Intergenerational Determinants of Income Level in Finland

Outi Sirniö, *University of Helsinki*
Pekka Martikainen, *University of Helsinki*
Timo M. Kauppinen, *National Institute for Health and Welfare*

This study estimates the level of intergenerational transmission of income in Finland and assesses the contribution of parental and personal socioeconomic and demographic characteristics to this relationship. We used a longitudinal register-based data set covering two decades and selected cohorts born between 1973 and 1976 for analysis. The results demonstrate strong intergenerationality, with those from the lowest and highest income quintiles being the most probable to remain in the same income quintile in adulthood. Approximately half of these associations are attributable to parental characteristics among men and by personal characteristics among women. Our results further show complex interactive effects, with higher-income parents unable to entirely protect their offspring from the negative impact that unemployment, single parenting, and living alone has on personal income levels. These findings demonstrate significant and multifaceted intergenerational continuities in income level even in a Nordic welfare state such as Finland.

Background

Studies of intergenerational income mobility abound—mostly in the field of economics. Parental income level has been shown to influence offspring's income level both in Finland and in other Western countries (e.g., Aaberge et al. 2002; Björklund et al. 2002; Blanden 2009; Jäntti et al. 2007; Pekkala and Lucas 2007; Österbacka 2004). However, research on income mobility seldom incorporates information on other parental and personal socioeconomic and demographic variables, such as education, class, unemployment, and family structure, despite the strong evidence concerning the effects of parental background and personal characteristics on personal income (e.g., Björklund et al. 2002; Blanden 2009; Solon 2002).

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Our aim is to examine the intergenerational association between parents' and offspring's income in contemporary Finland. We focus on intergenerationality in the highest and lowest income levels in more detail, given that the strongest association between parental and personal position is to be found at both ends of the stratification. This study is novel in three respects. First, the register-based data allow us to study intergenerational income transmission while simultaneously assessing the contribution of other social and family characteristics to this relationship. Prior research has generally concentrated only on the association between father's and offspring's earnings, without allowing for other social factors characterizing the family background. Second, the high participation rates of women in the labor market in Finland also allow us to reliably compare women's intergenerational income mobility patterns to those of men. This is a novel initiative, as gender differences are still rarely studied in stratification research. Third, as a Nordic welfare state, Finland provides a research setting with comparatively strong social policies aiming at achieving, for example, smaller welfare differences between population groups, low income inequality, and low economic barriers for attaining educational qualifications. In spite of these universal policies, prior results on the intergenerationality of income in Finland and other Nordic countries (e.g., Hansen and Mastekaasa 2006; Jæger and Holm 2007; Österbacka 2004) show strong intergenerationality that is not based solely on the deployment of the family of origin's financial resources.

Mechanisms of Intergenerationality

The most direct channel of income-level intergenerationality is the utilization of parental monetary resources to help offspring to acquire personal resources that are valued in the labor market. Parents may also transfer property, and thus increase their offspring's income from capital in adulthood. Goldthorpe (2000) argues that people from different backgrounds use distinct approaches in order to either maintain or improve their position relative to their childhood circumstances. According to Goldthorpe, people with a less advantaged background use "strategies from below," such as obtaining a higher educational level, in order to improve their social standing. These strategies are prone to being undermined by those who are more advantaged, however, who use "strategies from above" in order to maintain their privileges. Strategies from above include the utilization of social connections, achieving higher and more specialized educational qualifications, direct income transfers, and higher parental advocacy of risk-taking, for example. Pursuing these strategies is unlikely to be constrained by inadequate resources such as lack of parental encouragement, ascribed attributes, and monetary support. Goldthorpe also argues that, as the main aim of strategies from both below and above is to prevent offspring ending up in a disadvantageous position, parents can regulate the extent of resource deployment according to the risk of confronting disadvantages: the greater the risk, the more extensive the deployment. Because parents from lower social positions have fewer socioeconomic resources to deploy, their prospects of shielding their offspring from disadvantage are smaller.

Achieving a higher educational level is the most notable way of obtaining and maintaining a high social position (e.g., Bowles and Gintis 2002; Goldthorpe 2000). Parental socioeconomic resources are believed to matter when it comes to attaining educational credentials, both directly in that wealthier parents are better able to fund educational costs, and indirectly in that low-income parents may transmit disadvantageous traits such as low skills or a lack of aspiration. Studies concerning parental characteristics other than income indicate that the effect of social background on educational achievement is similar or even stronger in the Nordic than in other Western countries (Breen et al. 2010; Triventi 2013): even though schooling is state financed and independent of parental economic resources, previous Nordic studies have implied that not only do parental resources affect offspring's outcomes in purely economic terms, parents also transmit other non-economic sources of stratification (e.g., Hansen and Mastekaasa 2006; Jæger and Holm 2007). In other words, parental income may indirectly affect income level of offspring via other socioeconomic characteristics. For example, parental income is likely to have a major influence on offspring's education and unemployment, which will be linked with offspring's income later in life.

Parents also pass on assets other than monetary resources to their offspring that could be related to their level of income: social connections, beliefs and skills, abilities, and preferences and aspirations. These assets are not exclusively linked to parental income level but also reflect the family culture, which in turn is related to parental educational level and social class. For example, parents with a higher educational level are more likely to have higher expectations concerning their children's future careers. Thus, the household's socioeconomic position as a whole affects the intergenerational transmission of income level (e.g., Bowles and Gintis 2002; Harding et al. 2005; Jencks and Tach 2006).

Given the many aspects involved in the distribution of socioeconomic resources across families and the transmission of income from generation to generation, it is worth taking into account the interrelations among other key socioeconomic characteristics, such as social class and educational level. This is still not enough, however, because other characteristics of the parental family are connected to the income achieved in adulthood. The demographic characteristics of the family have proven to have an association with offspring's personal income level, for example. A stronger association between parental and personal income has been traced among children originating from single-parent households as opposed to dual-earner families (e.g., Björklund and Chadwick 2003). Children from single-parent families with female headship are also more likely to become poor than children from two-parent families (Musick and Mare 2006). Demographic conditions should therefore also be taken into consideration in studies focusing on the effects of the childhood family.

As discussed above, parental income might affect the offspring's income indirectly via other pathways than direct economic support. It has been shown to affect personal educational level (e.g., Blanden and Gregg 2004; Hansen 2008) and family structure (e.g., Blanden and Gibbons 2006; Sigle-Rushton 2004). Studies conducted in the United States have shown that a low income is most

likely among females and non-married adults with a low-level manual occupation (e.g., Raffalovich, Monnat, and Tsao 2009). According to Vandecasteele (2011), poverty risk in Western Europe is highest among single women, single mothers, and people with a lower educational level, and unemployment and partnership dissolution increase the risk (Vandecasteele 2011). Previous studies have shown that the effect of parental income on completed schooling is higher among children from low-income families because a low parental income predicts lower educational attainment (Duncan et al. 1998; see also Harding et al. 2005), implying a possible nonlinear effect between parental income and personal schooling. Given that parental income may have an association with personal socio-demographic characteristics, we included these factors in our analysis in order to describe the mechanisms of intergenerationality in more detail.

Methodological Aspects

In view of the fact that many previous studies on income mobility focus solely on father-son correlations of income (e.g., Aaberge et al. 2002; Björklund et al. 2002; Solon 2002), we decided to examine males and females separately. Thus far there is a lack of detailed research on gender differences in intergenerational income and the intergenerational role of both parents. Paternal and maternal roles in managing households differ, and gender differences in labor markets have a diverse influence on women's and men's socioeconomic outcomes. For example, Beller (2009; see also Hansen 2010; Musick and Mare 2006) found that each parent's effect on his or her children's opportunities in adulthood was equally significant, joint-parent measures of family of origin incorporating both parents' social characteristics having been shown to explain mobility patterns the best (e.g., Chadwick and Solon 2002; Ermisch, Francesconi, and Siedler 2006). The association between parental and offspring income has been found to be stronger when parental income is measured by taxable household income instead of only the father's earnings (Chadwick and Solon 2002; Lucas and Pekkala 2003). Previous studies have indicated that the income level of the whole household is a more accurate measure of the socioeconomic position of family members—in other words, their position in the system of stratification relative to others—than the breadwinner's earnings (DiPrete and McManus 2000). We therefore consider it essential to include the income of the whole household and not just the earnings of the family breadwinner. Such a measure will account for the positive impact of the partner's earnings on the family's standard of living, and the protective influence against the breadwinner's unstable income.

Furthermore, examining correlations or other linear summary measures of the association between parental and offspring income levels may be restrictive, especially in cross-country comparisons (Bratsberg et al. 2006). According to Bratsberg et al. (2006), the Nordic countries differ from Anglo American societies in terms of father-son income association: the association between parental and offspring income is more nonlinear. Intergenerational income mobility has been shown to be lower at one or both ends of the income-distribution scale

(Bratberg, Nilsen, and Vaage 2007; Jäntti et al. 2007). Previous studies conducted in the United States also indicate that inheritance of income is strongest at the lowest end of the income-distribution scale, and that the mobility patterns of children from low-income families probably differ from the pattern on other income levels (Harding et al. 2005). These asymmetries in the relationship between origin and destination income levels call for more detailed study of the patterns and determinants of both low and high incomes.

The Aims of the Study

Our objective is to broaden the perspective on intergenerational income mobility in Finland in the early 2000s, describing the mechanisms in more detail rather than concentrating solely on linear measurements. This study examines the intergenerational association between parental and offspring income level, and assesses the contribution of other social and family characteristics—both in the parental family and later in early adulthood—to this relationship. There are four main aims. The first is to assess the magnitude of intergenerational income mobility by gender. Second, we include other parental characteristics in the analysis in order to explain the association between parental and offspring income level, concentrating on the lowest and highest income groups. Third, we assess the extent to which the socio-demographic characteristics of offspring mediate the intergenerationality of income. Finally, we analyze the interaction between parental income level and unemployment, family structure, and the offspring's educational level under the assumption that the effects of parental income level on personal income level differ in accordance with various personal socioeconomic and demographic factors.

On the basis of previous research (e.g., Bowles and Gintis 2002, Bratsberg et al. 2006), we hypothesize that the offspring of parents with a lower socioeconomic status (income, education, and social class) have a higher risk of entering the lowest income quintile, as the resources and strategies for attaining higher income are more limited among disadvantaged families. Correspondingly, the offspring of parents with a higher socioeconomic status have better chances of entering the highest income quintile. We assume that the association between parental and personal income level is explained partly by parental educational level and social class—factors that typically precede the establishment of both parental and personal income. Furthermore, we expect personal educational level and social class to mediate the association to a certain extent, as especially education is considered to be the most efficient means of achieving higher incomes, and higher parental resources promote higher educational achievements. We also assume that people who have spells of unemployment or who are single parents have a higher risk of entering the lowest income quintile: employment is the main determinant of income, and single parents have scarce resources to obtain better incomes. Finally, we suggest that the offspring of parents in higher income groups are more likely to be protected from the effect of unemployment and single-parenting on entering the lowest income quintile compared to those of parents in lower income groups. On the other hand, a higher educational level will presumably decrease the association between parental and personal income.

Previous Finnish Studies and the Finnish Context

As in other Nordic countries, the level of intergenerational income mobility is rather high in Finland compared to the United States and other Western societies, for example (e.g., Björklund et al. 2002; Bratsberg et al. 2006; Jäntti et al. 2007; Pekkala and Lucas 2007; Österbacka 2004). According to recent Finnish studies using census-based register data, the relationship between parental family's and their offspring's income is strongest among the richest families and weakest among the poorest, and this association is stronger among men than women (Österbacka 2004). Moreover, the level of income mobility has increased in Finland since World War II, and the mediating effect of parental investments in the schooling of offspring on intergenerational income levels has decreased (Pekkala and Lucas 2007).

Intergenerational disadvantage is attributable not only to parental resources but also to the national context. Finland is a Nordic welfare state with a strong objective to protect its citizens and guarantee adequate economic resources through universal and decommodifying benefits, independently of the market or familial reliance (Esping-Andersen 1990). According to studies comparing European countries, the Nordic regime, for example, is more efficient in preventing poverty and reducing disparities in citizens' economic capacities (e.g., Fouarge and Layte 2005; Whelan and Maître 2005). Cross-national studies also indicate that the level of income inequality is low in Finland compared to other countries (e.g., Brandolini and Smeeding 2009; Fritzell, Bäckman, and Ritakallio 2012). Studying the case of Finland thus offers a unique chance to examine whether a Nordic welfare state is also able to reduce intergenerational inequalities, and whether the mechanisms of intergenerationality differ from other welfare states. According to different measurements of the relative poverty rate, Finland is also one of the European countries with the lowest proportion of poor citizens, although the relative poverty rate has increased over the last couple of decades (e.g., Fritzell, Bäckman, and Ritakallio 2012; Nolan and Whelan 2011). Tax and transfer policies offer protection from a decreasing of standard of living caused by changes in earnings or household composition. Moreover, schooling is free in Finland, and attaining educational qualifications is supported by public funds. Davies, Jie, and Zeng (2005) argue that the association between parental and personal income level is weaker in societies with a public as opposed to a private education system. Consequently, studies on comprehensive school reforms in the Nordic countries indicate an increase in the level of income mobility (Bratberg, Nilsen, and Vaage 2005; Holmlund 2006; Pekkala and Lucas 2007); however, the association between parental characteristics and their children's educational attainments has proven to be strong irrespective of the education system (Hansen and Mastekaasa 2006; Jæger and Holm 2007).

Data and Methods

The data used in this study are a unique annually updated longitudinal register data set obtained from Statistics Finland and drawn from administrative

registers. Individual-level information from censuses and employment registers, for example, is combined by using personal identification numbers. The data are a representative 11-percent sample of the whole population residing in Finland over the period from 1987 to 2007. Individuals born between 1973 and 1976 are selected for this analysis. However, those not living in the parental family (institutionalized children and those who have left the parental home, for example) between 1987 and 1991 for at least three years (4 percent) and those without information on household taxable income in adulthood (2 percent, typically those not living in private households) are excluded from the analysis. The final sample comprises of 12,798 men and 12,041 women. Parental social and family characteristics are typically assessed in 1990, when the participants were aged fourteen to seventeen, and corresponding individual characteristics between 2005 and 2007, when they were between twenty-nine and thirty-four years old. Previous studies concerning socioeconomic attainment over the life course have indicated that these characteristics tend to stabilize around the age of thirty (e.g., Bihagen, Nirmo, and Erikson 2010; Breen and Jonsson 2007; Böhlmark and Lindquist 2006). We measured parental characteristics in the subject's adolescence at a time when many educational and other career choices are made.

Measurement of Income

Annual household taxable income is used as the income measure. This variable, obtained from the official registers of the tax authorities, incorporates all forms of taxable income covering all household members and including wages, capital income, and taxable income transfers. The measure is adjusted for household size and composition by dividing household income by the number of consumption units (corresponding to the OECD equivalence scale). The level of income, both parental and personal, is calculated as the mean of three consecutive annual income amounts. Subsequently, income is divided into quintiles in order to identify the relatively lowest and highest levels.

Predictor Variables

Nine different explanatory and mediating variables are included in the analyses. Parental characteristics are taken as explanatory variables; that is, variables assumed to affect both parental income and later own income. Personal characteristics are assumed to mediate the effects of parental income on personal income. The data used in the study include individual- and household-level information about employment, social class, education, and family derived from administrative registers.

The data give information on the social class of both parents and their offspring. The classification of *social classes* used divides the population into seven categories mainly on the basis of occupation, but also by economic activity (home based, student, economically active, pensioner) and employment status (self-employed, employee). The categories for both personal and parental class are (1) upper non-manual, (2) lower non-manual, (3) skilled manual, (4) unskilled

manual, (5) farmers, (6) self-employed, and (7) students and other (including the long-term unemployed and homemakers, for example).

Educational level is measured for the individuals in the sample and separately for their mothers and fathers, and is based on the highest attained educational qualification or certificate. There are five categories: (1) the basic level (about 9 years) includes people with no non-compulsory education; (2) the upper-secondary level includes those who have taken the matriculation examination (i.e., the final examination at upper-secondary school) or who have undergone vocational training lasting three years or less; (3) the lowest level of tertiary education, meaning those with vocational training lasting for two or three years after upper-secondary education but that does not give a polytechnic degree; (4) lower-degree-level tertiary education includes those with bachelor's degrees from universities and polytechnics requiring three or four years of education after upper-secondary school; and (5) higher-degree-level tertiary education (master's and doctoral degrees from universities).

The *unemployment* measure comprises the sum of months with more than fourteen days of unemployment during a three-year period at the age of twenty-nine to thirty-four, calculated for all the study subjects. This variable is divided into three classes: (1) no unemployment, (2) between one and six months of unemployment, and (3) more than six months of unemployment during the period under study.

The family structure of both the family of origin and the offspring's own family in adulthood is defined according to the family characteristics and the marital status of the head of the household. Family structure is categorized as (1) couples (married or cohabiting) with no more than two children, (2) couples (married or cohabiting) with more than more children, and (3) single-parent households in the parental family; and among offspring as (1) single parents, (2) couples (married or cohabiting) with children, (3) couples without children, and (4) those living alone.

Methods

We used mobility tables, cross-tabulations of parental and personal income quintiles, to analyze intergenerational income associations, deriving descriptive measures of the level and pattern of intergenerational transmission of income level from them. We calculated the percentage outflow for each parental income group, and the rates of total mobility, upward mobility, and downward mobility.

Logistic regression modeling enabled us to estimate the effects of parental and personal characteristics on entry into the lowest and highest income quintiles in adulthood. The results of the models are presented as odds ratios, the first category of each explanatory and mediating variable being the reference group with an OR of 1.00. By means of the KHB method (Karlson, Holm, and Breen 2012), we provide odds ratios that are comparable across nested models. When estimating models with nonlinear outcomes, such as the binary income group, a rescaling of the model after including additional covariates causes the

error variance to change. Therefore, the interpretation of differences in coefficients between nested models is biased if the impact of rescaling is not taken into account. The KHB method provides a solution for this problem by fixing the residual variance on the same scale (Karlson and Holm 2011; Karlson, Holm, and Breen 2012). All the analyses were performed separately for men and women on the assumption that the factors under investigation are likely to influence male and female income levels differently.

Our analyses proceeded as follows. First, we estimated the magnitude of the associations between the socioeconomic and demographic indicators and entry into the lowest or highest quintile separately, thus obtaining unadjusted odds ratios (model 0). Second, we added the explanatory parental socioeconomic indicators in order to control for the differences in family of origin (models 1 and 2). Third, we derived a model incorporating personal socioeconomic variables in addition to the parental socioeconomic indicators in order to estimate the mediating effect of attained resources (model 3). Finally, in the full model (model 4), controlling for all the socioeconomic indicators mentioned earlier, we added covariates of unemployment and family structure. Odds ratios for all models are on the scale of model 4 and therefore comparable. We calculated the attenuation percentages between parameter estimates (β) in different logistic regression models as $\frac{(\beta_{yx} - \beta_{yx \cdot z})}{\beta_{yx}} \times 100\%$, where x, y, and z denote the key, outcome, and predictor variables, respectively (Karlson, Holm, and Breen 2012). In this study context, the attenuation percentage refers to the fraction of the association between parental income and personal income, which is either explained or mediated by a predictor variable included in the model.

We also estimated two-way interactions between parental income level and personal educational level, family structure, and unemployment in order to analyze the effects of parental income on entering the lowest income quintile within different subgroups. When illustrating the interactions, we show the ORs of those originating from the lowest parental income quintile, with those originating from the highest as the reference group. Differences in these ORs between educational subgroups, for example, indicate disparity in the effect of parental income.

Results

An Overview of the Intergenerationality of Income in Finland

According to the mobility tables (table 1), 74 percent of Finnish men and women aged twenty-nine to thirty-two between 2003 and 2007 were mobile; in other words, they had an income level (levels defined as income quintiles) different from that of their family of origin. Downward mobility was slightly more common among men than women in our sample, even though lower overall mobility rates have been previously found among Finnish men as compared to women in the late 1990s (Österbacka 2004). About a third of both men and women originating from families in the lowest and highest income quintiles remained on the corresponding income level: this proportion is notably higher than in

Table 1. Income Mobility: Men and Women Aged 29 to 32 between 2003 and 2007 (percentages)

	Parental income quintile	Personal income quintile in adulthood						
		Bottom	2	3	4	Top	Total	*N*
MEN	Top	11.68	12.67	16.68	23.21	35.76	100	2,542
	4	14.36	18.85	21.17	23.80	21.83	100	2,584
	3	16.63	19.82	21.03	23.40	19.12	100	2,573
	2	19.90	22.10	23.19	19.98	14.84	100	2,548
	Bottom	29.44	22.34	19.91	16.07	12.23	100	2,551
	Total	18.39	19.16	20.40	21.30	20.75	100	12,798
		Bottom	2	3	4	Top	Total	*N*
WOMEN	Top	12.78	14.81	17.82	21.38	33.21	100	2,418
	4	17.01	20.21	19.83	21.35	21.60	100	2,375
	3	21.35	21.98	21.73	19.31	15.63	100	2,393
	2	25.98	24.00	20.16	15.75	14.10	100	2,425
	Bottom	32.06	23.91	18.11	14.90	11.03	100	2,430
	Total	21.87	20.99	19.52	18.52	19.10	100	12,041

Notes: Absolute mobility rate for men 73.60 percent, women 73.50 percent. Downward mobility rate for men 38.57 percent, women 34.99 percent. Upward mobility rate for men 35.03 percent, women 38.51 percent.

the other quintiles. Previous Finnish studies have indicated that remaining in the same income category as that of the family of origin is usually more likely in the highest as compared to the lowest income level (Jäntti et al. 2007). In line with this result, the men in our sample in the highest quintile were even less mobile than those in the lowest quintile, but the women were fairly similar in this respect. However, comparing these results to previous studies is difficult because most of the previous research has not taken into account the nonlinear nature of parental-personal income association. Also, immobility at both ends of the diagonal in the table may be affected by ceiling and floor effects. A higher level of income than the parental level is not possible when the subject originates from the highest parental income quintile, and similarly a lower personal than parental income level is not possible among those whose parents belong to the lowest income quintile. Thus, immobility might appear to be stronger in the lowest and highest income quintiles.

Entering the Lowest and Highest Personal Income Quintiles

In order to further explore the association between parental and personal income levels observed in table 1, we analyzed entry into the lowest and highest quintiles by means of logistic regression models. Tables 1 and 2 in the appendix present descriptive statistics of the covariates of parental and personal characteristics

included in the modeling. When compared to those whose parental income was on the highest level, both women and men whose parental income was on the lowest level had over four times higher odds of entry into the lowest income quintile (table 2) and only a fifth of the odds of entry into the highest income quintile (table 3). The offspring of upper non-manual parents and of parents with the highest education were most likely to enter the highest income quintile, whereas the children of parents with a lower social class or a lower educational level, or who were from a single-parent family, tended to have the lowest personal income level. Male and female offspring with a lower personal social class were most likely to be in the lowest income quintile, and the higher their educational level, the more likely they were to enter the highest quintile. The ORs for entry into the lowest income quintile were multifold among men and women with longer periods of unemployment, and almost sevenfold among female single parents.

We assumed that parental income level would be closely linked to parental social class and educational level, and that taking into account indicators of societal position other than income would better represent the resources of the parental family given the variation in societal position within income groups. We also considered income level not as an independent predictor of one's personal income level but as mediating its association with parental social class and educational level. Consequently, in model 1, adjustment for parental social class and educational level reduced the relationship between parental and personal income level by 5 to 31 percent.[1] The attenuation was larger for men than for women, thereby implying that the association between parental and personal income was attributable partly to the disparities in educational level and social-class structures within the different income groups, especially among men. Parental income, educational level, and social class all impact offspring's income level. Thus, part of the association between parental and personal income seems to be explained by the effects of other indicators of the parental societal position.

We assumed that the parental family structure would affect the offspring's labor market outcomes in adulthood, and may also have partly determined the family's income level. We therefore adjusted the models accordingly (model 2), but this adjustment left the disparities in the association between different parental and personal income levels almost intact. It thus appears that the structure of the parental family does not explain the association between parental and personal income when parental social class and educational level are controlled for: there was only minor attenuation between parental income and entering the lowest quintile among women.

Model 3 examines the impact of personal social class and educational level on the association. This further adjustment produced a decline between 9 and 26 percent in the relationship between parental and personal income level, especially with regard to entry into the lowest income quintile for women (attenuation between 20 and 26 percent). This attenuation indicates that personal social class and educational level mediate the effect of parental income on the probability of women ending up in the lowest income group. Furthermore, the coefficients of

determination for both men and women clearly improve in model 3, suggesting that the personal income level is attributable primarily to personal characteristics.

In the final fully adjusted model 4, we estimated the extent to which spells of unemployment among offspring and their family structure account for the association between parental and personal income. Between 12 and 43 percent of the difference in entering the lowest or highest income quintile was attributable to these life-course factors, again most strongly among women entering the lowest quintile (attenuation between 26 and 43 percent).

Modeling the association between parental and personal income also demonstrated that entering the highest income group from a lower parental income group was more restricted than entering the lowest income group (table 1 and model 0 in tables 2 and 3), especially among women. In other words, the effect of parental income on entering the highest income level in adulthood is stronger than its effect on entering the lowest income level. In addition, the variables describing parental and personal socio-demographic characteristics were better predictors of attaining a lower than of attaining a higher income group among women than among men. Overall, after all the adjustments, significant associations between parental and personal income levels remained. The adjusted odds ratios of offspring entering the highest income quintile were less than 0.5 among both men and women whose parents were in the lowest as opposed to the highest income group. Correspondingly, the odds ratios of entering the lowest personal income quintile were 2.54 among the men and 1.71 among the women whose parents were in the lowest income group.

Instead of using income quintiles, we also experimented with models with alternative outcome definitions. We tried out models where income was defined on the basis of deciles or as income below the OECD-scale poverty threshold. These sensitivity analyses provided results very similar to those presented: in all models, we observed similar disparities between parental income groups and obtained the same levels of statistical significance.

Next, we tested the interaction terms in order to shed further light on the underlying associations between parental income level, personal characteristics, and personal income level. We were particularly interested in whether higher parental income gave protection against the risk of entering the lowest income level in case of personal unemployment or a disadvantageous family structure. We assumed, first, that single-parenting and living by oneself would increase the odds among those from low-income families of origin of entering the lowest income quintile, especially for women. Economic instability is considered to be strongest among these subgroups. We also expected that having longer periods of unemployment would provoke a higher risk of entering the lowest income quintile, especially among those originating from low-income families. We further assumed that a higher personal educational level would mitigate the association between parental and personal income so that those with parents on a lower level of income would nonetheless benefit highly from having a higher education. Consequently, the odds of entering the lowest income level would be low among those with a higher educational level, irrespective of the family background.

Table 2. Adjusted Odds Ratios of Entry into the Lowest Income Level (bottom quintile)[a] for Men (*N* = 12,798) and Women (*N* = 12,041) Aged 29 to 32 between 2003 and 2007, Calculated by Means of the KHB Method

		Model					Attenuation percentage from model 0 to 4
Parental income level		0	1	2	3	4	
MEN	Top quintile (ref.)	1.00	1.00	1.00	1.00	1.00	
	Fourth quintile	1.46***	1.28*	1.29*	1.25*	1.20	50.8%
	Third quintile	1.76***	1.45**	1.47**	1.33**	1.25*	57.8%
	Second quintile	2.28***	1.83***	1.85***	1.60***	1.45**	54.6%
	Bottom quintile	4.54***	3.63***	3.70***	2.90***	2.54***	38.3%
Pseudo R^2		.03	.03	.03	.16	.23	
WOMEN	Top quintile (ref.)	1.00	1.00	1.00	1.00	1.00	
	Fourth quintile	1.45***	1.30**	1.26*	1.15	1.08	78.3%
	Third quintile	2.04***	1.72***	1.61***	1.40***	1.27*	66.8%
	Second quintile	2.84***	2.34***	2.13***	1.66***	1.42**	66.3%
	Bottom quintile	4.24***	3.53***	3.12***	2.08***	1.71***	32.7%
Pseudo R^2		.03	.03	.03	.17	.26	

Notes: Model 0: Age-adjusted. Model 1: Adjusted for age, parental social class, and parental educational level. Model 2: Model 1 + adjusted for the structure of the family of origin. Model 3: Model 2 + adjusted for personal social class and level of education. Model 4: Model 3 + adjusted for personal unemployment and personal family structure. Attenuation percentages are calculated from logit-scale coefficients.

[a]We also tested the models including those entering below the poverty threshold (OECD scale) instead of the lowest income quintile. The results proved to be very similar with those presented in this table.

*** $p < .001$ ** $p < .01$ * $p < .05$

Figure 1 illustrates the statistically significant interactions. The ORs for entering into the lowest income quintile are presented for those with the lowest as compared to the highest parental income, separately for each category of each interaction variable. We found a statistically significant interaction between

Table 3. Adjusted Odds Ratios of Entry into the Highest Income Level (top quintile)[a] for Men (*N* = 12,798) and Women (*N* = 12,041) Aged 29 to 32 between 2003 and 2007, Calculated by Means of the KHB Method

		Model					Attenuation percentage from model 0 to 4
Parental income level		0	1	2	3	4	
MEN	Top quintile (ref.)	1.00	1.00	1.00	1.00	1.00	
	Fourth quintile	.42***	.61***	.61***	.66***	.71***	59.7%
	Third quintile	.33***	.55***	.54***	.62***	.67***	63.7%
	Second quintile	.23***	.38***	.38***	.45***	.51***	55.1%
	Bottom quintile	.17***	.29***	.28***	.37***	.44***	53.0%
Pseudo R^2		.04	.06	.06	.15	.23	
WOMEN	Top quintile (ref.)	1.00	1.00	1.00	1.00	1.00	
	Fourth quintile	.44***	.61***	.62***	.67***	.72***	60.7%
	Third quintile	.25***	.40***	.41***	.48***	.54***	54.5%
	Second quintile	.21***	.33***	.35***	.45***	.54***	60.6%
	Bottom quintile	.15***	.22***	.24***	.37***	.46***	58.2%
Pseudo R^2		.04	.06	.06	.16	.28	

Notes: Model 0: Age-adjusted. Model 1: Adjusted for age, parental social class, and parental educational level. Model 2: Model 1 + adjusted for the structure of the family of origin. Model 3: Model 2 + adjusted for personal social class and level of education. Model 4: Model 3 + adjusted for personal unemployment and personal family structure. Attenuation percentages are calculated from logit-scale coefficients.

[a]We also tested the models including those entering the highest income decile instead of the highest quintile. The results proved to be very similar with those presented in this table.

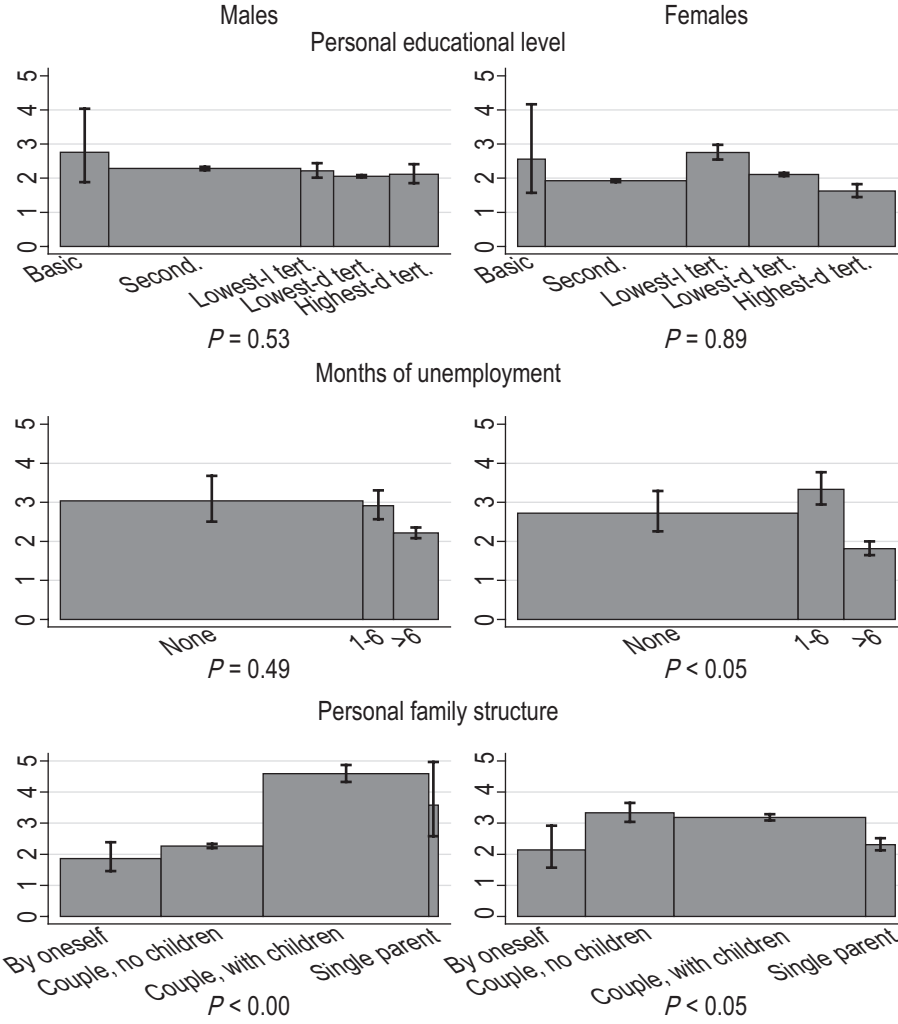
*** $p < .001$

parental income level and personal family structure for both men and women (the lowest figures in figure 1). According to our results, the effect of parental income was strongest among males living with a partner and children: for these males, a higher parental income level offered stronger protection from entering the lowest income quintile than for other males. There was the least protection for single-parent females and for both males and females living by themselves.

The interaction between parental income level and personal periods of unemployment in 2005–2007 was statistically significant for women (for men, $p = 0.49$): those with higher parental income were protected from entering the lowest income quintile especially if they had no or less than six months of unemployment (the middle figures in figure 1).

No statistically significant interaction was found between parental income and personal educational level ($p = 0.53$ for men, $p = 0.89$ for women). However, the

Figure 1. Odds ratios for entering the lowest income quintile among the offspring of parents in the lowest as opposed to the highest income quintile by personal educational level, months of unemployment, and family structure at the age of 29 to 32 in 2003–2007: OR = 1.00 indicates no disparity between the lowest and the highest parental income levels



Note: The width of the bars is directly proportional to the distribution (%) of each subgroup.

results tentatively indicate that attaining a higher educational level predicts a higher level of income among those with a high-income family background.

Discussion

We used longitudinal register-based data representing the whole population of Finland in order to analyze the association between parents and their offspring in terms of income level, and to determine the extent to which this association is attributable to other parental and personal socio-demographic characteristics. Our sample comprised men and women born between 1973 and 1976, and we explored the association between their family background and their socio-economic outcomes in adulthood. We demonstrate clear intergenerationality of income among men and women originating from the poorest fifth of families, for whom the risk of remaining on a low income in adulthood is fourfold compared to those originating from the richest fifth. Correspondingly, the odds of achieving a high income among the former are less than 20 percent compared with those originating from the latter. The association is attributable partly to parental social class and educational level, especially for men. Offspring's social class and educational level mediate the effects of the parental income more notably among women than men. These other factors explain (parental characteristics) and mediate (personal characteristics) approximately half of the intergenerationality of income in the fully adjusted model. A higher achieved educational level significantly increases the likelihood of avoiding low income irrespective of the parental income, despite its effect on personal income at all levels of educational achievement.

Parental Characteristics

In accordance with the results of previous research conducted in Finland and elsewhere (e.g., Aaberge et al. 2002; Björklund et al. 2002; Blanden 2009; Bratsberg et al. 2006; Jäntti et al. 2007; Pekkala and Lucas 2007; Österbacka 2004), the income level of parents is clearly associated with their offspring's income level in adulthood. We further show that, even though the main effects of the parental educational level and social class on adulthood incomes are strong, adjusting for these factors attenuates the effects of parental income on the adult income level only moderately: approximately one quarter of the association between parental and personal income level is attributable to parental educational level and social class. Our results also demonstrate, in line with previous studies (Bratberg, Nilsen, and Vaage 2007; Jäntti et al. 2007), that the association between parental and personal income is strongest at both ends of the income distribution: in other words, those originating from the highest and lowest income groups have the lowest levels of mobility to other income groups. A high-income family background may offer offspring adequate protection from maintaining a lower income level in adulthood, whereas the lack of resources in the lowest income group reduces the likelihood of achieving a higher level.

The offspring of single-parent families tend to be at higher risk of maintaining a low income level in adulthood (Björklund and Chadwick 2003; Musick and Mare 2006). We therefore assumed that the structure of the family of origin would explain the association between parental and personal income level. The family structure turned out to have only a weak effect on this association, however. We believe this is due partly to the fact that parental socioeconomic characteristics, in other words, income and educational level and social class, already reflect the effects of the family structure, given that the economic resources of single-parent families, for example, tend to be low.

Personal Characteristics

The effect of personal social class and educational level on the association between parental and personal income level turned out to be somewhat weaker than we expected, except for women entering the lowest income level. This is due partly to our modeling strategy, as the effects of parental education and social class are already adjusted for when the contribution of personal education and social class are evaluated. However, parental income is also relatively weakly associated with the achieved educational level in these data. Results not shown indicate that parental income is a somewhat weaker predictor of the educational level achieved than parental education. This is partly consistent with the findings Jæger and Holm (2007) report in the context of Nordic welfare states that parents' *economic* resources are not major determinants of their children's educational achievement as such, and that other characteristics in the family of origin are more significant. In other words, it seems that achieved education does not explicitly mediate the association between parental and personal income, even though the achieved educational level predicts the achieved income level to a significant extent. Previous studies have shown that father-son income correlation decreased in Finland following the comprehensive school reform in the 1970s (Pekkarinen, Uusitalo, and Kerr 2009), and this may be one of the reasons why we did not find a substantial association between parental income and personal education.

However, our results imply that achieving a higher educational level slightly equalizes the disparities between different parental income groups in terms of avoiding low income in adulthood. A higher achieved educational level offers some protection for those with parents in the lower income groups against entering the lowest income level, whereas offspring, especially women, with parents on the highest parental income level have an overall low risk of entering the bottom income quintile. As previous research has shown (e.g., Blanden 2009; Bowles and Gintis 2002; Goldthorpe 2000), educational attainment thus seems to play a key although not exclusive role in equalizing socioeconomic outcomes in adulthood. Given that Finland is, comparatively speaking, a society with a low earnings-to-education ratio (Blanden 2009), obtaining a higher education is not as attractive a "strategy from above" for maintaining the more advantaged and privileged position inherited from parents as it would be in liberal welfare regimes (Jæger and Holm 2007). Accordingly, the transmission of income level

from generation to generation is not preserved via education to the same extent in Finland as in other societies (Blanden 2009).

Esping-Andersen (2004) argues that instead of concentrating on the educational level as a main mediator, studies on the intergenerationality of social position should focus on other assets that are transferred from parents to their offspring but do not work through measured education. In showing a significant effect of parental income on individual income following adjustment for education, our results indicate that along with the general material circumstances provided by the family, intangible characteristics transmitted from parents to their offspring, such as social networks, knowledge, family culture, and beliefs (e.g., Bowles and Gintis 2002; Duncan et al. 2005; Harding et al. 2005; Roemer 2009), may contribute notably to the offspring's chances of achieving higher levels of income. Our findings that achieving a higher income level than one's parents is more dependent on these unmeasured characteristics than maintaining a lower income level further support this line of reasoning. Due to data restrictions, however, we cannot rule out the possible effect of other monetary transfers, such as inheritance, on the intergenerationality of income.

We therefore further focused our analysis on potential disparities in the effects of parental income on low income in adulthood when personal periods of unemployment and family structure are taken into account. We found that parents in higher-income groups could not fully protect their offspring from the negative impact of unemployment, single-parenting, and living alone on income level, although those living as couples with or without children benefited more. Our results are thus consistent with previous research reporting that critical life events are strongly associated with low income and poverty (e.g., Raffalovich, Monnat, and Tsao 2009; Vandecasteele 2011). However, to our knowledge, the association between personal characteristics and intergenerationality of income level has not been thoroughly investigated before.

The Measurement of Income Level

Several methodological issues should be taken into account in the interpretation of our findings. Because we used equivalized household income as the measure of achieved income level, the effect of either partner's income on the results must be considered. Previous research has shown that people tend to marry someone with a relatively similar socioeconomic position (e.g., Blossfeld 2009; Ermisch, Francesconi, and Siedler 2006). Given this assortative mating, not only do our results reflect the intergenerationality of income level from parents to offspring, they are also, to some degree, influenced by partner choice. Household composition may also affect our income measurement: one-earner households, especially with children, are more likely to have a lower income level.

Income is, nevertheless, the main class-related resource reflecting one's societal position relative to others, and households are the most important units that make use of these resources. Standard of living is associated not only with personal income but also with the income level of other household members, thus validating the use of household income as an outcome measure. We therefore

argue that our analysis of intergenerationality in household income is more meaningful than simply comparing achieved earnings with paternal earnings, as we are interested in the life chances and well-being that the family of origin is able to provide for its children and the standard of living achieved by its offspring in adulthood.

The use of equivalized household income as a measure of one's standard of living and life chances does, however, marginally change the magnitude but not the pattern of our results compared to an individual-level measurement of income. When examining entry into the lowest income level, the intergenerational association is slightly weaker when individual-level income as opposed to household-level income is used. Otherwise, the results proved to be similar regardless of the chosen income measurement. Comparability to other studies concerning the intergenerationality of income is in this regard dependent not only on the study design but also, to some extent, on the measurement of income or earnings.

We concentrated in our analysis on both the lowest and highest income quintiles, showing that the association between the levels of parental and personal income is strongest among the richest and poorest. Assessing income-level intergenerationality by means of linear measurements would not have captured this particular association between parental and personal income. Our results indicating that intergenerational income mobility from the bottom to higher income quintile is more challenging than mobility to the lowest quintile also justify our decision to measure income by category.

National Context

Even though Finland is considered to be a society with a high level of social and income mobility and a low level of income inequality compared to other Western countries, we found that the offspring of parents on higher income levels benefited greatly in terms of their own income. Income inequality in Finland has increased in recent decades. The widening income gap is attributable partly to the Finnish tax reform in 1993 that created incentives to shift labor income to capital income, especially for high earners (Fritzell, Bäckman, and Ritakallio 2012; Riihelä, Sullström, and Suoniemi 2008). At the same time, on the other end of the scale the purchasing power of the minimum amount of social benefits has declined over time, which has further increased income inequality (Fritzell, Bäckman, and Ritakallio 2012; Kuivalainen and Nelson 2012). Greater financial insecurity and inequality has strengthened the intergenerationality of socioeconomic position in Norway and Sweden (e.g., Goldthorpe 2000; Hansen 2008; Jonsson 2004; Wiborg and Hansen 2009). Although there is no direct evidence, it is possible that increasing income inequality may have influenced income-level intergenerationality in Finland, too, although previous studies have shown that social-class mobility has remained relatively stable in recent decades (Erola 2009).

We also conducted our analysis separately for both genders, taking into account the effects of both maternal and paternal characteristics on the

association between parental and personal income levels. Gender differences have not been widely studied in the fields of social and income mobility due to the lack of proper data and the low rate of female participation in the labor force in many countries. In Finland, however, the participation rate of women in the labor force is one of the highest and the proportion of women in part-time jobs one of the lowest in Western countries (Jaumotte 2003), providing a fruitful context for studies of the intergenerationality of income not only among men but also among women.

The adjusted association between parental income and entering the lowest income level in adulthood turned out to be slightly stronger for men than women, whereas with regard to entering the highest income level there was less of a discrepancy. A previous study analyzing Finns born between 1950 and 1960 reports that women's earnings are more independent of their family background than men's (Österbacka 2004). We found that the association between parental and personal income level among men was attributable mostly to parental social class and education, whereas for women it was more strongly mediated through personal social class, educational level, and life-course characteristics.

Our results imply that among those born in the 1970s the impact of family background on socioeconomic outcomes is stronger for men than for women, and women's outcomes are more strongly influenced by their own achievements than by parental characteristics. This shift may be due to the constant increase in the educational level of women in Finland since the 1950s, which has enhanced gender equality in labor market outcomes. A gendered labor market probably still affects women's income levels, as variation in incomes in female-dominated fields is relatively narrow. Another explanation for the disparity between the mechanisms of women's and men's income mobility may be found from the different gender roles that daughters and sons confront: a previous study on a Danish cohort indicates that parental income affects sons' but not daughters' educational aspirations, and this may account for the gender differences in the transmission of values (Kleinjans 2010). For example, young men with high-income parents may face stronger parental expectations for achieving a higher social status or income level than young women. As gender differences have previously been studied to a lesser degree, the differences in the underlying mechanisms between genders are still unknown. Given that assortative mating patterns have been shown to be homogamous or even hypogamous in Finland (Domański and Przybysz 2007; Mäenpää and Jalovaara 2013), we do not believe that partner choice substantially affects our interpretation of the results concerning gender disparities in the intergenerationality of income. However, further research on the contribution of assortative mating is needed.

Policy Implications and Conclusions

Research on the intergenerationality of socioeconomic position concentrates on the opportunities of children: how their social position and labor market outcomes in adulthood are related to their family background. When this relationship is weak and offspring occupy any other socioeconomic positions than the

parental position, the level of equality of opportunity is high: occupying a certain position is equally attainable for those with similar personal characteristics who make the same degree of effort.

Our results show that income level in adulthood is attributable partly to various socio-demographic factors in addition to parental income and that these factors interact in various ways. We address the need to broaden the framework of research on the intergenerationality of social position to include multiple measurements of one's position relative to others. One single measurement, such as income, social class, or education, is not able to depict the whole phenomenon of intergenerational transmission.

It appears that the transmission of socioeconomic resources from parents to their offspring is an intricate process that is difficult to disentangle. The association between parental and personal income remained strong after all our adjustments; thus, we can conclude that parental income influences the income level of offspring that we cannot explain with reference only to the other socioeconomic and demographic characteristics we took into account in our analysis. Unmeasured factors, such as wealth and favorable genes transferred from generation to generation, as well as an advantageous nurturing environment at home, are notable advantages that open up wider opportunities for those on the receiving end (e.g., Bowles and Gintis 2002; Davies 2009). On the basis of our results, we suggest that decreasing the effect of disadvantageous life-course events (e.g., unemployment) and increasing equal access to educational opportunities and labor market outcomes would be an efficient means of reducing the intergenerationality of income and increasing equality of opportunity in Finland.

Note

1. Attenuation percentages between each model were calculated using the formula described in the methods section. Only the attenuation percentages between models 0 and 4 are presented in tables 2 and 3.

Appendix Table 1. Total Distribution (%) and Main Effects (age-adjusted odds ratios of entering the highest and the lowest income quintile) of Parental Characteristics (year of assessment in parentheses), Men and Women Aged 29 to 32 between 2003 and 2007

	MEN			WOMEN		
	Total distribution %	OR (top)	OR (bottom)	Total distribution %	OR (top)	OR (bottom)
Father's social class (1990)						
Upper non-manual	16.4	1.00	1.00	16.6	1.00	1.00
Lower non-manual	16.0	.56	1.30	15.8	.64	1.22
Skilled manual	25.1	.32	1.78	24.5	.35	1.81
Unskilled manual	11.3	.26	2.17	11.7	.30	2.32
Farmer	9.0	.37	2.06	8.2	.48	1.49
Self-employed	10.5	.46	1.65	10.5	.50	1.77
Student, other	11.7	.41	2.09	12.7	.45	2.23
Mother's social class (1990)						
Upper non-manual	11.4	1.00	1.00	11.8	1.00	1.00
Lower non-manual	43.3	.53	1.32	42.7	.52	1.28
Skilled manual	10.1	.36	1.66	10.4	.41	1.90
Unskilled manual	15.1	.27	2.05	16.2	.29	2.16
Farmer	9.3	.38	1.82	8.6	.45	1.50
Self-employed	6.5	.41	1.81	6.5	.49	1.58
Student, other	4.3	.44	1.94	3.9	.31	2.26

Father's level of education (1990)						
Basic or unknown	46.7	1.00	1.00	46.6	1.00	1.00
Upper secondary	29.6	1.15	.84	29.8	1.05	.79
Lowest-level tertiary	10.8	2.07	.56	10.4	2.09	.52
Lower-degree-level tertiary	6.4	2.83	.51	6.2	2.36	.56
Higher-degree-level tertiary	6.5	3.54	.55	7.0	3.30	.43
Mother's level of education (1990)						
Basic or unknown	40.4	1.00	1.00	39.3	1.00	1.00
Upper secondary	37.7	1.30	.88	38.3	1.16	.83
Lowest-level tertiary	13.3	2.37	.68	13.4	1.99	.59
Lower-degree-level tertiary	4.9	3.01	.55	5.0	2.51	.54
Higher-degree-level tertiary	3.8	4.23	.61	3.9	3.70	.50
Structure of the family of origin (1990)						
Couple (married or cohabiting), 1 or 2 children	56.7	1.00	1.00	55.9	1.00	1.00
Couple (married or cohabiting), >2 children	29.5	.86	1.23	30.6	.79	1.41
Single parent	13.8	.82	1.44	13.5	.75	1.70
Total	100.0			100.0		

Appendix Table 2. Total Distribution (%) and Main Effects (age-adjusted odds ratios of entering the highest and the lowest income quintile) of Personal Characteristics (year of assessment in parentheses), Men and Women Aged 29 to 32 between 2003 and 2007

	MEN			WOMEN		
	Total distribution %	OR (top)	OR (bottom)	Total distribution %	OR (top)	OR (bottom)
Social class (2005)						
Upper non-manual	20.9	1.00	1.00	22.2	1.00	1.00
Lower non-manual	24.7	.41	2.16	43.8	.32	2.17
Skilled manual	21.4	.17	3.78	6.7	.14	4.92
Unskilled manual	18.4	.12	5.60	12.9	.07	7.70
Farmer	1.6	.19	6.78	1.1	.06	11.11
Self-employed	5.3	.24	8.04	3.7	.27	6.21
Student, other	7.8	.05	26.30	10.0	.07	13.13
Level of education (2007)						
Basic or unknown	12.8	1.00	1.00	7.3	1.00	1.00
Upper secondary	50.8	1.73	.50	37.4	1.60	.43
Lowest-level tertiary	8.7	2.79	.22	16.6	3.02	.18
Lower-degree-level tertiary	14.8	4.52	.18	20.4	5.15	.11
Higher-degree-level tertiary	13.0	10.25	.13	18.4	13.32	.08
Months of unemployment (2005–2007)						
None	80.1	1.00	1.00	74.3	1.00	1.00
1–6	8.1	.32	2.11	12.1	.28	2.50
>6	11.9	.12	8.60	13.6	.18	5.76
Family structure (2007)						
By oneself	26.6	1.00	1.00	18.0	1.00	1.00
Couple (married or cohabiting), no children	27.1	2.23	.23	23.4	3.73	.22
Couple (married or cohabiting), with children	43.8	.48	.81	50.7	.56	1.04
Single parent	2.6	.49	1.35	8.0	.10	6.93
Total	100.0			100.0		

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