

Parental decision-making, allocation of resources, and child outcomes

Ingvild Almås, Bet Caeyers, Pamela Jervis, Ingrid Hoem Sjursen and Charlotte Ringdal¹

Sammendrag på norsk

For å utforme god politikk innrettet mot barnefamilier er det viktig å forstå hvordan foreldre tar beslutninger på vegne av familien og barna. Foreldre kan være enige eller uenige i prioriteringer, både fordi de kan ha ulike preferanser og fordi de kan ha ulike oppfatninger om hva som er konsekvensen av pengebruk, for eksempel fordi de har ulike oppfatning om avkastningen på utdanning. I situasjoner med uenighet mellom foreldre kan de komme fram til samarbeidsløsninger, for eksempel ved å diskutere seg fram til valg som framstår som et vektet gjennomsnitt av det mor og far ville ha valgt hver for seg. Men for noen familier fører uenighet til konflikt, og disse familiene står i fare for å ende opp med suboptimale løsninger. For slike familier er faren for stress, barrierer for utvikling og adferdsproblemer for barn større enn i andre familier.

I denne rapporten går vi igjennom eksisterende forskning på kjønnsforskjeller i preferanser generelt, og mellom mor og far i familiene, spesielt. Det har for eksempel lenge vært en gjeldende teori at mødre allokere mer penger til sine barn enn fedre. Noen tidligere studier var basert på utgifter til klær og mat, og vist eksempler på at mødre prioriter disse kategoriene høyere. Basert på dette, har noen konkludert med at mødre prioriterer barn høyere enn fedre. Nyere studier tyder derimot på at mødre og fedre allokere tilsvarende mengder penger til sine barn, men antall studier er få og resultatene i noen grad sprikene. Der er derfor behov for flere studier som undersøker empirisk om mor og far bruker penger ulikt, noe som er viktig for vurderinger om hvem som bør motta eventuelle overføringer fra velferdsprogrammer for barnefamilier, som for eksempel barnetrygden.

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En viktig faktor for om mødre og fedre velger ulikt og konsekvensene dette har for barn, er foreldres preferanser. I denne rapporten går vi derfor igjennom og diskuterer forskningen på kjønnsforskjeller mellom kvinner og menn med fokus på tidspreferanser, risikopreferanser, sosiale preferanser, samt preferanser for allokeringer internt i hushold.

Innen tidspreferanser finnes det ingen konsensus på hvorvidt kvinner og menn har ulik grad av tålmodighet og blant norske 15-åringer finner vi ingen forskjeller mellom kjønnene, noe som kan tyde på at der heller ikke er slike forskjeller for dagens voksne. På den annen side finner vi en sammenheng mellom høyere sosioøkonomisk status er assosiert med økt tålmodighet, men vi mangler gode data på hvorvidt kjønnsforskjeller finnes for noen sosioøkonomiske grupper men ikke andre. For å forstå tidspreferanser blant lav-inntekt og immigrant familier i Norge bedre er vår vurdering at det er behov for nye studier for å avdekke forskjeller mellom typer av familier og potensielle kjønnsforskjeller innad i enkeltgrupper.

Innen risikopreferanser viser forskningen at menn er villige til å ta mer risiko enn kvinner, noe som kan lede til uenighet og økt konflikt, men det er samtidig viktig å påpeke at vi ikke fant kjønnsulikheter i risikopreferanser blant norske 15-åringer, noe som kan indikere at der er små slike forskjeller blant voksne også. Vi finner videre at familier med høyere sosioøkonomisk status i større grad er villig til å ta risiko enn husholdninger med lavere sosioøkonomisk status. Til slutt antyder forskningen at kjønnsforskjeller innen risikopreferanser er større i rikere land enn fattige, men vi understreker samtidig at det er manglende data på dette feltet. Mer forskning på dette feltet vil gi en bedre forståelse av potensielle kjønnsulikheter og forskjeller mellom lav-inntekt og immigrant-familier og andre familier i Norge.

Innen sosiale preferanser finner vi at kvinner noen studier som antyder at kvinner er mer altruistiske enn menn, mens andre studier viser ingen kjønnsforskjell i slike sosiale preferanser. Vi finner heller ikke robuste tall på forskjeller mellom ulike sosioøkonomiske grupper, eller hvilke kjønnsforskjeller som oppstår ved endring av sosioøkonomisk status. Forståelsen av hvordan kjønn og sosioøkonomisk status påvirker sosiale preferanser er derfor manglende.

Rapporten går også igjennom litteraturen på hvilke faktorer som påvirker foreldres antagelser om investeringer. Disse antagelsene dikterer hvordan foreldre velger å allokere tid og ressurser

til sine barn. Vi finner at det er gjort lite forskning på forskjeller i antagelser mellom fedre og mødre, og at det verken finnes systematiske studier av forskjeller i antagelser i Norge, globalt eller blant ulike sosioøkonomiske klasser. Slike studier ville kunne bidra til en bedre forståelse av premissene for politikkutforming og potensielle framtidige studier vil kunne være av stor verdi.

Videre går vi igjennom forskning på hvordan forhandlingsmakt påvirker familiers beslutninger. Vi finner at menn generelt har større forhandlingsmakt enn kvinner, men også at det er store variasjoner mellom land. Rapporten utdyper hvilke økonomiske modeller som blir brukt til å måle forhandlingsmakt, særlig den kollektive modellen, og hvordan ulike modeller gir ulik forståelse av familiers beslutninger. Igjen er det behov for norske studier på hvordan familier tar beslutninger og graden av konflikt som finnes og oppstår i beslutningssituasjoner som angår barn.

Felles for disse områdene er at det er en mangel på studier av norske familier eller lignende forhold. Da mye av forskningen er gjort i utviklingsland og i land med annen grad av likestilling enn det vi har i Norge, har vi manglende kunnskap om hvor aktuelle disse dataene er i norsk sammenheng. Vi framhever derfor behovet for å forske på preferanser, antagelser og forhandlingsmakt generelt, og i norsk kontekst, spesielt.

For å sikre de beste utfallene for barn, og for å unngå fattigdom og stress for den oppvoksende generasjonen, behøver vi gode institusjoner og god velferdspolitik. Slik politikk bør ha som mål å begrense konfliktnivået i familier. Denne rapporten argumenterer for at god forståelse for potensielle forskjeller mellom mødre og fedre i preferanser, antakelser og forhandlingsmakt, er essensielt for å forme slike institusjoner og slik politikk. Viktige prinsipper bør være å møte begge foreldre med likeverd og respekt, og å sikre begges rettigheter og felles forståelse av ansvar, noe som kun er mulig med en god forståelse av potensielle forskjeller mellom partene. Kjønnbalansen i rådgivningsinstitusjoner og mekling fra det offentlige sin side bør også vurderes, da eventuell overbalanse av kvinner (menn) kan føre til opplevelser av fremmedgjøring for fedre (mødre).

Summary and conclusions

To design effective policies and evaluate the impact of policies aimed at families with children, it is important to understand how parents make (spending) decisions on behalf of their families and children. Parents may agree or disagree on priorities, both because they may have different preferences and because they may have different perceptions of the consequences of , parental decisions, because they may have different beliefs about the returns on education. Even in situations of disagreement between parents, they may arrive at collaborative solutions, for example, a weighted average of what the mother and father would have chosen separately. For example, if the mother would, given their constraints, like the family to send their eldest child to school only for 3 years, but the father would like to send this child to school for 6 years, then they may end up sending the child to school 4 or 5 years depending on whether the mother or the father has more weight in this decision than the other. If the father has full weight, and the mother none, they will most likely end up sending that child to school for 6 years. But for some families, disagreement leads to conflict, and these families are at risk of ending up with suboptimal solutions. For such families, the risk of stress, developmental barriers, and behavioral problems for children is greater than in other families.

In this report, we review the literature discussing gender differences in preferences in general, and between mothers and fathers in families, in particular. For example, it has long been theorized that mothers allocate more money to their children than fathers. Some earlier studies were based on expenses for clothing and food for children, and showed examples of mothers prioritizing these categories higher. Based on this, some have concluded that mothers prioritize children to a greater extent than fathers. However, more recent studies indicate that mothers and fathers allocate equivalent amounts of money to their children, but the number of studies is limited and the results are somewhat inconsistent. Therefore, there is a need for more studies that empirically investigate whether mothers and fathers use money differently, which is important for considerations of who should receive potential transfers from welfare programs for families with children, such as child benefits.

Parental preferences, and potential differences between mothers and fathers, are important decision-making factors within families. In this report, we review and discuss the literature on differences in preferences between women and men with a focus on time-, risk-, and social preferences, as well as preferences for allocations within the family. We also discuss potential differences across socio-economic groups.

Regarding time preferences, there is no consensus on whether women and men have different degrees of patience, and among Norwegian 15-year-olds, we find no differences between genders. It is possible that gender differences in time preference are starker among specific socio-economic groups in society (we do know that higher socio-economic status is associated with increased patience), but there is insufficient data and research available to determine that. New studies are needed to better understand gender differences in time preferences among low-income and immigrant families in Norway.

Regarding risk preferences, evidence suggests that men are generally more willing to take risks than women, which can lead to disagreement and increased conflict in a family. It is interesting to note that there is no sign of gender differences in risk preferences among Norwegian 15-year-olds, suggesting that such gender differences may also not exist among adults in Norway. The literature further finds that families with higher socio-economic status are more willing to take risks than families with lower socio-economic status. Finally, studies suggest that gender differences in risk preferences are greater in richer countries than in poorer ones, but we also emphasize that there is insufficient data in this field. More research on this will allow for a better understanding of potential gender differences and differences between groups of families (i.e., low- versus high-income and immigrant versus non-immigrant families) in Norway.

With regard to social preferences, some studies suggest that women are more altruistic than men, but other studies report no gender difference. There is also no robust evidence on differences across socioeconomic groups, or gender differences within socioeconomic groups. Therefore, understanding how gender and socioeconomic status affect social preferences is lacking.

The report also examines the literature on factors that influence parents' beliefs about investments. These beliefs dictate how parents choose to allocate time and resources to their children. We find that there have been few studies on differences in beliefs between fathers and mothers, and that there are no systematic studies of differences in beliefs in Norway, globally, or among different socioeconomic classes. Such studies could contribute to a better understanding of the premises for policy design, and we therefore argue that such potential future studies could be of great value.

Further, we review the literature on how bargaining power affects family decisions. We find that men generally have greater bargaining power than women, but there are also large variations from country to country. The report elaborates on the economic models used to measure bargaining power, particularly the collective model, and how different models provide different understandings of family decisions. Again, there is a need for Norwegian studies on how families make decisions and the degree of conflict that exists and arises in decision-making situations involving children.

A commonality between these areas is a lack of studies on Norwegian families or similar circumstances. As much of the research has been conducted in developing countries and in countries with a different degree of gender equality than we have in Norway, we lack knowledge of how relevant this data is in a Norwegian context. We therefore emphasize the need to research preferences, assumptions, and bargaining power in general, and in a Norwegian context, in particular.

To ensure the best outcomes for children, and to avoid poverty and stress for this group, we need good institutions and good welfare policies. Such policies should seek to limit the level of conflict within families. This report suggests that a good understanding of potential differences between mothers and fathers in preferences, beliefs, and bargaining power is essential for shaping such institutions and policies. An important principle should be to treat both parents with equality and respect, and ensure both their rights and a common understanding of responsibility, which is only possible with a good understanding of potential differences

between the parties. The gender balance in counseling institutions and mediation from the government's side should also be considered, as any imbalance may lead to feelings of alienation for one of the parties.

About the assignment

The Ministry of Children and Families has asked NHH/FAIR to write a report summarizing the knowledge about parents' preferences, beliefs and decision-making power on issues relating to children, and the relevance of this for family policies in Norway in general and for policies concerning families living in conflict. The assignment is also to discuss important knowledge gaps in how to design the best and most efficient social how to meet families, and improve conditions for the children, when targeting policies at families. The background for this assignment is the work that the group at NHH/FAIR has done and is currently doing on the topic.

NHH/FAIR will, through this report, discuss mothers' and fathers' preferences, beliefs and decision-making power relating to budget allocations, and discuss possible differences between mothers and fathers along these dimensions. We will also discuss whether we have reasons to believe that different socioeconomics groups and groups with different immigration status have different preferences, beliefs and decision-making power. The discussion will be based on the existing literature on the topic, both in the Norwegian context and globally. However, it is worth noting that global empirical evidence on this topic is limited. The purpose of this report is therefore both to give an overview of the existing evidence, but also to highlight important knowledge gaps.

Part of the assignment is to give input to political decision-making, with focus on policies directed to families in general, and families with particular challenges, such as families in conflict. As the group at NHH/FAIR consists of economists, the main focus of the report will be on how preferences, beliefs and decision-making power – key parameters in economic models of family behavior – can affect parental investments in general, and how it may affect families in conflict in particular.

NHH/ FAIR will include a discussion around implications for policy such as the transfer programs, e.g., the child allowance (barnetrygd). The discussion will to some extent focus on consequences for child development, stress and behavioral problems.

NHH/FAIR will describe existing knowledge needs for the public sector child policy making and how experimental studies may contribute to meet these needs.

1. Background: Household decision-making, families in conflict and child outcomes

Family background has been shown to be important for child and adolescent outcomes. Parental income and education have, e.g., been shown to be important predictors of i) own education and income (Black et al. 2005a); ii) the development of fairness preferences related to allocation of resources (Almås et al. 2016a), as well as iii) willingness to compete (Almås et al. 2016b). But what are the mechanisms at play? Almås, Cappelen, Salvanes, Sørensen, and Tungodden (2016c) match (i) a rich data set on adolescent behavior elicited through a large laboratory experiment with a representative sample of 15-year-olds in Norway and (ii) register data on the adolescent family background as well as their school outcomes. The study relates adolescent school dropouts to parental education and income as well as many other behavioral parameters such as risk taking, competitiveness, personality traits and patience. Even with this rich data set at hand, however, it is difficult to nail down *why and through which channels* parent decision-making is so important for child development and outcomes. To better understand parent decision-making processes relating to children, one needs detailed information on parental behavior and traits beyond observational statistics such as education and income. Such parameters include underlying preferences, beliefs and decision-making power dynamics within the family. In this report, we will discuss the role of parents through a discussion of these key parameters. We will focus on how parents make decisions and why knowledge about this is important for policy design. We will in particular discuss differences across parents, both across families and between mothers and fathers within families.

One particular focus in the report's review of parameters affecting decision-making processes relates to families living in conflict situations. The governmental report "The family – responsibility, freedom and choice" (Barne og Familiedepartementet 2016) *Familien – ansvar, frihet og valgmuligheter*) expressed that there is solid scientific evidence that children and adolescents can suffer if parents have substantial and longstanding conflicts. Research has shown that children who live in families with violence or high level of conflict after divorce have a higher likelihood of having socioemotional and mental health challenges. Long-lasting conflicts can cause challenges related to the ability to focus at school, school performance, and presence at school.² If these challenges persist, they will lead to challenges in succeeding and participating in the labor market, with subsequent high costs for society. In sum, conflict in families can cause substantial individual, as well as societal losses, and it is therefore important for the governmental sector to try to mitigate such conflicts and facilitate systems that help reduce, rather than exaggerate, spurring or existing conflicts. Understanding how parents make decisions, and the basis for differences between the decision makers – in preferences, beliefs and/or decision-making power – is therefore important.

1.2 Household decision-making – a framework

In economics, household decisions are often assumed to be affected by three main factors: (i) the decision-makers' preferences, (ii) the distribution of decision-making power between decision-makers, and (iii) the decision-makers' beliefs. In this section, we will discuss each of these parameters in the decision-making process.

Who are the decision-makers in a household? Models of household behavior in economics usually consider a *nuclear family* as starting point, that is, a family where two adults (usually the mother and the father) make decisions on behalf of the family. This does not necessarily mean that children do not have a voice, but their opinions are taken into account through parental preferences. To our knowledge, there is only one study that investigates whether children

²See e.g.: Justis- og beredskapsdepartementet (2014a): «Et liv uten vold. Handlingsplan mot vold i nære relasjoner 2014– 2017», and Barne- likestillings- og inkluderingsdepartementet (2014a): «En god barndom varer livet ut. Tiltaksplan for å bekjempe vold og seksuelle overgrep mot barn og ungdom (2014–2017)».

should be considered as decision-makers in the family when it comes to consumption: Dauphin et al. (2011) focus on children who are at least 16 years of age and argue that these children should be considered as decision-makers. In this report, we focus mostly on families with young children, and therefore we do not consider them as decision-makers.

In reality, some households contain more than two adults, for example grandparents or uncles or aunts. This is relatively rare in Norway (about 5 percent of families with children). There are also some children born without a registered father, but this only amounts to about 1 percent of the Norwegian population. We therefore focus on the following family structures: families with two adults (parents) with one or more child(ren).³ Note that we use the term “family” even if families split up and do not live in the same household.

Decision-making about what? A family makes many decisions in everyday life, including decisions concerning private and public consumption, labor supply (whether and how much to work), private savings and investments, and fertility. The main focus in this report is on consumption and time use (including time spent in the labor market and time spent on other tasks at home, such as regular household chores and quality time with children). The household consumes a combination of *private* and *public* goods. Private goods are goods that can only be consumed by one person in the family, for example food and clothing. Public goods, on the other hand, are goods for which the consumption of one household member does not affect the consumption of another member such as house heating or rent. All family members have preferences over how the family’s income should be distributed across private and public consumption and how they should allocate their time.

The type of parental **preferences** typically considered when modeling parental decision-making are multifold. First, studies consider child preferences, that is, the importance parents put on children. It is often argued that mothers spend more on children than fathers do. One example is a blog post by Marina Adshade discussing this and also claiming that “it has been consistently shown that money given to mothers is far more likely to be spent in a way that benefits their

³ See <https://www.ssb.no/befolkning/barn-familier-og-husholdninger/statistikk/familier-og-husholdninger> and <https://www.fhi.no/> for statistics that give support to this focus.

children than is money given to fathers”. We will challenge this claim and show that the empirical support for it is weak.⁴ Second, parents may have different time, risk and social preferences – something that can also affect their investment in children – and we will also discuss the existing literature on this.

Parental **beliefs** about returns to child investments and the effect of different parenting styles are important for decision-making regarding child investment. For example, parental beliefs about how important it is to read to a child every night is critical for whether parents choose to do this or not – and it is likely to differ across parents, both within and across households.

Finally, **decision-making power** dynamics in the household, in particular, how much sway each of the parents have in the decision-making process, matters for child outcomes. Even if mothers do care more about children in some families, it may not matter much if they do not have the power to act on these preferences. This could be true for decisions regarding time use, but it may be particularly important for financial decisions. Similarly, if fathers are more patient or believe more strongly in education as an efficient investment, this may or may not lead to more investment in education for the children. For example, if there is a conflict after divorce and the mother gets custody, the father may not be able to act on his preferences. In this case the lack of control of decisions regarding children, for the father in this example, may lead to frustration for (at least) one of the parties, and may then in turn spur conflict between the parents.

2. Literature review

The literature review consists of five parts. First, we discuss in more detail preferences that have been considered relevant for household decision-making. We start with what can be referred to as “fundamental preferences” that is time-, risk-, and social preferences. Then we go on to discuss what is particularly important for family decision-making, namely within-

⁴ See <https://www.psychologytoday.com/us/blog/dollars-and-sex/201401/why-do-mothers-care-more-about-their-children-fathers> for the blog post.

household allocation preferences. For each of these, we describe why they are important for decision-making and how they are measured. And, we provide an overview of the documented gender differences.

Second, we discuss parental beliefs. Particularly relevant for parental allocations and decision-making are the beliefs related to returns to investment in children, for example believed returns to financial investment in education, time investment in child learning, and the believed importance or returns in terms of health and well-being of spending on (healthy) food. We discuss how such beliefs can be elicited and whether there is evidence that these beliefs are different across households and between mothers and fathers within households.

Third, we review the literature on decision-making power within households. We start by providing an overview of how decision-making power is typically measured, before reviewing the literature on how decision-making power is distributed in households in OECD countries (as the evidence for the Norwegian population is scarce). We contrast these findings with the distribution of decision-making power in non-OECD countries, which may be important for parts of the population with roots in non-OECD countries.

Fourth, we discuss different models of household decision-making. In order to understand how parents make decisions and how the mechanisms at play work together we need a full model of household decision-making. We will discuss main theoretical models of household decision-making, and we will illustrate how non-cooperation in families in conflict may lead to sub-optimal outcomes where resources are not used efficiently. We will also discuss how the different models can be tested and estimated empirically to inform us about each household's full decision-making process.

Fifth, we discuss the literature on effects of gender targeted transfers. A significant fraction of governmental programs, welfare arrangements, and cash transfer programs, target women. In particular, in matters related to children, most countries have a long tradition of targeting mothers. For example, in Norway, the default is for child benefits to be automatically paid to mothers. As a result, about 90 percent of the recipients are mothers. The main arguments behind policies that target mothers are that they promote gender equality, empower women,

increase investment in children and promote child welfare. This can be formalized into two main arguments: i) the maternal argument states that women are more likely to spend money on goods and services that benefit children than men are, and ii) the empowerment argument states that targeting women will increase their control over resources in the household and therefore empower them. We will discuss the literature on the first argument, namely whether we have empirical support for female targeting benefitting children.

2.1. Preferences

2.1.1. Time, risk, and social preferences

Time, risk, and social preferences are all considered to be a primitive function of economic decision-making. When discussing the literature, we focus on gender differences as this may be a source of conflict within families, and differences across socioeconomic groups, as this may be important for the design of public policies aiming at facilitating child development. We will also briefly discuss whether any gender differences in preferences vary across socioeconomic groups.

2.1.1.1. *Time preferences*

Time preferences refers to how an individual values receiving a good or money at an earlier date compared to receiving it at a later date. Individuals who value present over future consumption are defined as *less patient* individuals. These individuals are predicted by economic theory to be less likely to spend money, time, or resources today that would yield benefits in the future. For example, less patient individuals may save and invest less, be healthier, and invest less in their children's education.

In an overview paper, Cohen et al. (2020) show that time preferences are typically measured in economic experiments (lab or field) where participants are asked to choose between an amount of money today and another higher amount sometime in the future, so-called money

earlier or later (MEL) experiments. These experiments are usually incentivized, meaning that the decision they make will be paid out in money. For example, if the participants are faced with a choice where they can either get 200 NOK today or 1000 NOK in 4 weeks and they choose 1000 NOK in 4 weeks, they will be paid this amount four weeks after the experiment.

While students are still frequently used as participants, it is becoming more and more common to use the general population.⁵ Falk et al. (2018a) present evidence from 76 countries on different economic preferences. In their paper, they first go through a validation exercise in which students face both incentivized and hypothetical choices. The idea is that incentivized experiments are expensive and cannot be rolled out on a representative sample of the population. Because of this, having hypothetical survey measures that can be implemented in larger surveys (such as Gallup's World Poll) can be valuable. By validating hypothetical measures, Falk et al. (2018b) choose the combination of hypothetical measures that best predict the incentivized decisions.⁶ In their study, Falk et al. (2018a) use a combination of two measures to elicit time preferences. The first one is a hypothetical form of a MEL experiment, and the second one a qualitative version where they ask the respondent to assess their willingness to wait.⁷

While the methodology of Falk et al. (2018a) can be challenged for not being incentivized, something NHH/FAIR addresses in the incentivized studies that are currently run globally, it serves as a good first study to get an overview of gender differences across the globe. We therefore use it as a starting point when discussing the literature on gender differences in time preferences. Individuals in Western Europe, and particularly in Scandinavian countries, stand out as exhibiting a high degree of patience compared to the rest of the world. In terms of

⁵ Students and the general population often behave very differently. We provide an example of this when discussing social preferences (Cappelen et al. 2015)..

⁶ While Falk et al (2018)'s method is useful and interesting, it has also received some criticism. Specifically, the validation is done with a student sample and does not replicate in Kenya with a sample from the general population (Bauer et al. 2019). Further, asking participants to do both hypothetical and incentivized decisions can lead to path dependency, i.e., that people's second choice is influenced by the first, possibly because respondents would like to behave and appear as rational. While they participate in two sessions which are two weeks apart, it is not clear whether the correlation between the hypothetical and incentivized decisions are strong because the hypothetical survey questions actually validate or because of such path dependency.

⁷ The specific formulation is "*How willing are you to give up something that is beneficial for you today in order to benefit more from that in the future?*"

gender differences, they find that women are *less* patient than men when looking at the full sample across the 78 countries. Focusing on some of the countries that are more similar to Norway (which is not included in their sample), they find that women are less patient than men in Sweden, Germany, and the Netherlands, but there are no differences found in Finland. Using an online experiment from all states of Germany, Dittrich and Leipold (2014) find the opposite; men are less patient than women. A multi-country representative survey by Meissner et al. (2022) also found men to be less patient than women in their sample. However, they state that most studies fail to find the relationship between gender and time preference to be statistically significant. They elaborate that:

“The patterns of results for the relationship between gender and time preferences appear ambiguous, with the majority of studies reporting non-significant results. However, men are clearly found to be more patient than women when the number of observations is considered instead of the number of studies”

If men are indeed more patient than women, this may lead to conflicting views about spending money on goods today, such as healthy food or clothing for children today, versus investing in future outputs, such as educational activities. If there is then also a biased decision-making weight, possible due to mothers receiving more financial support from public policy programs, or because there is a conflict between the parents and the mother has (more of) custody, such differences in preferences may contribute to spurring the frustration among fathers (and/or mothers) and the conflict between the parents.

In the next step, we consider whether time preferences differ across different socio-economic groups. Lawrance (1991) finds that poorer families are less patient than richer families in the US, though the results from other studies do not always go in the same direction (Ogaki and Atkeson 1997). In line with Lawrence (1991), Amir et al. (2018) find that individuals born in low-SES families are less patient in adulthood than individuals born in high-SES families. De Lipsis (2021) uses evidence from five European countries and find that patience is not monotonically increasing in income. Rather there is some threshold level under which individuals are significantly less patient. In Sweden, for example, the 4th and 5th income quintile are less patient

than the 1st, 2nd, and 3rd income quintiles. Using a sample from 65 countries, Burro et al. (2022) find a strong correlation between wealth and patience; more wealthy individuals are more patient. However, they also point out that when people are relatively younger, there is no difference in patience across income groups, but that this changes as they grow older. Specifically, they find that patience is relatively constant for rich people, while it is decreasing for poor people. Falk et al. (2021) also find that children from low-SES families are less patient than children from high-SES families in Germany.

The empirical evidence does, however, remain silent on whether gender differences in time preferences change across income and socio-economic status or whether it is only the level that changes. There exists some evidence on how gender differences vary across countries. Falk et al. (2018a) and Wang et al. (2016) show that, in line with most of the cited literature above, individuals in poorer countries are less patient than individuals in richer countries. Further, Falk and Hermle (2018) show that gender differences in time preferences are smaller in poorer than in richer countries. However, (Almås et al. 2016c) find no gender difference in patience among 15-year-olds in Norway, which indicates that more research is needed in order to understand whether mothers and fathers in Norway indeed have general differences in such preferences.

To summarize this section, we draw the following conclusions from the above discussion:

1. There is no consensus on whether and in which direction gender differences in time preferences go. This is probably due to the use of different methods to elicit time preferences and a wide variety of samples ranging from students to the general population. There is thus a need for more research on this – and in order to inform policy nation specific studies on particular choices related to child investments are needed.
2. Richer individuals and individuals from high-SES families are more patient than poorer individuals and individuals from low-SES families. This is true both within countries and across countries. The finding is consistent with the growing literature on scarcity (Shah et al. 2015) that discusses that the one consequence of being poor is that one has different considerations and behaviors simply because of the mental capacity being

used on striving rather than e.g., thinking long term. However, it is also consistent with a different causal story, namely that being impatient leads to less investments which in turn makes people worse off later in life. It is important to note that any policy targeted at increasing child investment will benefit from acknowledging the socioeconomic gradient in patience as one might want to form different policies for different groups, i.e., target some groups with an information campaign, e.g., on the benefit of investing in human capital financially or spending time reading to your children.

3. There is scarce evidence on how gender differences in time preferences change with income or SES, but the existing evidence suggests that the differences are larger in richer than poorer countries. This may be explained by greater availability of material and social resources removing the gender-neutral role of subsistence, which then enables the scope for gender-specific ambitions and desires (Falk and Hermle, 2018). More gender equal access to the resources may allow women and men to express preferences independently from each other. As a consequence, one may expect gender preferences to be more unequal in countries with more gender equal institutions. However, the scarce evidence from Norway find no gender difference in patience among 15-year-olds (Almås et al. 2016c).

Thus, the evidence on how gender differences vary with income/SES and across poorer and richer countries is scarce, and this calls for more data that aim to measure such differences. Such evidence may be important to understand the behavior of both low-income and immigrant families within Norway.

2.1.1.2. Risk preferences

Risk preferences, or people's willingness to take or avoid risk, is an important determinant of many individual decisions including investments and savings, trust, choice of occupation, and health-related behaviors such as smoking and alcohol consumption. Similar to time preferences, risk preferences are typically measured in lab experiments where participants

choose between two payments; one payment that they will be paid with certainty and a higher payment that will be paid out with some probability. Alternatively, risk preferences are also elicited by choosing between two lotteries where one is riskier, but with a higher expected payoff (for example a 50/50 chance of winning 1000 NOK or 0 NOK) and the other one is less risky, but with lower expected payoff (for example a 50/50 chance of winning 700 NOK or 200 NOK) (Croson and Gneezy 2009).

Several survey measures have also been used extensively. The most widely adopted measure was developed for the German Socio-Economic Panel (GSOEP) survey and consists of asking individuals to self-report their willingness to take risk on a scale from 0 to 10, where 0 indicates that they prefer to avoid risk completely and 10 that they enjoy taking risk (Dohmen et al. 2011). Dohmen et al. (2011) show that this non-incentivized, self-reported measure correlates well with real-life behavior. Falk et al. (2018a) use a combination of two questions to elicit risk preferences in their study; the first one is similar to the survey measure used in GSOEP and the second one is a hypothetical version of a typically incentivized game where the participants choose between an amount they will get for sure and a draw where there is a 50/50 chance of receiving a higher amount or nothing.

As for time preferences, we take Falk et al. (2018a) as a starting point when discussing the empirical results. Overall, individuals in Western Europe are relatively risk averse compared to other countries. In terms of gender differences, there is a large consensus in the literature that women are more risk averse than men. Falk et al. (2018a) also find such a difference in all countries in their sample with the exception of Iraq - the gender difference being significant in many but not all of the countries. Croson and Gneezy (2009) summarizes the literature up until 2008 and find that women are more risk averse than men both in a lab setting and in investment decisions in the field. In line with these studies, Meissner et al. (2022) also find women to be more risk averse than men in a multi-country representative sample across Europe. Further, Aarbu and Schroyen (2009) and Breivik et al. (2020) find consistent evidence in Norway, where both studies find that women are more risk averse than men.

Looking at the correlation between socio-economic status and risk aversion, the results are more mixed. Amir et al. (2018) find that children born in low-SES families are more risk averse when they grow up, and Falk et al. (2021b) show that children from high-SES families are more risk averse. In line with this, Meissner et al. (2022), Castillo et al. (2018), Bouchouicha and Veider (2019), and Blake and Cannnon (2021) find that people with higher incomes are less risk averse. However, the evidence on the relationship between risk aversion and education/socioeconomic status is mixed. Meissner et al. (2022) do not find any relationship, while Mata et al. (2016), Bouchouicha and Veider (2019) and Browne et al. (2021) find a negative relationship between risk aversion and education, and Lee and Kang (2016), Sepahvand and Shahbazian (2021) and Chapman et al. (2018) find a positive relationship.

The empirical evidence on whether gender differences in risk preferences change across income and socio-economic status or whether it is only the level that changes is scarce. Almås, Cappelen, Salvanes, Salvanes and Tungodden (2016) find that there exists some evidence on how gender differences vary across countries. Falk et al. (2018a) show that, somewhat surprisingly perhaps, poorer countries – and in particular African countries -- are less risk averse than individuals in richer countries. Further, Falk and Hermle (2018) show that gender differences are present in all countries, but the differences are smaller in poorer than richer countries. This may again be explained by greater availability of material and social resources removing the gender-neutral role of subsistence, which then enables the scope for gender-specific ambitions and desires (Falk and Hermle, 2018). More gender equal access to the resources may allow women and men to express preferences independently from each other. As a consequence, one may expect gender preferences to be more unequal in countries with more gender equal institutions. However, a study of Norwegian 15-year-olds show no gender differences in risk taking between girls and boys (Almås, Cappelen, Salvanes, Sørensen and Tungodden, 2016), and hence we need more research on parents in Norway in order to understand general gender differences across parents in Norway.

To summarize this section, we draw the following conclusions from the above discussion:

1. Women are consistently more risk averse than men. This is true across the world. This may imply that women are more willing to spend resources on children when the benefit of this spending is immediate and certain, such as for investments in healthy food and good quality clothing. When it comes to investment in education, fathers may be more willing to invest in high expected return but more risky educational choices, leading to e.g., jobs in the financial sector or other private sector job, whereas mothers may be more willing to invest in education that typical leads to public sector more certain return jobs such as health workers or other. Another difference that may occur because of the gender differences in risk aversion is that mothers want their children to diversify by investing *some* in many activities, whereas fathers would like to allow their children to be more specialized. With these differences, potential conflicts may arise between mothers and fathers, in particular for families where there is less cooperation to begin with, such as broken families.
2. The evidence on the relationship between risk aversion and socio-economic status, income, and education are mixed, but the tendency is that richer families are willing to take more risk, something that can be rationalized by these families also having economic buffers to take potential losses without having to change their life-styles significantly and/or end up in poor states. For policies, this is an important input for at least two reasons. First, insuring families through an elaborate welfare state make even lower income families able to take sufficient risks – risks that may be necessary to succeed in life. Such risks could be investments in education when future jobs are uncertain, and investing in the housing market when future house prices and interest rates for mortgages are uncertain. Second, information campaigns and other targeting poorer families may have to take into account the risk aversion for this group.
3. There is scarce evidence on how gender differences in risk preferences change with income or SES, but the existing evidence suggests that the differences are larger in richer than poorer countries, although a study on 15-year-olds in Norway indicate no gender differences in risk taking in that nationally representative sample of adolescence.

Thus, we lack systematic evidence on how gender differences vary with income/SES and across poorer and richer countries. This evidence – or more direct evidence on differences in risk preferences among mothers and father in Norway -- can be important to understand the behavior families in Norway in general and that of low-income and immigrant families within Norway, in particular.

2.1.1.3. Social preferences/altruism

The economic sciences have often portrayed humans as agents who are narrowly self-interested (Smith 1776; Mill 1874; Persky 1995). However, in recent decades, behavioral economists have extensively documented that people are willing to sacrifice own economic gains in order to reach more social and equal outcomes (Kahneman et al. 1986; Loewenstein et al. 1989; Blinder and Choi 1990; Rabin 1993; Forsythe et al. 1994; Babcock et al. 1996; Bolton and Ockenfels 2000; Andreoni and Miller 2002; Fehr et al. 2002; Fehr and Falk 2002; Charness and Rabin 2002; Fehr and Fischbacher 2003). Camerer (2003) provides a comprehensive discussion of this literature.

From Falk et al. (2018a) we cannot find evidence from Norway as it was not included in the study. However, the authors report findings for some of the more similar countries. In Sweden women are shown to be more altruistic, display more positive reciprocity, i.e., they are rewarding good behavior, and less negative reciprocity, i.e., they are punishing bad behavior less, than men. In Finland, there is no difference in positive reciprocity, however, women are more altruistic and display less negative reciprocity than men. In the Netherlands, women are more altruistic, display less negative reciprocity than men, but there is no gender difference in positive reciprocity. For the world as a whole, pooling all country observations, the authors find that women are more altruistic, display more positive reciprocity and less negative reciprocity than men.

Globally, the authors only report a few deviations from the finding that women are more or equal prosocial as men: women are less altruistic than men in 3 countries (Bangladesh, Cambodia, Pakistan); women display less positive reciprocity than men in 6 countries

(Cambodia, Ghana, India, Italy, Pakistan, and Thailand). But women do never display more negative reciprocity than men.

Earlier studies on student samples in the United States suggested that women are more prosocial, i.e., they reveal more socially favorable behavior, than men (see e.g., Eckel and Grossman (1998) who used dictator games to study this), but the results are not robust in all studies. Croson and Gneezy (2009) summarizes the literature on gender differences in social preferences up until that point in time and conclude that the social preferences of women are more situationally specific than those of men; women are neither more nor less socially oriented, but their social preferences are more malleable.

Turning to social preferences and socioeconomic status we have some indications from the Norwegian setting that there is no variation in prosociality between socioeconomic groups: Almås, Cappelen, Salvanes, Sørensen, and Tungodden (2016c) show that in the representative sample of 15-year-olds in Norway, the low socioeconomic groups are neither more nor less prosocial. The groups differ though in what they consider to be a fair allocation of resources – the adolescents with low socioeconomic background consider an equal distribution to be more fair, whereas the other groups considers the meritocratic ideals to be more fair where those who contribute more also gets more of the production value.

There is no sign that the gender differences in social preferences are more pronounced for any socioeconomic groups, but here more research on general populations would be beneficial.

To summarize this section, we draw the following conclusions from the above discussion:

1. Women are sometimes shown to be more pro-social than men, but the finding is not robust across all settings.
2. There is no robust evidence of pro-sociality differences across socioeconomic groups.
3. There is scarce evidence on how gender differences in social preferences change with income or SES.

Thus, we lack evidence on gender differences in prosocial preferences in general, and also how gender differences vary with income/SES and across poorer and richer countries. This evidence

can be important to understand the behavior of both low-income and immigrant families within Norway, but direct evidence on choices of parents in Norway may prove even more valuable in informing family policy in Norway.

2.1.1.4 Gender differences in preferences in Norway

As Falk et al (2018a and 2018b) and many other studies discussed do not include Norway, we use this section to emphasize that in Norway, it has been proven hard to find gender differences that are prevalent in other countries. This contradicts the findings in Falk et al (2018a and 2018b) that suggest that richer countries, and countries with more gender equal institutions, reveal larger gender differences in preferences, and may suggest that gender equalizing policies indeed lead to smaller gender differences over time. Almås, Cappelen, Salvanes, Sørensen, and Tungodden (2016b) shows that there are no gender differences in patience, risk taking or altruism amongst 15-year-olds in Norway. However, there is a difference in willingness to compete.

2.1.2. Preferences over household resource allocation

Household allocation decisions involve choosing between different budget posts, e.g., food, education, and clothing, but also choosing between who to spend on, e.g., children – and potentially *what* child, the mother or the father. Women and men may differ in both these dimensions. Such preferences are difficult to measure from observational data alone. Economic experiments may serve useful. For distributional preferences, the dictator game has been shown to be a useful tool (Eckel and Grossman 1998). With such an experimental approach, researchers can place individuals in identical settings – and hence should have the same beliefs – and then elicit preferences through real (incentivized) choices. One example of such an approach in the literature on preferences for redistribution is Almås et al. (2020).

The dictator games can be useful also in the household sector. Cherchye et al. (2021) studies actual choices in an economic experiment for married couples in Nairobi, Kenya. In the

experiment, parents were asked to allocate money between themselves and meals for one of their children. With the choice data at hand, the authors test models of household decision-making and they estimate a structural model of household collective decision-making. Through this, they reveal allocation preferences.

Ringdal and Sjørusen (2022) studied allocation decisions in Tanzania for mothers and fathers that could choose between money for themselves, their partner, or spending on tuition for a child. They find to general significant differences between mothers and fathers in these choices.

A hypothetical version of an allocation experiment with many goods, was tested in Tanzania (Almås et al. 2022). In the experiment, participants are asked to allocate a certain hypothetical amount of cash among six consumption categories (food, clothing, education, learning materials, health, and transportation). Within each consumption category, they are then asked to distribute to the mother, the father, and a child. Participants were randomized into one of two treatments: either the mother made the decision alone as a “dictator” (“Mother decision”) or the couple was asked to make the decision (“Joint decision”). The main findings are that mothers prioritize children more than the couples, but the effect sizes are not big. In particular, the mother suggests to spend more on child clothing and food, and less on the partner.

To sum up this section:

- Measurement tools from the literature on social preferences, in particular the dictator game, may serve useful in the household setting.
- Evidence from Tanzania indicate that mothers allocate the same to education, but more to children clothing and food, than fathers do, but the evidence on this is scarce.
- We do not have evidence on such allocation preferences in Norway, and as we believe that the evidence on preferences and behavior from Tanzania is not necessarily corresponding to the actual preferences and behavior in Norway, there is a need for such evidence in the Norwegian context. Such evidence would provide important knowledge for researchers and policy-makers in the Norwegian setting.

As evidence on allocation preferences for families is scarce, there is a need for more evidence on allocation preferences across families from different socioeconomic groups as well as across mothers and fathers within families, globally and in Norway.

2.2. Beliefs

One of the main drivers of parental decision-making is the beliefs parents have about the return to specific investments, such as different types of investment in child human capital and education. Rather than assuming that individuals know the returns to certain investments, we need to acknowledge that parents act on beliefs about these returns, and these beliefs may be correct or biased. Further, the beliefs may very well be different across parents, both within and across families.

The common theoretical and empirical approach in the body of literature for child development is to employ a production function for human capital which provides the technological relationship between the productive inputs and the outcomes to study the dynamic process of child development. Some standard inputs are the time spent reading to a child, enrolment or quality of child care, or the initial endowment of the child at birth while some outcomes could be higher cognitive or language skills (Foster 2002; Todd and Wolpin 2003; Cunha and Heckman 2007; Abramovsky et al. 2019). Most specifications assume parents “know” the functional form behind the production function (Cunha et al. 2010; Liu and Chan 2014; del Boca et al. 2014; Attanasio et al. 2017) which relates parental investment with child outcomes. One relevant case is the study of Luis and Chan (2014) that estimate a dynamic cognitive production function using administrative data from national test scores in Norway from 1995 to 2010 on math and reading in early childhood as outcomes which are a function of a number of productive inputs including child’s exposure to child care use, parental time with the child, income, existence of sibling, the age gap between the child and the siblings, the age of the mother at which the child is born and the quality of the primary school. In this case, the assumption is also that parents “know” the functional form, in particular, the productivity of inputs in the production function. As mentioned above, this assumption is not realistic as parents may have biased beliefs. In

particular, policy makers may be concerned that disadvantaged parents, immigrant families, parents with low socioeconomic status or parents living in rural areas or immigrant families, lack of information and knowledge about the evolution of child development. If this is the case, then these families may invest less in their children not only because they do not care about their children (i.e., they do not have preference for these investments), or they are financially constrained, but instead due to biased beliefs about the return of their investments on the process of child development. In this case, a policy focusing solely on alleviating financial constraints e.g., with cash transfer to families, may not be optimal, as indeed the families lack information and have biased beliefs about human capital formation. Beliefs about productivity have been shown to have long-lasting effects on persistence of social inequities (Hoff and Pandey 2003).

The fact that biased beliefs matter for decision-making of parents, has been one of the motivations behind some parenting interventions in early childhood (see for example the Abecedarian program (Campbell and Ramey 1991), the Nurse Family Partnership (Olds et al. 2019) as well as the *Reach Up* Visiting program (Grantham-McGregor et al. 1991, 2020) which might correct parental beliefs for disadvantages parents. The Norwegian government has put in place a parent training for families who settle in Norway as refugees which aims to improve parenting through positive parenting practices and development of attachment behaviors (Patras et al. 2021).

There is still need for more knowledge on the effectiveness of parenting support and its potential role in correcting parental beliefs about the returns of their investment on child development could. The lack of such knowledge may be an obstacle to the formation of policies that promote social mobility (Sundsbø 2018, 2022).

In sum, as parents, through their skills, characteristics and investment choices, play a crucial role in determining the abilities, skills, and opportunities of their children, knowledge about them is crucial input to national policies aiming to promote child development. In turn, parents with correct beliefs on human capital formation may take future effects into account when deciding the allocation of time and resources within the family, by explicitly specifying a

perceived production function which will correspond to the “true” production function (with “correct” parameters and inputs). Despite their potential importance, it is not well understood how beliefs shape parental investments and children’s skills neither its consequences for the persistence of inequality across generations.

The importance of the early years and their salience for policy to intervene becomes even greater in current times of Covid-19 and it is particularly relevant to ameliorate the negative impact on the process of child development and its implications for poverty and inequality. For example, if parents have incorrect beliefs with respect to the relevance of early childhood development stages they may believe that early and late investments are substitutes rather than complements or that later investments have higher returns than early investments.

2.2.1. Measuring parental beliefs

Some recent studies have looked at measures of parental beliefs (Cunha et al. 2013, 2020; Dizon-Ross 2019; Attanasio et al. 2019; Bergman 2021). A recent paper studies the importance of maternal subjective beliefs about the production function in determining parental investments on child development. Using data from a parenting stimulation program in Colombia in early years, they find that most mothers believe that the technology of skill formation follows a Cobb-Douglas parameterization, but there is significant heterogeneity in coefficients of investments across mothers. In particular, mothers hold low subjective expectations, which means that mothers under-estimate the returns to their investments. Moreover, they also find that maternal subjective beliefs predict investments, but that the parenting program did not affect maternal subjective beliefs (Attanasio et al. 2019). A different approach to study the implications of incorrect (biased) beliefs about the marginal and the relative productivity/value of all types of early investments in children is done by Caucutt et al. (2017). The authors show that for poor families that systematically underestimate the productivity of early investments will under-invest in their young children and have a high marginal return to early investment relative to the return to savings and the marginal return for high-income families with accurate beliefs. Instead, for relative productivity it has no effect on

total early investment expenditures. Instead, it results in a misallocation across early inputs, which tends to reduce the marginal return to early expenditures.

In a study of families in Tanzania, Almås, Attanasio and Jervis (2023) use an instrument to measure beliefs that is inspired by Flavio Cunha's work on this (see e.g., Attanasio, Cunha and Jervis, 2022). Almås, Attanasio and Jervis (2023) shows that in Tanzania, mothers and fathers have the same beliefs about returns to investment in high initial condition children, but mothers tend to believe in higher returns for low initial condition children than fathers do. However, we lack global evidence on mother's and fathers' beliefs about returns to investments.

To sum up Section 2.2. on Beliefs:

- Despite the recent evidence, there is a need to advance our understanding of how parental choices relate to children's well-being and human capital formation in an integrated dynamic theoretical framework suitable for policy analysis and that accounts for parental beliefs.
- The evidence on potentially differential beliefs within the families (between mothers and fathers) is scarce.
- We have no systematic studies of beliefs differences across socioeconomic groups, globally or in Norway.

There is a need for evidence of beliefs differences across socioeconomic groups as well as across mothers and fathers, globally and in Norway.

2.3. Decision-making power

To the extent that there are different beliefs and preferences for the decision-makers in the family, it will matter who has more sway in family decision-making.

A number of standard questions used in a large number of surveys directly ask respondents who is in charge of a set of family decisions. Typically, a family member is asked *who decides about this type of expenditure*, where the possible options are the husband, the wife, or both

and where several expenditure categories are used. Expenditure categories are also complemented with other decisions.

There are several issues with this way of eliciting decision-making in the family as we often see a lot of answers on “both decides” even in settings where we know that the decision-making power is skewed (see e.g., Adato et al 2000 for a discussion of these measures).

Another way to look at power within the family is to study distributions within families and assume that that reveals the distribution of power in the decision-making within families. Such within family distributions are often estimated using structural estimations of household models (such models will be discussed in detail in the next section). Almås, Ringdal and Sjørusen (2021) gives an overview of existing estimates of resource shares within families from structural models and also from the few studies using direct elicitation of consumption shares within families. The estimates range from about one third to the women to about half of the resources for the woman when shares to children are not counted in. Shares are estimated to be lower when shares for children are also estimated as one would expect. This range is quite similar for the summary of the scarcer literature using direct measures of consumptions shares, where women has about one third of consumption in Japan (Lise and Yamada, 2019) and a little more than half of consumption in Denmark (Bonke and Browning, 2011).

An alternative approach to the standard survey questions and the elicitation of shares through structural model estimation, is a direct elicitation of decision-making power suggested by Almås, Armand, Attanasio and Carneiro (2018). The authors conducted a controlled (“laboratory”) experiment in a sample collected within a randomized control trial (RCT) in North Macedonia. The measure was designed to capture the potential impact of targeting women rather than men with a Conditional Cash Transfer. In the RCT, the grant was given to women in some villages and to men in others. After the initial data collection, the wives were called to an office to run an incentivized experiment. They were shown 100 Denars that we could either give directly to their husband, or they could pay to receive the money themselves. We elicited their willingness to pay to receive the money themselves. The more money the wives are willing to pay to get the money for themselves, the less power they have over family money.

In Tanzania, a very similar experiment was conducted, though it was posited as a hypothetical question rather than an incentivized experiment. In both North Macedonia and Tanzania, the women are willing to pay considerable shares to keep the money for themselves, indicating that the women have less power than men in the family setting in the two countries. The Tanzanian women are willing to pay considerably more than the Macedonian women, however, indicating that the former has less power than the latter.

In sum, we have some measures of power in decision-making in the family indicating that women in general have less power than men, but the skewness in power varies across countries. However, we lack such direct evidence for Norway. More and better measures for direct elicitation of power is needed in order to accurately map decision-making processes in families in Norway and across the world.

2.4. Models of household decision-making

The field of economics has traditionally focused on modeling and understanding individual decision-making. The discipline typically portrays rational individuals, who make choices to maximize an objective function, representing their individual welfare given the relevant constraints including time, ability and material resources. However, we know that many of the important decisions consequential for children, are taken within the household, and it is not clear whether the focus on individuals will give the right picture of the decision-making process.

We will here present some models of household decision-making that have been focused on in the literature.

We start with a brief discussion of the *unitary model* and then consider deviations from it.

2.4.1. The unitary model

The unitary model considers the household as one unit, which means that it does not matter whether the mother or the father receives some money for example, as the household would act in the same way independently. It may still be that what the household does is a function that weighs in both mother and father preferences as well as beliefs, but the way it weighs

those in, is predetermined and do not vary with e.g., how much money the father or the mother brings to the family in different time periods.

Let us express individual utility, for, say, individual $i \in (a, b)$, as a function of a vector of public goods (Q), a vector of private goods for the woman, a , (q^a) and private goods for the man, b , (q^b):

$$U^i(Q, q^a, q^b).$$

Let us further assume that individual utility is concave and twice differentiable in (Q, q^a, q^b) and strictly increasing in own consumption (Q, q^i) .⁸ Consider that the standard assumptions of rationality and monotonicity/non-satiation are satisfied (see e.g., Mas-Colell et al. 1995, chapter 3).

One representation of the unitary model is a weighted sum of the utility function of the two elements in a couple, typically a woman and a man:

$$\begin{aligned} U(Q, q^a, q^b) &= W(U^a(Q, q^a, q^b), U^b(Q, q^a, q^b)) = \\ &= \pi U^a(Q, q^a, q^b) + (1 - \pi) U^b(Q, q^a, q^b) \end{aligned} \quad (1)$$

where π and $1 - \pi$ are fixed weights so that no other terms than the quantities enter as elements of the utility function. The theory is silent here about what determines these weights. Equation (1) essentially defines the utility function for the unitary household. In the example,

⁸Note that this allows for selfish individuals that do not care for the other household members, and even negative consumption externalities between members.

we are considering these weights to be the same for all households. Such an assumption, however, can be relaxed.

The unitary household maximizes this utility function given the household budget constraint:

$$P'Q + p'(q^a + q^b) = x$$

where p and P are vectors of prices for private and public goods, respectively, and x is income.

As the household acts as one unit, standard assumptions from consumer theory can be imposed and the decision problem can be analyzed as standard utility maximization under a budget constraint. Assuming “well-behaved” preferences (continuously differentiability and quasi-concavity of the utility function), this maximization problem leads to standard demand functions:

$$q^i = f^q(x, p, P) \quad \forall \quad i = a, b$$

$$Q^i = f^Q(x, p, P),$$

The weights given to the individuals within the households are constant and essentially play the same role as the other parameters of the individual utility functions U^i .

Typically tests fail and reject the unitary model. This means that the world is typically more complicated and we need to actively consider how the decision-making weights for the mother and father are determined. Thus it will typically matter whether the mother or the father is the recipient of transfer schemes or other targeted policies. Understanding how this matters is

crucial for policy makers aiming at designing programs that help families in need and promote child development.

2.4.2 Cooperative models

One way to study this topic is within the class of cooperative bargaining models where the household is modeled as two (or more) agents that bargain over consumption and other choices. Models from cooperative game theory can be used to find outcomes for the household bargaining problem.

Within the class of cooperative models, the most studied one is the so-called collective model, developed in Chiappori (1988, 1992), and Browning and Chiappori (1998).

2.4.2.1 The static collective model

In the collective model, it is assumed that the household always acts in a way that secures efficiency and as such simplifies the allocation problem to a choice of an equilibrium point on the Pareto frontier. The decision-making weights are modelled as a function of prices, household income, as well as other so-called distribution factors, such as the woman's share of income.

The household utility function can be expressed very similarly to that of the unitary model, the only difference being that the decision-making weights are functions of prices and income, as well as potential distribution factors, $\mathbf{z}$:

$$\begin{aligned} U(Q, q^a, q^b, \mu(p, x, z)) &= W(U^a(Q, q^a, q^b), U^b(Q, q^a, q^b)) \\ &= \mu(p, x, z)U^a(Q, q^a, q^b) + (1 - \mu(p, x, z))U^b(Q, q^a, q^b). \end{aligned}$$

2.4.3 Non-cooperative bargaining models – when is bargaining not efficient?

If household behavior is modeled non-cooperatively, see e.g., Ulph (2006), then no binding agreements between members are assumed and the optimal decisions need not be efficient.

In the simple situation in which preferences are egotistic, and all commodities are privately consumed, the non-cooperative solution boils down to two separate maximization problems, one for each of the two adult individuals considered as decision makers. Each individual, i , maximizes individual utility:

$$U^i(q^i), i \in (a, b)$$

given their individual budget constraint, which is their own individual income:

$$p^i q^i \leq x^i.$$

Each of the two maximization problems lead to individual demand functions with standard (neoclassical) properties but associated household decisions (the aggregate of the two) does not in general satisfy the properties from individual demand theory. With this setup, inefficiency is likely to occur.

2.5 Targeted transfers

In this section, we study the literature on the effects of targeted transfers and female control over resources on family spending. We summarize reported effects on four different outcome variables: food (expenditures or composition of diet), children's clothing (expenditures), children's education (expenditures and outcome variables), and children's health (expenditures and outcome variables). These domains have been extensively studied previously, and are also the focus of our empirical analysis. In each section, we start by considering studies using cross-

sectional data and we follow up by the studies using experiments (either natural experiments, RCTs, field experiments, or lab experiments). In the last part of each section, we provide a summary of the findings.

2.5.1 Food

Food expenditures are the most studied consumption category in the literature. Using a large expenditure survey from Brazil, Thomas (1990) finds that the effect of money in the hands of women increases nutrient demand by 4-7 times more than income in the hands of men. The numbers are based on non-earned income. In a different study (Thomas 1993) uses real budget data from Brazil and finds heterogeneous effects depending on whether the family has one or two incomes. In families where only one spouse has an income, he finds that the share of expenditures spent on food declines more if the income is in the hands of women, but the diet is more nutritious when women's income increases. In couples where both spouses earn an income, however, Thomas (1993) finds no evidence that income earned by men and women is spent differently. Hoddinot and Haddad (1995) find a positive association between women's income share and the budget share spent on food in Cote D'Ivoire. Phipps and Burton (1998) use the 1992 Statistics Canada Family Expenditure Survey and find an ambiguous effect of women's income on food expenditures. Specifically, they find that families spend more on restaurant food when the wife's income increases, but there is no difference in expenditures on home food. Quisumbing and Maluccio (2000) use cross-sectional data from Bangladesh, South Africa, Indonesia, and Ethiopia and use women's assets at marriage as a proxy for women's decision-making power. They find no effect on food expenditures of increasing women's decision-making power in Bangladesh and South Africa, while in Ethiopia and Indonesia, increasing women's decision-making power has a positive effect on food expenditures. Doss (2006) also uses women's assets at marriage as a proxy for women's decision-making power and finds a positive effect on food expenditures.

Several studies have used Oportunidades (former Progresa) in Mexico to estimate the effect of conditional cash transfer to women on food expenditures. Even within this program, the results are mixed. Attanasio and Lechene (2002) find that the expenditure share spent on food

decreases when the wife's income share increases.⁹ Rubalcava et al. (2009) also find that food expenditure share decreases after the cash transfer, however the diet quality increases. Angelucci and Attanasio (2013) find that both the expenditure share on food and the diet quality increases after the cash transfer and attributes this to women being the recipient. Attanasio et al. (2012) study a conditional cash transfer program in Colombia, and find that the budget share spent on food increases after the transfer and attributes the finding to women being the recipient.

It has become increasingly common to randomize the gender of the recipient of a cash transfer. We are aware of three such studies that investigate the effect on food expenditures or diet quality. In Burkina Faso, Akresh et al. (2016) find that in times with little rainfall, targeting men improve the diet for children (compared to targeting women). In Macedonia, Armand et al. (2016) find that targeting women increases the share of expenditures spent on food by 4-5 percentage points (compared to targeting men) and that with initially low levels of food expenditures, there is also a shift towards a more nutritious diet. Finally, in Kenya, Haushofer and Shapiro (2016) find no difference between male and female recipients, but the power of this comparison was limited in this study.

A note of caution is important when discussing food expenditures. Usually, families' food expenditures are observed, and not the within-family allocation of food. Thus, we do not know for certain who benefits from increased expenditures on food.

2.5.2 Clothing

When it comes to expenditures on children's clothing, studies show either a positive effect of targeting women or no effect. Thomas (1993) finds no effect of the share of family income earned by men on expenditures on children's clothing. In line with this, Doss (2006) finds no effect of women's assets in Ghana, and Quisumbing and Maluccio (2000) find no effect in Indonesia, Ethiopia, and South Africa. Hoddinott and Haddad (1995), Phipps and Burton (1998)

⁹ If the wife's income share is instrumented with the transfer, Attanasio and Lechene (2002) find no effect on the share of food expenditures.

and Quisumbing and Maluccio (2000) on the other hand, find a positive effect of women's income share on children's clothing in Cote d'Ivoire, Canada, and Bangladesh.

A seminal paper by Lundberg et al. (1997) studies the effect of a change in the UK Child Benefit law. After the law change, the child benefit was shifted from men to women. They find that this shift increases expenditures on children's clothing. Ward-Batts (2008) replicates this finding using the same law change. Using data from Oportunidades, both Attanasio and Lechene (2002) and Rubalcava (2009) find a positive effect of an increase in women's income share on the budget share spent on children's clothing. Studying a conditional cash transfer in Macedonia; however, Armand et al. (2016) find no differences in budget shares spent on children's clothing for female and male recipients.

2.5.3 Education

Thomas (1993) finds that income in the hands of women is associated with a larger increase in the budget share spent on human capital (including both health and education) compared to income in the hands of men. However, this is only true for families where only one of the spouses has an income. In the case where both have some income, there is no difference. Phipps and Burton (1998) find that expenditures on child care increase with women's income in Canada. Quisumbing and Maluccio (2000) find that women's assets do not affect educational outcomes in Bangladesh, Indonesia, and Ethiopia, but affect educational outcomes positively in South Africa. In line with the results from South Africa, Doss (2006) finds a positive effect in Ghana.

Using Oportunidades, Rubalcava et al. (2009) find a positive effect on women's income share on educational expenditures. However, cash transfer programs (both conditional and unconditional) that randomize the gender of the recipient, generally find no difference between male and female recipients (Benhassine 2015; Akresh et al. 2016; Armand 2016; Armand et al. 2016; Haushofer and Shapiro 2016). Armand (2016), however, shows that the effect of the cash transfer program depends on parental beliefs of returns to education. In a lab experiment in Dar es Salaam, Tanzania Ringdal and Sjursen (2021) ask couples to allocate an

endowment between the wife, the husband, and tutoring for one of their children. The authors find that whether the husband or the wife makes this decision does not affect the allocation to tutoring. In a similar set-up in another district of Dar es Salaam, Schurz (2019) find that women allocate more resources towards school materials than men do.¹⁰

2.5.4 Health

Both Thomas (1990) and Thomas (1993) find a positive effect of income for women on health; however, Thomas (1993) finds this relationship only for couples where one spouse has an income. Quisumbing and Maluccio (2000) find a positive effect of women's assets at marriage on children's health in Indonesia, no effect in Ethiopia and South Africa, and a negative effect in Bangladesh. Similar to the results from Bangladesh, Doss (2006) find a negative effect in Ghana.

Using a reform in the pension system in South Africa, Duflo (2003) finds that pensions received by women had a positive effect on girls' anthropometric status, but no effect on boys. Pensions received by men do not affect either outcome. Akresh et al. (2016), Armand et al. (2016), and Haushofer and Shapiro (2016) do not find any difference in children's health expenditures and outcomes when considering the difference between a female and a male recipient, keeping in mind the previously mentioned caveat on limited power in this comparison.

2.5.5 Overall effects

The studies in the literature discussed above, are covering different populations – none of them the Norwegian population. We would like to stress here the need for evidence on family decision-making, parental beliefs and preferences, and child development from the Norwegian setting. This is crucial in order to be able to form the best policies for children and families with children in Norway. However, as we believe that we may learn something in general from the evidence from other settings, we will summarize the findings from the existing literature here.

¹⁰ The key differences between the two studies in Tanzania are (i) what children are given (tutoring vs. school materials) and between who the allocations are (wife, husband, and child vs. self and child).

Table 1 summarizes the literature review from the previous sections. First, we note that across all domains, most studies either show a positive or no effect of targeting women and increasing their control over resources. In other words, it appears to be unlikely that increasing women's decision-making power within the family will have adverse consequences for children.¹¹ Second, more than 50% of the studies show a positive effect when it comes to food expenditures or food quality and children's clothing.

In contrast, less than 30% of the studies show a positive effect in terms of education and health. This might be due to food and clothing being, traditionally, areas where the women are in charge, while spending on education and health do not have the same stereotypes. It should also be noted that all these studies compare income/assets in the hands of women versus income/assets in the hands of men. Generally, an increase in income at the family level has a positive effect on all four domains. However, the effect is often *more* positive (especially for food and clothing) if the income/assets are in the hands of women.

Effect of cash transfers to women and increases in women's income/assets					
	Positive	Negative	No effect	Ambiguous	No of studies
Food	9	1	3	3	16
Clothing	7	0	6	0	13
Education	4	0	9	1	14
Health	3	2	5	1	11

Note: The table displays the number of studies with positive, negative and no effect on spending from targeted transfers to women.

¹¹ Studies having an ambiguous effect are mostly studies with positive and no effect results Thomas (1993); Attanasio and Lechene (2002). The exception is Phipps and Burton (1998) for food expenditures, where it is unclear whether an increase in expenditures on restaurant food is a positive effect or not.

3 Knowledge needs

Throughout the literature review, we have marked some knowledge needs. First, we lack evidence on how gender differences in time-, risk-, and social preferences vary with income/SES and across poorer and richer countries. This evidence can be important to understand the behavior of both low-income and immigrant families within Norway. Such an understanding is crucial in order to be able to design the best family policies targeted at child development, as these families may be the most vulnerable, at least in some dimensions, and therefore also important to reach with the right policies to avoid intergenerational transmission of poverty and despair. For example, if parents of immigrants are too risk averse or impatient, it may be worthwhile to target information campaigns or conditional transfers to induce these families to take more risks in education.

There is also a need for more evidence on allocation preferences across families from different socioeconomic groups as well as across mothers and fathers within families, globally and in Norway, and a need for evidence of belief differences across socioeconomic groups as well as across mothers and fathers, globally and in Norway. For example, if there are larger gender differences in beliefs for some groups of immigrants – different beliefs about the returns to education may e.g., occur if only males are active in the labor market and/or take higher education – this is important knowledge for policy makers. If the goal is to facilitate higher education for this group in the society, it may be better to target fathers with incentives such as conditional cash transfers, or mothers with information campaigns about the actual returns.

In general, there is a need in Norway, but also globally, for more knowledge about the effects of policy programs on families. In particular, as many programs such as the child allowance program in Norway, target mothers, there is a need to understand the effect of targeting either the mother or the father. More generally, there is also a need to understand how much we should actively involve mothers and fathers in child programs, such as potential parent academies at schools aiming to prepare parents to contribute to successful schooling and education of their children.

For policy design, there is also a need to focus attention on the families in conflict. Conflict in decision-making may occur within families or exist and occur in broken families, i.e., in families where the mother and the father is divorced or separated. We do not have a systematic data set measuring degree of conflict in decision-making within families. This is needed as we need to be able to identify these families and study them in particular in order to form policies that help reduce the possible negative effect of conflict on children.

We believe that designing and conducting robust experiments -- ideally in collaboration with the relevant authorities and public sector institutions -- would help meet these knowledge needs and subsequently help forming efficient policies.

We have discussed how differences in preferences and beliefs may affect how decision-making is working and also that policies should be formed and targeted with the knowledge of these differences in mind. We will now turn to a brief discussion of the usefulness of economic experiments (in the “laboratory” and the “field”) and surveys.

3.1 Laboratory experiments

To identify allocation preferences as well as decision-making power in the household, laboratory experiments have proven useful (Almås et al. 2018; Ringdal and Sjørusen 2021; Cherchye et al. 2021).

We believe that such experiments can be run in Norway to nail down particular important behavioral parameters for households.

FAIR/NHH is currently designing such experiments for a large sample of Norwegian families with children 2-4 years. The aim of the project is to start closing the gap in the literature by improving the method of measuring how mother and fathers allocate resources within the family. Through this and a substantial data collection effort, will provide novel evidence on the effect of targeted transfer policies on household resource allocation, and study the underlying mechanisms.

As a first part of this study, we will collect data on how parents choose to spend 1700 NOK, an amount that is equivalent to the child allowance per month in Norway for a child 5 years or younger. We will ask about 7000 parents with a child that is between 2 and 4 years old to allocate the money between household members and expenditure categories and randomize whether we ask the mother or the father in the household to make the decision. We will then be able to study to what extent mothers and fathers make different choices. About 1000 parents will make actual choices about actual money (incentivized choice), and about 6000 will respond to a hypothetical question on how they would allocate the same amount of money.

Through the design, we aim to answer the following research questions:

- Do the parents reveal the same allocation preferences with hypothetical questions as they do when they make real choices?
- Do mothers and fathers choose differently?
- Do parents with different socioeconomic status choose differently?

If the results from the hypothetical question are the same as the results from the incentivized choice experiment, we have verified a survey instrument that can easily be rolled out on large population to investigate the effect of gender targeting (or targeting of other pre-specified groups such as those based on socioeconomic status).

3.2 Field experiments

It is also possible to conduct large field experiments to test how targeted transfers affect family decision-making and child outcomes. The literature review has discussed many such experiments globally.

In Norway, with the sample of children recruited by NHH/FAIR, it would be possible to also include a treatment for part of our sample (and leave the other part of the sample as a control group). We could for example test an information campaign on the usefulness of reading for child every day and study the effect on later educational performance.

3.3 Surveys

Generally, surveys are important tools for gathering information from families. In particular, for the elicitation of beliefs as discussed in Section 3, surveys are useful tools. In the study of families in Norway, NHH/FAIR could extend the survey to also elicit beliefs. Another possible extension would be to add a question about whether the parent sees their own family as a family in conflict. This could be a useful tool to help us analyze whether these families make different choices than other families, and whether we see any signs that mothers make better choices for the children than the fathers for these families.

In order to reach a sufficient number of families in conflict, it may be beneficial to increase the general sample size to have more families that are “in conflict”.

4 Policy implications

Building on our discussion of targeted transfer programs, we would claim that a new discussion on the general focus on mothers, and in particular how to transfer the child allowance (barnetrygd) – that is currently given to mothers as a default – is in place. There is not sufficient empirical evidence to back the claim that children benefit more from mothers receiving the child allowance than fathers. Denmark has recently changed the targeting and they now split the child allowance between the mother and the father as the default. It may be better if Norway considered the same change for the following reasons.

First, transferring the money to the woman may give a signal that she is more important for the child, which may feel unfair for fathers, many of whom today are very involved with their children. Second, transferring to the mother, may give signals that she *should* to a larger extent than the father, take care of the children, which may help preserve traditional gender roles instead of promoting gender equality in the labor market and at home. Third, for families in conflict, or at risk of being non-cooperative or becoming in conflict, a system that systematically “reward” one party for having children in particular ages, but not the other, may spur conflict in cases where fathers are at risk of feeling marginalized by the system.

Turning to the parental leave compensation (foreldrepenger), we have seen some reforms lately, that have encouraged the father to take out more leave than before. Through this we have seen that fathers have become more engaged with children something that supports our claim that there are good reasons to equalize between mothers and fathers in public welfare programs. For example, Kotsadam and Finseraas (Kotsadam and Finseraas 2011) find an effect of the first Norwegian daddy month in 1993 on division of household work 13 years later. The authors find that couples with children born after the reform have fewer conflicts about household work and they share household chores more equally.

In this report we have touched upon both potential causes and potential consequences of poor child development. Questions about finances can be both a source of conflict and a factor that further reinforce existing family disputes. Conflicts about finances can occur if parents disagree on family spending, for example about how much they should spend on their children and what the money should be spent on. When parents no longer live together, these disagreements may increase, for example in the calculation of child support. If the receiver of the child support additionally uses the money in a manner that the payer of the child support disagrees with, this may further increase the conflict.

Non-cooperative parents and families in conflict are more likely to end up with more challenges in general, and poorer child development in particular. Families in conflict may also have a larger probability for child poverty because resources may not be spent as efficiently as in the cooperative households (see discussion around the non-cooperative household models above). The lack of resources for children may lead to lower child investment and development. Further, conflict in the family setting may cause children to suffer both emotionally and materially. Hence, an important policy implication is that we should design systems that seek help families in conflict and also try to mitigate conflict in first place. This will require knowledge about differences across parents, in beliefs, preferences and decision-making power, knowledge that we to a large extent lack in the Norwegian system. Further, the systems in place should secure that both parents are treated with respect. Similar rights for mothers

and fathers may help mitigate conflicts, and therefore help reduce child poverty and more generally bad outcomes for children.

Public institutions contribute to parent and family cooperation by e.g., offering couple therapy, family therapy, and parent support programs in the municipalities. In addition, they also offer mediation in cases of divorce or separation. Parents with children below the age of 16 are required to mediate upon separation or to file a parental dispute case with the court. The goal of the mediation, according to the Norwegian law relating to children and parents, is for the parents to create a written agreement about custody, access and parental responsibilities. The mediator is responsible for informing the parts about the most significant economic impacts an agreement will have, such as the right to child support. The parts should also be notified that the amount of child support will depend on how parents share custody of the child. In the case of sole custody, the parts should also be notified that it may impact status as single parent regarding taxation and social security regulations. Other topics, such as division of debt and housing arrangements, are not included in the mediation. Again, knowledge about potential differences in preferences, beliefs, decision-making power and spending patterns of mothers and fathers may be key to succeed in this support for couples in conflict. Further, meeting both parties with respect, equal treatment and equal rights, may help mitigate the conflict in the case where a mediator is needed. It may be worth discussing the gender of the mediator, whether it would be good to have one woman and one man in the room in order for both parties to feel equal. More research is needed in order to understand how institutions, such as the mediator in the example with separation and divorce, work and can be improved to help minimize the level of conflict.

The most important institutions for young children, is still, undoubtedly the family. If the family does not function in an optimal way, and if there is conflict and lack of cooperation, children will most likely suffer, both in terms of learning, mental well-being and general welfare and development. In the economic domain, non-cooperative families, will possibly not choose efficient solutions and hence resources that could have been used to increase well-being for members in the family, such as the children, are wasted.

We have discussed this at the theoretical level, but in order to get a better understanding of how severe such problems are in Norway and how policy can be formed to mitigate these problems, more analysis of data on families are needed. In particular, we need to know more about the families in conflict and their main barriers to more efficient decision-making.

One question that would be worth studying in this regard is: do mothers and father in families with (different degree of) conflict have different preferences and/or beliefs regarding returns to investment in children? When more information about these families is in place, it is easier to inform policy making about the important premises for success. It would be possible to use laboratory experiments and surveys to study this. Further, it would be possible to use field experiments testing different policies such as how to meet families in conflict. Does it matter whether the person representing the relevant authority is a man or a woman? Does it matter whether immigrants are met with a person that speaks the relevant native language?

NHH/FAIR currently has an ongoing study on the family spending, focusing on how mothers and fathers choose to spend cash transfers such as child allowance (barnetrygd) and cash for care (kontantstøtten). The study is based on three factors that determine how a family makes decisions about spending:

1. Preferences for how and how much the mother and father desires to spend on children. For example, if they desire to save their money or to spend it on activities now, as well as which activities they would like to spend it on.
2. Beliefs the mother and father have about what use/returns different spending has for the child's development. Is for example healthy foods or books more important?
3. Negotiation power in financial decisions of the family and if a cash transfer to the mother or the father will impact the balance of negotiation power in the family.

NHH/FAIR have also conducted earlier studies on how parent characteristics impact allocation of resources to children (Ringdal et al. 2018; Almås et al. 2020; Ringdal and Sjursen 2021), and many studies of how parent characteristics impacts children's choice of school, education and

income (Black et al. 2005b, 2011, 2014; Bjørklund and Salvanes 2011; Almås et al. 2016c, b, a; Carneiro et al. 2022).

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