grady, 1993), and that thoughts about pregnancy are utilized as a coping mechanism to escape stressful environments (Sipsma, Ickovics, Lewis, Ethier, & Kershaw, 2011). Swedish research on the reasons for becoming pregnant and carrying a child to term among teenage girls have, indeed, provided support for both theories of opportunity cost and uncertainty reduction. Narratives mirroring lack of other opportunities were found alongside those of a child bringing something permanent and stable into the young woman's life (Wahn, Nissen, & Ahlberg, 2005).
Reproduction of disadvantage and early parenthood – overview of previous research

The following section is an overview of previous research on selection into teenage parenthood, divided into four parts: socio-economic status, the role of adolescent mental health, intergenerational transmission of family patterns and early parenthood, and trajectories of early family formation. These sections mirror the key themes explored in the studies contained within this thesis.

Socio-economic status

Even though opinions and evidence on the impact of teenage parenthood on future outcomes differ (Geronimus & Korenman, 1992; Hoffman, Foster, & Furstenberg, 1993), there is a consensus that individuals who become teenage parents more often come from more disadvantaged social strata in terms of socio-economic background factors, such as low income and low education in the parental home or low parental occupational status. The existing studies, explicitly reporting on teenage mothers and fathers compared to either non-parenting peers or adult parents, show that the selection effects seem to be true for most western contexts, and for both teenage mothers and teenage fathers.

Cross-sectional data from Canada showed that teenage mothers were more likely to come from low socio-economic backgrounds, and live in rural areas, compared to average aged mothers (Al-Sahab et al., 2012). Studying both men and women using prospective longitudinal data from the United States, low socio-economic background was found to drive selection of young men and women into teenage parenthood, although it seemed to play a larger role in the case of women (Xie et al., 2001).

In Australia, longitudinal data showed teenage girls from low-income families and from families with low parental education where more likely to become teenage mothers than their higher income peers (Gaudie et al., 2010). Similarly, using a New Zealand birth cohort of women through the longitudinal Christchurch Health and Development Study, Boden, Fergusson and Horwood (2008) found that young age, either younger than 18 years old or 18-21 years old, at the birth of the first child was associated with pre-existing socio-economic disadvantage.

In the United Kingdom, social class as measured by father’s occupation had no significant impact on the probability of becoming a teenage mother (Kiernan,
1997), but perceived financial hardship in adolescence increased the probability. For teenage fathers, results were reversed, with low social class measured by fathers occupation acting as a risk factor, but not perceived financial hardship. Focusing on teenage fathers only, still in the United Kingdom, Dearden, Hale and Blankson (1994) found that experiences of financial hardship and unemployment did increase probability of teenage fatherhood. By matching some of the non-fathering controls on social class measured by paternal occupation and education, they found that it was these two factors, rather than social class per se, that selected young men into teenage parenthood. Other results from the United Kingdom showed that not only household deprivation, but also social deprivation of the area of residence, increased probabilities of teenage motherhood (McCulloch, 2001) and that a large proportion of the disadvantage found among young fathers could be attributed to childhood background factors (Sigle-Rushton, 2005).

In a Scandinavian context, results based on Finnish register data show that the risk of experiencing either abortion or, especially, childbirth was elevated for teenagers from groups with low socio-economic status, measured by occupational status of the highest status adult in the household (Väisänen & Murphy, 2014). These results were stable when comparing three cohorts from the mid-1950s to late 1970s. Looking at later birth cohorts of Finnish women, still using Finnish register data, Vikat, Rimpela, Kosunen and Rimpela (2002) similarly found a gradient with respect to socio-economic status, measured by occupational status, in the probability of becoming a teenage mother. Women from homes with lower occupational status where more likely to become teenage mothers.

In summary, there is evidence of a socio-economic gradient in the propensity to become a teenage mother or father in areas including the United Kingdom, the United States and Scandinavia. However, the channels through which this happens, whether social class, financial hardship or perceived financial hardship, are not entirely clear.

The role of adolescent mental health
While there seems to be a cross-national consensus on selection into both teenage motherhood and teenage fatherhood as a result of low income and education, and other measures of social disadvantage and low socio-economic positions, the evidence for mental health selection is more sparse. It is unclear whether associations between adolescent mental health issues and subsequent teenage parenthood are causal or spurious, that is whether there is a direct link or whether the situation is driven by social gradients in mental health problems (e.g. Hall, Kusunoki, Gatny & Barber, 2014; Kovacs, Krol, Voti, & Krol, 1994),
where adolescents from low socio-economic backgrounds also have a higher incidence of mental health problems.

Relationships between mental health issues and teenage parenthood have been found in American studies of psychiatric disorders among both women and men (Barrett, Katsiyannis, Zhang, & Kingree, 2015; Kessler et al., 1997) and in Australia, looking at aggression and delinquent behaviour (Gaudie et al., 2010). However, the relationship between mental health and teenage parenthood may be muddled by other socio-economic factors. There are American examples in which correlations between mental health issues and teenage parenthood ceased to be significant after controlling for socio-economic factors (e.g. Hall et al., 2014). Selection on the basis of mental health into teenage parenthood may also be moderated by socio-economic background in the sense that these issues might have a more pronounced impact in certain socio-economic contexts. In an American context, Mollborn and Morningstar (2009) found that mental distress was a significant predictor of teenage childbearing only for teenagers living below the poverty line. Here, mechanisms of cumulative disadvantage or context-dependent norms might be at play.

Whether the association between adolescent mental health and subsequent parenthood is confounded by socio-economic factors or not, it seems that any existing association is not a linear one. Carlson (2011) found a curvilinear relationship between mental health and age at first child in the US, where both early and late timing of parenthood was related to a higher degree of depressive symptoms. Similar timing-dependent processes seem to be in play in Sweden, where Selling, Carstensen, Finnström, Josefsson and Sydsjö (2009) found that women were more likely to give birth at ages 20-24 years if they had previously been hospitalized for mental health illnesses. After age 24, previously hospitalized women who had not yet had their first child were less likely to give birth than their healthy counterparts. This pattern continues when looking at teenage parenthood, with Olsson, Hansson, and Cederblad (2006) revealing increased prevalence of teenage parenthood among former mental health in-patients compared to the general Swedish population.

As this overview illustrates, there are not many studies investigating the link between mental health issues in youth and teenage parenthood. Furthermore, the mechanisms through which selection based on mental health issues into parenthood works are unclear. The connection may be confounded or mediated by the socio-economic context. A lack of research from outside the liberal welfare states of the Anglo-Saxon countries makes it hard to pinpoint this effect.
Intergenerational transmission of family patterns and early parenthood

The associations between age at first birth and parents’ age at first birth, known as intergenerational transmission of age at first child, have been established in many previous studies (e.g. Barber, 2001; Kiernan, 1980; Meade, Kershaw, & Ickovics, 2008; Sipsma, Biello, Cole-Lewis, & Kershaw, 2010; Stanfors & Scott, 2013; Steenhof & Liefbroer, 2008; Wall-Wieler, Roos, & Nickel, 2016), and the association has also been found to increase across cohorts (Steenhof & Liefbroer, 2008).

This association between age at first child has also been found to be particularly strong for younger parents. In a Swedish context, Stanfors and Scott (2013) found an age gradient in the intergenerational transmission of age at first child, where the younger the mother was when having her first child, the younger the daughters were when they started childbearing (Stanfors & Scott, 2013). Comparing teenage mothers and adult mothers in Sweden, a cross sectional study found a higher percentage of teenage mothers were born to teenage mothers as compared to adult mothers (Wahn & Nissen, 2008). In an American and Canadian context, persistent associations between parent and child teenage childbearing, even after controlling for other factors, have been found in longitudinal studies of both teenage motherhood (Meade et al., 2008; Wall-Wieler et al., 2016) and teenage fatherhood (e.g. Sipsma et al., 2010). The same has been found in the UK for teenage motherhood (Manlove, 1997).

In Sweden, this intergenerational transmission of age at first child has been found to be independent of shared socio-economic traits between parents and child, indicating that intergenerational transmission of fertility is largely due to socialization of values rather than shared socio-economic background (Kolk, 2014). In contrast, Kahn and Andersson (1992) found in their American study of intergenerational transmission of teenage childbearing, that the association declined substantially when controlling for socio-economic background factors. For white mothers, the association almost completely disappeared, while for black mothers it was only partially mediated (Kahn & Anderson, 1992). There are also examples examining teenage motherhood in Australia (Gaudie et al. 2010) and teenage fatherhood in the UK (Kiernan, 1997) which found that having a mother who had her first child as a teenager was not an independent predictor of teenage parenthood, once other background characteristics were taken into account. Taken together these results indicate that the strength of intergenerational transmission of teenage parenthood might be context-dependent. Furthermore, Barber (2001) found that the association between young American mothers and their children held true, until the children married, at which point they were no longer under increased probability of early
childbearing, suggesting that intergenerational transmission of age at first birth is not independent of other family life course events.

To sum up, intergenerational transmission of age at first child and of teenage parenthood has been shown in diverse western contexts, although how much of the intergenerational correlation is explained by socio-economic context seems to vary. The research on intergenerational transmission of parenthood largely focuses on timing, i.e. when a specific event takes place. Less is known about the transmission of broader trajectories of family formation behaviour, even though there is some emerging research studying intergenerational transmission of trajectories for normative and on-time parenthood (e.g. Fasang & Raab, 2014; Liefbroer & Elzinga, 2012; Raab, Fasang, Karhula & Erola, 2014).

**Trajectories of early family formation**

As the overview of previous work shows, there is a body of research indicating that socio-economic factors such as maternal and paternal education and income, mental health issues in adolescence and age at first child of an individual's parents, might make young people more likely to become teenage parents. While studying these selection processes is important in order to understand the background of individuals taking this life course route, the diversity among teenage parents risks getting lost when treating teenage parenthood as a discrete outcome. Having a child as a teenager is only one, although arguably a life changing, event in an individual's family trajectory. Less research has investigated how selection might sort individuals into different types of teenage parent trajectories.

Some research can be found within the “transition to adulthood” literature. Fomby and Bosick (2013) used latent class analysis to identify classes of transitions into adulthood among youth up to ages 24 who took part in the American longitudinal Add Health study. They identified five distinct types of transition classes centred on college education, fulltime work and/or family formation through parenthood or cohabitation. Like other research on selection into early parenthood, they found that, in comparison to those who were classified into a class focused on the traditional college experience, individuals who formed families early either by cohabitation and/or having a child before age 24 tended to come from disadvantaged backgrounds. They had lower maternal education, grew up with single mothers and low maternal income. Fomby and Bosick (2013) also found that college aspirations for cohabiting parents where indeed lower than for the college focus class, however, the married parents class did not have significantly lower college aspirations than the college class. This illustrates that there are different types of family-oriented
pathways to follow, and that the selection processes and individuals within these pathways might be significantly different from each other.

Focusing specifically on trajectories of early family formation, Dariotis, Pleck, Astone & Sonenstein’s (2011) study of young American fathers identified five different latent classes of young fathers. These classes differed according to partnership status and employment status in the years following fatherhood, but also through whether they were teenage- or merely “young” fathers. These five groups where compared to a class of “on-time” and “on-sequence” fathers who had children around the cohort mean while married and in full-time employment. Dariotis el al. (2011) found that young underemployed fathers, both married and single, came from backgrounds of poverty to a larger extent than any other pathways, and that they all had lower levels of maternal education as compared to the on-time, on-sequence fathers. Similarly, adding Italian longitudinal data to the same dataset as that used by Fomby and Bosic (2013), Sironi, Barban and Impicciatore (2015) found that lower socio-economic status lead to earlier and faster transitions to adulthood among both men and women.

These few studies taking a trajectory approach illustrate the diversity in trajectories that can be found in young adulthood. However, even though some of the above studies include young parenthood, none focus on the diversity within young parents in general, or among teenage parents in particular. This means that even as selection by socio-economic background is investigated, we still lack knowledge about if and how teenage parents are selected into different types of family formation trajectories.
The institutional setting of Sweden

As described in the section on the life course framework, this analytical approach emphasizes that individual actions are structurally conditioned by the political-economic, cultural and social context in which an individual exists (Heinz et al., 2009). The institutional context may impact the development of the individual's life course both through the opportunity structures created, and through the societal norms woven into the way welfare is organized. In the case of individuals considered within this thesis, the institutional setting in which they exist is contemporary Sweden. In this section I outline important institutional contexts pertaining to fertility patterns, fertility control, labour market participation, educational expansion and family support systems through the parental leave system, affecting important dimensions of institutional and structural conditions that shape the life courses of Swedish adolescents.

Sweden has, since the 1960s, been classified as a social democratic welfare regime, where previous inequalities in income and wealth have been equalized through developed opportunity structures (Esping-Andersen, 2015). Education has been a key channel through which policy in Sweden strived to diminish class barriers, through an expansion of the school system and eradication of financial barriers (Esping-Andersen, 2015). As a part of a worldwide expansion of the higher education system (Schofer & Meyer, 2005), the number of registered university students doubled in Sweden between the beginning of 1990 and today (Statistics Sweden 2017a), which in turn has led to an increase in highly educated citizens. Today, about 42% of secondary education graduates continue to university, and out of these students, 27% end up achieving a three-year degree or higher (Statistics Sweden 2017a). This expansion of higher education has been especially evident for women, with new applicants to university being around 60% women, and by the time of graduation, women outnumber men 2 to 1 (Statistics Sweden 2017b). While Sweden has no tuition fees for higher education1, and state financed loans are available independent of financial means, there is still a social gradient in educational attainment (Erikson, 2016).

Women in Sweden now have both higher grades and higher levels of education (Statistics Sweden 2017b) than men, which means that women today have to consider the opportunity costs in terms of career and income, as well as possibilities for work/family balance when thinking about having children.

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1 For citizens of Sweden, any other European Union / Agreement on European Cooperation (EEA) member state, or of Switzerland, as regulated by ordinance SFS 2012:730
(Daly, 2005). However, while other European countries have seen notable drops in total fertility levels in the last 50 years, Sweden’s fertility levels (measured as average children per woman) have remained relatively stable (Eurostat, 2015). This is, in part, explained by the fact that during this period Sweden never had the high fertility levels of other countries, meaning that Sweden started from a relatively low total fertility in 1960, and ending today with a slightly higher total fertility, although not much change has happened in the absolute sense. Nonetheless, as total fertility levels have been stable, the teenage fertility rates have dropped (World Bank 2017) and the mean age at first child has increased (Statistics Sweden 2017c).

Sweden is and has long been a country with low prevalence of teenage parenthood. As can be seen in Figure 1, the adolescent fertility rate for women has been far below that of countries such as the United States and the United Kingdom since the 1960s, and even though teenage fertility rates have dropped substantially for all three countries, that in Sweden remains significantly lower. Only 1.5 % of girls, and 0.5% of boys belonging to the birth cohorts for 1975-1980 became parents before the age of 20 (Study 1).

![Figure 1. Adolescent fertility rate (Births per 1000 women 15-19 years old)](https://data.worldbank.org/indicator/SP.TFP.TNR certifications=SE-US-GB)

Meanwhile, the mean age at first birth has increased, with mean age for first time parents in 2014 being 31.5 years for men, and 29 years for women, which is an increase of five years for both men and women since 1970 (Statistics Sweden 2017c). Hence, teenage parenthood is not only becoming less prevalent, but also further removed from the normative age at parenthood.
These changes in teenage fertility should be viewed in the light of two important areas of policy connected to the emancipation of women during the last 50 years. First, an important reform for women was the abolition of joint taxation in 1971, when married couples ceased to be taxed as a household unit and where instead taxed as individuals. This tax reform led to considerable growth in female labour market participation, especially among women married to high-income earners and in households with children (Selin, 2014). Sweden has developed a comparatively generous parental leave system, with the right to stay at home and receive approximately 80% pay for 480 days (Försäkringskassan 2017). Nonetheless, having children can still function as a roadblock for further human and economic capital gains for women, in a way that it does not for men. While the parental leave system is individualized, giving each partner 240 days out of the 480, it still allows one partner to transfer 130 of his or her 240 days to the other partner (Försäkringskassan 2017). In reality, this means that women still take the large majority of the parental leave days, with Swedish fathers averaging 60 days (Försäkringskassan 2016), which is less than the non-transferrable allotted 90 days. While there is an education gradient in the utilization of parental leave among men, with fewer days utilized by poorly educated men, and most days utilized among highly educated fathers, in heterosexual couples it is the position and resources of the mother which have the largest impact (Försäkringskassan 2013). The share of paternal leave is largest among highly educated men, where the mother is also highly educated or has a high-income position (Försäkringskassan 2013). However, even in the latter group, although 36% split the days equally, the mean number of days utilized by fathers reaches only 112 out of 480 days (Försäkringskassan 2016). For young mothers, this means missing out on important work experience or years in school. In turn, this means that the consequences of young parenthood might, indeed, differ for teenage mothers and fathers. Furthermore, the income-based parental leave system is also designed to encourage a normative sequencing of the life course: it becomes income-based if you have previously worked for at least eight months. If you have had no prior work income, as is often the case for teenage parents, you receive a minimum level (Försäkringskassan 2017).

The mere possibility for women to control their own fertility has not always existed, and still varies between countries. In Sweden today, hormonal contraception for teenagers and young women is either strongly subsidized down to a small fee, or completely cost free, depending on region (RFSU, 2016). Furthermore, abortion up until pregnancy week 18 became legal and available in Sweden in 1957, and 80% of teenage pregnancies in Sweden end in abortion (Statens folkhälsoinstitut, 2011). While the abortion numbers are higher in Sweden than in the other Nordic countries, more abortions per 1000 women take place in ages 20-29 than among teenagers (Statens folkhälsoinstitut, 2011).
The number of abortions among teenage girls has steadily declined, which is believed to be the result of more efficient contraceptives and increased contraceptive use after the expansion of state subsidies (Socialstyrelsen, 2016). Even though contraceptive use is the responsibility of both partners, qualitative research on Swedish teenagers found that girls were perceived as having greater responsibility in avoiding pregnancy, among both men and women (Ekstrand, Larsson, Von Essen, & Tydén, 2005; Ekstrand, Tyden, Darj, & Larsson, 2007). Such attitudes, in combination with the right of women to decide over their own body choices and whether abortion is the right option for them or not, can make the decision pathways leading to teenage parenthood very different for young men and women.

With the fast expansion of the higher education system, decreased teenage fertility levels and increased mean age at first child, teenage parenthood is increasingly becoming an out of norm event, moving further away from the expected timing of a first child. While teenage parenthood has not had the emphasis in the public debate as it has in high prevalence settings such as the UK and the US, being high on the political agenda as the US (Furstenberg, 2003) and the UK (Daguerre, 2006), decreasing levels of teenage pregnancies are still a national health target for Sweden (Folkhälsomyndigheten 2010). In national policy documents, teenage pregnancies fall under the topic and heading of “unwanted pregnancies” (e.g. Folkhälsomyndigheten 2010), which can be read as an explicit assumption that no teenagers want to be or should become parents. Experiences of teenage mothers in Sweden show that they feel stigmatized and experience a constant need to justify themselves (Wahn et al., 2005), and research on young girls’ attitudes towards teenage mothers showed that teenage pregnancy was considered a ‘tragedy’, and that the decision to keep the child is generally viewed as wrong (Ekstrand et al., 2005).
Introduction to the studies

This dissertation includes four research papers, addressing processes of selection into teenage parenthood in contemporary Sweden in different ways. While they are all set in the analytical framework of life course theory, different aspects of the theoretical framework previously presented can be used to understand the different studies. Figure 2 illustrates how the main themes of the four papers connect to the outcomes of becoming a (teenage) parent and early family formation trajectories, and which theoretical mechanisms can be used to try to understand these processes. This is not a theoretical model, but represents a roadmap for the studies in this dissertation.

*Figure 2. Thematic study overview.*

The first study addresses whether mental health problems in adolescence are connected to becoming a teenage parent, and whether this is independent of the socio-economic background factors known from previous research to select young people into teenage parenthood. Here, the opportunity cost and uncertainty reduction frameworks can be useful when thinking about why this is the case.

The second study changes focus from selection into the single event of teenage parenthood, to selection into longer trajectories of family formation patterns, all starting in teenage parenthood. Here, informed by the life course theory framework, I try to achieve a more nuanced approach to who the teenage parents are, by understanding the event of teenage parenthood life course context. By including longer trajectories of many family formation events following teenage parenthood, selection based on socio-economic background
factors into these different types of trajectories are studied. The importance of context-dependent norms and opportunities, and context-dependent influences, presented in the chapters *The proper time and place for parenthood - Early parenthood in a life course setting* and *The Social shaping of the life course and family formation*, guided this paper.

The third study takes its point of departure from the knowledge outlined in the *Intergenerational transmission of family patterns and early parenthood* section. We know from previous studies that children of teenage parents are more likely to become teenage parents themselves, but this study asks whether there is persistence between generations when looking at extended early family formation behaviour, such as having a second child, and getting married. To understand these processes of intergenerational transmission, we utilize the concepts of social role models and social learning presented in the chapter *The social shaping of the life course and family formation*.

The fourth and final study departs from the study of teenage parents and, instead, focuses on selection on the basis of mental health issues and socio-economic background into parenthood during a normative time period. This study illustrates the concept found in *The proper time and place for parenthood - Early parenthood in a life course setting* about the importance of timing and sequencing, by showing how selection effects differ for on-time parents, compared to the off-time selection addressed in the previous studies in this dissertation. Furthermore, it takes a step forward, looking at the impact of parenthood on later mental health, once selection into parenthood by mental health issues is accounted for.
Data

This thesis contains research utilizing two different data sources: longitudinal survey data from the Northern Swedish cohort (NSC), and Swedish population register data accessed through the Umeå SIMSAM network. The register data used in study 1, 2 and 3 come from the Umeå SIMSAM lab and covers the whole Swedish population over a large span of time, offering opportunities to study rare events such as teenage parenthood by including multiple cohorts. The register data, rather than being from one register source, consists of several Swedish registers linked with the help of a personal id number. The registers are a rich source of socio-economic background data, family outcomes and mental health prescriptions (Lindgren, Nilsson, de Luna & Ivarsson, 2016). There is, however, always the issue of lack of any aspects that are not registered, such as cohabitation without children, mental health problems that do not lead to a prescription, or any information on internal family dynamics. These limitations need to be kept in mind when analysing the data and reading the results.

The NCS, utilized in study 4, includes all individuals born in the municipality of Luleå in 1981. The first wave of data was collected when the respondents were 16 years old, the second wave at 18, the third at 21, the fourth at 30 and the fifth wave at 42 years of age, and all waves of data were used in the analysis presented in study 4. The NSC is a valuable data source since it contains not only information on self-rated health, but also aspects of internal family dynamics such as experienced closeness to parents, in addition to socio-economic background variables such as parental work and education (as reported by their children) (Hammarström & Janlert, 2011). The panel has had very low attrition, 93% (n = 1001) of those still alive from the original cohort (n = 1071) participated in the 2007 follow-up (Study 1). While this dataset offers quality information on self-assessed health measures and family formation dynamics of the 1981 cohort, in order to measure off-time parenthood, I moved on to population data from which access to millions of cases makes it possible to study small and underprivileged groups, such as teenage parents. An overview of data sources, analytic approaches and research questions is presented in Table 1.
Table 1 Overview of the studies

<table>
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<th>Authors</th>
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<td>Mental health problems and social disadvantages as predictors of teenage parenthood</td>
<td>All individuals born in Sweden between 1989 and 1994.</td>
<td>Random intercept logistic models with individual mean-centred effects.</td>
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Analytical approach

The analytical strategies of this thesis draw from two main methodological families, multilevel models and sequence analysis.

Random intercept models for longitudinal data

Studies 1 and 4 utilized multilevel models for panel data, where individuals are followed over time. These models are also known as mixed models or random intercept models, utilizing many time points "nested" within each individual throughout their life course. These models allow for analysis of both time-varying covariates as well as time-fixed covariates, within the same model. This means that covariates that might change over time, such as mental health status, can be modelled together with covariates that are stable over time, such as mothers’ country of birth. The models utilize individual specific intercepts and allow for error terms and random effects to have correlated variability. This enables repeated measures of the same individual, making it possible to follow them throughout their life, without being hampered by the assumption that each data point needs to be uncorrelated with all other data points.

In addition, I utilized analytical strategies known as individual mean centring, the Mundlak approach or hybrid model. With this approach, the individual i’s mean is subtracted from each time point j resulting in a new value for each time point j that represents the variability around the individual mean $\bar{x}_i$

$$x'_{ij} = x_{ij} - \bar{x}_i$$

Where $x'_{ij}$ is the new individual mean-centred value for individual i at time point j, and the new mean for individual i will subsequently be 0. With this centring approach, it is the variability around the individual’s own mean, rather than around the sample mean, that is modelled. The approach solves the issue of unobserved heterogeneity and selection effects of time-fixed covariates (Curran & Bauer, 2011), yielding similar results as a fixed effects model, while still allowing time-fixed covariates within the same model, hence the name hybrid model. Thus, this approach makes it possible to disaggregate variability in a variable of interest that stems from between-subject variability or within-subject variability (Curran & Bauer, 2011).

The research questions of Study 2 were explored through random intercept logistic models, due to the binary nature of the dependent variable having a child as a teenager. This model is a generalized linear model, an adaptation of the random intercepts model, but for binary outcome variables. The time-
A varying mental health variable was mean-centred for each individual to account for unobserved heterogeneity and selection effects. In Study 4, selection effects of mental health into parenthood were modelled first by the use of logistic regression. The impact of becoming a parent on self-reported mental health, taking previous mental health into account, was then modelled by a random intercept multilevel model, with individual mean centring for the time-varying self-reported well-being.

**Multichannel- and dyadic sequence analysis**

The second family of methods utilized was sequence analysis. Sequence analysis is a fruitful approach for life course research since its unit of analysis is complete trajectories comprised of several states, rather than single events. This makes sequence analysis especially suitable when the area of interest is family formation trajectories rather than the binary variable “parenthood”. The underlying basis of sequence analysis is quite different from other modelling-based methods, such as panel regression models, since it does not have any underlying assumptions about how the data was generated (such as a specific underlying distributions). Instead, sequence analysis tries to uncover patterns in data, and to identify the processes that brought them about (Aisenbrey & Fasang, 2010). I applied the type of sequence analysis built upon optimal matching algorithms, which is the version prevalent within the social sciences. The basis of optimal matching is the comparison of sequences. By comparing two sequences, either two sequences within different domains of a single individual, or the sequences of two separate individuals, optimal matching techniques can be used to calculate a quantifiable difference between the two sequences. On this foundation of optimal matching, different versions of sequence analysis for the social sciences have been developed.

In Study 2, multichannel sequence analysis (MCSA) was utilized in order to examine selection by socio-economic factors into various forms of teenage parenthood trajectories including both partnership and fertility. With the MCSA approach, it is possible to take into account the multidimensionality of life trajectories (Gauthier, Widmer, Bucher, & Notredame, 2010). That is, to study several trajectories running parallel throughout the life course of the same individual. MCSA as a computational approach makes practical improvements to the optimal matching algorithms traditionally used in sequence analysis, in order to deal with this multidimensionality and account for interdependencies among different social statuses (Gauthier et al. 2010). This approach is suitable for studying concurrent life course trajectories, especially when they are closely related to one another, such as partnership and fertility trajectories. Specifically, I employed a multichannel dynamic distance hamming algorithm, which is a development of the optimal matching algorithm that better takes into account
timing of events in the sequence by calculating transition costs dependent on how salient a transition is at a specific time (Lesnard, 2010). The distances between an individual’s sequence of events to everyone else in the sample, i.e. the difference between two sequences, is then used to group the fertility and partnership sequences with the help of cluster analysis. In my study, these were then used as dependent variables in a multinomial regression analysis, in order to identify precursors of entering into different types of early family formation trajectories.

In Study 3, the individual’s distance to everyone else in the sample was no longer in focus, and instead I was interested in seeing how similar an individual is to their own parents, in comparison to unrelated individuals. To study this, distances were calculated with the help of a dynamic hamming distance algorithm together with a theoretically defined substitution cost matrix. The distance between the pre-specified parent/child dyads were then extracted and used as the dependent variable in a multilevel linear regression model. This focus on specific pairings of individuals can be achieved with several strategies, together known as dyadic sequence analysis. Previous examples of this, or similar strategies can be found in Elzinga and Liefbroer (2007) and Raab et. al. (2014).
Summary of the papers

Study 1. Mental health problems and social disadvantages as predictors of teenage parenthood: a register-based population study of Swedish boys and girls.

Author: Sara Kalucza

This study investigated mental health- and socio-economic selection into teenage parenthood among men and women born in Sweden between 1989 and 1994. I examined whether mental health problems in adolescence are connected to becoming a teenage parent, and if so, whether this holds true when adjusting for other factors of socio-economic status. Previous research has often struggled with issues of small study groups because of the relatively low prevalence of teenage parenthood, making it difficult to disentangle different sources of disadvantage and their relationship to teenage parenthood. The research questions were explored through random intercept logistic models for panel data, using all individuals born in Sweden between 1989 and 1994 accessed through the Umeå SIMSAM lab.

The results revealed that the variable mental health issues prior to parenthood is a statistical predictor of teenage parenthood among both men and women, independent of socio-economic factors. Having had a prescription for psychotropic drugs at least once during adolescence increases the probability of becoming a teenage parent, showing that mental health issues in teenage years is an independent risk factor for teenage parenthood in Sweden. In addition, risk factors found previously, such as low educational background, low income and transmission of early parenthood from previous generations, were confirmed. Furthermore, my results showed that the association between mental health problems and teenage parenthood are even stronger among high-income girls and girls from homes with high maternal education levels, than for those with lower levels of income and education in the parental home. While low socio-economic background and mental health have previously been found to lead to cumulative disadvantage in an American context (Mollborn & Morningstar, 2009), i.e. when several disadvantages converge to become a risk factor, in my Swedish study, divergence from the expected life course seemed to be a more influential risk factor.
Study 2. Not all the same: Swedish teenage mothers and fathers selection into disparate early family formation trajectories.

Authors: Sara Kalucza, Anna Baranowska-Rataj & Karina Nilsson. SK conceived the subject of the paper, and SK, AB and KN devised the design. SK performed the sequence analysis and AB and SK jointly performed the multinomial regressions. SK, AB and KN prepared and revised the manuscript.

This study attempted to nuance selection into teenage parenthood by looking into the disparate teenage parenthood family trajectories individuals follow after the birth of their first child. Instead of treating teenage parenthood as a single static outcome, with uniform significance and consequences for all who enter into it, trajectories of continued family formation are used as outcomes. These trajectories include having a second and third child with the same or a new partner, cohabiting, separating, marrying and divorcing.

By applying cluster analysis to sequences of partnership and fertility trajectories of teenage parents, four types of family formation trajectories were identified for both men and women. For women, the clusters Traditional family patterns, Re-partnering three-child mothers, Mostly single mothers and Modern family patterns were identified. Similarly, for men the clusters Traditional family patterns, Re-partnering two-child fathers, Single fathers and Modern family patterns were identified. While men and women both shared similar cluster solutions, the content of the clusters differed on the basis of gender, as well as being internally heterogeneous.

The multinomial regressions revealed further gender differences. For men, having a mother who had her first child as a teenager made them more prone to follow a traditional, modern or re-partnering family pattern. For women, having a teenage mother did not impact the type of family formation trajectory, instead family characteristics such as family form, size and birth order mattered. These gendered differences continued when looking at family resources, where education- and income backgrounds played different roles for men and women. Women were shifted away from traditional family trajectories when growing up with a mother with a high educational level, while not being affected by father’s income. For men, the results were reversed, with income of the father having the same impact as education of mother for women. The results illustrate the heterogeneity of teenage parenthood trajectories, illuminating the problem with one-size fits all “solutions” to teenage parenthood.
Study 3. The intergenerational patterns of early family formation in Sweden.

Authors: Sara Kalucza, Sergi Vidal & Karina Nilsson.

SK and SV conceived the paper topic and study design. SK preformed the data analysis with support from SV. SK, KN and SV prepared and revised the draft of the manuscript.

Study 3 continued the family formation trajectory approach, analysing life course pathways with the help of sequence analysis. Still looking at teenage parent trajectories, but this time focusing on the similarities to individual’s own parental family formation behaviours. By comparing teenage parents’ trajectories to their own parents’ trajectories, as well as to unrelated adults trajectories, we study the intergenerational persistence of family formation behaviour. That is, whether the way these young individuals form families is similar to the patterns of their parents. From a life course perspective, we would expect the trajectories of the teenage parents and their parents to be more similar than the trajectories of the teenage parents and adults to whom they are not related, since, in addition to sharing socio-economic backgrounds, they have linked lives with strong possibilities for value transmission and social learning. With the help of dyadic sequence analysis, we found that teenage parents did ‘inherit’ whole trajectories of family formation behaviour from their parents, and not only single events such as age at first child.

Our findings are in line with some previous research on within-family similarities of family formation trajectories, looking predominantly at on-time parenthood (e.g. Liefbroer & Elzinga 2012, Raab et al., 2014), although we extend this knowledge to a non-normative family formation category: teenage mothers and fathers. We found that coming from homes with high maternal income and education indeed made teenage parents less like their parents when looking at trajectories of childbirth and marriage. We also found that even when controlling for socio-economic background, there are still significant within-family similarities in family life courses that we were not able to explain with the measures available through the population registers.

Authors: Sara Kalucza, Anne Hammarström & Karina Nilsson
SK and KN conceived the paper topic and study design. SK performed the data analysis. SK and KN prepared the draft of the manuscript. SK, KN and AH revised the manuscript. AH was responsible for, and collected the data used in this study.

This paper revisited selection processes based on mental health, but this time looking at becoming a parent at a more normative age, instead of focusing on teenage parenthood. Although previous studies about the connection between parenthood and subsequent mental health stress the fact that previous mental health might affect who becomes a parent (e.g., Agerbo et al., 2013; Umberson & Gove, 1989), there are few examples of studies that actually analyse this selection mechanism of mental health on entry into parenthood. Utilizing the longitudinal survey data for the Northern Swedish cohort, we asked if there is a selection effect of self-reported mental health into parenthood and if there is a relationship between mental health and entry into parenthood. The longitudinal data utilized, because it was limited to only one birth cohort, included very few teenage parents (n=18), and hence the outcome becoming a parent was limited to what can be considered “on-time” parenthood. In addition, this paper looked beyond the point of entry into parenthood and asked if there is a relationship between entry into parenthood and subsequent mental health, once selection effects are accounted for?

The results showed that, for women, no selection effect of mental health into parenthood could be identified. The large majority of women of all mental health statuses became mothers. Entering into parenthood was also found to have a small significant positive effect on the self-reported mental health of women. For men, the results were reversed. We were able to identify a selection effect into fatherhood, where men with worse self-reported mental health in adolescence where less likely to become parents. For those men who did become fathers, no significant effect on mental health could be found.
Discussion

In order to understand the consequences of important life course events, such as teenage parenthood, we first need to understand who the young people becoming young parents are. By what route in their life course did they arrive there, and what is the context both within their own family formation trajectory and their familial context? Hence, the aim of this thesis was to study processes of selection into teenage parenthood in contemporary Sweden. Where previous research has had a strong focus on the single event of teenage parenthood, in this thesis I attempt both to assess the pathways into this event, and to put teenage parenthood into a wider context of early family formation, in order to better understand the heterogeneity of teenage mothers and fathers today. There follows a thematic discussion of the results of the four studies included in this thesis.

Main results

**Socio-economic selection**

In line with the finding that there is social selection into teenage parenthood by socio-economic background (e.g. Al-Sahab et al., 2012; Boden et al., 2007; Dearden et al., 1994; Gaudie et al., 2010; Kiernan, 1997; Xie, Cairns & Cairns 2001), in Study 1 I did, indeed, find that having parents with low income and low education attainment levels increased the probabilities that individuals would become teenage parents. This is in line with theoretical reasoning that coming from backgrounds with lower resources, both financial and educational, might decrease the perceived opportunity costs of teenage parenthood, as long educational trajectories and status careers do not seem viable, and hence are not values forgone by choosing early parenthood.

Furthermore, the results from Study 2 revealed that family formation trajectories of teenage parents are indeed diverse, and additionally that there is diversification in the selection processes into young parenthood, where socio-economic factors have different effects for men and women, as between types of continued family formation trajectories. Looking at selection processes into family formation trajectories from age 15 to 30, all starting with teenage parenthood, we found that economic capital (measured through parental income) and cultural capital (measured through education) had different effects on men and women. While high maternal education led women into paths of mostly single motherhood, it had no effect on the types of trajectories teenage fathers followed. Instead, high financial means, measured through father's income, selected men away from traditional family patterns into either re-
partnering patterns or becoming a single one-child father. Financial means had no effect on women's continued trajectories. Both women of high education backgrounds and men of high income backgrounds can be expected to break from expected behaviour when becoming a teenage parent. Continuing into one-child, single-parent trajectories, and thus not continuing with further family formation events, can be seen as a way of making space for, and adjusting to, continued education and or career development, by not taking on further family responsibilities. Hence, it can be theorized that perceived further opportunities and competing alternatives for individuals with cultural- or economic capital play a part in the continued early family formation trajectories. The heterogeneity found in Swedish teenage parent trajectories may be somewhat higher than in other welfare contexts. With availability of paid parental leave, low cost childcare and free higher education, there may be a wider variety of viable options for young parents within the Swedish welfare context. The lack of comparative studies from other contexts is unfortunate.

Study 1 found both maternal education and maternal income impacted the probability of becoming a teenage parent, with higher probabilities among children of low income and low education mothers. While effects of income and education were not significantly different in magnitude among teenage fathers, education had a slightly stronger impact than income for teenage mothers. This again implies that, for women, education may be a better indicator of the cultural capital associated with the transference of social norms surrounding family formation than economic capital. However, these differences in types of background capital and the transmission and leverage mechanisms need to be further and more explicitly investigated in order to elucidate the mechanisms at play.

In contrast, looking at selection into on-time parenthood, Study 4, measuring socio-economic background through occupational status categorized as working class or not, showed that men with two working class parents were more likely to become parents (before age of 43). No such relationship was found for women. Hence, when looking at on-time parenthood, socio-economic status does not seem to have the same effect, guiding women into parenthood. One could argue that the cut-off at age 43 symbolizes different things for men and women, as this age has been found to be a perceived social deadline for motherhood in Sweden, but it is younger than the perceived social deadline for fatherhood (Billari et al., 2011). Hence different parenthood timings are captured for men and women through the use of this threshold. For women it might symbolize “will or will not become a parent”, which might not yield any selection results as the norm of becoming a parent at some point throughout the life course is still strong, and frequently viewed as a moral imperative (Ashburn-Nardo, 2017). For men, the cut-off does not capture later parenthood, leaving
room for variability over socio-economic background in relation to timing. More research following men and women throughout their fertile life is needed to fully understand the connection between social selection and timing of parenthood.

However, the results from Studies 1 and 2 on the selection by socio-economic background into teenage parenthood and young family formation trajectories clearly show the heterogeneity of young parents’ continuing life courses, even when only considering fertility and partnership dimensions. This illustrates how teenage parenthood is only a single event in the life course – a non-normative, important and stigmatized one – but nonetheless it is only one piece of the individual’s life course puzzle. That the selection processes differs depending on the type of direction continuing family life takes shows that individuals have different support needs, even if they are all teenage parents.

**Mental health selection**

Mental health issues are an increasing problem among young people in Sweden (Folkhälsomyndigheten, 2016). This factor of social disadvantage has received little attention in previous research, and should be considered alongside traditional measures of disadvantage such as low education and income in family of origin. Study 1 revealed that mental health problems, as measured by prescriptions of psychotropic drugs, did affect selection into teenage fatherhood and motherhood, and that it did so differently in different socio-economic strata. Previous research has not been able to determine whether mental health issues in young people are an independent predictor of teenage parenthood, or whether it is fully mediated by socio-economic background (e.g. Hall et al., 2014; Mollborn & Morningstar, 2009). I found that, in a Swedish context, mental health issues were, indeed, an independent predictor of teenage parenthood, even after adjusting for other socio-economic factors, such as parental income and education. Moreover, Study 1 also revealed that this is true for both men and women. I argue that the theoretical framework of perceived opportunity costs and competing alternatives previously applied to socio-economic background and teenage parenthood can be extended to include mental health issues. Experiencing mental health issues in youth might decrease an individual’s perceived chances of doing well in school, continuing to higher education and obtaining a well-paid career, independent of external opportunity structures, such as welfare systems and parental resources. For these young people, parenthood can instead represent a path to adulthood and to acquiring meaning and focus in their lives, as has previously been found in qualitative research of Swedish teenage mothers (Wahn et al., 2005), reducing uncertainty in what is to happen if the expected pathway of education and work is not viable.
Furthermore, in Study 1 I identified a link between socio-economic background and mental health problems, and its connection to teenage motherhood, that is unlike what has been reported previously. Whilst Mollborn and Morningstar (2009) found that mental health issues only became a significant predictor of teenage motherhood when they co-occurred with a low-income background, my results showed the effects of mental health issues becoming stronger among women with high maternal income and education backgrounds. In other words, whereas Mollborn and Morningstar (2009) found a cumulative disadvantage becoming a risk factor, mechanisms seem to differ in the Swedish context. Here, divergence from the expected life course seems to be of greater importance: having mental health problems when coming from a high socio-economic background might sharpen the contrast between what is expected and what the individual perceives as their opportunities. Having mental health issues in youth might make young women feel that pathways of education and careers open to their healthy peers and expected in their social context, are closed to them. This would make the pathway of motherhood more attractive as a way to minimize uncertainty. In similar vein, Study 3 found the trajectories of early family formation of teenage parents to be the most dissimilar from those of their own parents, when coming from a high income background.

Moreover, Study 4 illustrates that these selection effects are, indeed, different for teenage parents than on-time parents. When looking at becoming a parent before the age of 43, no selection effect by self-assessed mental health was observed for women, whereas for men those with lower self-assessed mental health were less likely to become parents.

**Intergenerational transmission of teenage fertility and family trajectories**

Previous research has verified that having a teenage parent increases one’s own probability of becoming a teenage parent (e.g. Manlove, 1997; Meade et al., 2008; Sipsma et al., 2010; Wall-Wieler et al., 2016). I confirmed this association for both teenage mothers and teenage fathers in Study 1. In Study 2, taking a more nuanced perspective on selection into teenage parenthood by focusing on trajectory, women being daughters of a teenage mother did not affect the type of continued trajectory they would follow. Instead, it was family form in their family of origin that selected women into different types of trajectories. Both men and women living in intact families with both their biological parents at age 15 were more likely to follow more traditional family formation patterns, with marriage and 2-3 children. If they, on the other hand, lived in one of the new family constellations with a parent who re-married and/or had a new child with their new partner, both men and women were, in turn, more likely to follow a re-partnering multi-fertility trajectory, or continue as single parents. Birth
order, however, worked in different ways for men and women. Women who were born as a later sibling were less likely to follow the single mother trajectory in comparison to any of the other patterns, and hence followed more family-focused trajectories. Meanwhile, men who were born later in the order of siblings were more prone to follow the single father trajectory. These results show that the family background characteristics matter for the family life course trajectories of both men and women, and that individuals often follow trajectories resembling characteristics in their family of origin.

This was further confirmed by Study 3, which showed that both men and women do, indeed, follow family trajectories similar to those of their own parents. Looking at fertility and marital trajectories for teenage parents, and comparing them to martial and fertility trajectories of their own parents and of unrelated adults, we found that it was not that teenage parenthood specifically is “hereditary” but that the way we form a family is passed on, and linked to individuals with whom we have grown up in a wider sense. These results are in line with some previous research exploring the use of dyadic sequence analysis to compare sets of family formation trajectories, but our results expand this to show that this is true also for trajectories that start out with a non-normative event such as teenage parenthood, which can be considered mistimed and out of sequence.

**Concluding remarks and policy implications**

This thesis attempts to increase understanding of selection processes leading into teenage parenthood. This involved three main contributions, broadening the background factors examined: looking not only at socio-economic selection, but selection by mental health issues; looking not only at teenage mothers but also teenage fathers; and lastly, by studying not only teenage parenthood as a single event and an end point, but placing it in a wider context of the early family formation life course.

The results confirm the continued importance of socio-economic factors. We can theorize that context-specific norms, social learning and low expectations, and perceived opportunities associated with other pathways can direct young men and women towards teenage parenthood and teenage parenthood trajectories. However, mental health issues in youth are also an important pathway to teenage parenthood. Through this pathway both young men and women are led into teenage parenthood in a way that does not occur with on-time parenthood.
The results from the studies included in this thesis show that socio-economic factors, mental health and intergenerational transmission all direct both young men and women into teenage parenthood. However, there are differences in the subtleties about which of these, and to what extent, they matter for men and women. The lived realities for teenage mothers and fathers can differ in key ways. Young women are still expected to take responsibility for not becoming pregnant (Ekstrand et al., 2005a; Ekstrand et al., 2007) and have to visibly carry the stigma of teenage pregnancy. Furthermore, women still take on a much larger share of responsibility for child rearing, as can been seen through the utilization of parental leave (Försäkringskassan 2016). This means that time missed out in education hits young women harder than young men. For men, teenage parenthood might be both a beginning and an end of their involvement. A single father type trajectory might have a very different implication than a single mother trajectory.

Thinking about policy implications there are two main pathways that policy aimed at teenage fertility can take: support and prevention. First, saying that interventions should focus on supporting teenage parents based on their individual circumstances might be kicking at an open door. However, an important detail that I would like to stress in the light of the results of this thesis is that support structures need to be created not from the premise that “mistakes have been made” and now we will support you, but from a value-neutral premise where young parenthood can be a part of many different more or less disadvantaged life course trajectories, and come about through very different perceptions of other opportunities. Policy makers, healthcare personnel and researchers have to be mindful that we are all privileged groups in society, with the power to influence what is considered proper family formation, and what is not. It is easy, and human, to view this through the baseline of our own lives, opportunities and interests. However, we need to address mental health problems, school problems, and limited education prospects, instead of stigmatizing young parents for making “bad” decisions.

Secondly, if we want to talk about prevention, as the national health goals state (Folkhälsomyndigheten 2015), there are a couple of things that this thesis can hopefully contribute. We already know that contraceptive use is on the rise and that this might be one important reason that teenage fertility has dropped (Socialstyrelsen, 2016). However, my results show that teenage parenthood is connected to mental health issues in youth, among both men and women. We also know that mental health issues, both self-assessed (Folkhälsomyndigheten, 2016) and measured through the prescription of psychotropic drugs (Socialstyrelsen 2017) are increasing, especially among young women. Thus, since policy aimed at increasing availability of contraception has been successful (Socialstyrelsen, 2016), a new focus in the prevention work should be alleviating
mental health issues among young men and women, and strengthening self-confidence and belief in their own abilities and opportunities. This, of course, needs to be matched by continuing strengthened opportunity structures for disadvantaged young men and women.
References


