

# **Is family structure associated with the psychological behaviour of young people?**

The Strengths and Difficulties Questionnaire in a population  
sample

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## **Abstract**

Differences in family structure have been linked to several mental health outcomes, where children living in a nuclear family setting are best-off, while children in joint physical custody are second best followed by those living mostly and only with one parent. One of the biggest changes in recent years is that joint physical custody is growing more common. The dependent variables in this thesis were three dimensions of mental health from the Strengths and Difficulties Questionnaire. Data from 6<sup>th</sup> and 9<sup>th</sup> graders in the entire Sweden 2009 was used. Regression modelling showed differences in mental health between the family structures throughout, although children in joint physical custody was not significantly different from those in nuclear families (reference category) in half of the models. Children living mostly with one parent reported the third worst levels of problematic behaviour and prevalence of low prosocial behaviour while those living with just one parent were worst off. Stratifying by gender did reveal small coefficient differences and so did controls for birth region. This thesis, although in a line of other publications based on this study can help shape future guidelines for e.g. social workers.

### *Key words*

SDQ, family structure, Grodan, joint custody, externalizing, internalizing, prosocial behaviour.

In loving memory of the family cat Santos, my paternal aunt Anne-Marie and my maternal  
uncle Matti.

You will never be forgotten.

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## *Introduction*

### *Trends in mental health*

Approximately 20 % of the world population will suffer from a mental illness during their youth. The future is however clouded with mystery as there are no clear global trends on the prevalence of mental illnesses (Patel et al., 2007).

There are signs that several aspects of the psychological health among the Swedish youth have worsened in the last 30 years (Petersen et al., 2010). The mental health differences between girls and boys in Sweden appears to be growing, although bad health for both of these groups is increasing (Petersen et al., 2010). The trend according to Cederblad (2013) is however difficult to conclude, what is clear is that there have not been an improvement during the last 30 years.

Taken together there seems to be dissimilarities between the global trends and the Swedish trends, where Swedish youth appears to be having increasingly more psychological health problems. Comparing Sweden internationally lets one see that Sweden appears to have medium prevalence of severe or borderline (meaning almost severe) mental illnesses (Ravens-Sieberer et al., 2008). This will however become worse in the following years if the negative trend described by Petersen and colleagues (2010) is allowed to continue.

### *Family structure characteristics in Sweden*

Differences in family structure have been linked to several mental health outcomes. Fransson, Bergström and Hjern (2015) consider the change of more children living in joint custody to be “one of the largest changes in children’s living conditions during recent years” (p.7). Shared custody became a juridical possibility in Sweden in 1976 (Swedish government proposition 1975/76:170), another change in 1974 was a more lenient juridical outlook on divorces (Statistics Sweden, 2011). However, shared custody is denied by a court if the parents have difficulties co-operating or if both of the parents are opposing it (The National Board of Health and Welfare, 2006). This is in line with the focus on what is best for the children, a focus that in the mind of this thesis author has been clearer for each governmental passing of an update.

The annual number of divorces was higher in 2010 than 1988 for each year and was steadily increasing for each year between 2005 and 2010 (Statistics Sweden, 2011). This appears to be

a global phenomenon (e.g. Amato, 2014); one reason could be the simple fact that there are more people living in these countries. It should also be noted that the number of marriages increased between 1990 and 2010 (an increase of approximately 25%) (Statistics Sweden, 2011). The trend of family split-ups when children are involved do however go the other direction; a pattern of decreasing separations, this did however include co-habiting parents as well (Persson & Tollebrant, 2013).

Immigrants generally marry as well as get divorced to a higher extent than Swedish-born (Statistics Sweden, 2011); the divorces took a pattern of Swedish natives being those that divorced the least, then other European, then people originally from other continents.

### *Family structure and mental health globally*

The importance of a child's family and home environment for his or her behaviour and health have been widely discussed and theoretized, there has been less focus on those identifying themselves as neither. Many have reported effects of family structure and separation on mental health (for meta-analyses and literature reviews, see e.g. Amato, 2014; Amato, 2001; Amato, 1991 respectively Amato, 2000; Fransson, Bergström & Hjern, 2015).

A meta-analysis by Bauserman (2002) found that children living in joint custody had more healthy scores in studies on emotional and behavioural behaviours than those living with just one parent, no effect differences was found for the kind of informant used.

Family structure as such has been linked to statistical differences in mental morbidity (using the screening tool Strengths and Difficulties questionnaire, SDQ) in England (McMunn et al., 2001) and Germany (Rattay, von der Lippe & Lampert, 2014). The corresponding finding was that living with two parents was the strongest protective factor.

A gradient for family structure was reported by Connelly, Joshi and Rosenberg (in Platt et al., 2014) for all four behaviour problems measured by the SDQ among eleven-year-olds. Living with a lone parent was a risk factor compared to living with both biological parents during all of the 10 years the longitudinal study had been held. This pattern was also found for three kinds of conduct problems in a Norwegian study (Storvoll & Wichstrøm, 2002) on 12287 students in 7<sup>th</sup> to 12<sup>th</sup> grade. Low prosocial behaviour was found to be more prevalent in a crude model for English four-year-olds and their older siblings which did not live with both of their parents than those who did. The difference became non-significant after an addition of control variables (Dunn et al., 1998).

Changes in family structure (becoming a non-intact family) were connected to lower levels of prosocial behaviour (and empathy) in an American longitudinal study (Yoo, Feng and Day, 2013). General findings from other American studies also point towards higher risks for peer problems among children in divorced families compared to intact families, as well as higher levels of problematic conduct and emotional behaviour (Amato, 2014). Amato (2014) performed a meta-analysis and found the strongest negative effect for having divorced parents was for internalizing problems. The level of peer problems has also been found to be affected by family structure in a study in Australia; living continuously in a nuclear family was a protective factor compared to those living with non-intact families at any point of the longitudinal study. This finding was however for 4-5 year-olds (Perales, O'Flaherty & Baxter, 2015).

Resident father's involvement has been found to be a protective factor for children in comprehensive schools in a study from the southern parts of England when it comes to hyperactivity and prosocial behaviour. Problems with emotions, conduct and peers was not affected (Flouri, 2007). The study found no effects on non-resident fathers' involvement.

Living only with their father might be a risk factor for problematic externalizing behaviours compared to living in only-mother-family or in a step-family, while there was no difference between those family structures for problematic internalizing behaviour (Breivik & Olweus, 2006).

#### *Family structure and mental health in Sweden*

A gradient in effect on total SDQ scores, where children in joint physical custody generally reported the second lowest level of problematic behaviours (compared to those in a nuclear family setting) have been found in a study based on the same dataset as this thesis. Those living mostly with one parent and those living with just one parent followed with step-wise increases in problematic behaviours (Bergström, 2012).

A study on eleven to thirteen year-olds living in Halmstad, a medium sized town in Sweden showed no difference in self-rated mental health when having divorced parents compared to having married parents. The sample comprised 948 respondents (Hutton et al., 2014). Having divorced parents was however connected to significantly better prosocial values in a master thesis by Kuhr (2016), but not for behaviours related to externalizing or internalizing behaviour. Any strong conclusions can however be un-sound, especially from the latter study,

since the sample was only 88 respondents, all of which came from one school in southern Sweden. For that reason, findings by Kuhr (2016) will only be mentioned when showing found differences and in connection to other studies showing the same pattern. Among others, Amato (2001; 1991) has mentioned that large samples are more precise in its estimates.

Furthermore, Swedish 10-18 year-olds living in joint physical custody reported lower stress compared to children living with one parent (Turunen, 2015). Another set of findings come from a study by Jablonska and Lindberg (2007), showing that living with a single mother or father, but not living in shared physical custody was a risk factor for elevated aggressive behaviour among ninth graders in Stockholm county. Living with a single mother was a weak risk factor for high levels of anxiety/ depression, while living with a single father or in joint custody did not appear to be. The findings are however only generalizable to Stockholm, but the sample was large (n=15428).

Not living with both parents (compared to living with both parents) has also been found to be associated with self-reported aggressive behaviour among both 3<sup>rd</sup> (n=623) and 6<sup>th</sup> (n=842) graders in Umeå (Stenmark et al., 2015). The effects of attention problems and oppositional defiant behaviour (both parts of the externalizing behaviour index) was similar in a model not controlling for other factors. Aspects similar to the internalizing index or the prosocial behaviour index was however not different among those two family types. ADHD symptoms (measured by a DSM-IV based questionnaire; ADHD Rating Scale IV) was shown to be more prevalent among 10 year old children not living with both biological parents compared to those who did (the latter measured as both nuclear family and in different households) (Rydell, 2010).

The municipal share of children only living with their mother have been found to be linked to the share of children with prescribed ADHD-medicine, regardless of the gender for the one aimed for the medicine (Karlsson & Lundström, 2016). There are confounders, such as the share of children living in an economically strained situation, which they control for. This association was however not significant after controlling for county of residency. What they did not control for was help-seeking behaviour. Swedish Agency for Youth and Civil Society (2015) mentioned that girls generally have been found to have a stronger help-seeking behaviour than boys, which was also shown in their study. They even found that while girls had an adequate gradient in help-seeking behaviour, boys had the opposite; boys with bad psychological health did seek less help than their healthy peers.

### *Possible social mechanisms behind the effects of family structure*

The relations between the divorced parents are of high relevance for how children cope with the divorce and it is also important for a child's well-being not to be involved in parental conflict (Amato, 2014). Bauserman (2002) mentions that the arguments against joint custody are that it implies disturbances in the routines and increased risks of experiencing parental conflict. In the meta-analysis performed by Bauserman (2002), it was however found that children in joint custody adjusted better to divorce and had better family relations than those living under the custody of just one parent. Kitterød and Lyngstad (2014) found a pattern of less conflict among the parents having joint custody.

The parent-child relations are of high importance for values to be internalised from socialisation, and the values in the family affect children strongly (Grusec, Goodnow & Kuczynski, 2000). This supports an effect of socialization and also the effect of social support. Thus - the better the relations are, the stronger chance of the child being affected by parental value socialization and feeling more secure in their undertakings. A part of the observed difference in family relations can however come from selection bias, as those parents in joint custody might be more co-operative (Amato, 2000). Joint custody was less common if the mother or the father had financial problems in a Norwegian study (Kitterød & Lyngstad, 2014). This supports a selection into that family type (as well as sole-parent custody) on financial grounds, even though this might change as joint custody grows more common.

The argument in favour of joint custody is that it implies keeping a good contact and relations with both parents (Grusec, Goodnow & Kuczynski, 2000). This notion has some support in findings from Norway, where parents' shared physical custody lived closer to each other than the parents where the custody only was given to one parent (Kitterød & Lyngstad, 2014). A difference in family relations was found in studies on the same dataset as this thesis is based upon; those which have divorced parents (including joint custody) report worse family relations than those living in a nuclear family (Bergström et al., 2013; Bergström, 2012). A finding consistent with those reported from a study on 15-16 year-olds in Stockholm (Brolin Låftman et al., 2014). It has also been found to be of importance in moderating the effect of family structure (also that based on the same dataset, see Hagquist, 2016).

Amato (2000) mentions that the divorce process tend to be stressful mainly due to four factors, these are worse finances, parental conflict, having to move and losing the (parental)

partner - leading to more demands for the remaining parent. Bauserman (2002) did however not find that current or past conflicts affect the advantage of living in joint custody compared to one-parent custody. Breivik, Olweus and Endresen (2009) found mother-child conflict to be a strong moderator for the effect of living with a sole mother or sole father on antisocial behaviour, while father-child conflict was of less importance. The stronger parent-child relation connected to living in joint custody (compared to living with just one parent) can result in a wider set of social contacts for the child (argued by Turunen, 2015).

Learned behaviour from role models is another aspect, one example of what is considered a learned behaviour is conduct problems (BUP, 2003). One of its links to families is through harsh discipline (BUP, 2003). Risks for parental negative behaviour are also higher for divorced parents than two-parent families (Amato, 2014). There are findings of both selection biases (those divorcing have less favourable traits than other) and effects of strain from the divorce as a loss of a life partner (Amato, 2014; Amato, 2000). The home environment in a sole parent family could as well have as much love as the environment of a two parent family, but the experience of a slightly depressed parent can create negative symptoms in the child (Amato, 2014). The differences between having a father as sole custodian and having a mother as a sole custodian was small in the literature review by Amato in 2000.

#### *Immigrant background, family situation and mental health globally*

The probability of living in joint physical custody have been found not to be different for children whose mother was native born (Norwegian), born in another Western country or not (Kitterød & Lyngstad, 2014). A contrary finding was reported for a comparison of family types between 9 to 15 year-olds living in the Netherlands and having Dutch origin (having both parents born in the Netherlands), Moroccan origin (at least one parent born in Morocco) or Turkish origin (at least one parent born in Turkey). Moroccan children were more likely than Dutch children to live with their two biological parents, while Turkish children did not differ from the Dutch (Adriansee et al., 2014).

A review by Stevens and Vollebergh (2008) reported mixed results on the family's effect on migrant children's mental health (although limited to labour migrants) due to various comparison groups and informants. Later findings follow the same pattern to some extent. Adriansee and colleagues (2014) found no difference between Dutch, Moroccan or Turkish in the effect of living with their two biological parents or not on having high levels of problematic behaviour (measured with the SDQ). Findings from UK by Maynard and Harding

(2010) shows that psychological problems (measured as total scores on the SDQ) generally were less prevalent among the South Asians compared to UK Whites regardless of the family structure. The exception was that Pakistani/Bangladeshi children in one-parent households reported an equal level of problems than did UK Whites.

A longitudinal study on teens in Oslo, Norway reported similar effects on mental health of having married parents or not regardless of the youth's immigrant background (Sagatun et al., 2008). The ages were 15-16 years old at baseline and 18-19 at follow-up. Their loss to follow up was however high.

### *Immigrant background, family structure and mental health in Sweden*

There were no studies found which tested if ethnicity or immigrant background can change the effect of family structure on mental health in a Swedish context. One reason for a lack of research in this subject could be that there are no research consensus on how to measure this important subject (some take so-called second generation immigrants into consideration, some do not and some split by countries while some by areas or continents), as Stevens and Vollebergh (2008) calls for. Research on the effect of ethnicity and immigrant background on mental health have however been conducted in Sweden, some it will be reported below.

Being born outside of Sweden to parents from Asia or Africa was found to be connected to higher levels of reported mental ill-health measured in three ways, for example externalizing behaviour (Hjern, 2012). That study was based on the same dataset as in this thesis and the results was stratified by grade (6<sup>th</sup> and 9<sup>th</sup>).

No difference in the risk of problematic internalizing behaviour was found among adolescents of Turkish background compared to native adolescents in either Norway (controlled for SES) or Sweden (controlled for SES and age) in a study by Virta, Sam and Westin (2004). Perceived discrimination was the strongest factor predicting the level of internalizing behaviour, while having a Turkish identity was a protective factor.

Having parents born abroad was found to be a protective factor (although mainly for girls) on self-rated mental health in the study by Hutton and colleagues (2014). This was similar to deKeyser and colleagues (2014) study on 774 12 year-olds born in Scania and Blekinge, Sweden. The authors found that having at least one non-Swedish born parent was a weak protective factor (non-significant after controlling for e.g. family structure) for internalizing behaviour problems for girls. No effect of parent's birth region was found for girls regarding

externalizing behaviour or for boys regarding any studied outcome. Not being born in Sweden has however been found to be a risk factor for aggressive behaviour, but no other aspects (borderline to significant for somatic problems and conduct problems) was found in the study by Stenmark and colleagues (2015). Their findings was supported by the master thesis mentioned above by Kuhr (2016), where immigrant background was connected to higher peer and conduct problems, but not other SDQ behaviour types such as prosocial behaviour. Having parents born outside of Europe was also found to be a risk factor for both Oppositional Defiant Disorder (ODD) and ADHD symptoms in the aforementioned study by Rydell (2010). The ODD- diagnose are based on three symptom types: angry/irritable mood, argumentative/defiant behaviour, and vindictiveness. This makes it a borderline diagnose between the externalizing, with aspects related to anger and aggression, and the internalizing, with its focus on mood, instead of visible behaviour.

*Probable social mechanisms behind the mental health differences due to immigrant background*

The three most important reasons why non-European immigrants in Sweden report worse mental health than Native Swedes are that they are often placed in areas where the local SES are low, work in low-paid manual professions and are discriminated (Hjern, 2009). Refugees background of substantial stress and fear until they get a safe place to stay for a foreseeable future is seen as the source for differences between immigrants (Hjern, 2009).

Gender values might be different and the family structure might also be a factor; family structure has a tendency to affect young people differently depending on ethnic composition (Dion & Dion, 2001). Having an immigrant background can have stronger effect for girls than boys, as the most important and to some extent most different norms and values from the immigrants former country are the ones which pertain to female gender roles (family relations and traditions) (from a review by Dion & Dion, 2001). Amato (2000) did however not find enough studies to draw any safe conclusions on differences in mental health due to background. A difference described by Dion and Dion (2001) is that living with at least one immigrant parents is to a higher extent negative for girls than for boys as their values are relatively closer to their host country.

### *Gender differences globally*

The research found on gender moderation for the effect of separation on children's behaviour has reported mixed results (Amato, 2000; Amato & Keith, 1991). Only small gender differences in the effect of divorce were found except with regard to social adjustment (a mix of peer problems and prosocial behaviour), where boys were struck the hardest (Amato & Keith, 1991). Research published after that have shown mixed results, one study found that boys were more negatively affected by separation for the risk of theft and vandalism (a kind of problematic externalizing behaviour) than girls were (Storvoll & Wichstrøm, 2002). The data collection was however done in 1992 and the participants could win a vacation of own choice. Another Norwegian study found that girls and boys were not affected differently (measured internalizing and externalizing, but not with SDQ) when it comes to family structure in a comparison between only-father-families, only-mother-families and step-families (Breivik & Olweus, 2006).

When it comes to global gender trends in mental health, there seems to be a stronger increase in prevalence of severe or borderline to severe mental illness among girls than for boys (Ravens-Sieberer et al., 2008).

However, it appears that boys have lower parent-reported prosocial behaviour regardless of the child's age than girls. The study was done on children 7219 4 year-olds and 4071 of their older siblings (Dunn et al., 1998). Although the age range was lower than in this thesis, it is of importance since it shows that this difference also can be experienced by parents' (for a discussion on informants' different perspective, albeit in research on immigrant background differences, see e.g. Stevens and Vollebergh, 2008). An American longitudinal study (Yoo, Feng & Day, 2013) also found that boys reported lower levels of prosocial behaviour (and empathy) than girls. Findings on 7-12 year-olds in a part of north-eastern Italy (Dimitrova, 2011) tell the same story; girls report more prosocial behaviour than boys do.

Dimitrova (2011) also found gender differences in one internalizing and one externalizing behavioural aspects; girls reported less aggression and less emotional self-control (more emotional impulsivity). The gender pattern for emotional problems was also found in a cross-sectional Danish study on a nationally representative sample of seventh graders in the sense that girls reported more emotional problems than boys did (Reinholt-Dunne et al., 2011). Depression has also been found to be more prevalent among girls than boys in a Norwegian study (Fandrem, Sam & Roland, 2009).

## *Gender differences in Sweden*

Gender equality and concern is high on the current agenda, not the least in Sweden.

No moderation of gender on the effect of family structure was found for 10 year old Swedish children when it comes to ADHD symptoms while there was a moderation effect for ODD, describing girls to be worse off in living with a single parent than boys in the same setting (Rydell, 2010). This was somewhat supported by findings reported by Åslund and colleagues (2007) on the effect of divorce on depression. Both girls and boys in a Swedish county which had experienced a divorce had higher depression symptoms, albeit a stronger effect for girls (Åslund et al., 2007). The sample contained answers from 5092 9<sup>th</sup> and 11<sup>th</sup> graders. DeKeyser and colleagues (2014) reported that externalizing and internalizing behaviour was more common among boys which did not live with both of their parents according to teachers' reports, where girls' symptoms did not appear to have been affected by family structure. The children's own reports tell another story; externalizing problems were more common among those girls who did not live with both of their parents, the difference for boys was non-significant.

Boys might report more family cohesion than girls (Kuhr, 2016). Although this study has been criticised, it is mainly due to its small sample, bearing more evidence in the case of a significant result than otherwise.

Prosocial behaviour has been found to differ based on gender in several Swedish studies. The results in most studies have had shown better prosocial behaviour among girls than boys (Lundh, Wångby-Lundh & Bjärehed, 2008; Svedin & Priebe, 2008; Kuhr, 2016) or girls being less prone to exhibit or report low levels of prosocial behaviour (deKeyser et al., 2011). One slightly contrasting finding on this matter came from Larssons and Frisks (1999) study, where no gender difference was found on social competency.

Externalizing behaviour is generally more common among boys than girls also in Sweden, regardless of the dependent variable studied. Externalizing behaviour as an index measured by the SDQ was only found being used by Stenmark and colleagues (2015). They found this kind of behaviour was more common among boys than girls.

Breaking down that plethora of various diagnoses and kinds of behaviours shows rather clear pattern of boys displaying more behaviours connected to conduct problems than girls (Broberg et al., 2001; Lundh, Wångby-Lundh & Bjärehed, 2008; Svedin & Priebe, 2008;

deKeyser et al., 2011). This also goes for convictions for any crime (more common among boys than girls) (The National Board of Health and Welfare, 2013), but that the numbers for girls are increasing faster than boys numbers, a worrying converging trend, that is. Symptoms of ODD were however found to be as common among girls as boys (Rydell, 2010). This can be since this is a diagnose on the borderline between the visible (externalizing) and the within held and emotional (internalizing) as mentioned above.

The other subgroup to externalizing behaviour, apart from conduct problems is hyperactivity and attention difficulties, where the findings vary more than for conduct problems, even so making the general pattern hard to draw any conclusions on. Boys have been found to be more prone of this kind of behaviour in three of seven publications mentioned here (Larsson & Frisk, 1999; Rydell, 2010; deKeyser et al., 2011). Three other studies found no gender difference (Svedin & Priebe, 2008; Lundh, Wångby-Lundh and Bjärehed, 2008; Kuhr, 2016). Diametrically contrasting results come from Broberg and colleagues (2001), which found girls to report more attention problems.

Problematic internalizing behaviour (measured as an index) has been found to be more prevalent among girls than boys, although measured in different ways (for SDQ, see Stenmark et al, 2015; for Youth Self-Report including having somatic complaints and anxiety/depression symptoms and being withdrawn, see Broberg et al., 2001).

The two subgroups in SDQs internalizing behaviour index is emotional problems and peer problems. Findings regarding emotional problems tell a unanimous story of worse problems for girls, both measured continuously (Svedin & Priebe, 2008; Kuhr, 2016) and measured in the search for caseness (9<sup>th</sup> decile, Lundh, Wångby-Lundh and Bjärehed, 2008; deKeyser et al., 2011). This has also been found in descriptive measures (Åslund et al., 2007). Studies on peer problems have shown different results, albeit more in the lines of that there are no gender differences (Lundh, Wångby-Lundh and Bjärehed, 2008; deKeyser et al., 2011, Broberg et al., 2011). One study (Svedin & Priebe, 2008) did however find more reported peer problems (using the SDQ) among boys than girls (or young men and women, as the participants were 17-19 years old). Another reason for a difference than the age difference can come from that Svedin and Priebe's study (2008) was on participants in Malmö city.

#### *Social mechanisms behind the gender difference*

Family has been proposed to affect the gender differences in prosocial behaviour; the different gender roles are something young people are socialized into (a review by Siu, Shek & Law,

2012). An effect of socialization has also been found for anger (in an index with another kind of behaviour) and anxiety/ depression for American children at the verge of starting school (Chaplin, Cole & Zahn-Waxler, 2005). WHO Europe (2011) mentions that the gender effect on mental health often is different among different ethnicities, families and socioeconomic statuses.

Gender roles have been widely discussed, but how will this affect children and adolescents? One idea is through socialization mentioned above. Fagot, Rodgers and Leinbach (in Eckes & Trautner, 2000) wrote a chapter on gender socialization. The history began with Freud's description of (stereo)typically gendered behaviour (mother give children affection, which the child learned to display and handle, while the father give the child military characteristics such as obeying rules and displaying discipline). Changes in both the socialization theory framework and the occurrence of other ideas came in the mid-20<sup>th</sup> century. Another theory connected to the mechanisms of gender socialization is Piaget's theory of children creating schemata of what relates to what to understand the surroundings better. Gendered behaviour (acting like a lady, being a big boy etc.) is among the categorizations children are theoretized to do. Bandura, Ross and Ross (1961) found that 3-5 year old boys was more prone to imitate physical aggression than girls in the same age and girls behaviour to be more affected by seeing someone being non-aggressive. Fagot, Rodgers and Leinbach (in Eckes & Trautner, 2000) mentions that there is strong evidence supporting the existence of gender socialization for children as young as infant age. It should be said that they mentioned that effects of parental socialization tend to wear off with age. In comes peer socialization, but with the probability of similar upbringing, this might lead to a small difference.

Discrimination has been suggested to affect the mental health of ethnic minorities negatively (see above), but this might not be the case for gender differences (Kessler, Mickelson & Williams, 1999). They did however not control for racialization (i.e. people with another skin colour than the majority population) and the study was based on US answers.

#### *Effects and lack of effects for socioeconomic status*

5th, 7th and 9th graders living with just one parent had unsatisfactory household economy to a higher extent than other children (Carlsund, Eriksson & Sellström, 2012).

Findings from Finland tell a story of higher use of mental health services for children whose fathers were blue collar in comparison to those children whose father were upper white collar

(Koivusilta, Rimpelä & Kautiainen, 2006). The effect was however just barely being significant. The sample was nationally representative of Finland and contained answers from 5394 12-, 14 and 16 year-olds. Emotional problems among Danish seventh graders have been found to be affected by perceived financial strain (Reinholt-Dunne et al., 2011).

Swedish parents' SES (where the marital status was included) was found to have a positive effect on competences such as social competence in a Swedish study by Broberg and colleagues (2001). Problematic behaviour was found not to be affected by parental SES. The latter was partially supported by a study on 948 mid-teens in a town in southern Sweden where the self-reported mental health was only affected by the parent's material wealth combined with frequency of travelling for boys (Hutton et al., 2014). Findings by Larsson and Frisk (1999) in a study from Uppsala tell another story as they reported SES differences in problematic externalizing behaviour, where the lowest group had higher reported problems than the two groups above. Also social competencies was found to be affected by SES, however the difference was that the middle SES group had higher reported competencies than the one below and the one above. The difference between the articles findings can come from the fact that information came from the youth in the former article and the parents in the latter. The sample in the study by Broberg and colleagues (2001) was based on answers from the entire Sweden. Family income during the child's 5 first years of life has been found to be associated with increases in the risks for diagnosis of or medication for ADHD (Larsson et al., 2014). This was done after excluding those with other externalizing behaviour problems (which often co-exist with ADHD, see e.g. Swedish Council on Health Technology Assessment, 2013).

#### *Age or grade differences in the effect of family structure*

Young people in primary and secondary school with experience of a divorce reported more problems than those which were in preschool or college age (Amato & Keith, 1991). Amato (2001) found mixed results in comparing primary with secondary school pupils.

With increasing age (going from 15 to 18 year old) both prosocial behaviour and conduct problems generally decreases for both boys and girls in Norway, although conduct problems do not decrease among girls who did not have two Norwegian-born parents (Sagatun et al., 2008). This paradox was not discussed by Sagatun and colleagues (2008), but this author posits that it might come from becoming more self-centred and mature with age. A different pattern was reported in the study by Broberg and colleagues (2001) for three measures similar

to internalizing problems and one externalizing problem, comparing the cross-sectional effects for 13-14, 15-16 and 17-18 year-olds. Basing their results on the study which this thesis is also using, 9<sup>th</sup> graders reported more SDQ-problems than 6<sup>th</sup> graders regardless of the SDQ-pertinent behaviour type (Gustafsson and Modin, 2012). Larsson and Frisk (1999) did however find that symptoms of being withdrawn, delinquent behaviour, somatic complaints and the level of total social competencies (somewhat similar to prosocial behaviour) were more common or higher among older children (12-16 years old) than younger (6-11 years old). This points towards higher levels of problems among 14-16 year-olds than both younger (most relevant for this thesis) and older.

### *Theoretical considerations*

Based on the literature above, it is reasonable to see family structure as potentially having different effects based on birth region and gender, but also perceived financial strain, grade and strained family relations. This is presented as a theoretical path diagram in Figure 1.1.

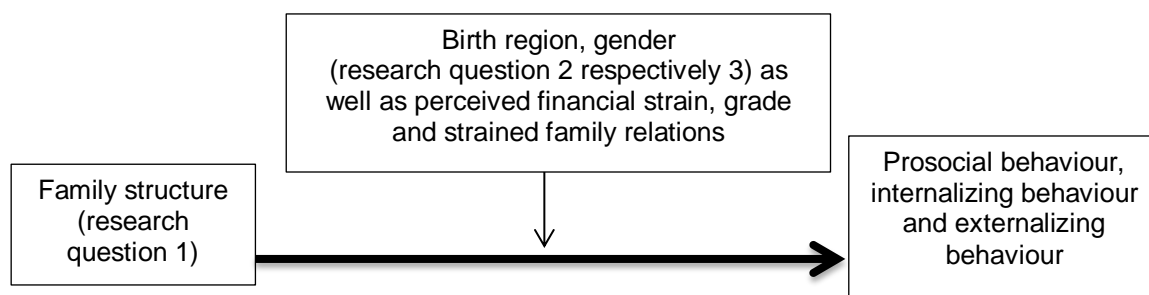


Figure 1.1. Theoretical path diagram on the assumed relations in focus

### *Aim and research questions*

The aim is to examine if there is an association between family structure and externalizing, internalizing and prosocial behaviour (measured on the Strength and Difficulties Questionnaire, later abbreviated SDQ). There are gaps in research on psychological health linked to joint physical custody and children's birth region.

There are three research questions:

1. Is there an association between family types and externalizing, internalizing and low prosocial behaviour? The hypothesis is that there will be a gradient in these kinds of behaviours with young people in nuclear families showing less problems
2. Does an addition of child's birth region change the possible associations for externalizing and internalizing behaviour? No hypothesis has been developed.

3. Are boys' patterns of how family structure affects externalizing and internalizing behaviour different from girls'? No hypothesis has been developed.

Perceived financial strain, strain in family relations and grades are control variables. It is however assumed that these affect the level of problematic behaviour, but no hypotheses have been constructed for these variables.

## ***Methods***

### *Data material and participants*

This thesis uses cross-sectional data from pupils in 6<sup>th</sup> and 9<sup>th</sup> grade in the so called Grodan study, a nationwide study. The questionnaires were answered during school time (Swedish National Institute for Public Health, 2011, p. 87). Information to the participants (pupils in 6<sup>th</sup> and 9<sup>th</sup> grade) were given orally by the survey distributor in connection to filling out the survey, during he/she remained in the room (Swedish National Institute for Public Health, 2011, p.87). Both the legal guardians and the children were informed that participation was voluntary and their answers were protected under the Secrecy Law.

Information was also sent to the legal guardians of the pupils in the schools and grades that were relevant, although these were encouraged to deny consent if they so wanted (Swedish National Institute for Public Health, 2011, p. 88). Unless they contacted their school about not wanting to participate, their child would get a survey.

The aim was to “map the psychological health” of the pupils in Sweden, other questionnaires were also used in this work (The National Board of Health and Welfare, 2012, p 3 respectively p 13-14).

The Grodan dataset is based on all schools in Sweden having a 6<sup>th</sup> and/ or 9<sup>th</sup> grade during the autumn 2009 (The National Bureau of Health and Welfare, 2012). A total n of 172298 respondents, or 83 % of the registered pupils in the schools that wanted to participate answered the questionnaires (Swedish National Institute for Public Health, 2011, p.88).

The original sample (n=172298), was reduced to 128405 omitting all participants who had invalid answer on any of the pertinent questions, along with those born outside of Sweden while their mother was not and those that did not live with any of their parents. Children born outside of Sweden and which had a Swedish-born mother was omitted due to impossibilities to categorize these as being born by a woman which happened to be abroad (i.e. for work), being an unaccompanied minor or adopted. This is due to well-known higher levels of

problematic behaviours among the two latter groups. That also goes for foster care children, for that reason children not living with any of their parents was also kept out of the sample. The highest number of missing came from the addition of the variables *Economic strain* and *Strained family relations* (loss of n=11589). For more information on the steps towards the final population variable, see the flow chart in Figure 1.2. For a comparison between the descriptive statistics for the original sample and the used sample, see Appendix (Table 1.9-1.13).

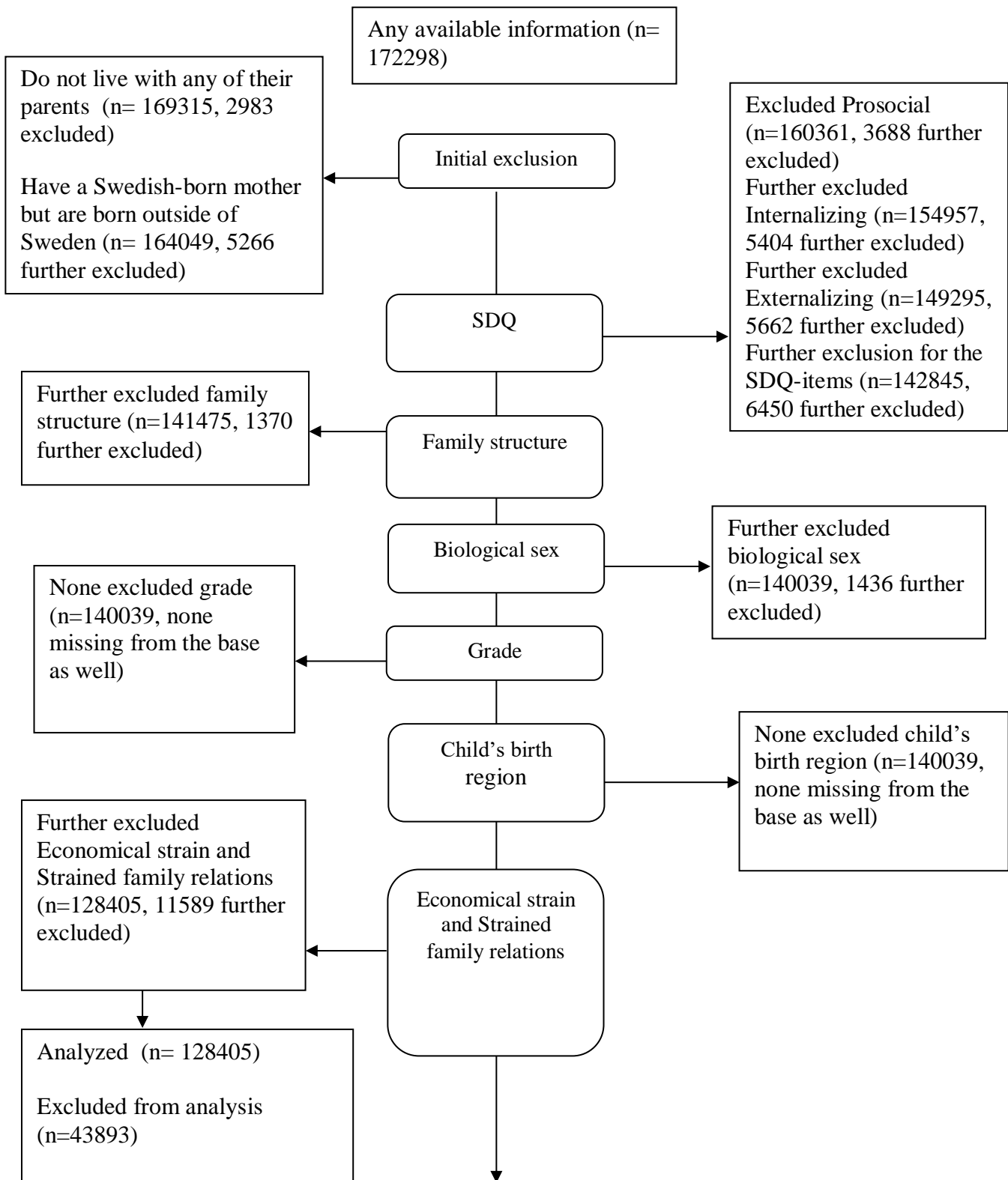


Figure 1.2. Flow chart on attrition and deletion towards the final sample.

### *Dependent variables*

The Strengths and Difficulties Questionnaire (SDQ) is a 25-item questionnaire aimed at catching psychological issues. The developer Robert Goodman based it on DSM-IV (Goodman, Lamping & Ploubidis, 2010). It is split into five indices entailing prosocial, conduct, hyperactivity, emotional and peer problems. This thesis uses SDQ split into three aspects; prosocial, externalizing and internalizing behaviours. The threefold split has been shown to be better suited for population studies (Goodman, Lamping & Ploubidis, 2010), while the fivefold operationalization is better suited for finding morbidity, so called “caseness” especially in combination with the extended-SDQ (Goodman, 1999). A similar methodology was used by Per A. Gustafsson and Bitte Modin (The National Board of Health and Welfare, 2012) on the Grodan dataset while splitting the analyses by gender and grade. The SDQ was translated by Smedje and colleagues (1999) and it is a good questionnaire for a Swedish context (Malmberg, Rydell & Smedje, 2003). Achenbach and colleagues (2008) did however report a lack of research in multi-ethnic contexts, although focused on comparing differences between SDQ scores between different countries.

Three dependent variables were used; *externalizing problems*, which includes questions on conduct problems, concentration and hyperactivity and *internalizing problems*, based on emotional and peer problems. These are each based on 10 questions. The values range between 0 and 20 for both of these indices, with higher scores indicating higher level of mental issues.

The third dependent variable is *prosocial behaviour*, based on five questions with a range of 0 to 10. Due to skewness the variable was dichotomized to measure a case of having a prosocial behaviour less than 6, with 5 being the 10<sup>th</sup> percentile. This cut-off has been used by Lundh, Wångby-Lundh and Bjärehed (2008) in a Swedish setting. It has also been used before in connection to reporting results from the study called Grodan (Gustafsson & Modin, 2012). The higher the value, the more prosocial the respondent reported he/she is.

### *Independent variables*

There were six independent variable types. The one mostly focused upon was the family structure, which were categorized as *nuclear family*, *joint custody*, *child lives mostly with one parent* (abbreviated *mostly* in the following tables) and *child lives with only one parent* (abbreviated *only* in the following tables). The two latter categories included both those living mostly respectively only with their mother or their father.

For the pupil's (biological) *sex*, boy or girl was used (a substantial part of the missing answers for this variable can come from those which do not want to describe them as either of these). The region of birth for the child, was compressed into *child born in Sweden* (reference group in the regressions), *child born elsewhere in Europe* and *child born outside of Europe*. Stenmark and colleagues (2015) used immigrant status in their checks, measured as being born in Sweden or not, but the risk of discrimination and other unfair treatment is higher among those with another skin colour. Brubaker (2004) also points out that one should be careful not to depict ethnic groups as being homogenous.

*Grade* was also used, in this case ninth graders were used as a reference category (coded as 0) compared to sixth graders. The variable *Economical strain* was based on an index of three questions regarding the money available for experiences, personal expenses and buying things in comparison to their peers. *Strained family relations*, also this an index was also used, based on six questions measuring experienced parental understanding, love, available time in general and for talking, fairness in treatment and if they had a good home environment.

#### *Regression models*

Ninety-five percent was set as the confidence interval range. The regressions (both OLS and the logistic regressions) contain the nuclear family as a reference group. There are two assumed effect alternators in these models. The reference group for child's birth region is being born in *Sweden*. Gender is the other assumed affecting variable, which the regressions are split by.

Control variables are *Family relations* (the higher the value, the better ground for a good parent-child relation, a continuous variable), *Economic strain* (the higher value, the worse relative economic situation, also continuous) and grade, mentioned as *Sixth grade* (meaning the results are for those in the sixth grade compared to those in the ninth).

#### *Factor analysis*

A factor analysis was done to analyse how the SDQ items correlated (Barmark in Djurfelt & Barmark, 2009, p. 69).

The factor analysis (done with a Varimax-rotation) came up with six components for the twenty-five questions, which in total aims to describe five aspects, this goes for both before and after the population variable was used. After further checks, it was found to be due to differences on the hyperactivity/ inattention scale, which as it sounds should be showing two components.

One drawback with factor analysis is that using the components in analyses, i.e. in regressions; make the comparison of results from previous studies close to impossible due to the differences in possible results from the factor analysis (Barmark in Djurfeldt & Barmark, 2009, p. 101). The indices remain as they have been described above for the sake of comparison with previous research. Other measures from the factor analysis were not deemed as giving signs of problematic patterns.

### *Descriptive statistics*

The descriptive statistics was computed for all the variables used describing the mean and median for continuous variables, and number (n and % of the sample) for variables on a nominal or ordinal scale.

### *Regressions*

Linear regressions (Ordinary Least Squares, abbreviated OLS from now on) and logistic regressions followed, for each underlying behavioural aspect which the SDQ is surveying (prosocial respectively internalizing and externalizing), split by gender. One reason for a splitting by gender is that previous research has shown gender differences in the effect size of family structure (Amato & Keith, 1991; Storsvoll & Wichstrøm, 2002). Another one is the proposed scenario by Dion & Dion (2001), which posits a gender difference in the combined effect of immigrant status and family structure. Both the logistic regressions and the OLS-regressions had three models each. In total eighteen regression models distributed into six tables. However, logistic regressions cannot be compared across groups within samples due to omitted variables, which are nearly impossible to evade (Mood, 2010). For that reason prosocial behaviour was only of interest for the first research question; *is there an association between family types and externalizing, internalizing and low prosocial behaviour?*

### *Ethics*

The study called Grodan was approved by an ethics committee and the questionnaires were answered anonymously (The National Board of Health and Welfare, 2012, p 11).

For the work connected to the thesis itself, it was prohibited to use the datasets apart from at CHESS (outputs and syntax were however allowed to bring where ever one fancied it), this is for the sensitive information which it holds.

## *Results*

Descriptive statistics on the used variables can be read in Table 1.1-1.2 and Figure 1.3- 1.4.

As can be seen in Table 1.1, most children live in a nuclear family. The distribution in the other family types is fairly even.

Table 1.1. Frequency table on family type. n=128405.

<b>Family type</b>	<b>N</b>	<b>%</b>
Nuclear family	88473	68.9
Joint custody	13711	10.7
Mostly	9967	7.8
Only	16254	12.7

Table 1.2. Frequency table on the other dependent variables in percent, by total sample and family structure. n=128405.

<b>Variable name</b>	<b>Total sample</b>	<b>Nuclear family</b>	<b>Joint physical custody</b>	<b>Mostly</b>	<b>Only</b>
<i>Dependent variable</i>					
Prosocial behaviour 5 or below (90 <sup>th</sup> percentile)	10.5	9.7	10.5	11.8	13.8
<i>Independent variables</i>					
Boys	48.9	49.4	50.7	47.7	45.6
Girls	51.1	50.6	49.3	52.3	54.4
Child born in Sweden	94.1	93.9	99.0	97.1	89.0
Child born in another part of Europe	2.0	2.0	0.5	1.2	3.5
Child born outside of Europe	3.9	4.0	0.6	1.7	7.6
Sixth grade	44.8	46.5	47.8	42.2	34.9
Ninth grade	55.2	53.5	52.2	57.8	65.1
<b>Variable name</b>	<b>Total sample mean</b>	<b>Nuclear family mean</b>	<b>Joint custody mean</b>	<b>Mostly mean</b>	<b>Only mean</b>
Economical strain	5.51	5.23	5.66	6.16	6.56
Strained family relations	10.09	9.64	10.33	11.27	11.65

As shown in Table 1.2, the 10<sup>th</sup> percentile (or 1<sup>st</sup> decile) cut off for the dependent dichotomous variable for prosocial behaviour included 10.5 of the final sample. That behaviour has a gradient between the family types, where those living in a nuclear family has reported low prosocial behaviour to a lesser extent. The gender distribution differs most among those living with just one parent, where there are more girls than boys, although the difference is small. Joint physical custody is the least common family type for children born outside of Sweden, regardless of that country also is outside of Europe or not. The distribution

of immigrant background is the most even for living with just one parent, although it should be said that most of the children born outside of Sweden live in a nuclear family. The pattern found for immigrant background is also seen for the age distribution; the family type with the clearest age (grade) profile is a sole custody. Economical strain and strained family relations is also showing a gradient, where children living in a nuclear family setting has the lowest reported levels. Living in sole-parent custody mean higher economical strain and worse family relations in pure descriptive measures.

As can be seen in Figure 1.3, the mean for the internalizing behaviour is 4.55. Figure 1.4 lets one see that externalizing behaviour has a mean of 5.56. Both behaviour types has a gradient depicting those living with just one parent as having the highest levels of reported problematic behaviour. In crude numbers, externalizing problematic behaviour is higher than problematic internalizing behaviour is.

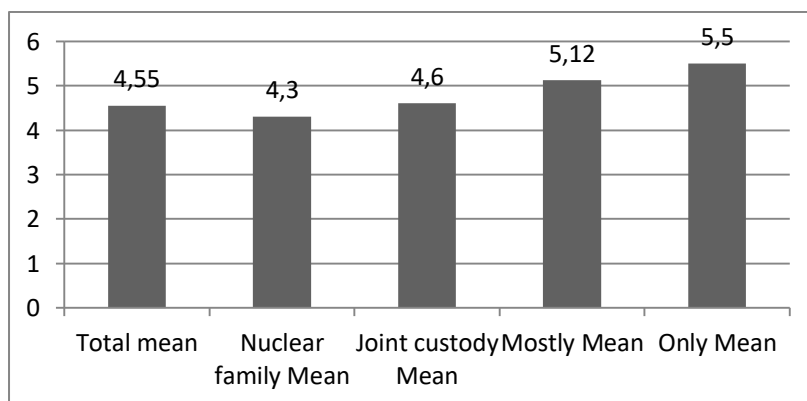


Figure 1.3. Chart on internalizing behaviour. n=128405.

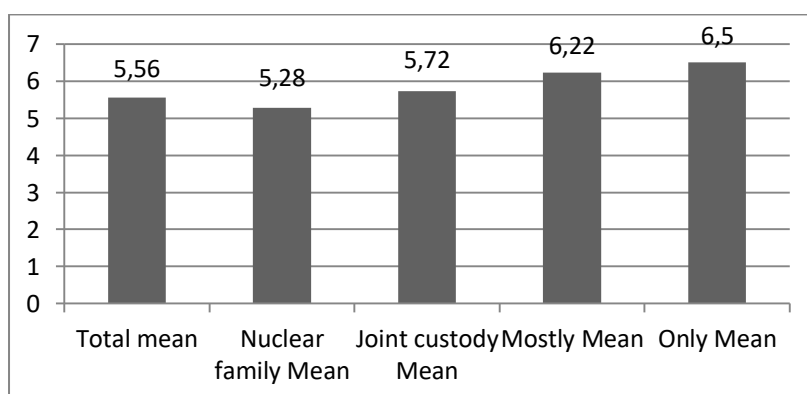


Figure 1.4. Chart on externalizing behaviour. n=128405.

Logistic regressions on low prosocial behaviour is presented in Table 1.3 and 1.4.

Table 1.3. The association between low prosocial behaviour and family structure among boys. Results from logistic regressions. n=128405.

Variable name	Crude (95 % C.I.)	Model 1 (95 % C.I.)	Model 2 (95 % C.I.)
<i>Family structure</i>			
Nuclear family	(reference group)	(reference group)	(reference group)
Joint custody	1.104 (1.029, 1.184)	1.103 (1.028, 1.183)	1.012 (0.941, 1.088)
Mostly	1.283 (1.185, 1.389)	1.283 (1.185, 1.389)	1.044 (0.961, 1.133)
Only	1.514 (1.422, 1.612)	1.515 (1.423, 1.613)	1.131 (1.058, 1.208)
<i>Child's birth region</i>			
Sweden		(reference group)	(reference group)
Elsewhere in Europe		0.965 (0.827, 1.126)	0.977 (0.833, 1.147)
Outside of Europe		1.000 (0.896, 1.115)	0.888 (0.792, 0.997)
<i>Control variables</i>			
Strained family relations			1.109 (1.103, 1.115)
Economical strain			1.065 (1.057, 1.074)
Ninth grade			(reference category)
Sixth grade			0.751 (0.717, 0.787)

There are higher risks for having a reported prosocial behavior under 5 for children living in family types other than in a nuclear family in both crude regressions (see Crude in Table 1.3-1.4) with the exception of joint custody for girls (see Crude in Table 1.3.-1.4.). This also holds after controlling for children's birth region (see Model 1 Table 1.3 and Table 1.4). It appears that family type is affecting boys slightly more (compare Table 1.3 and 1.4), but one should not compare logistic regression models (Mood, 2010). The full models reveal significant difference for children living with only one parent compared to children living in a nuclear family, while it was non-significant for both children living in joint physical custody and those living mostly with one parent.

The child's birth region appears to have a small, but for non-Europeans significant effect for boys once adjusted for the control variables (see Model 2 in Table 1.3), with those born outside of Europe having a slightly lower risk, a reverse gradient was found for girls. Girls

born in either of the two tested birth regions were significantly more prone to report low prosocial behaviour than girls born in Sweden, a pattern leaning towards the opposite were found for boys.

The control variables showed expected results apart from that girls in sixth grade were more prone to report low levels of prosocial behaviour than girls in the ninth grade (see Model 2 in Table 1.4).

Table 1.4. The association between low prosocial behaviour and family structure among boys. Results from logistic regressions. n=128405.

Variable name	Crude (95 % C.I.)	Model 1 (95 % C.I.)	Model 2 (95 % C.I.)
<i>Family structure</i>			
Nuclear family	(reference group)	(reference group)	(reference group)
Joint custody	1.014 (0.904, 1.137)	1.033 (0.921, 1.159)	0.909 (0.809, 1.021)
Mostly	1.271 (1.130, 1.429)	1.287 (1.144, 1.447)	0.974 (0.863, 1.098)
Only	1.695 (1.556, 1.846)	1.663 (1.526, 1.812)	1.184 (1.082, 1.296)
<i>Child's birth region</i>			
Sweden		(reference group)	(reference group)
Elsewhere in Europe		1.333 (1.081, 1.644)	1.268 (1.023, 1.572)
Outside of Europe		1.445 (1.246, 1.674)	1.318 (1.132, 1.532)
<i>Control variables</i>			
Strained family relations			1.097 (1.089, 1.104)
Economical strain			1.075 (1.063, 1.087)
Ninth grade			(reference category)
Sixth grade			1.167 (1.087, 1.253)

OLS-regressions on internalizing is designated to Table 1.5 and 1.6.

Table 1.5. The association between internalizing behaviour and family structure among boys. Results from OLS-regressions. n=128405.

Variable name	Crude		Model 1		Model 2	
	B	95 % C. I.	B	95 % C. I.	B	95 % C. I.
<i>Family structure</i>						
Nuclear family	(reference group)		(reference group)		(reference group)	
Joint custody	0.283 (0.210, 0.356)		0.314 (0.241, 0.387)		0.114 (0.048, 0.180)	
Mostly	0.662 (0.576, 0.749)		0.682 (0.596, 0.768)		0.225 (0.147, 0.303)	
Only	1.036 (0.956, 1.107)		1.005 (0.933, 1.076)		0.386 (0.321, 0.451)	
<i>Child's birth region</i>						
Sweden			(reference group)		(reference group)	
Elsewhere in Europe			0.153 (-0.007, 0.312)		0.180 (0.036, 0.324)	
Outside of Europe			0.796 (0.682, 0.910)		0.598 (0.495, 0.701)	
<i>Control variables</i>						
Strained family relations					0.221 (0.215, 0.226)	
Economical strain					0.193 (0.185, 0.201)	
Ninth grade					(reference category)	
Sixth grade					-0.374 (-0.416, -0.333)	

Both boys and girls with non-cohabiting parents report more problematic internalizing behaviour at non-adjusted levels than those that live in a nuclear family setting (Crude in Table 1.5 & 1.6), the highest reported problems is among those which live with just one parent. Girls seem to be slightly more affected than boys (comparing Crude in Table 1.5 respectively 1.6). The effects changed very little after controlling for child's birth region regardless of gender (Model 1 in Table 1.5 and 1.6). Model 2 in both tables shows a strong decrease for the effects of family type, although a bigger loss for girls (Table 1.6), not just in the loss of a significant result for joint custody, but also in effect size.

Child's birth region itself showed a clearer effect for boys than for girls regarding problematic internalizing behaviour.

The control variables showed expected results.

Table 1.6. The association between internalizing behaviour and family structure among girls. Results from OLS-regressions. n=128405.

Variable name	Crude		Model 1		Model 2	
	B	95 % C. I.	B	95 % C. I.	B	95 % C. I.
<i>Family structure</i>						
Nuclear family	(reference group)		(reference group)		(reference group)	
Joint custody	0.352 (0.274, 0.430)		0.361 (0.283, 0.439)		0.066 (-0.001, 0.133)	
Mostly	0.942 (0.855, 1.030)		0.949 (0.861, 1.036)		0.235 (0.159, 0.310)	
Only	1.267 (1.198, 1.337)		1.257 (1.188, 1.327)		0.338 (0.277, 0.399)	
<i>Child's birth region</i>						
Sweden			(reference group)		(reference group)	
Elsewhere in Europe			0.041 (-0.129, 0.210)		0.006 (-0.140, 0.151)	
Outside of Europe			0.266 (0.143, 0.390)		0.172 (0.066, 0.277)	
<i>Control variables</i>						
Strained family relations					0.252 (0.247, 0.257)	
Economical strain					0.182 (0.174, 0.190)	
Ninth grade					(reference category)	
Sixth grade					-0.699 (-0.740, -0.657)	

OLS-regressions on externalizing behaviour problems for boys and girls is presented in Table 1.7 respectively 1.8.

Table 1.7. The association between internalizing behaviour and family structure among boys. Results from OLS-regressions. n=128405.

Variable name	Crude		Model 1		Model 2	
	B	95 % C. I.	B	95 % C. I.	B	95 % C. I.
<i>Family structure</i>						
Nuclear family	(reference group)		(reference group)		(reference group)	
Joint custody	0.478 (0.394, 0.562)		0.484 (0.400, 0.568)		0.288 (0.210, 0.366)	
Mostly	0.910 (0.811, 1.009)		0.914 (0.815, 1.013)		0.463 (0.371, 0.556)	
Only	1.213 (1.131, 1.295)		1.207 (1.125, 1.289)		0.589 (0.512, 0.666)	
<i>Child's birth region</i>						
Sweden			(reference group)		(reference group)	
Elsewhere in Europe			-0.123 (-0.307, 0.061)		-0.093 (-0.264, 0.077)	
Outside of Europe			0.225 (0.094, 0.357)		0.031 (-0.091, 0.154)	
<i>Control variables</i>						
Strained family relations					0.213 (0.206, 0.220)	
Economical strain					0.194 (0.185, 0.204)	
Ninth grade					(reference category)	
Sixth grade					-0.469 (-0.518, -0.419)	

As presented in Table 1.7 and 1.8, there are higher reported problematic externalizing behaviour among those not living in a nuclear family throughout all six models. The effect sizes showed most reported problems among children living with only one parent, less problems regarding children living mostly with one parent and further less among children living in joint physical custody. The control for the child's birth region did little to change that, regardless of gender (see Model 1 in Table 1.7 and 1.8). No clear patterns emerged comparing the effect sizes on externalizing behaviour for boys and girls, apart from that Model 2 shows a bigger decrease in effects from family type for girls than for boys (Table 1.8 respectively 1.7).

Region of birth only has a clear effect for boys if that area is non-European. No effects were found for girls' levels of externalizing behaviour when it came to birth region (Model 1 and 2 in Table 1.8).

Table 1.8. The association between externalizing behaviour and family structure among girls. Results from OLS-regressions. n=128405.

Variable name	Crude		Model 1		Model 2	
	B	95 % C. I.	B	95 % C. I.	B	95 % C. I.
<i>Family structure</i>						
Nuclear family	(reference group)		(reference group)		(reference group)	
Joint custody	0.399 (0.322, 0.476)		0.404 (0.327, 0.481)		0.143 (0.073, 0.212)	
Mostly	0.991 (0.905, 1.077)		0.994 (0.908, 1.080)		0.392 (0.314, 0.471)	
Only	1.269 (1.200, 1.337)		1.263 (1.194, 1.332)		0.500 (0.437, 0.564)	
<i>Child's birth region</i>						
Sweden			(reference group)		(reference group)	
Elsewhere in Europe			0.133 (-0.034, 0.301)		0.090 (-0.061, 0.241)	
Outside of Europe			0.101 (-0.021, 0.223)		0.000 (-0.110, 0.109)	
<i>Control variables</i>						
Strained family relations					0.209 (0.204, 0.214)	
Economical strain					0.171 (0.163, 0.179)	
Ninth grade					(reference category)	
Sixth grade					-0.356 (-0.399, -0.312)	

### *Discussion*

This thesis had three research questions; the first one was a focus on family structure and the potential associations with the three behaviour problem types. The second was on the partially assumed moderation of the child's birth region and the third focus was to see if there were gender differences in the association (or non-association) that family structure had with the problematic behaviours.

This study reveals an association between family structure and all three behaviour types (looking at coefficient size). No statistical difference between children living in joint physical

custody compared to those living in a nuclear family was found in the fully adjusted models for low prosocial behaviour, regardless of gender. Girls living in joint physical custody also did not report significantly more internalizing behaviour problems than the girls living with both of their parents under the same roof. Neither boys nor girls living mostly with one parent were significantly more or less prone to report low prosocial behaviour compared to those living in a nuclear family after fully adjusting the effect. It was however significantly associated with low prosocial behaviour in the other models, as well as both externalizing and internalizing behaviour, regardless of the variables used to test the association.

This means that children living in joint physical custody has the second least problems in reported behaviour and more seldom report low prosocial behaviour than children living in other non-nuclear families (with those living in a nuclear family setting reported even lower levels of negative behaviour and higher or equal extent prosocial behaviour that is not low). Those children living mostly with one of the parents has the third least self-reported problematic behaviour and the worst off are those living with only one parent. This is in line with the pattern in the majority of the previous research (some do not include joint physical custody), including two of the articles based upon the same dataset as this thesis is (Bergström, 2012; Bergström et al., 2013). The most common causes for exceptions to the assumed step-wise difference between family types are in studies where control variables have been added (for the problem part of the SDQ in Sweden, see e.g. Bergström, 2012; for both the problem and the prosocial behaviour part in England, see Dunn et al., 1998, for prosocial behaviour, an effect was not found for the 4 year-olds, but for their older siblings). Another exception is where the sample was small (see Kuhr, 2016). In other words, most previous research which has reported crude effects shows a gradient in those. Although, as mentioned above, the outcomes in the two recently mentioned articles based on the dataset called Grodan, was measured in total score on the problem part of the SDQ (Bergström, 2012) and KIDSCREEN, a measure of well-being (Bergström et al., 2013). The only dependent variable in this thesis that showed a gradient in both effect size and significance in all its regression models was externalizing behaviour. This would imply a stronger effect of the social constructionist view of negative peer socialization, also called secondary socialization by Berger and Luckmann (2011), which however are seen as less strong than the primary socialization which comes from the family. The criticized, later revised biosocial theory called the frustration-aggression hypothesis, where frustrating conditions theoretically leads to displaced aggression (Dollard et al, 1939, cited in Hogg & Vaughan, 2010) can be seen as partially relevant. It is only partially relevant due to externalizing behaviour contains both

conduct and hyperactivity/ inattention problems. A third theory pertinent in explaining these findings is the importance of social support to combat the cause of this behaviour. An effect that in other words is not as linked to perceived financial strain or parent-child relations (and grade) as much as the other two seems to be.

The arguments against joint custody mentioned (but not necessarily held) by Bauserman (2002); about the disturbance in routines and more experience of parental conflict for those in joint arrangements (also mentioned by Amato, 2000) could not be tested here. It should be made clear that joint custody means shared part in the decision-making for the child, while joint physical custody means children living both with his/her father and mother (in the case of this thesis approximately 50/50). However, this thesis found that the relations between the parents and the child was better (in descriptive measures) among those living in joint physical custody than among those living mostly or only with one of the parents. A finding also supported by Bergström (2012; Bergström et al., 2013), using the same dataset as this was based upon. That also goes in line with what Grusec, Goodnow and Kuczynski (2000) mentioned as arguments for joint custody. Better relations to their parents can both increase the effect of parental socialization (Grusec, Goodnow & Kuczynski, 2000) and increase the social network for the child (Turunen, 2015). Socialization as well as social support can also come through the parental status of a role model, where two role models seem to be better than one in the effect of standing strong against negative peer or (social) media impressions. Parents as a source of learned behaviour can however be detrimental to the behaviour if the child experiences domestic violence or other negative life events, adults do not always do what is right or have the energy to help their children as themselves can face hardship. The latter conclusion was also drawn in relation to children in refugee families (Hjern, 2009). It should be mentioned that people in sensitive situations should neither be demonized nor exoticized, but understood and treated with respect.

Another discussion aspect worth mentioning is the debate on selection or true effects (see e.g. Amato, 2000). Selection in this case means that parents in joint custody are co-operating better with each other than those where the custody is more in the hands of one of the parents (Amato, 2000). This makes the child living in joint physical custody experience less parental conflict than those living mostly or only with one parent. As mentioned above, this could not be tested, but there was a gradient in parent-child conflict, depicting those in joint custody to be better off than those living mostly with any of the parents or just with one of them (lowest among those in a nuclear family setting). Selection into joint custody was by economic

measures was found by Kitterød and Lyngstad (2014). A similar finding was also shown in this study, albeit measured as financial strain perceived by the child.

A true effect mean that sharing time with both parents equally has unique positive health effects. This might be the case as the fully adjusted models also checked for perceived financial strain, which did reduce the effect size dramatically, albeit with the addition of parent-child relations and grade, but it remained significant in three out of four models. The logistic regressions cannot be compared.

The moderating effect of child's birth region was only minimal. An outlook on family structure as affecting children differently based on the child's region of birth receives no scientific evidence from this thesis (the least small effects was found for internalizing behaviour among boys, but this effect change was still very low).

Joint physical custody was the least common family type for children born outside of Sweden, while living with only one parent were much more common. This could come from that parents with an immigrant background not seldom have lost their partner in any of the perils that do or have existed in the countries where the majority of Sweden's young immigrant population originally came from. They also divorce more often (Statistics Sweden, 2011) another reason might be emigration due to break-up or divorce (based on Statistics Sweden, 2015). The results from the latter publication were however not split by having biological children.

The overall trend in the previous research with three out of four articles, where three used the SDQ goes in line with this finding. Maynard and Harding (2010) found youths with a South Asian background to report less problematic behaviours (measured with the SDQ) than UK Whites, in general regardless of family structure. The exception was those with a background in Pakistan or Bangladesh and which lived with just one parent; their problematic behaviour was not lower than those with a background as UK Whites. As hinted, Maynard and Harding (2010) did their study on UK, whose immigration pattern and to some extent also family politics is different to the one in Sweden. Findings of different patterns based on immigrant status or ethnicity can in some sense be linked to the mental health of refugees, since some of them are parents, the tragic and adverse life events they have experienced and the effect that has on their health (as mentioned by Hjern, 2009) can trickle down to their children. But also discrimination and the stress of being racialized can be reasons.

There were no major differences between the gender specific analyses regarding the pattern of associations in the crude gender-separated analyses for problematic externalizing and internalizing behaviour. Prosocial behaviour should not be compared gender-wise, due to it being analysed using logistic regression (see Mood, 2010). Crossing this statistical border results in conclusions that the patterns were different. Girls living in joint custody were not more prone to report low levels of prosocial behaviour than girls in a nuclear setting, regardless of model. A contrasting finding was that boys living in joint arrangements were more prone to report low levels of prosocial behaviour in comparison to boys living with both parents under the same roof. If this difference is due to the problems with logistic regressions or real gender differences is hard to tell. The general gender-common patterns in the effect of family structure on prosocial behaviour goes slightly (slightly due to problems comparing logistic regression models) against the theoretical discussion by Siu, Shek and Law (2012). They mentioned that gender ideals were socialized from the values held by the parents. It has however been mentioned that socialization tend to have lower effects with increasing age (Fagot, Rodgers and Leinbach in Eckes & Trautner (ed.), 2000).

Having experienced a divorce has been associated with more depression symptoms for girls than boys and more problems with social adjustment (similar to peer problems, an internalizing problem) for boys than for girls (Amato and Keith, 1991). Those findings are somewhat contradicted to the minimal pattern differences found in this thesis. Amato (2000) did however not find any of the previously found effects in a later meta-analysis, but he did find boys to be more negatively affected by divorce than girls regarding conduct problems. DeKeyser and colleagues (2014) found two different effects on externalizing behaviour in a Swedish study. Living with both parents was for girls, based on their own reports, associated with higher levels of problematic externalizing behaviours, while that association was not found based on teacher's reports. The opposite was found for boys. Based on their own reports, living arrangements was not associated with their levels of externalizing behaviour, while results based on teacher's reports depicted boys not living with both parents as exhibiting more externalizing behaviours than boys living with both parents. That results can differ depending on the choice of informants tell a similar story as the one described by Stevens and Vollebergh (2008) in connection to immigrant status and ethnicity.

The gender different effect of ODD, which can be considered an externalizing behaviour problem, found by Rydell (2010) is another finding which has not found support in this thesis.

She did however find no gender moderation of ADHD, which goes in line with the patterns presented above.

In total, the results were as expected for all three hypothesized research questions.

One unexpected finding was the gender difference in how the child's birth region appears to be of relevance, where girls did not appear to be as affected by birth region as boys. This neither goes in line with the overall findings of Dion and Dion (2001), who saw a pattern of worse effects for girls, nor the conclusion by Amato (2000), who did not see any trends. Both of these were however reviews of studies from around the world and from studies at least 10 years older than the data collection in the Grodan study. In mere speculative phrasings, the diverse results might come from the more gender egalitarian focus in Sweden compared to other countries. One should however be careful not to depict Sweden as gender-egalitarian, as a too positive view of Sweden's gendered situation has been criticized in a recently published book (for a review, see Swedish Secretariat for Gender Research, 2016).

#### *Strengths and limitations of the study*

The sample size of this study is an obvious strength, but the attrition was however quite substantial. It is also positive that the data is based on schools in the entire Sweden, which due to the legal demand of children having to attend compulsory school makes it the best ground to receive high generalizability. Since this study was cross-sectional, causal claims cannot be made. The study also has a decreased generalizability for the current situation, one example of a change since 2009 is the increase of financial support for lone-parents (Swedish Left Party, 2014). The decreased generalizability is due to that the parental economy has been found to affect young people's mental health (for Canadian context, see Beiser et al., 2002; for a Swedish context, see Larsson et al., 2014).

Stronger effects of all the variables could be seen, as the mean scores for the problem indices was lower in the analysed sample than in the original one due to the loss of information on those with the most problems (see Appendix).

OLS has a couple of demands, which all can be tested for with different methods. Diagnostics was done for all of these regressions to see if there were any issues with non-linearity, heteroscedasticity, multicollinearity, non-normally distributed residuals or outliers. Endogeneity and autocorrelation is also issues for OLS. Non-linearity was deemed as a non-problem, apart from the original test to use OLS on prosocial behaviour, the reason to examine prosocial behaviour with a logistic regression.

The differences in effect size could have been even smaller between those theoretized as being more in vulnerable situations and those in less problematic ones if outliers would have been deleted, however, deleting them would be against the code for describing a part of these children's reality, albeit in mere numbers. As looking for outliers is a part of the regression diagnostics, so is looking for approximately normally distributed residuals and skewness. As it was found to be clear breaches of these assumptions for prosocial behaviour, this dependent variable was first tested by using a logarithm, which did not help, to finally settle for using a logistic regression on a dichotomized version of this variable. The information lost after dichotomizing can be compared to the increased insurance of correct conclusions throughout the spectrum of possible answers.

The check done for logistic regressions were Hosmer and Lemeshow tests. These were significant for the full model logistic regressions (but not for the two models labelled Crude or Model 1), a sign of poor model fit. There is however a critique on this test in connection to large samples (e.g. Kramer and Zimmerman, 2007).

The splitting of SDQ into the three parts in combination with family structure is unique to the previous research in connection to Grodan.

Examples of aspects commonly used in the literature that was missing in the current study is experience of traumatic events, number of siblings in the household, non-resident fathers' involvement and conflict between the parents. That nuclear families tend to have more children than lone parents (Statistics Sweden, 2004, p 19) makes it a control variable that might have increased the differences.

Father-mother conflict has been used as a control variable in other studies, and it has had strong effects in the meta-analysis by Amato and Keith in 1991. Children in families where there were high conflict had more problems than those with divorced parents.

None of these were available in the dataset, but they could have further decreased the gap between the family types once controlled for (apart from the sibship size).

As there have been other researchers using this dataset for published articles, the added value which this master thesis brings into politics or in the field of social work must not be exaggerated, although it is substantially different from those.

### *Conclusions & implications*

This thesis main focus was on the effect which family structure has on three kinds of behaviour. The findings depict step-wise differences between the family structures. Children living in a nuclear family were found to generally be less prone to report negative behaviour characteristics than children living in any of the other three kinds of family types. Children in joint physical custody was reporting the second least, followed by those living mostly with one parent and the worst off was those living with just one parent. This finding was expected and beckons for more social help to those in the worst situations without either be patronizing, demonizing or exotifying their life situation and personalities.

As neither immigrant status nor gender did moderate the effect of family type, it gives the message to professionals in the social work field that the effect might not vary across these social aspects in Sweden.

Economy appears to be affecting problematic behaviour and linked to not living with two parents under the same roof. This leads me to (further, if one should be forthcoming with personal views) support a raise for state financial support for lone parents. It was however raised in 2015 (Sweden's Left Party, 2014). The raise from 1273 to 1573 Swedish Kronor is however still low compared to the cost of raising a child. An increase is however better than status quo or a decrease. No matter if the increase means that the parent(s) can work less and spend more time with the child or the child perceive less stress due to financial strain, it is for a good cause.

Children do need to feel that they can get help from adults, as a principal named Johan Hallberg, mentioned when working on improving their student's health. One part of the health work at his school was to have an adult available for all students to talk to. This person would then steer the students towards contact with e.g. counsellors (Hallberg, 2016). This shows the importance of employed adults who co-operate in the schools as well as the existence of an employed counsellor, and not just good support for lone parents.

Gender should neither be dismissed as non-important. Galea (foreword in World Health Organization Europe/ WHO Europe, 2011) mentions the effect of gender norms and values as an important and sometimes forgotten factor in policy making for improvements in the populations mental health. With the recent criticism against seeing Sweden as an egalitarian country (Swedish Secretariat for Gender Research 2016), I urge the politicians to do more, for

both boys and girls, for men and women, as well as for those which do not describe themselves as either.

### *Pointers for future research*

For further studies, one can look into “caseness” (this has been done for the Grodan study, see Gustafsson & Modin, 2013), which means taking those with a score at the 95<sup>th</sup> percentile or above and combine them with the extended SDQ (for more information, see Goodman, 1999). This are however not as recommended for big population studies such as this was, and a combined effort to check for clinical health care is demanding, but it can be combined with family structure to base the politics regarding social aids on research.

More longitudinal studies are needed to come nearer an answer whether there is any selection bias into joint custody or not. It might be that there will be more findings of both, but then sound conclusions on specific areas or countries are easier to be drawn.

More research done on ethnicity or immigrant status in connection to the effect of family type on mental health is also beckoned for to elucidate in what situations it can matter. The same goes for research done on children living with either two women or two men, these are family types which are becoming more common (Statistics Sweden, 2010).

To better be accommodating those with a queer gender identity research should not avoid this topic even regarding family structure, the importance lies in making sure they are not demonized or exoticized.

Mixed methods could be incorporated in future studies. Going deeper into the stress of being racialized, objectified or peer (or media) pressure and the support from the parents through interviews and then test that to the reported risk of exhibiting risky behaviours or gender-typical behaviour (and other problems). The behaviours can both be self-reported and observed, i.e. by parents, teachers or psychologists, but the kind of informant should be taken into consideration as it can lead to different results.

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## *Appendix*

Table 1.9. Mean score comparisons between the original sample and the current one.  
(n=128405 for the latter)

Variable name	Mean in original sample	Mean in current sample	Proportional change in mean (%)
Internalizing behaviour	6.13	5.56	-9.1
Externalizing behaviour	4.97	4.55	-8.2

The decrease of problems with psychological behaviour reported after the population variable was put in use is somewhat high (Table 1.9). Analyses should therefore be safer, in the case of a found difference, since conclusions are being drawn on less severe cases.

Table 1.10. Comparison cut-offs between the two samples

Variable name	Cut off original sample	Cut off current sample
Prosocial behaviour	5	5

The score for the 10<sup>th</sup> percentile (or 1<sup>st</sup> decile) did not change for prosocial behaviour (see Table 1.11).

Table 1.11. Number of missing in the original sample for the dependent variables.

<b>Variable name</b>	<b>Missing in the original sample</b>
Prosocial behaviour	4238
Externalizing behaviour	11855
internalizing behaviour	7863

The concentration index (one of the five original aspects, and a part of the externalizing behaviour) had the highest number of missing values (8745) in the original sample. This contributed to the externalizing behaviour index to have the highest number of missing (11855) in comparison to the other dependent variables (4238 for prosocial behaviour and 7863 for the internalizing behaviour index) which can be seen in Table 1.12. One reason can be that there are two questions that begin with “I can concentrate...”, another reason can be that they are already difficult to answer.

Table 1.12. Comparison of changes in distribution between the original sample and the current one. (n=128405 for the latter)

Variable name	n original sample	% of original sample with valid data	n current sample	% of current sample	% unit change
Prosocial behaviour <6	19157	11.1			
Nuclear family	114829	68.6	88473	68.9	+0.3
Joint custody	17600	10.2	13711	10.7	+0.5
Lives mostly with one of the parents	13031	7.8	9967	7.8	0.0
Lives with just one parent	21950	13.1	16254	12.7	-0.4
Boy	85515	50.4	62788	48.9	-1.5
Girl	84055	49.6	65617	51.1	+1.5
Swedish born child	156370	91.9	120809	94.1	+2.2
Child born in another part of Europe	4629	2.7	2556	2.0	-0.7
Child born outside of Europe	9219	5.4	5040	3.9	-1.5
Sixth grade	80671	46.8	57569	44.8	-2.0
Ninth grade	91627	53.2	70836	55.2	+2.0
Variable name	Mean original sample	% of original sample with valid data	Mean current sample	Proportional change in mean	
Economical strain	5.51	85.8	5.51	0.00 %	
Strained family relations	10.08	85.8	10.09	+0.93 %	

Just above a quarter (three out of eleven) of the changes were under 0.5 percentage units, the highest change was the proportional rise of pupils born in Sweden (2.2), mainly to the proportional loss of pupils born outside of Europe. The average change was 1.15 (12.6/11), a rather big change. Another noteworthy change is the sex distribution going from more boys

than girls in the original sample to more girls than boys in the used one, and a less balanced distribution as well. An increased proportion of answers from those which theoretically and based on previous research might have the lowest levels of problematic behaviour was expected, as these might not feel as hindered by the stigma of i.e. anger, concentration or emotional issues. Amato (2001) mentions that it might be easier to measure behaviour among secondary school pupils than those in primary school. It makes sense to extrapolate that to the difference between sixth and ninth grade due to the increased demand for things in 9<sup>th</sup> grade than in 6<sup>th</sup> grade. The higher demand, the easier to know if one misses it.

The control variables *Economical strain* and *Strained family relations* showed no respectively a minimal difference.