

**Occupational aspirations
- development and consequences of failure in achievement**

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List of papers

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Gjerustad, C. and von Soest, T. Occupational aspirations – development and predictors. *Submitted to Journal of Career Development.*

Paper 2

Gjerustad, C. and von Soest, T. (2012) Socioeconomic status and mental health – the importance of achieving occupational aspirations. *Journal of Youth Studies, 15 (7): 890 – 908.*

Paper 3

Gjerustad, C. and von Soest, T. (2010) Socioeconomic status, achieving occupational aspirations and sickness absence: A population based longitudinal study of Norwegian youths. *Norsk Epidemiologi, 20 (1): 85-92.*

Paper 4

Gjerustad, C. Predicting unemployment: Occupational aspiration–achievement discrepancy as a risk factor in Norwegian young adults. *Accepted for publication by International Journal of Social Welfare.*

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1. Introduction

To decide on one's future occupation and to qualify for this through education are central tasks in adolescence and early adulthood. The decisions may involve considering one's own interests, expectations from others, current options and what it is realistic to achieve. Still, in the end, it is likely that not everyone will achieve the occupational position they want. Factors such as admission to education, failure to complete the necessary education and limited access to work may mean that the expectations cannot be fulfilled.

This thesis presents an examination of factors that are related to the occupational level that people expect to achieve and how their expectations towards occupational achievement develop during adolescence. The thesis also reports on an investigation of whether not gaining entry to an occupation that is in accordance with expectations is related to factors such as reduced mental health, increased levels of sickness absence and increased risk of unemployment.

Background

There has been only limited research on the proportion of people that gain entry to the occupation they initially aimed for, and we do not know how common failure to gain entry is in this respect. However, figures regarding admission and dropout rates in upper secondary and tertiary education suggest that such failure could be quite common.

In Norway, nearly all those who complete compulsory schooling continue with upper secondary education (Tuhus, 2013). However, since admission to upper secondary education is regulated, young people do not necessarily gain access to their preferred study program. Also, at the tertiary level, limited admission means that many do not gain access to the field of study or the educational institution they wanted. In 2013, 89 per cent of qualified applicants were admitted to tertiary level study (Norwegian Universities and Colleges Admission

Service, 2015). However, only half of these (53 per cent) were admitted to the field of study they had as their first priority. In addition, several thousand applicants were not regarded as formally qualified for tertiary education, and were therefore not admitted to any studies. This implies that a substantial proportion of young people do not gain access to their preferred education, and that they therefore may be at risk of not achieving their occupational goals.

Dropping out from school may also limit the opportunity for achieving occupational goals. Commonly, around 30 per cent have not completed upper secondary education, measured five years after they first started (Statistics Norway, 2015). Dropout rates are higher among those pursuing vocational education (45 per cent) than among those pursuing general education (20 per cent). The estimates of how many students do not complete tertiary education vary. One study showed that around one in four of those that started tertiary education in 2001/2002 had not been awarded a qualification ten years later (Statistics Norway, 2015b). Other studies have found that between 10 and 20 per cent of students leave tertiary education without a formal qualification (Mastekaasa and Hansen, 2005; Hovdhaugen, 2009). Regardless of the differences in the estimates, the studies clearly indicate that the dropout rates are substantial, both at the upper secondary and tertiary levels.

In addition, findings regarding access to work also imply that many will not get into the occupation they initially aimed for. On average, between 1.7 and 3.5 per cent of workers have been registered as unemployed during the last ten years (The Norwegian Labour and Welfare Service, 2015). The low unemployment rates suggest that the opportunities for finding jobs are currently good. However, this does not necessarily imply that people find employment in an occupation that is in line with their expectations. Some may not get access to jobs that match their plans. Studies show that many people are working at a lower level than their education otherwise indicates (McKee-Ryan and Harvey, 2011; Kjeldstad and Nymo, 2012).

Aim of the thesis

All in all, the figures presented in the previous section suggest that many young people in Norway will experience problems achieving their educational and occupational goals, such as difficulties with admission to their preferred field of study, failure to complete education and difficulties in finding suitable work. This may lead people to rethink their occupational goals. Some may also end up in a lower occupational position than they had anticipated. In spite of a potentially large number of young people experiencing difficulties in achieving their educational and occupational goals, relatively few studies, Norwegian or international, have examined change in educational and occupational expectations and failure to achieve such expectations. Therefore, little is known about how expectations develop, how many fail to fulfil their expectations and whether this has negative consequences or not.

This thesis addresses this subject through examination of young peoples' plans for their own occupational achievement. The development of occupational aspirations from adolescence through early adulthood will be examined, and possible consequences of discrepancies between the aspirations and actual occupational achievements will be investigated.

Sociological relevance of the topic

There are two main reasons why this topic is relevant for sociology. The first concerns how to approach young people's educational and occupational choices. Within the field of sociology, focus has primarily been on social reproduction: how young people with different socio-economic backgrounds choose different educational pathways and occupations, thereby achieving occupational positions at different status levels. Less research has been conducted on occupational and educational choices in general, which means that research on social reproduction gives little insight into the overall process of choosing education and occupation.

If we want to understand this process, other approaches are needed. In this respect, examining occupational aspirations may be a relevant approach. Within this line of research, the plans of the individual are the primary concern, as opposed to the socio-economic status of the family.

Aspirations may be seen as subjective, because it is the preferences or expectations of the individual that are studied. However, these individual preferences or expectations are to a large extent formed by social forces in the family and in society, suggesting that a sociological approach to aspirations is relevant. This point will be further discussed in Chapter 2.

The second reason concerns the opportunities for understanding success and failure that come with an examination of aspirations. Current sociological research has focused on how the level of socio-economic status achieved, commonly measured by educational or occupational status, relates to physical and mental health. In general, research within this field suggests that the status achieved in education and occupation is important. However, by examining people's educational and occupational goals in addition to what they actually have achieved, it is possible for us to gain a deeper understanding of the importance of success and failure in these areas. This point will also be further elaborated in Chapter 2.

Central concepts

Young people's plans and goals for their own professional achievement could be assessed in several ways. First, an important distinction is whether plans and goals refer to what young people would like to achieve or what they view as being likely to achieve. Haller (1968) calls the former idealistic aspirations and the latter realistic aspirations. He considers idealistic aspirations to be an expression of ideals not limited by considerations of actual options, and realistic aspirations as expressing expectations based on considerations of the actual situation.

A study by Johnson (1995) supports Haller's view: he found that when respondents were

asked to state their expected future occupation, considerations of existing options influenced the answer more than when the question concerned preferred future occupation. Furthermore, expectations and preferences have been found to be relatively similar regarding ambitiousness, but when they differ, preferences are higher or more ambitious than expectations (Slocum, 1974; Patton and Creed, 2007).

This thesis concerns young people's expectations relating to their own achievements. The main reason for using expectations is the level of seriousness that is involved. Even though we cannot know how realistic the expressed aspirations are, it is likely that expectations are more realistic than preferences. Thus, when examining whether failure to achieve aspirations has negative consequences, achievements have been compared to plans for the future that probably are based on existing opportunities.

I have decided to refer to the expressed expectations as aspirations, even if some studies also use the terms expectations (Rindfuss, Cooksey and Sutterlin, 1999; Goyette, 2008) and goals (Hardie, 2014). There is no clear precedent in this area. The reason for using the term aspirations is to signal that even if people have expressed what they expect to achieve, they may not have achieved it yet. Their expectations are, as such, aspirations.

Second, aspirations for both educational and occupational achievement can be used as indicators of people's aspirations for future achievements. These two kinds of aspiration are clearly related, as educational achievement in most cases is connected to the occupational status it is possible to achieve. However, those who have achieved their educational aspirations, but not their aspirations for occupational status, may still feel that they have not succeeded. This discrepancy would not be captured if educational aspirations and the achievement of them were used as indicators of success. Therefore, this thesis assesses occupational aspirations.

Third, occupational aspirations can be examined in both a vertical dimension (differences in the status of work) and in a horizontal dimension (differences in the field or category of work). This thesis deals with the vertical dimension of occupational aspirations. Therefore, in this thesis, failure to achieve occupational aspirations means ending up in an occupation that has lower status than the occupation aspired to. This means that differences on the horizontal dimension are not examined. Theories and research on the horizontal dimension of aspirations this area has primarily focused on how to detect people's interests (Su, Rounds and Armstrong, 2009), and how decisions regarding education and occupation should be based on these interests (Holland, 1997).

The term aspiration achievement is also central to the thesis, referring to how well occupational aspirations and occupational achievements are matched. Measurements of aspiration achievement were constructed by subtracting achieved occupational position from occupational aspirations. Some of the variation in this variable will be caused by the achieved occupational position. Therefore, a relationship between aspiration achievement and other variables may actually reflect variation in occupational status, and not aspiration achievement. This point is further addressed in the *Method* (page 52) and *Discussion and Conclusion* (page 74) sections, and examined empirically in the papers.

Overview of the thesis

The theoretical basis for aspirations and how failure to achieve them may be negative is discussed in Chapter two. Chapter three presents empirical findings on these subjects. Research questions are presented in Chapter four. In the fifth chapter, data and statistical methods are presented and discussed. Summaries of the four papers that are included in the thesis are presented in Chapter six. In Chapter seven, the answers to the main questions

provided by the four papers are discussed and conclusions are drawn. Full versions of the papers are presented in Appendices A to D.

2. Theoretical background

The purpose of this chapter is to present theories on how people decide on which occupation to pursue, and to discuss whether failing to achieve this occupation may have negative consequences or not. No theories cover both occupational aspirations and consequences of failure to achieve them. This situation therefore involves presenting two distinctly different sets of theories. In the first part of the chapter, theories on educational and occupational aspirations and achievement are presented. In the second part of the chapter, theories on how failure to achieve occupational aspirations may be negative are presented.

Educational and occupational achievement

There are several theories on educational and occupational achievement. The theories often emphasize different aspects of the process of choosing and achieving education and occupation. The section starts with contributions from sociology, a field that has focused on the importance of socio-economic background for educational and occupational achievements, commonly referred to as social reproduction. The section continues with theories on the formation and role of educational and occupational aspirations, theories that come primarily from the field of psychology. In addition, one theory on the importance of beliefs on the societal level for the aspirations young people have is presented.

Social reproduction

Theories on social reproduction aim to explain one particular part of educational and occupational achievement: the influence of socio-economic background. Two commonly applied theories on social reproduction are those of John Goldthorpe (2000) and Pierre Bourdieu (1984, 1996). The theories account for the role that socio-economic background plays for educational and occupational achievement, and both have inspired much research on social reproduction.

Bourdieu: habitus and cultural capital

The theory of Pierre Bourdieu focuses on how social origin influence schooling and strategies for educational and occupational achievement. Central to his theory are the two terms capital and habitus. Capital refers to possession of the resources and powers that can be used to achieve goals. The amount of capital is unequally distributed among individuals in society. Economic capital (finances) and cultural capital (education, cultural taste and knowledge) are the most central forms of capital in Bourdieu's theory (Bourdieu, 1984: 114), but he also considers social capital (connections) and symbolic capital (the status and standing within a society) as resources that can be used to achieve goals (Bourdieu, 1984: 291; 1986).

Bourdieu views cultural capital as valued by the educational system, increasing the probability of students with high levels of such capital to succeed at school (Bourdieu and Passeron, 1990). Cultural capital is typically possessed by students with parents with higher education. The educational performance of these students ensures their access to the more prestigious kinds of education, thereby leading to social reproduction.

According to Bourdieu, the total amount of capital and the combination of the different forms of capital determines people's positions in social space. Peoples positions in the social space is determined both by the total amount of capital and by the combination of the different forms of capital. Individuals within the same area of the social space are similar not only in their relative position within the society, but also when it comes to areas such as cultural taste and political views. Individuals that are grouped together in the social space and has a distinct distance to other groupings constitutes a class (Bourdieu, 1984: 114). Bourdieu refers to three distinct classes. The classes are based on the total volume of economic and cultural capital, and are:

- Bourgeoisie or dominant class
- Petty bourgeoisie

- Working class or the popular classes

According to Bourdieu, people's position in social space has consequences for how they act and think. He refers to the tendency to reason and behave in a certain manner according to one's position in society as habitus. A person's habitus can be seen as a set of dispositions that guides behaviour (Weininger, 2005), linking capital to practice (Reay, 2004), but should not be understood as simply repeating existing modes of behaviour:

“Because the habitus is and infinite capacity for generating products – thoughts, perceptions, expressions and actions – whose limits are set by the historically and socially situated conditions of its production, the conditioned and conditional freedom it provides is as remote from creation of unpredictable novelty as it is from simple mechanical reproductions of the original conditioning.” (Bourdieu, 1990: 55)

Bourdieu views habitus as the main reason for occupational achievement and social reproduction. Habitus operates primarily on a sub-conscious level, and social reproduction is therefore not the result of a deliberate plan to achieve an occupational status similar to that of the parents:

“To speak of strategies of reproduction is not to say that the strategies through which dominants manifest their tendency to maintain the status quo are the result of rational calculation or even strategic intent. It is merely to register that many practices that are phenomenally very different are objectively organized in such a way that they contribute to the reproduction of the capital at hand, without having been explicitly

designed and instituted with this end in mind. This is because these practices are founded in habitus...” (Bourdieu 1996: 272 – 273).

The relative position in social space limits and guides people’s choices regarding education and occupation through dispositions to think and act in certain ways.

Bourdieu’s theoretical suggestions continue to influence research on class division and social reproduction (Flemmen, 2013; Savage et al., 2013). His term cultural capital, and how this relates to education, have been the subject of a number of studies: “Thanks in large part to the legacy of Bourdieu, the premise that culture cannot be ignored in studies of stratification is now broadly accepted throughout much of sociology.” (Lareau and Weininger, 2003: 598).

Drawing on Bourdieu’s theory, Jæger and Breen (2016) propose a model for how parent’s cultural capital relate to educational achievement and cultural reproduction. They suggest that, for cultural reproduction to take place, the cultural capital must first be transmitted from the parents to the children, the children must then convert this capital into educational success, and this success must promote social reproduction. Jæger and Breen (2016) examined existing research and found studies supporting that parents, actively and passively, transmit their cultural capital to their children and that cultural capital is related to educational success. They found mixed results regarding whether cultural capital influenced how the children were perceived by their teachers.

Goldthorpe: relative risk aversion

In contrast to Bourdieu’s views, Goldthorpe (2000) suggest that decisions regarding education and occupation are based on rational considerations of existing options. He put forward his theory to explain what he viewed as empirically well established: the relative mobility rates between class positions has remained unaltered for a long period of time; the process of

change in the relationship between social origin and educational achievement is slow; the differences between countries are small. He stated that the aim of his theory was to focus on the common characteristics of these findings, and therefore did not focus on contextual differences between countries. Goldthorpe views rational action theory as a particularly fruitful approach to explain human behavior. He therefore based his explanation of social reproduction on the belief that when people choose particular courses of action in pursuit of their goals, they use the resources that are available to them and adapt these resources to the opportunities and constraints they experience. Based on this view, Goldthorpe propose that an explanation for social reproduction focusing on rational action must both account for how socio-economic background relates to the goals that people have and to the strategies they adopt when pursuing their goals.

He views differences in employment relations and the availability of financial capital in the family as fundamental in making decisions regarding education and occupation and individual ability (Breen and Goldthorpe, 1999; Bukodi, Erikson and Goldthorpe, 2014). Based on differences in employment relations, he distinguishes between three classes (Goldthorpe, 2000: 239-240):

The service class typically consists of professional, administrative and managerial employees. The employment in this class is usually long term, with a steady increase in income and good career opportunities. Therefore, members of this class have good opportunities for accumulating financial capital.

The working class typically consists of manual and lower-grade non-manual occupations. The employment is often short term with clearly specified expectations to the exchange of work and salary, something Goldthorpe refers to as a labor contract. Members of this class experience little or no increase in their income throughout their working life. This reduces the opportunity for gathering financial capital.

The intermediate class typically consists of routine non-manual employees, employees in lower-grade technical or manual supervisory positions, smaller employers and self-employed workers. The employment relationship has some elements from the service class and some from the working class. Even though there can be economic uncertainty in the form of unstable income for some of the members of this class, which is especially relevant for smaller employers and self-employed workers, members of this class often find it possible to accumulate financial capital.

According to Goldthorpe the probability and consequences of failure are taken into consideration when choosing education and occupation (Goldthorpe, 2000, 2010; Breen and Goldthorpe, 1997). Strategies that maximizes upward mobility is not necessarily similar to strategies that minimize the risk for downward mobility. Pursuing higher education involves the possibility of failure. Starting education but not completing it means loss of income for the duration of that education without the increase in the expected future income that would have been the result if the education was completed. Goldthorpe thinks that, as a general rule, safer strategies will be preferred; the avoidance of downward mobility will be given priority ahead of the possibility of upward mobility:

“More specifically, the suggestion is that what should be treated as common to individuals of all class backgrounds alike is a concern, in the first place, to maintain a class position that is no less desirable than that of their parents or, in other words, to avoid downward class mobility. A concern to secure a more desirable class position, or, that is, to achieve upward class mobility, is then to be regarded as a secondary objective, even if, perhaps, a still important one.” (Goldthorpe, 2000: 242)

Goldthorpe views the priority of stability over mobility as being equal regardless of class. However, differences in employment relations lead to different priorities among the classes. Goldthorpe (2000: 244-251) postulated two major strategies for occupational achievement, and that these strategies depend on social origin:

Strategies from below apply to the working class and the intermediate class. Because of the limited financial resources available to those in these classes, the decision whether to pursue higher education or not can be difficult. There is a conflict between strategies that will ensure class stability and those that will ensure class mobility. Taking over a family business or going into early vocational training are the best strategies if class stability is the main purpose. A shorter period of education is preferred to a longer and more risky period of education:

“... individuals pursuing mobility strategies from below can have good reasons, in the light of perceived costs and benefits, for not attempting to use educational channels to the fullest extent that would be open to them and that their ability would warrant”
(Goldthorpe, 2000: 247).

Strategies from above apply to the service class, which is the class least constrained by the availability of economic resources. To achieve the goal of maintaining class position it is important to maximize educational attainment. It is not sufficient that the children have abilities; they have to translate these abilities into educational attainment. This strategy is to a little degree hindered by the lack of resources. The parents are willing to invest substantial resources to improve the chances of their children's educational success, and they have the financial resources to do so.

Goldthorpe's theory points to the importance of the social status of the family. The occupational level of the parents is important both for the resources available to young people for them to pursue education and for the strategies for educational and occupational achievement they adopt.

Several studies have tested Goldthorpe's suggestions regarding social reproduction. Stocké (2007) examined whether the model accounted for the relationship between class and educational choice. He found that the financial cost of education differed between the families, that the beliefs of being able to complete educations increased with social class and that parents cared that their children reached at least the same occupational status as themselves. These findings are in line with Goldthorpe's suggestions. Stocké also found that the perceived probability of success was more important for the choice of secondary education than anticipated costs, which is not in line with Goldthorpe's suggestions.

Hansen (2008) examined whether the relationship between socio-economic background and educational choices changed when the degree of economic inequality changed in a society. She found that the impact of socio-economic background on educational attainment decreased in times of decreased economic inequality, and increased in times of increased economic inequality. Hansen sees these changes as being in line with fundamentals of Goldthorpe's theory, because he considers economic resources as fundamental for educational choices.

Gambetta: the importance of preferences

The explanations of social reproduction by Goldthorpe and Bourdieu have different conclusions, because they have approached social reproduction from two different positions. Bourdieu points to class-induced dispositions as the main reason for social reproduction,

whereas Goldthorpe sees rationality and considerations based on current options as causing social reproduction.

According to Gambetta (1987: 28), in principle there is no reason to suppose that educational decisions are the result of only rational choice, or only class induced expectations. He gives three reasons for this. First, different people might use different strategies. Some might use a rational approach whereas others act on what they perceive to be appropriate and expected by the surroundings. Second, the same person can use two mechanisms simultaneously. A youth from a lower social background might exclude the opportunity to undertake higher education because of class induced preferences, but at the same time rationally consider costs and benefits of the remaining options. Third, the same person can use different strategies at different educational transitions. The choice to enrol in upper secondary education might not involve much reflection for youths from a higher social background, whereas the choice to undertake tertiary education might be based on rational calculations of costs, benefits and probability of success.

Gambetta (1987) puts forward an explanation for educational choices, in which the importance of individual preferences are emphasized. This is in clear contrast to the explanations by Bourdieu (1984, 1996) and Goldthorpe (2000). Gambetta's suggestions are based on an examination of three potential explanations for educational choices: the importance of constraints, expected probability of success and preferences and life plans. The examination leads him to conclude that individual preferences have a central place in educational choices:

“Even when the focus is on constraints as in the structuralist model the evidence suggests that actors evaluate them rather than being mechanically pushed by their

presence. Thus, at the centre of an overall explanatory model we must place subjects' preferences and life-plans." (Gambetta, 1987: 177)

Gambetta suggest that the starting point of people's educational choices are their individual preferences regarding factors such as salary and the content of the work. He views these preferences as being related to socio-economic background, but also finds that not all variation in preferences can be explained by the background:

"...I was able to show that preferences whose origin cannot be traced to social class of origin or to other unevenly distributed social attributes play a part in explaining educational choices. (...) In essence, what one wants to do does count." (Gambetta, 1987: 176)

Gambetta further suggest that the preferences are filtered by constraints and perceptions of the outcome. Constraints, such as the economic situation of the family may limit the opportunities for fulfilling the preferences. The constraints are not evenly distributed in the society, and those with low socio-economic background will commonly experience more constraints than those with high socio-economic background. Perceived outcome refers both to how individuals' view their chances of succeeding in completing different levels of education and to the benefits they expect to gain from this. Hence, those with academic success and a positive view of what they gain will be more likely to pursue longer education than those with less academic success and a less positive view of the benefits of education, if all other things are equal.

Implications of the theories

Although the theories by Bourdieu and Goldthorpe provide divergent explanations for social reproduction, both stress how parental status influences what is seen as the right educational and occupational level to achieve. The focus on socio-economic background leaves little room for the preferences and expectations of the individual. In both theories, family characteristics are seen as being directly related to the strategies for educational and occupational achievement that young people adopt. The individual's opportunity for choosing education and occupation is to a small degree discussed in the theories. This is probably due to the purpose of the theories; they were put forward to account for the relationship between socio-economic background and educational and occupational achievement. Individual preferences and expectations were not included as relevant factors in this relationship.

In contrast to Bourdieu and Goldthorpe, Gambetta's theory emphasizes the importance of preferences, and view these as central for decisions regarding education and occupations. His theory was put forward to account explain educational choices in a broader sense, not only social reproduction. This difference means that the theory has a wider scope, making preferences a more relevant factor.

Aspirations

In this section, I present three central contributions on educational and occupational aspirations and discuss the implications the theories have. Even though the theories differ, they complement each other in some areas. This will be further discussed in the last part of this section. Because this thesis concerns differences in aspirations on the vertical level, the presentation does not include theories that primarily concern horizontal differences in aspirations.

Sewell and colleagues: status attainment theory

The status attainment theory by Sewell and colleagues (Sewell, Haller and Portes, 1969) is an early theoretical account of educational and occupational achievement. Sewell and colleagues include both socio-psychological variables and structural conditions in their model. They propose a theory where the influence of significant others is central. Socio-economic background, mental ability and academic performance is seen as explaining the influence of significant others (Sewell, et al., 1969: 85). Different expectations from significant others leads to differences in educational and occupational aspirations. Once the aspirations for education and occupation are formed, they guide learning choices and planning, thereby influencing career development.

The model was later replicated and revised (Sewell, Haller and Ohlendorf, 1970). The replication showed that academic performance was directly related to educational and occupational aspirations and achievement, suggesting that the relationship between academic performance and aspirations and attainment were not completely mediated by the influence of significant others.

The status attainment theory have been applied in numerous studies since it was first introduced. Several studies have applied it in connection to understanding aspirations of minority youth (Mickelson, 1990; Kao and Thompson, 2003), and educational and occupational achievement in general (Buchmann and Dalton, 2002; Goyette, 2008).

Gottfredson: circumscription and compromise

Gottfredson (1981) put forward her theory of circumscription and compromise to account for the development of occupational aspirations. She suggests that aspirations result from a process that involves matching self-concept with images of different occupations and perceptions of their accessibility. In the theory, self-concept “refers to one’s view of one’s self, one’s view of who one is and who one is not” (Gottfredson, 1981: 546-547). Gender,

social class, intelligence and interests are seen as determining the self-concept. Jobs that match a person's self-concept and are perceived by this person as accessible are considered as acceptable occupational alternatives. According to Gottfredson, most people have a range of occupations that they view as acceptable alternatives, and when they state occupational aspirations, they name the occupation they view as the best alternative at that time. In Gottfredson's view, knowledge about occupations and their accessibility may change, and compromises may have to be made, thereby changing the aspirations.

Gottfredson's theory has been used in many studies concerning different topics such as gendered educational and occupational aspirations (O'Brien and Fassinger, 1993; Cook, et al., 1996), development of aspirations (Hartung, Porfeli and Vondracek, 2005) and occupational achievement (Schoon and Parsons, 2002). In addition, studies have supported Gottfredson's suggestion the development of aspirations involves compromises between what is viewed as acceptable occupations and what is seen as realistic to achieve (Armstrong and Crombie, 2000; Blanchard and Lichtenberg, 2003).

Lent, Brown and Hackett: social cognitive career theory

The social cognitive career theory by Lent, Brown and Hackett (1994, 2000) was constructed to explain how people form interests, make choices and achieve varying educational and occupational levels. The theory emphasizes that individuals exercise personal agency in the career development process, and that extra-personal factors enhance or constrain agency. According to the model, aspirations are the result of two processes. The first is the direct effect of individual characteristics and background factors on the chosen goals, or aspirations. The second is the indirect effect of individual characteristics and background factors through learning experiences, self-efficacy, outcome expectations and interests. Previous success will increase self-efficacy, thereby increasing the level of occupational aspiration. The aspirations

are seen as influencing choices of education and occupation, and to be an important factor for what is actually achieved.

The theory, or parts of it, has been extensively used in research on aspirations and the acquiring of work. In particular, studies have examined the importance of self-efficacy for educational and occupational choice (Turner and Lapan, 2002; Abele and Spurk, 2009), but also how perceived barriers (Kenny, Blustein, Chaves, Grossman and Gallagher, 2003) and contextual factors influence career decisions (Constantine, Wallace and Kindaichi, 2005). Also, the theory have been applied in research on how aspirations change over time (Creed, Patton and Prideaux, 2007).

Eccles and colleagues: expectancy – value model

In the expectancy – value model by Eccles and colleagues (Eccles, et al., 1983; Eccles and Wigfield, 2002) the relative value of achieving a goal and perceived probability of success are viewed as the key determinants of educational and occupational choice. Expectancies to the difficulty of completing a task, such as getting access to a specific line of education, and the values attached to this goal, are assumed to influence performance and persistence.

Expectancies comes from individual's self-concept of ability, perceptions of task difficulty, perceptions of others expectations and causal attributions. The values people attach to completing a specific task, comes from sources such as previous experience with similar tasks, social stereotypes and information from parents, teachers and peers about the importance of doing well in this area.

The theory has been applied in many studies on gender differences in educational and occupational aspirations, particularly regarding gender differences in areas such as mathematics and engineering (Correll, 2004; Morgan, Gelbgiser and Weeden, 2013).

Implications of the theories

The theories referred to above view educational and occupational achievement as resulting from a relatively complex process, involving interaction between background factors, individual factors, learning experiences and considerations of options. Aspirations are the result of all the factors involved. Furthermore, aspirations are regarded as a driving force in educational and occupational achievement. The aspirations people have for their own achievement are seen as guiding learning, choices and planning.

Aspirations and achievement in contemporary societies

Furlong and Cartmel (2007) focus on how social norms may influence the expectations young people have towards educational and occupational achievement. Their theory is not so much an explanation for educational and occupational achievement in particular as a general account of challenges young people in contemporary western societies face during the transition from adolescence to adulthood. The theory draws on theoretical contributions on individualization by Beck (1992), and Giddens (1990, 1991). These theories postulate that the individual is becoming the central unit of social life, as opposed to traditional values and sources of identity, such as social class. This means that decisions regarding education and occupation are more based on self-image, and less on background characteristics.

Furlong and Cartmel suggest that contemporary Western societies are characterized by high expectations regarding the options for occupational achievement. Individuals are perceived as having endless opportunities when deciding on future occupation. However, in contrast to Beck and Giddens' suggestions, Furlong and Cartmel (2007) do not suggest that class and gender have lost their meaning for the actual occupational achievement. The connection between a youth's social background and their own occupational status still exists. The importance of objective constraints induced by class and gender has merely been obscured, creating an impression of equality. All youths are free to aspire to any occupation,

but the chances of achieving a high position within any given occupation are not evenly distributed.

Furthermore, Furlong and Cartmel (2007) see individuals as carrying the responsibility for their own fate to a larger extent than previously. Failure to achieve occupational aspirations is attributed to individual shortcomings. The combination of subjective perceptions of endless possibilities, objective constraints and personal responsibility, as described by Furlong and Cartmel, leads to a situation set for failure and negative self-evaluations. Young people are at risk for having too ambitious expectations towards own occupational achievement, and if they fail to achieve their expectations, the responsibility are theirs alone.

Drawing on Pierre Bourdieu's work, Zipin, Sellar, Brennan and Gale (2015) make a similar point to that made by Furlong and Cartmel. They distinguish between two kinds of aspirations held by young people: habituated aspirations, and doxic aspirations. Habituated aspirations refers to goals that are based on experiences of one's own options. The perceived options come from the social position. Doxic aspirations refers to educational and occupational goals that are viewed as desirable in a society. These aspirations are only achievable for those from a privileged social position. Such aspirations function to reproduce inequality by inducing many to pursue unrealistic aspirations.

Contribution of the theories

Even though the theories presented here diverge substantially, there is one area where they converge: social factors are emphasized as important for aspirations and decisions regarding educational and occupational achievement. All theories view achievements in these areas as related to not only individual factors, but also to social factors, such as socio-economic background. In addition, the theories complement each other in some areas. In my opinion,

there are three particular areas where suggestions from different theories can be combined: factors that influence decisions regarding education and occupation, the importance of constraints, and the relationship between decisions and aspirations on the one hand and actual achievements on the other.

In contrast to the theories on social reproduction that focus primarily on the importance of socio-economic background, the theories on aspirations include many factors. I suggest that the theories on aspirations can contribute to understanding educational and occupational aspirations in general, because they include more factors. This approach gives a nuanced understanding of the processes. I further suggest that this may contribute to further understanding of social reproduction. Including factors other than parental status can also contribute to an understanding of the relationship between socio-economic background and educational and occupational achievements. When we know the other factors involved, we are able to identify clearly the impact of socio-economic background.

In general, the theories on aspirations do not discuss the importance of limitations for educational and occupational choices, even though Gottfredson's theory suggests that aspirations are based on considerations of an occupation's accessibility. A lack of emphasis on objective constraints can leave the impression that decisions regarding education and occupation are primarily a question of choosing freely, and less a question of choosing the necessary (Kerckhoff, 1976). The explicit and specific discussion of how young people's options may be limited in Bourdieu and Goldthorpe's theories, complements the theories on aspirations in this respect.

Few of the theories discuss the relationship between aspirations and strategies on the one hand, and actual achievements on the other. Bourdieu is most explicit on this, suggesting that subjective expectations are not important for educational and occupational achievement (Bourdieu, 1973; Bourdieu and Passeron (1990). Bourdieu and Passeron view subjective

expectations being “the product of the internalization of objective conditions” (1990:156). Subjective expectations has the function of “linking the educational system to the class structure” (1990:156) so that “when agents make up their minds, they always, albeit unwittingly, make reference to the system of the objective relations which make up their situation.” (1990:156). In other words: Bourdieu and Passeron view aspirations as reflections of the existing possibilities, and therefore suggests that aspirations and achievements will be more or less identical.

Several of the other theories stress that decisions regarding future education and occupation are based on considerations of realistic opportunities. This applies for the theory by Lent and colleagues, for Gottfredson’s theory and for Goldthorpe’s theory. In this way, the theories imply that people’s aspirations and decisions are closely related to their actual achievements.

However, this may not be the case. For considerations of one’s own options to lead to the right conclusion they must be based on correct information. If, for instance, people underestimate the difficulty of completing a particular study, or overestimate the availability of work, they may develop unrealistic aspirations. This is one of the central points raised by Furlong and Cartmel (2007). Furlong and Cartmel point to the possibility of a gap between what people expect and what they actually achieve, thereby suggesting that it is possible to harbour unrealistic aspirations. In this respect, their theory complements the other theories.

Consequences of not achieving occupational aspirations

Many of the theories on educational and occupational achievement implies that not achieving an appropriate educational and occupational status may be unfortunate. Goldthorpe (2000) views ending up in a lower position than one’s parents as something that must be avoided, and Furlong and Cartmel (2007) are concerned about the effects of having unrealistic expectations about occupational achievement. Even though these theories imply that not achieving the

appropriate occupational level is negative, the possible consequences are not explicitly discussed.

In this section I use existing theories to discuss whether *not* achieving occupational aspirations may have negative consequences, and what these consequences might be. Since few theories have examined this subject directly, this involves presenting several different kinds of theories. Theories on social epidemiology are used to point to the relationship between occupational achievement and health, whereas theories from psychology are used to discuss the importance of achieving goals.

The connection between socio-economic status and health

Several studies have shown that social position (e.g. education, occupation or income) is related to health. People in higher positions have better health than those in lower positions (Mackenbach et al., 2008; Torvik et al., 2015). However, what causes this relationship has been discussed for a long time (West, 1991; Scrambler, 2012). Many of the explanations suggest that differences in social positions cause this disparity in health. This view, referred to as social causation, has been strongly debated for a number of years (Marmot, 2004). In particular, two opposing explanations have been put forward: the health selection hypothesis, suggesting that differences in health lead to differences in achieved social position, and explanations that focus on the importance of confounding factors.

Social causation

Theories on social causation aim to explain how differences in socio-economic status, measured as education, occupational status or income, influence health. Existing explanations have primarily focused on possible mechanisms connecting socio-economic status and health within three areas: material conditions (Lynch, Smith, Kaplan and House, 2000), health

behaviours (Chandola, Clarke, Morris and Blane, 2006; Melchior et al., 2005), and psycho-social factors (Pearlin, Menaghan, Lieberman and Mullan, 1981; Adler and Rehkopf, 2008).

Psycho-social factors, such as exposure to chronic stress (Pearlin, Menaghan, Lieberman and Mullan, 1981; Adler and Rehkopf, 2008), social cohesion (Meijer, Rohl, Bloomfield and Grittner, 2012) and intrapersonal resources (Matthews, Gallo and Taylor, 2010) are particularly relevant to this thesis, since it investigates the achievement of aspirations. If there is a relationship between aspiration achievement and health it is likely that psycho-social factors are involved. The presentation will therefore focus on three theoretical contributions that view psycho-social factors as playing a major role in the relationship between achieved educational and occupational status and health: Marmot's (2004) and Wilkinson's (1996) theories on social comparison, and Siegrist's (1996) theory on effort reward imbalance at work.

Marmot (2004) and Wilkinson (1996) argue that different positions in the social hierarchy are connected to different levels of stress and control. Lower positions lead to higher levels of stress and less control, whereas the opposite is true of higher positions. However, and this is an important part of their theories, it is the relative position in the social hierarchy that is of importance, not the absolute position. People compare their own position with the position of others, and it is this comparison that is related to experiences of stress and control, not the absolute level of education and income. According to Marmot (2004) and Wilkinson (1996), this means that comparing one's own position with that of others can have a positive or negative impact on health, depending on where the position is in the social hierarchy.

Siegrist (1996) postulated his theory on effort-reward imbalance to explain how stressful experiences and opportunity structures at work could have adverse health effects. The basic suggestion is that the ratio of effort to reward at work is related to health. Imbalance

between efforts and rewards (high effort and low reward) influences health through reduced self-esteem (Siegrist, 1996; Siegrist and Marmot, 2004). Efforts include demands and obligations of an occupational position and the individual performance of employees, whereas rewards include money, esteem and status control. The term “status control” refers to the degree of control over one’s own occupational position. For Siegrist, both negative changes in a job situation, such as termination, forced occupational change, downward mobility and stable negative situations such as lack of promotion prospects and inconsistency between education and occupational positions are examples of low status control. Siegrist sees occupational positions as crucial social roles and threats to these roles as affecting self and identity. Therefore, he considers status control as fundamental for perceived rewards from work.

Alternative explanations: the health selection hypothesis and confounding factors

Compared with the social causation hypothesis, the health selection hypothesis suggests the reversed order of causality: variation in health is seen as leading to differences in social positions (Canning and Bowser, 2010; Chandra and Vogl, 2010). The idea is that health is particularly important for people’s educational and occupational achievements. Those with impaired health do not have the same opportunities for achieving high educational and occupational positions as those with good health. This leads to a situation where people with poor health achieve high-status positions less often than those with good health (Bloom and Canning, 2006).

Even though many researchers regard health selection as an important factor in the relationship between socio-economic status and health, relatively few accounts have been made to elaborate on this relationship. One of the more detailed explanations is provided by West (1991). He suggests that variations in health can predict educational and occupational

status in two ways. First, impaired health may lead to difficulties in completing education, causing systematic variations in achieved education. This influences the opportunities those with impaired health have for occupational achievement. Second, impaired health may also reduce access to high-status jobs even when the necessary educational level has been achieved. People with impaired health may be discriminated against, which could lead to systematic differences in achieved occupational position.

Explanations focusing on the importance of confounding factors suggest that the relationship between socio-economic status and health is caused by factors that influence both health and socio-economic status. Chandra and Vogl (2010) suggest that socio-economic status in childhood is such a factor, influencing both adult health and educational and occupational achievement. In their view, this may be one of the main reasons for the relationship between socio-economic status and health. Warren (2009) uses the term *indirect selection* to describe the process where confounding factors have an impact on both socio-economic status and health. He suggested that poor health in childhood could be such a factor, reducing both adult healthiness and educational and occupational achievement. However, Warren also acknowledges that both social causation and health selection may be involved in the relationship between socio-economic status and health.

How one can explain the relationship between socio-economic status and health is still being debated. However, the explanations presented are not necessarily mutually exclusive. Both confounding factors, variation in health and differences in socio-economic status, may contribute to explain the relationship between health and social position. For this thesis, the theories presented imply that not achieving aspirations may reduce the level of health, that reduced health may lead to not achieving aspirations, and that other factors may influence both aspiration achievement and health.

Discrepancies between standards and achievements

Michalos (1985) has put forward the Multiple Discrepancies Theory to explain variation in life satisfaction. The basic idea is that life satisfaction is a function of perceived gaps between one's actual situation and comparison standards such as aspirations, desires and the possessions of others. The theory implies that the acquiring of goals might be an important source for well-being. The Multiple Discrepancies Theory does not state that some goals may be more important to achieve than others. However, it is likely that occupational aspirations, being based on considerations of existing possibilities and influenced by the socio-economic status of the family are vital goals, and therefore it is particularly important that they be achieved.

Feldman (1996) has suggested that underemployment (e.g. working fewer hours than desired, being in a position for which one is overqualified, subjectively perceived over-qualification) reduce psychological well-being. Relative deprivation theory has been put forward as an explanation for the relationship between underemployment and psychological well-being (Feldman, Leana and Bolino, 2002; McKee-Ryan and Harvey, 2011). Relative deprivation theory postulates that individuals compare their achievements with subjective standards (Stouffer, Suchman, DeVinney, Starr and Williams, 1949; Crosby, 1976). If the achievements are lower than the standards, this leads to negative evaluations of the achievements. Occupational aspirations can probably be seen as subjective standards, reflecting what people view as likely for them to achieve.

Adaptive preferences

Drawing on suggestions regarding cognitive dissonance put forward by Festinger (1957), Elster (1983) has suggested that it is possible to avoid negative consequences of mismatch between beliefs and actual situation. Individuals experiencing such situations may try to

improve the situation or change the preferences (Elster 1983). This means that those in an occupation that does not match their aspirations may try to get a better occupational position, or they may adjust their aspirations to match the actual situation. Both strategies can have positive results. In both cases, the gap between aspirations and achievements will disappear, or at least diminish. This, however, depends on success in applying the strategies. Trying to improve the situation without succeeding may lead to increased frustrations and reduced mental health. Furthermore, changing the preferences may be more or less successful, depending on the nature of the preferences. Occupational aspirations are related to several factors, such as the socio-economic status of the family and individual experiences. Therefore, to change occupational aspirations may be difficult.

Conclusion

The theoretical proposals presented in the first part of the chapter suggest that several factors influence occupational aspirations. Together, the theories suggest that the occupational level people aspire to may be related both to parental status, to individual experiences and to social norms. In addition, several of the theories view aspirations as coming from long-lasting processes. As young people develop and learn about the world and themselves, the range of occupations they aspire to narrows.

The theories presented in part two of the chapter point to a relationship between achieved occupational or educational position and health, and suggest that to not achieve goals may be related to negative consequences. When combined, the theories imply that it may be particularly important to achieve occupational aspirations, because they are based on social and individual beliefs and concern occupational position, and that failure to do so could be particularly harmful.

3 Empirical findings

The previous chapter presented theories on aspirations and educational and occupational achievement, as well as theories on why it may be negative not to achieve one's occupational aspirations. The purpose of this chapter is to present empirical studies regarding aspirations and the consequences of not achieving them.

Aspirations

Regarding aspirations, empirical findings from three areas will be presented: predictors of aspirations, how they develop, and the relationship between aspirations and achievements.

Important predictors of aspiration

The theories on aspiration presented in the previous chapter suggest that a number of factors may be related to the occupational level people aspire to. This is supported by empirical research. School truancy (Henry, 2007), low academic self-concept and low educational aspirations in the home has been found to be related to having low aspirations (Strand and Winston, 2008). Furthermore, high parental expectations has been found to be positively related to aspirations (Schmitt-Wilson, 2013) as well as positive academic self-concept and motivation (Guo, Marsh, Morin, Parker and Kaur, 2015). In addition, leisure activities and mass-media have been found to contribute to young people's aspirations (Archer, DeWitt and Wong, 2014)

However, in this thesis, focus will be on fewer factors, factors that theories point to as potentially important for the occupational level people aspire to: socio-economic background, academic performance and gender. In addition, studies on whether the aspirations of young people are more ambitious now than before are presented.

Socio-economic background and academic performance

Several studies have shown that socio-economic background and academic performance are the two most consistent predictors of people's aspirations (Schoon and Parsons, 2002; Creed, et al., 2007; Schoon, Martin and Ross, 2007; Hegna, 2014). Coming from a higher socio-economic status background and having produced higher academic performance are related to higher or more ambitious aspirations. The findings confirm the importance of parents' socio-economic status for plans and expectations for occupational achievement. The relationship that can be found between academic performance and aspirations is also in line with theories suggesting that aspirations reflects realistic possibilities.

Socio-economic background and academic performance are related, in the sense that those from a high socio-economic background are more likely to succeed at school than those from a lower background (Dubow, Boxer and Huesmann, 2009; Andersen and Hansen, 2012).

Studies show that even though socio-economic background and academic performance are related (Dubow et al., 2009), they also are uniquely related to aspiration (Schoon and Parsons, 2002). Socio-economic background also predicts aspiration when academic performance is controlled for, and academic performance also predicts aspiration when socio-economic background is controlled for. This means that higher grades are related to higher aspirations, regardless of socio-economic background, and that having higher socio-economic background is related to higher aspirations, regardless of academic performance.

There are diverging views on how the relationship between socio-economic background and educational and occupational achievement should be understood, as shown by the explanations by Goldthorpe (2000) and Bourdieu (1984) discussed in the previous chapter. Research suggests that both explanations are plausible (Andersen and Hansen, 2012; Jæger and Holm, 2012). Of particular interest in this thesis are two studies by Werfhorst and

Hofstede (2007) and Glaesser and Cooper (2014), examining how well the two explanations accounted for educational plans.

Werfhorst and Hofstede (2007) found that rational choice explained variation in schooling ambitions, whereas cultural capital accounted for differences in school performance. Glaesser and Cooper (2014) found that young people reflected on their educational choices in line with Goldtorpe's suggestions about rational choice and risk aversion. The upper and lower boundaries for their aspirations, however, were defined by their habitus.

The research confirms the relevance of both Bourdieu's and Goldthorpe's explanation for social reproduction. This supports Gambetta's (1987) suggestion that both rational choice and class induced dispositions may be relevant for understanding young people's choices and reasoning regarding future education and occupation.

Gender

The educational or occupational status of the parents is not the only factor that may limit the range of occupations that is perceived as possible or acceptable to achieve. Also, gender may influence the occupational level people aspire to. Several studies have shown that, on average, women have higher aspirations than men (Sewell, Hauser and Wolf, 1980; Schoon et al., 2007; Lee and Rojewski, 2009; Schoon and Polek, 2011). In addition, Sewell and colleagues (1980) found that roughly the same set of variables predicted the aspiration level for both men and women. However, when compared with women, the relationship between the predictor variables and the aspiration was substantially stronger for the men. The authors explained this finding as resulting from the restricted gender roles of the 1950s, when the data were collected. Sewell and colleagues (1980) considered that the gender roles of that time limited the educational and occupational choices for women, and that this reduced the importance of

other factors. The choices were not similarly restricted for the men, and were to a larger degree determined by the predictor variables. A study by Davis and Pearce (2007) suggests that gender ideologies may still be related to aspirations today. The findings indicate that women with traditional gender ideologies have lower aspirations than women with egalitarian views.

Beliefs in contemporary western societies

Furlong and Cartmel's (2007) suggestions regarding the possibility of youths in contemporary western societies having high aspirations is not easy to test empirically. However, studies have found that the aspirations of young people have become higher and more unrealistic (Reynolds, Stewart, Macdonald and Sischo, 2006; Goyette, 2008; Park, Wells and Bills, 2015). These empirical findings imply that aspirations are not only related to individual or family factors, but also to social norms. This supports Furlong and Cartmel's suggestions regarding the high expectations towards educational and occupational achievement in contemporary western societies. The gap between what people aspire to and what they can realistically achieve may be higher now than before.

Development of occupational aspirations

Regarding change and development of aspirations, the theories imply that aspirations may change, but at the same time have some kind of stability. I have found three studies that examine the development of occupational aspirations in adolescence and early adulthood. Jacobs, Karen and McClelland (1991) studied how men changed their aspirations from ages 17 until 27. Rindfuss, Cooksey and Sutterlin (1999), followed a group of men and women from the age of 18-19 for a period of seven years. Lee and Rojewski (2009) studied men and women between the ages of 14 and 26.

Two of the studies (Jacobs et al., 1991; Rindfuss et al., 1999) found that the number of youths with high aspirations declined with age, suggesting that the mean level of occupational aspiration declined. Lee and Rojewski (2009) reported that occupational aspirations increased until high school, and then decreased. All three studies suggest that the decline is a consequence of matching the occupational aspirations to real-life probabilities. Furthermore, Jacobs and colleagues (1991) found that socio-economic background is related to the development of occupational aspirations; the differences between respondents from low and high socio-economic background increased over time. However, Lee and Rojewski (2009) did not find a relationship between socio-economic status and the development of occupational aspirations. In their study, gender was the only variable predicting both increase and decline of occupational aspirations. Women's aspirations increased more than men's until high-school, and decreased more after high-school.

Aspiration achievement

Occupational aspirations have been found to be one of the best predictors of later occupational attainment (Sewell et al., 1970; Schoon and Polek, 2011). One study reported that occupational aspirations at the age of 16 were a better predictor of later occupational achievement than socio-economic background (Schoon and Parsons, 2002). These findings clearly suggest that aspirations are realistic, at least to some extent.

Consequences of failing to achieve occupational aspirations

Several theories were presented in the previous chapter to discuss a possible relationship between aspiration achievement and health. In this section, empirical findings from several areas of research are used to examine whether such a connection is plausible.

The section starts with studies on socio-economic status and health. Then, findings regarding the importance of achieving goals and occupational positions are outlined.

Socio-economic status and health

The relationship between socio-economic status and health has been examined extensively. Several studies have found that socio-economic status is connected to physical and mental health; people in higher positions are typically healthier than people in lower positions (Marmot 2004). Even though these inequalities change over time, they continue to exist (Bleich, Jarlenski, Bell and LaVeist, 2012). Also for children and adolescents, a relationship between different indicators of socio-economic status, such as poverty, household income, or parental education or occupational status, have been found (Reiss, 2013). However, whether the relationship between socio-economic status and health result from social causation, health selection or confounding factors has not yet been solved (Marmot, 2004; Kroger, Pakpahan and Hoffmann, 2015).

Research on social causation

Studies in the social causation category have focused on a wide range of possible mechanisms connecting socio-economic background and health. Empirical findings suggest that factors such as maintaining a healthy lifestyle, material conditions and working conditions are related to both socio-economic status and health, and may contribute to explain this relationship (Lynch et al., 2000; Melchior et al., 2005; Chandola et al., 2006; Adler and Rehkopf, 2008). Psycho-social factors, such as stress, control at work and social support, have also been supported by studies as possible mechanisms in the relationship between socio-economic status and health (Pearlin et al., 1981; Uphoff, Pickett, Cabieses, Small and Wright, 2013).

Of particular relevance for this thesis is the importance of a mismatch between efforts at work and the perceived rewards from work (Siegrist 1996). Empirical research has confirmed that effort–reward imbalance is related to health and sickness absence (Peter and Siegrist, 1997; Godin and Kittel, 2004; Fahlen et al., 2009), also when individuals health behaviour have been controlled for (Hanebuth, Meinel and Fischer, 2006). Furthermore,

effort-reward imbalance medically certified absence for mental health problems (Ndjaboue, Brisson, Vezina, Blanchette and Bourbonnais, 2014). In one of the studies of the relationship between effort–reward imbalance and sickness absence, Peter and Siegrist (1997) found that status incongruence, the mismatch between efforts and aspirations on the one hand and career achievements on the other, was the most consistent predictors of sickness absence. The authors concluded that status incongruence is a particularly frustrating situation that may decrease health levels and increase withdrawal from work.

The health selection hypothesis and confounding factors

The use of health-care services and hospital admission have been found to be connected to dropping out from school (van Heesch, Bosma, Traag and Otten, 2012; Homlong, Rosvold and Haavet, 2013), supporting health selection as playing a role in the relationship between socio-economic status and health. However, studies that examine the individual importance of health selection and social causation vary regarding the conclusions they draw. Warren (2009) did not find that health selection explained the relationship between socio-economic status and health, whereas social causation did. Hofoss and colleagues (Hofoss, Dahl, Elstad and Cvancarova, 2013) found stronger evidence for the social causation hypothesis than for the health selection hypothesis. A systematic review (Kroger, et al., 2015) found support both for social causation and for health selection. Miech and colleagues (Miech, Caspi, Moffitt, Wright and Silva, 1999) examined health selection and social causation as explanations for the relationship between mental health and socio-economic status, following their respondents between the ages 15 and 21. They found that the importance of health selection and social causation differed depending on the disorder. Anxiety was only caused by social causation, whereas depression was caused by neither causation nor selection. These internalizing disorders did not lead to reduced educational achievement. Antisocial behaviour caused low

educational achievement, which again was related to later antisocial behaviour, supporting both the health selection and the social causation hypothesis. Attention deficits were related to socio-economic status only through health selection.

Regarding indirect selection, Kristensen, Gravseth and Bjerkedal (2010) found that childhood health and parental characteristics explained substantial parts of the relationship between adult socio-economic status and health. However, not all of this relationship was explained, suggesting that other explanations, such as social causation, may also be relevant for understanding this relationship.

All in all, the empirical studies suggest that the causal relationship between socio-economic status and health is complex, and that the relationship may be caused both by social causation, health selection and indirect selection.

Aspirations as comparison standards

A study by Michaels (1985), conducted to test his Multiple Discrepancies Theory, showed the importance of comparisons between one's current situation and goals for well-being. The participants in the study were asked to evaluate their current situation in twelve different life areas, such as health, financial security, paid employment, self-esteem and education. They were then asked to compare their current situation in these areas to seven different standards: what they wanted to have, what others had, what they felt they deserved, what they needed, what they previously had expected to have in the future, what they currently expected to have in the future and the best they had ever had in the past. The comparisons resulted in seven kinds of discrepancies for the twelve life areas.

The analyses revealed a relationship between the overall discrepancy individuals experience and their well-being, which is in line with the suggestions in the Multiple Discrepancies Theory. Furthermore, the study showed that degree of accordance between the respondent's evaluation of the current situation and what they wanted to have was particularly

important for understanding well-being. Based on examinations of the strength of the relationship between the different forms of discrepancies and well-being, Michalos found that the gap between current situation and what people wanted was the most consistent predictor of well-being.

Michalos' (1985) study also suggests that comparisons between one's own achievements with those of others may be important for well-being: the gap between current situation and what other people had was the second most consistent predictor of well-being. As discussed in the previous chapter, Marmot (2004) and Wilkinson (1996) have proposed social comparison as playing an important role for the relationship between socio-economic status and health. On the one hand, Michalos' findings support the importance of social comparison. On the other hand, the findings indicate that aspirations may be even more important for well-being and health than social comparison. Michalos warned against taking the ranking of the different kinds of discrepancies too literally. However, other empirical findings also suggest that aspirations may be particularly important as comparison standards; the discrepancy between goals and the present situation has been found to be the best predictor of life satisfaction and the piece of information most commonly used by people to evaluate their current situation (Campbell, Converse and Rodgers, 1976; Ross, Eyman and Kishchuk, 1986).

Aspiration achievement and underemployment

The studies by Campbell and colleagues (Campbell et al., 1976) and Michalos (1985) point to the importance of achieving goals in general, but do not discuss the importance of achieving occupational aspirations in particular. As previously discussed, occupational aspirations are based on both background factors and on perceptions of the possibility of achieving the goals. This may mean that aspirations are particularly important goals to achieve, and that not achieving them may have negative consequences. Some studies have examined this.

Carr (1997) reported on an examination of the effects of achieving career aspirations. The analyses were conducted on a large-scale sample consisting of women. The aspirations were measured when the respondents were aged in their mid-30s, and aspiration achievement was assessed when they were in their 50s. Carr found that aspiration achievement was a significant predictor of depression even after controlling for earlier depression and status of present occupation. For those who had not achieved their aspirations the distance between their aspirations and actual occupation was important: higher discrepancy leads to higher levels of depression. Being married or having children reduced the negative consequences of not achieving aspirations. The respondents consisted of middle-aged women, leaving unanswered the question about whether the same findings apply to men and to those in other age groups.

A Norwegian study (Hyggen and Gjerustad, 2013) found that not achieving occupational aspirations was related to reduced mental health, and that this relationship was stronger for men than for women.

Hardie (2014) examined the relationship between occupational goals and achievement using two datasets. Both datasets included men and women, but they differed regarding when the respondents were born. The older cohort were born in the late 50's and early 60's, whereas the younger was born in the mid 70's. Hardie found that the gap between goals and achievements was strongly related to job satisfaction. The gap was also related to symptoms of depression, but only in the older cohort and only for men.

In addition to these studies on occupational aspirations, a study on the relationship between unrealized educational expectations and symptoms of depression should be mentioned. Reynolds and Baird, (2010) showed that unmet expectations were associated with a greater risk of depression. However, the relationship disappeared when educational level was controlled for. The authors conclude that the increased risk of depression is a

consequence of low educational attainment, and not a consequence of the gap between expectations and attainment. Reynolds and Baird (2010) suggest that individuals' capacity for dealing with unexpected and undesirable situations (what they refer to as adaptive resilience), explains why unrealized educational expectations do not relate to symptoms of depression.

The examination of depressive symptoms by Hardie (2014) and Reynolds and Baird (2010) are based on the same dataset, The National Longitudinal Study of Youth 1979. In spite of this, the studies draw opposite conclusions. There are, however, several differences between the studies. Hardie examined the achievement of occupational goals, whereas Reynolds and Baird examined educational expectations. Furthermore, the samples that were analysed are slightly different, with a larger sample in Hardie's study. In addition, the analyses in Hardie's paper were based on respondents' answers to questions regarding symptoms of depression in 1992, whereas Reynolds and Baird is based on measurements of symptoms of depression in 1982. This means that the respondents were substantially older in Hardies study than in the study by Reynolds and Baird. Taken together, the differences between the studies may explain the opposing conclusions.

Results from studies on the consequences of underemployment, understood as being in a position that is perceived as lower than a position one is qualified for, are in line with the findings by Carr (1997) and Hardie (2014). This kind of underemployment has been found to be related to several negative consequences, such as psychosomatic symptoms, depression, frustration, hostility, insecurity and psychological well-being (Borgen, Amundson and Harder, 1988; Johnson and Johnson, 1992, 1996; Johnson, Morrow and Johnson, 2002; McKee-Ryan et al., 2009).

Conclusion

The empirical studies referred to show how the occupational aspirations people have are related to both individual and social factors, such as academic performance and socio-

economic background. In addition, the studies suggest that aspirations become more realistic with increasing age. The relationship between aspirations and actual achievement confirms that aspirations are relatively realistic.

The studies also show the importance of occupational achievement and that how it relates to standards and goals may be relevant for how the achieved position is regarded. Studies on underemployment and socio-economic status point to a relationship between occupational position and several factors, such as well-being, depression, sickness absence, psychosomatic symptoms and hostility. Existing studies suggest that not achieving occupational aspirations may have negative consequences. However, there are relatively few studies on this potentially important theme, and the existing studies have examined relatively few possible negative outcomes.

4 Research questions

Aspirations are expressions about where people see themselves in the future, and they may change over time. Research suggests that aspirations are related to personal experiences, to the educational and occupational achievements of the parents and probably also to social norms. The connection to these factors may limit the range of occupational aspirations that are viewed as acceptable. Therefore, occupational aspirations may not be easily altered. Whereas several studies have examined how factors such as socio-economic background and academic performance predict the occupational level people aspire to, less is known regarding the development of aspirations. As a result of this we know little regarding the process of adjusting the aspirations to match the existing possibilities. This thesis examines this through the following research question:

- How do occupational aspirations develop during adolescence?

The theories presented and empirical findings reported in Chapters two and three suggest that the achievement of goals in general, and occupational aspirations in particular, may be important for health. Studies suggest that failure to achieve occupational aspirations may be related to increased stress, to reduced physical and mental health and to withdrawal from work. The high number of people that do not gain access to their preferred field of study and fail to complete the education they have commenced means that many may not achieve their occupational aspirations. However, relatively few studies have examined the relationship between achieving occupational aspirations and possible negative consequences. This thesis addresses this through examination of the following question:

- Is failure to achieve occupational aspirations related to negative outcomes?

Several studies have demonstrated a connection between socio-economic status and health: higher status is related to better levels of physical and mental health. At the same time, people's ambitions for their educational and occupational achievements vary according to factors such as socio-economic background and academic performance. A low position may still accord with the aspirations, and a relatively high position does not guarantee that the aspirations have been achieved. This implies that, depending on previously held aspirations, occupational or educational positions may be considered failures or successes regardless of their position in the social hierarchy. However, it is likely that failure to achieve aspirations is more common among those with low socio-economic status than among those with high socio-economic status. This points to the possibility that the educational and occupational level people aspire to may be involved in the relationship between socio-economic status and health. This thesis addresses this through examination of the following question:

- Is aspiration achievement a factor in the relationship between socio-economic status and negative consequences?

The research questions are answered through four papers. The analyses in the papers draw on longitudinal survey-data linked to register data for around 3,000 young people in Norway. The dataset contains information both regarding current and previous occupational aspirations and current occupational achievements. In addition, the dataset also contains survey data on several indicators of well-being and register data on employment. This makes it possible to examine the relationship between aspiration achievements on the one hand and mental health, sickness absence and unemployment on the other.

5 Method

Data from the *Young in Norway Study* have been used in this thesis. The study followed Norwegian youths from early adolescence through to young adulthood. In this section, the dataset, central variables and analyses are presented.

Sample and procedure

The data collection in Young in Norway was conducted from 1992 through 2005. A national sample of 12,287 students from 67 lower and upper secondary schools (grades 7 – 12) was selected for the first data collection in 1992 (T1). In Norway, lower secondary school is mandatory and includes grades 7 – 9. Upper secondary school is not mandatory and includes grades 10 – 12. The sample was selected in two stages. First, all schools in Norway were categorized into one of five geographical strata. This was done to ensure geographical representativeness. Second, at the lower secondary level, the schools were additionally stratified into three strata by school size, which in Norway is closely related to the degree of urbanization (Wichstrøm, 2002).

At the upper secondary level, school size is not related to urbanization in the same manner. However, there is a clear distinction between general education and vocational education, with an additional type of school incorporating both streams. Upper secondary schools were therefore stratified into three strata according to these three pathways of study. Participating schools were then drawn according to strata size, such that the number of participating students in each stratum was proportional to the total number of students in the stratum (Wichstrøm (2002) gives a more detailed description of the sampling procedure). In Norway, 98.5 per cent of the age cohorts between 12 and 16 attend compulsory lower secondary school, and 97 per cent enter upper secondary school. This means that almost the

whole age cohort of Norwegian adolescents comprised the population from which the initial sample was drawn.

At the first data collection wave, students in grades 7 - 12 from participating schools were asked to complete a questionnaire at school. The questionnaire covered a broad range of topics. To reduce the possibility of respondents influencing each other's responses, the study was carried out simultaneously for all participants at each school.

The response rate at T1 was 97.0 per cent. Among those not participating, 206 (1.5 per cent) did not consent to participation, 55 (0.6 per cent) lacked parental consent and 117 (0.9 per cent) were untraceable or could not fill in the form due to hospitalization. Questionnaires with grossly incomplete data and obviously incorrect or humorous responses ($n = 319$) were excluded. In the end, the net sample consisted of 11,985 persons. Three schools were included at T1 for participation in the first wave only, and were not part of the follow-up in 1994 (T2). At another school, there was a burglary in the school's archives, and the project ID records were stolen.

A total of 9,679 students from 63 schools were eligible to complete the T2 questionnaire. The overall response rate at T2 was 79 per cent ($n = 7,637$). Respondents who were tested at T1 in the spring term of 8th or 11th grade, during 9th grade, or in 12th grade had in most cases completed their lower- or upper secondary education at the time of the second data collection, and had therefore left their original school. These students received the T2 questionnaire by mail. The postal participants of the study were reminded once. Those still in their original school completed the questionnaire at school, following the same procedure as in the first survey. 91.8 per cent of those who were still at their original school responded, whereas the figure was 68 per cent among those who received postal questionnaires (Pedersen and Blekesaune, 2003).

Because of the lower response rate among those receiving the questionnaire by mail, only respondents who completed the questionnaires at school at T2 (n = 3,844) were followed up at the third data collection in 1999 (T3). New informed consent was obtained at T2, because the study had originally been planned as a two-wave study only. 3,507 (91.2 per cent) respondents consented. They received the T3 questionnaires by mail. The response rate was 83.8 per cent (n = 2,923). The T4 data collection was conducted in 2005. All those that had consented at T2 (n = 3,507) were seen as potential participants and received the T4 questionnaire by mail. 82.4 per cent (n=2,890) of the potential participants completed the questionnaire.

The net sample at the four data collections was 11,985, 7,751, 2,924, and 2,890 at T1 to T4, respectively. The cumulative response rate was therefore 97.0 per cent at T1, 89.1 per cent at T2 (for those followed up in school), 68.1 per cent at T3, and 66.9 per cent at T4. At T4, the respondents were asked to consent to linking the survey data to register data from Statistics Norway's "FD-Trygd" databases. In all, 2,606 respondents (90 per cent) agreed to this, meaning that the overall response rate was 60%.

Central variables

Occupational aspirations and aspiration achievement

Respondents answered open-ended questions about their occupational aspirations at all four measurement points. The question was: 'Which job or occupation do you think it is most likely that you will have when you are 40?' This is a common way to measure occupational aspirations (Trusty, 2000; Friedland and Price, 2003; Patton and Creed, 2007; Schoon et al., 2007). Questions concerning occupational expectations, as in this study, have been found to lead to more realistic considerations and lower aspirations than questions concerning preferences (Slocum, 1974; Johnson, 1995; Patton and Creed, 2007).

The responses given by the participants were transformed into a four-digit ISCO code (International Labour Office, 1988). The ISCO coding system is designed to categorize occupations according to their content and the skill level they demand. Then, the aspirations were assigned to one of five groups according to the effort required to achieve the aspiration. The groups were defined in the following way.

1. Little or no education beyond lower secondary (cleaning staff, operators)
2. Upper secondary education (craftsmen, farmers)
3. Shorter tertiary education (nurses, teachers, low-level managers)
4. Master degrees (engineers, assistant directors, mid-level managers)
5. Prestigious education and/or success at work (directors, ambassadors, lawyers, judges, physicians, university professors)

The respondents stated their current occupation in the T4 survey. The answers were transformed by a procedure similar to the one used on occupational aspirations. First, the open-ended responses were converted to four-digit ISCO codes and then assigned to one of five groups. The variable ranges from 1 to 5, with 5 indicating the highest occupational status.

Aspiration achievement was calculated by subtracting the score assigned to occupational aspirations from the score assigned to occupational status. This approach is further discussed in the *Analysis* section.

Control variables

Gender, socio-economic background, mental health, working hours, marriage and cohabitation and having children are some of the variables that were controlled for in the analysis. In most cases, the variables were based on the respondents' responses in the surveys.

The indicator of socio-economic background applied in Papers 2 and 4 was based on data from Statistics Norway's Historical Event Databases on the parents' education.

In addition, the respondents' socio-economic status was controlled for. This is a particularly important control variable. Socio-economic status has been shown to be related to two of the dependent variables, mental health and sickness absence (Lorant et al., 2003; Hansen and Ingebrigtsen, 2008; Adkins, Wang, Dupre, van den Oord and Elder, 2009). In addition, socio-economic status is related to aspirations, because aspirations is a predictor of actual achievement (Schoon and Parsons, 2002; Schoon et al., 2007). This means that a possible relationship between aspirations on the one hand, and mental health and sickness absence on the other, may actually be due to socio-economic status. Therefore, when assessing the relationship between aspiration achievement and various dependent variables, socio-economic status must be controlled for.

One approach to this is to use occupational status as an indicator of socio-economic status. In this case one would control for occupational status in addition to aspiration achievement. However, as the variable aspiration achievement is a function of the variables occupational aspirations and occupational status, aspiration achievement and socio-economic status will be mathematically related. This mathematical relationship may lead to wrong conclusions regarding the relationship between aspiration achievement and dependent variables when controlling for socio-economic status.

Research on status inconsistency and social mobility has addressed a similar issue: how to model status inconsistency (discrepancies between two indicators of social position, such as a gap between educational and occupational status) and socio-economic status simultaneously. Several solutions have been put forward, such as the use of interactions and dummy variables (Blalock, 1966, 1967; Hope, 1975). However, none of the solutions has been adopted as standard approaches (Whitt, 1983; Brown, Cretser and Lasswell, 1988). This

methodological problem has probably contributed to the reduction in studies on status inconsistency (Zhang, 2008).

The solution applied in this thesis was to use education as indicator of socio-economic status. This ensured that the indicator of socio-economic status was not mathematically connected to aspiration achievement, even though the two variables may still be statistically related. However, if this is the case, it is not caused by measurements of occupational status being included in both the variables aspiration achievement and socio-economic status. This means that the analyses examine the relationship between the achievement of occupational aspirations and the dependent variables when educational achievement is controlled for.

The variable used to indicate aspiration achievement in this thesis is a combination of occupational aspirations and occupational position, and some of the variation in this variable will be due to the occupational position achieved. This means that a relationship between aspiration achievement and the dependent variable may actually be caused by the variation that is caused by occupational status, and not aspiration achievement. To test this, analysis that included aspiration achievement were compared to analysis that included occupational status.

Analysis

Several kinds of statistical analysis were conducted in the papers. The choice of analyses depends on the purpose of the analyses and with properties of the analysed data. The first paper is concerned with the development of aspirations, whereas the remaining three paper examine the relationship between aspiration achievement on the one hand and sickness absence, mental health and unemployment on the other. Regarding the choice of analyses, three themes are particularly relevant, and will be further discussed:

- The measurement of change
- Causality

- Mediation

The measurement of change is relevant in all four papers, causality is relevant in papers two to four, whereas mediation is relevant in the second and third paper.

The measurement of change

How change at the individual level should be measured has been a controversial issue in social science for a number of years (Cronbach and Furby, 1970; Rogosa, Brandt and Zimowski, 1982). I will present four approaches that have been suggested as suitable for this: change or difference scores, auto-regressions, the first difference method and growth curve models.

One way to measure change is to calculate the difference between measurements at two points in time. The resulting quantity, commonly referred to as change or difference score, gives a relatively straightforward indication of the change between the two measurements. The same method can also be used to calculate the difference between two different variables. However, this approach has been severely criticized (Cronbach and Furby, 1970). In particular, two problems have been addressed: regression towards the mean and the presumed low reliability of change and difference scores.

The extent of change in measurements taken at several points in time depends heavily on the initial measurement (Wilder, 1967). Scores on the first measurement that are particularly high or low may influence subsequent changes: those with high initial scores may not further increase their scores, whereas those with low scores may not be able to further decrease them. This may lead to regression towards the mean, which means that those with extreme high or low scores on the first measurement change their scores towards the mean at subsequent measures to a higher degree than those with scores that are closer to the mean. This may influence the results. Even though regression towards the mean has been found to be relatively common, this may not always be the case. For instance, fan-spread patterns have

been observed in applied research settings, where differences between those with high and low initial scores increase over time (Rogosa, 1995).

Regarding reliability, it has frequently been noted that in many cases, changes in scores are less reliable than either of the two variables used to compute the score (Cronbach and Furby, 1970; Kessler, 1977). However, Rogosa and colleagues (Rogosa et al., 1982) show that difference scores are not necessarily as unreliable as previously suggested, and that low reliability is only a substantial problem when scores at different time points are highly correlated. Furthermore, they suggest that difference scores can be useful and accurate indicators of individual change even when the reliability is low.

The use of auto-regressive models has been suggested as a another way to analyse change over time (Cronbach and Furby, 1970; Bast and Reitsma, 1997). Auto-regression means that the measurement at each time point is regressed onto the same measurement at a previous time point. This approach has been suggested as particularly well suited for examining the time-specific relations between two measurements over time, when the observation at time two depends on the observation at time one (Bast and Reitsma, 1997; Curran and Bollen 2001). However, this does not mean that the two measurements are causally related (Stoolmiller and Bank, 1995).

Another approach that can be used to examine change between two points of measurement is to regress change in the dependent variable on change in the independent variables (Norström, 2008). This approach is often called the first difference method. This method has the advantage that all time-constant unobserved heterogeneity is controlled for (Allison, 1990; Johnson, 2005). This means that the influence from factors that do not change between the two measurements is removed from the analyses.

Even though auto-regression is advantageous in many settings, this approach can be somewhat limiting if one wishes to examine individual differences in developmental

trajectories over time, since individual change is not explicitly addressed in such models. Growth curve modelling have been suggested as appropriate for such analyses (Rogosa et al., 1982; Bollen and Curran, 2006). In growth curve models, the observed repeated measurements are used to estimate a growth trajectory for each individual across time (Bollen and Curran, 2006). Growth curve models are suitable for analysing continuous underlying trajectories (Bast and Reitsma, 1997; Bollen and Curran, 2006).

The measurement of change in this thesis

Although the measurement of change is relevant in all four papers, the kind of change that the papers address differs slightly. The purpose of the Paper 1 is to examine individual development of occupational aspirations over time, and to investigate whether socio-economic background predicted this development. I decided to use growth-curve modelling in this paper, as this method is particularly suited for examining individual growth trajectories over multiple measurements (Curran and Bollen, 2001).

In some of the analyses in Paper 2, change between two measurements of mental health was the dependent variable. This change were modelled using auto-regression. It is reasonable to suggest that the scores on the first measurement of mental health are related to the scores on the second measurement. Auto-regression has been suggested as a relevant approach for such cases (Curran and Bollen, 2001; Bast and Reitsma, 1997). Another approach to model change in this paper would have been to use the first difference method. This method has the advantage of controlling for unobserved time-consistent variables. However, this method demands that the variables included must be measured at both times. One of the variables (being married/cohabitating) included in the analyses in paper two did not meet this criterion. Therefore, I chose to use auto-regression.

How well occupational aspirations and actual occupational achievement accord with each other is central in Papers 2, 3 and 4. The purpose of these papers is to examine how aspiration achievement relates to mental health, sickness absence and unemployment. This means that the analyses must include an indicator of aspiration achievement. I decided to use a difference score between aspirations and occupational position to indicate aspiration achievement. As the presentation of change and difference scores shows, such difference scores have been criticized for their dependency on the initial measurement and low reliability (Cronbach and Furby, 1970). However, even though the aspiration achievement variable may have low reliability, this may not mean that this indicator is not accurate in describing the relationship between aspirations and achievement. As suggested by Rogosa and colleagues (Rogosa et al., 1982), difference scores may be important indicators, even when they have low reliability. The correlation between the two variables used to construct aspiration-achievement is around 0.3 (see Paper 2), suggesting that the reliability is acceptable.

The initial measurement in this case is occupational aspirations held in early adolescence. Those with aspirations in the lowest categories cannot later have occupational positions that are lower than their aspirations. This means that they cannot get a negative score on the aspiration achievement variable. For those with aspirations in the highest category, the situation is the opposite: they cannot get occupational positions higher than their aspirations, and therefore cannot get positive scores on the aspiration achievement variable. However, this reflects the realities of aspirations and achievements: those with high aspirations may not gain access to positions that exceed these aspirations, whereas those with low aspirations may not achieve positions lower than those they aspired to.

Causality

The purpose of Papers 2, 3 and 4 was to investigate whether the achievement of occupational aspirations was related to mental health, sickness absence or unemployment.

A common problem with non-experimental data, as in this study, is the difficulties with establishing whether one variable is the cause of another, or if they are just related. In contrast to experimental studies, where individuals are randomly assigned to either the control or the experiment group, the respondents in non-experimental studies are not randomized. This means that there may be systematic differences between those that achieve their aspirations and those that do not, which could influence the results of the analyses.

The following conditions have been suggested for a variable to be a potential cause of another variable in non-experimental data (Kenny, 1979; Bollen, 1989; Cohen , Cohen, West and Aiken, 2003):

1. The independent variable is correlated with the dependent variable
2. The independent variable precedes the dependent variable in time
3. The relationship holds even when the influences of other possible variables on this relationship are eliminated so that the effect can be said to have been isolated.
4. It must be a theoretically plausible mechanism by which the dependent variable may exert its influence on the independent variable.

In all the papers several relevant co-variates have been controlled for. Furthermore, in Papers 3 and 4, the independent variable precedes the dependent variable in time. Regardless of this, it has been difficult to establish causal relationships. This will be further addressed in the discussion in Chapter 6.

The analyses in Papers 2, 3 and 4 are based on regression techniques. This approach was chosen because regression analyses allows for including several control variables simultaneously. Depending on the properties of the dependent variables, several kinds of regression analysis were conducted:

- linear regression was used in Paper 2, where the dependent variable was continuous

- Poisson regression was used in Paper 3, where the dependent variable was a count variable
- logistic regression was used in Paper 4, where the dependent variable was categorical

Mediation

Papers 2 and 3 examined whether aspiration achievement accounted for some of the relationship between socio-economic status levels on the one hand and mental health and sickness absence on the other. In these papers, mediation analyses were applied to examine whether potential mediator variables could explain some of the relationship between the independent and dependent variables. The mediation analyses were conducted in accordance with Baron and Kenny's (1986) suggestions regarding mediation testing. According to Baron and Kenny, a variable mediates the relationship between an independent variable and a dependent variable when the following criteria are fulfilled: The independent variable must be significantly related to the presumed mediator; the presumed mediator must be significantly related to the dependent variable; and the association between the independent and dependent variable must be no longer significant or significantly reduced when the presumed mediator is added as a predictor. A significance test provided by Sobel (1982) was used to examine the effects of including aspiration achievement in the models.

6. Introducing the papers

Paper 1

Occupational aspirations – development and predictors

This article examines how young people's occupational aspirations develop during adolescence, and whether this development relates to socio-economic background. Drawing on population-based longitudinal data from 1,702 Norwegian youths, growth curve modelling is applied to investigate development and predictors of occupational aspirations. The results suggest that young people increase their aspirations slightly during adolescence. The analyses show substantial similarities between men and women regarding the development and predictors of occupational aspirations. Furthermore, socio-economic background predicts the development of occupational aspirations, but only for men. This means that the impact of socio-economic background on aspiration continues through adolescence into young adulthood for men, whereas no such relationship is found for women. Differences in learning experiences and perceived opportunities may explain why socio-economic background is related to the development of occupational aspirations.

Paper 2

Socio-economic status and mental health – the importance of achieving occupational aspirations

This article examines whether achieving occupational aspirations accounts for some of the frequently noted relationship between socio-economic status and mental health. The analysis draws on longitudinal survey and register data for 1,644 young people, following the respondents over a 13-year period. The findings show that aspiration achievement was a significant predictor of symptoms of depression and anxiety. A linear relationship was found for depressive symptoms, indicating that symptoms of depression decreased as aspiration

achievement increased. A curvilinear relationship emerged for anxiety symptoms, indicating increased levels of anxiety symptoms among those in occupational levels substantially lower and higher than their previous expectations. The results suggest that aspiration achievement qualified as a mediator of the relationship between socio-economic status and mental health, even though only part of the relationship was explained. The findings point to the importance of obtaining a job that is in accordance with previous expectations.

Paper 3

Socio-economic status, achieving occupational aspirations and sickness absence: A population-based longitudinal study of Norwegian youths.

This paper examines whether the degree of convergence between occupational aspirations and actual occupational achievement can provide elucidation on the relationship between socio-economic status and sickness absence. The analyses draw on survey data from a longitudinal study following 1,552 respondents from adolescence through young adulthood linked to register data on sickness absence. Occupational aspirations in adolescence were contrasted with actual occupational achievement in young adulthood and used to predict sickness absence. In accordance with existing research, socio-economic status significantly predicted sickness absence, even after controlling for several relevant variables. Including aspiration achievement in the analysis reduced the relationship between socio-economic status and sickness absence, while aspiration achievement was significantly related to sickness absence. The findings indicate that aspiration achievement mediates the relationship between socio-economic status and sickness absence.

Paper 4

Predicting unemployment: Occupational aspiration–achievement discrepancy as a risk factor in Norwegian young adults

Research on risk of unemployment has primarily focused on the importance of individual assets, such as level of education achieved and personal characteristics. This paper investigates whether a discrepancy between current occupational position and occupational aspiration predicts unemployment. Achieving occupational aspirations may be highly important for young people in Western societies. The analyses were conducted on longitudinal survey data linked to register data on 1,681 Norwegian young adults. The results showed that being in an occupation with lower status than the occupation to which the person aspired significantly predicted the risk of later unemployment. The findings accord with research suggesting that a mismatch between employees' subjective expectations and their actual job situation has negative consequences. Failure to achieve a match may lead to unemployment both through proactive behaviour, such as quitting a current job to find a new one, or through giving up, such as withdrawing from work.

7. Discussion

The aim of this thesis, as presented in Chapter 1, was to investigate young people's occupational aspirations, and to examine whether discrepancies between occupational aspirations and actual achievements have negative consequences. The purpose of the thesis was specified through the following research questions:

- How do occupational aspirations develop during adolescence?
- Is failure to achieve occupational aspirations related to negative outcomes?
- Is aspiration achievement a factor in the relationship between socio-economic status and negative consequences?

The findings in the papers indicate that young people increase their aspirations during adolescence, and that the development of aspirations are related to socio-economic background for men, but not for women. Furthermore, the analysis shows that failing to achieve occupational aspirations may have negative consequences and that aspiration achievement could be involved in the relationship between socio-economic status and factors such as mental health and sickness absence.

Occupational aspirations – development and predictors

The analysis in Paper 1 show that occupational aspirations increased as the respondents grew older. The finding does not accord with previous studies (Jacobs et al., 1991; Rindfuss et al., 1999; Lee and Rojewski, 2009). The increased aspirations was seen as reflecting a situation where young people learn more about their opportunities for educational and occupational achievement during adolescence. This knowledge may mean that they have to adjust their expectations for what it is reasonable to achieve.

Socio-economic background

The thesis shows the importance of socio-economic background for occupational aspirations.

The level people aspired to, was related to their social origins. This finding accords with theories on aspiration formation and development (Gottfredson, 1981; Lent et al., 1994, 2000), and with theories on social reproduction (Bourdieu, 1984, 1996; Goldthorpe, 2000).

The importance of socio-economic background for educational and occupational achievement is accounted for in the theories by Bourdieu (1984, 1996) and Goldthorpe (2000). For Bourdieu, the relationship between socio-economic background and educational and occupational achievement is explained by class-induced ways of thinking, what he refers to as habitus, and by cultural capital. Goldthorpe suggest that decisions regarding education and occupation are based on rational considerations of existing options. This means that the probability and consequences of failure are taken into consideration when deciding on future education and occupation.

The analyses in this thesis was not designed to decide whether one of these explanations is more plausible than the other. However, some of the findings may be more in accordance with Goldthorpe's explanation than with Bourdieu's. In Paper 1, the aspirations were found to increase as the respondents became older. This was interpreted as indicating that people adjusted their aspirations so they became more realistic, which has been suggested as a central part of the development of aspirations (Gottfredson, 1981). This adjustment towards more realistic aspirations is in line with Goldthorpe's explanation, because considerations of what it is realistic to achieve is a central part of his theory. In contrast, Bourdieu's explanation does not open up for this kind of adjustment to the same extent, because decisions regarding education and occupation is based on class induced dispositions to think and act in certain ways.

Another central part of Goldthorpe's theory is that the process of deciding on education and occupation varies between the classes. Strategies from below, involving choosing safer options when pursuing longer education involve the risk of failure, is applied by the lower classes, whereas strategies from above, involving maximizing educational attainment are applied by the higher classes. The findings in Paper 1 partially support this view, because socio-economic background was found to predict the development of aspirations. The analyses showed that men from higher socio-economic background had a more positive growth in their aspirations than those from lower socio-economic background. This is in accordance with Goldthorpe's view regarding how strategies for educational and occupational achievement differs between the classes.

However, for women, socio-economic background did not predict the development of aspirations. The analysis in Paper 1 showed that whereas factors such as socio-economic background and academic performance were related to the development of aspirations during adolescence for males, no such relationship was found for females. This means that during adolescence, women do not adjust their aspirations due to socio-economic background or grades, whereas men do. A possible reason for this may be that women have adjusted their aspirations according to socio-economic background more often than men have by the first data collection.

Gender differences

Except for the relationship between gender and development of aspirations, relatively few gender differences were found. There were no gender differences in the development of aspirations, nor in the level of aspirations at any of the four data collections. Furthermore, the relationship between aspiration achievement on the one hand and sickness absence, mental health and unemployment on the other were equally strong for both males and females. This

means that men and women have similarly ambitious aspirations, and that there are no gender differences in the consequences of not achieving them.

Consequences of failure to achieve occupational aspirations

The results from the papers show that many of the respondents had achieved an occupational status that matched their previously held aspirations. These findings accord with existing studies showing a strong relationship between aspirations and actual achievement (Sewell et al., 1970; Schoon and Parsons 2002; Schoon and Polek, 2011). Around one in three respondents was currently occupying a position that was lower than what they previously aspired to. This supports the suggestions put forward by Furlong and Cartmel (2007) regarding unrealistic aspirations among young people in western contemporary societies. Furlong and Cartmel view the high aspirations as resulting from beliefs regarding the opportunities for educational and occupational achievement on the societal level. The data and analysis in this thesis are not appropriate for confirming or rejecting this suggestion. However, the results show that a substantial proportion of the respondents had an aspiration in adolescence that they had not achieved as young adults, suggesting that unrealistic aspirations may be common.

The findings in Papers 2, 3 and 4 showed that the match between aspirations and achievements were related to negative outcomes. The papers are relatively different, not only regarding the subject, but also when it comes to the theories applied and analyses conducted. This means that the explanations for the relationships found between aspiration achievement and the dependent variable vary in the three papers. In this section I focus on how the consequences of failure to achieve occupational aspirations can be accounted for. Differences between the papers that can be attributed to the analyses are discussed in the limitations section.

Mental health

Paper 2 showed that those that have not achieved their occupational aspirations score higher on indicators of depression and anxiety than those that have achieved their aspirations. This is in line with empirical findings showing how aspiration achievement and underemployment relates to several negative consequences, such as reduced mental health and well-being (Borgen, et al., 1988; Carr, 1997; McKee-Ryan et al., 2009; Hardie, 2014).

The finding was interpreted in light of two kinds of theories: theories on social epidemiology and Michalos' Multiple Discrepancies Theory. The social epidemiological theories point to how an achieved occupational position may be related to health, whereas Michalos points to how discrepancies between standards and an actual situation may be negative for people's general satisfaction. This means that gaps between their current occupational position and aspirations may have negative consequences. Together, these theories suggest that failure to achieve goals may be negative, and that occupational aspirations are unique in this sense, as goals for occupational achievement may be particularly important to achieve.

Sickness absence

Paper 3 suggests that aspiration achievement is related to the number of days on sick leave. Even though sickness absence and mental health may be related, mental health and sickness absence are not the same phenomenon. Mental health, as examined in Paper 2, is based on people's self-reporting on their feelings and experiences. Sickness absence, as applied in Paper 3, has been drawn from register data on sick leave. The two measures may or may not be correlated, since the relationship between health and sickness absence is complex: people can experience health problems without being absent from work, or they can be on sick leave without experiencing health problems. This means that sickness absence and mental health are

two related but different indicators of possible negative consequences of aspiration achievement.

The theoretical basis in this paper was Siegrist's theory of effort-reward imbalance (Siegrist, 1996). In short, the theory postulates that perceived imbalance between efforts and rewards at work can lead to stress and reduced health in general, and more specifically more sickness absence. The theory is in line with the social causation hypothesis, suggesting that factors at work influence health. The findings in Paper 3 are in line with the suggestions put forward by Siegrist. According to Siegrist, being in a job that does not match the aspirations may lead to sickness absence. This may be particularly evident for those that perceive that they cannot change the situation at work.

Unemployment

In Paper 4, aspiration achievement was found to be related to unemployment. This finding, however, has different implications from the relationship found between aspiration achievement and sickness absence and mental health. This is due to different measures of aspiration achievement having been used. Whereas the consistency between aspirations held in adolescence and occupational achievement in young adulthood were used to indicate aspiration achievement when examining sickness absence and mental health, the distance between simultaneously measures of aspirations and achievements in young adulthood were used as indicator of aspiration achievement in the paper on unemployment. This means that the relationship found between aspiration achievement and unemployment is not necessarily a reaction to failure to achieve the expected occupational status. The finding may indicate how important it is to achieve occupational aspirations, and the means that people use to accommodate this.

The paper draws on research on work satisfaction, suggesting that a mismatch between subjective expectations (such as aspirations) and the actual situation (such as occupational

position achieved) increases to desire to quit the current job and find a new one (Locke, 1976; Kalleberg, 1977; Kalleberg and Mastekaasa, 2001). The findings in the paper support this view, even though other explanations, such as involuntary unemployment cannot be completely ruled out.

The importance of standards and achievements

The theories presented suggest that the relationship between aspiration achievement and negative consequences may occur because particularly important goals have not been achieved (Michalos, 1985), through perceptions of an unsatisfactorily situation at work (Siegrist, 1996), and through experiencing that the realities do not match the expectations (Kalleberg, 1977; Kalleberg and Mastekaasa, 2001). Even though the explanations are relatively different, they have at least one thing in common: the view that a gap between standards and reality may have negative consequences.

According to Elster (1983), there are two main strategies when standards and reality do not match: improving the situation or changing the standards. This implies that those that have not achieved their occupational aspirations may try to increase their occupational status or change their aspirations to match the realities. For those that are successful in managing to adjust their aspirations, failure to achieve aspirations may not involve reduced mental health or increased sickness absence. In line with this, Reynolds and Baird (2010) did not find a relationship between unrealized educational expectations and symptoms of depression. They suggest that an individual's capacity to deal with unexpected and undesirable situations explains this.

However, the way aspirations form and develop may mean that adjusting them or adapting to not achieving them could be difficult. Theories on social reproduction (Bourdieu 1984, 1996; Goldthorpe, 2000), theories on educational and occupational achievement (Sewell et al., 1969; Gottfredson, 1981; Eccles, et al., 1983; Lent et al., 1994, 2000) and empirical findings

(Creed et al., 2007; Schoon et al., 2007) suggest that aspirations are related to background factors, such as socio-economic background, and to experiences of failure and success, such as academic performance. In addition, Gottfredson suggest that aspirations are related to people's self-concepts, further supporting the notion that aspirations may not be easily changed.

Social causation, health selection or confounding factors?

The papers in this thesis show that aspiration achievement is related to mental health, sickness absence and unemployment. This relationship may mean that variations in aspiration achievement causes variations in the negative outcomes. This interpretation is in line with the social causation hypothesis, suggesting that success and failure in occupational achievement leads to variation in health and sickness absence (Siegrist, 1996; Marmot, 2004). However, as discussed in Chapters 2 and 3, the direction of causality is not easily determined, and other explanations could be plausible.

First, variation in health may lead to variation in aspiration achievement. This is in line with the health selection hypothesis (Bloom and Canning, 2006; Canning and Bowser, 2010). West (1991) suggests that health may influence the socio-economic status achieved because of reduced opportunities for completing education and through limited access to work. The analysis in Papers 2 and 3 include measurement of the level of education achieved. This means that when we examine whether aspiration achievement predicts mental health and sickness absence, one of the ways that variation in health may influence socio-economic status is controlled for. The analyses in Paper 4 also controls for education, but the variable only indicates whether the respondents have completed upper secondary education or not. However, difficulties with access to work due to impaired health were not accounted for in the papers, and I cannot rule out the importance of health selection in the found relationship.

Second, the relationship between aspiration achievement and the negative outcomes may be caused by confounding factors. Health and socio-economic status in childhood have been suggested as factors that may influence both health and achieved socio-economic status in adulthood (Warren, 2009; Chandra and Vogl, 2010). These factors may also influence both aspiration achievement and the assessed negative outcomes, mental health, sickness absence and unemployment. Parental socio-economic status was controlled for in the analyses, suggesting that the found relationship between aspiration achievement and the negative outcomes is not caused by this factor. Regarding childhood health, it is easy to see how impaired health may influence adult physical and mental health, as well as occupational achievement.

However, the importance of this factor is less straightforward when it comes to aspiration achievement. For childhood health to explain aspiration achievement, young people with impaired health would have to achieve their aspirations to a lesser degree than others. This means that this group must have unrealistic aspirations to a higher degree than children without impaired health. As discussed in Chapter two, the occupational aspirations of young people depend on a number of factors, such as probability of success (Gottfredson, 1981; Eccles, et al., 1983; Lent, et al., 1994, 2000). It is reasonable to suggest that young people with impaired health would adjust their aspirations if the impairment could interfere with educational and occupational achievement. An exception from this would be when one's health changes in such a way that the probability for achieving the aspirations is reduced. A substantial reduction in health after the first measurement of aspirations will most likely increase the risk for not achieving the aspirations. This suggests that downward changes in health is more strongly related to aspiration achievement than is constantly impaired health.

Furthermore, impaired childhood health may have different consequences depending on socio-economic background. According to Goldthorpe (2000), the higher the socio-

economic status of the family, the more resources they are willing to provide for their children's education. This may mean that the impact of childhood health differs depending on socio-economic background.

The role of aspirations in educational and occupational achievement

The introduction showed that there are diverging views about the role aspirations has for educational and occupational achievement. For Bourdieu and Passeron (1990), aspirations are merely reflections of the existing possibilities, and they suggest that aspirations and achievements will be more or less identical. This view is not supported by the findings in the thesis. Findings in Papers 2 and 3 show that far from all achieve their aspirations, whereas some achieve higher positions than they aspired to. These findings are more in accordance with suggestions by Furlong and Cartmel (2007). They view contemporary Western societies as characterized by high expectations regarding the options for occupational achievement. However, the chances of achieving a high position is not evenly distributed, young people with high socio-economic background have better chances than those with lower backgrounds.

A similar suggestion is made by Zipin, Sellar, Brennan and Gale (2015). They distinguish between aspirations that comes from experiences of one's own position and aspirations that are viewed as desirable in a society. The latter form of aspirations are only achievable for those from a privileged social position, and function to reproduce inequality by inducing many to pursue unrealistic aspirations.

In contrast to Bourdieu and Passeron (1990), Gambetta (1987) emphasizes the importance of preferences, and view them as central for educational and occupational achievement. The preferences people have are related to socio-economic background, but not

fully explained by it. Constraints, such as financial resources in the family, and probability of success, such as academic performance, contribute to decisions of whether to pursue the preferences or not. The findings in this thesis suggest that occupational aspirations can contribute to explain differences in factors such as sickness absence, unemployment and mental health also when socio-economic background, and other factors, are controlled for. These findings imply that aspirations are important to achieve, and that they probably are a central part of educational and occupational achievement.

Aspiration achievement and socio-economic status

Aspiration achievement was found to mediate the relationship between socio-economic status and mental health and sickness absence. This involves three main considerations (Baron and Kenny, 1986). First, aspiration achievement is related to socio-economic status: compared to those in the higher social strata, more people in the lower strata have been unable to achieve a level of occupational status that accords with their aspirations. Second, aspiration achievement was related to the possible outcomes examined: reduced mental health and sickness absence. Third, the relationship between socio-economic status and the possible outcomes examined was reduced when aspiration achievements were included in the analysis.

The finding is in accordance with Siegrist's (1996) theory of effort-reward imbalance, suggesting that negative situations at work influences health, and that this could explain some of the relationship between socio-economic status and health. He further suggests that occupational positions are crucial social roles, and that threats to these roles affects self and identity. Therefore, being in an occupational position that is lower than expected may be a negative experience, influencing health.

However, the relationship between socio-economic status and the dependent variables was only partially reduced when aspiration achievement were included in the analyses. This

means that aspiration achievement only explains a small part of the relationship between socio-economic status and the examined outcomes, and also that other factors are involved in this relationship. On the one hand, aspiration achievement may therefore be viewed as a mechanism of little importance in this relationship. Dismissing this variable as a mechanism, and focusing on the variables that explain larger parts of relationships may seem rational.

On the other hand, identifying mediators, even those that only account for a small part of a relationship, could be important. This may be particularly true when it comes to the relationship between socio-economic status and indicators of health. Existing research suggest that several mechanisms are involved in these relationships (Lynch et al., 2000; Uphoff et al. 2013; Reiss, 2013). However, the relationships are not considered as fully accounted for, and the mechanisms involved are still being debated (Kroger, et al., 2015). In a situation like this, it may be important not to exclude variables prematurely. If a variable is theoretically plausible as a mediator, and significantly related to the independent and dependent variable at hand, it may be reasonable to examine this further. Therefore, instead of dismissing aspiration achievement as a mediator in the relationship between socio-economic status and different indicators of health, further research in this area should be conducted.

Additional analysis showed that aspiration achievement was a better predictor of mental health and unemployment than occupational status. This means that after socio-economic status (i.e. educational achievement) had been controlled for, occupational achievement was not as strongly related to mental health and unemployment as was aspiration achievement. This means that to assume that aspiration achievement is related to the dependent variables because occupational achievement is a part of the variable is not supported. The findings in this thesis are in contrast with the conclusions drawn in a previous study (Reynolds and Baird, 2010), where the relationship between unrealized educational expectations and symptoms of depression disappeared when achieved education was

controlled for. Reynolds and Baird concluded that that the real reason for the relationship between goal achievement and mental health was the lower level of education that was achieved. The analysis in the study was conducted on data from 1982, whereas analysis for the current thesis was conducted on data from 2005 and onwards. This could explain the divergent findings, because it has been suggested that the importance education and occupation has increased (Furlong and Cartmel, 2007).

Limitations

The analyses in the papers that are included in the thesis are based on a large longitudinal study following respondents for a period of 13 years. However, there are still several limitations in the dataset and analyses that influences the conclusions that can be drawn from the study.

Difficulties with establishing a causal relationship

The causal relationship between aspiration achievement and the dependent variables that were examined was difficult to clarify. Four criteria for a causal relationship were presented in

Chapter four:

1. The independent variable is correlated with the dependent variable
2. The independent variable precedes the dependent variable in time
3. The relationship holds even when the influences of other possible variables on this relationship are eliminated so that the effect can be said to have been isolated.
4. It must be a theoretically plausible mechanism by which the dependent variable may exert its influence on the independent.

The relationship between aspiration achievement and negative outcomes meets some of these criteria. Aspiration achievement was found to be significantly related to the dependent variables in Papers two, three and four, thereby fulfilling the first criterion. Regarding the fourth criterion, it is my opinion that the different theories presented in Chapter 2 and in the papers point to a relationship between aspiration achievement and mental health, sickness absence and unemployment as plausible.

The second criterion is, however, fulfilled to a lesser degree. Even though aspiration achievement preceded sickness absence and unemployment in time in the analyses in Papers three and four, the relationship could be more complex. Sickness absence and unemployment could have been present at an earlier point in time, thereby making the causal relationship harder to unravel. In Paper two, occupational status - used to calculate aspiration achievement - was measured at the same time as mental health. Therefore, we cannot clearly state that aspiration achievement precedes mental health in time in this paper.

The third criterion for causality, controlling for other possible variables, has also not been met. Even though several relevant variables were controlled for, it is possible that also other factors are involved in the relationship between aspiration achievement and the examined negative outcomes. Of particular relevance are factors that may explain both the achieved socio-economic status and variation in health, such as childhood health (Warren, 2009).

To control for differences in mental health in paper two, the initial level of anxiety and depression were controlled for. In these analyses, aspiration achievement still predicted mental health at T4, suggesting that the initial level of depression and anxiety did not explain the found relationship between aspiration achievement and mental health. However, also in these analyses, we cannot rule out the possibility of indirect selection influencing the findings. First, there is no information of physical health, a factor that may be of importance for later

mental health and aspiration achievement. Second, young people's mental health may decline sometime between the two measurements of mental health, which may lead to problems with achieving the necessary occupational level, and may therefore explain failure to achieve occupational aspirations.

As mentioned in Chapter 2, an alternative approach to the applied auto-regressive models would be to use the first difference method. With this approach, the effect of time-consistent variables, i.e. factors that do not vary between the two times of measurement, are controlled for. This would be an advantage in the analyses, and would mean that some of the influence of omitted variables could be removed. However, this approach would not remove the effect of time-inconsistent factors, such as change in physical and mental health. Therefore, the possibility of such factors being involved in the relationship would still be present also if the first difference method was used.

Selective attrition

Many of the respondents were not included in the analysis. There were several reasons for this. First, some could not be included because they had not participated in one of the surveys used in the analysis, or because they had not answered necessary questions. Second, some were excluded because they had not consented to connecting survey data to register data. Third, analysis involving aspiration achievement could only be conducted for the respondents that were working at the time of the last data collection. Those still pursuing education at that point were therefore not included in the analysis. This means that the analysis does not include either those pursuing particularly long periods of education, those that have been delayed in undertaking their education or those who were older than others when they started their education. Combined, this led to a relatively high number of respondents that were not included in analysis. This reduces the possibility to generalize the findings in the paper.

The investigated period

The lack of data on respondents beyond their early adolescence is another limiting factor. The measure of occupational aspirations concerned expectations for the age of 40, but occupational achievement was assessed when the respondents were in their late 20s. This means that the variable used to indicate aspiration achievement may overestimate the number of people that have not achieved their aspirations. The respondents are relatively young, and it is still possible for them to achieve the aspirations they had for the age of 40.

Conclusion

The findings in this thesis suggests that young people's aspirations for their eventual occupation increase slightly during adolescence, and that there is a relationship between aspiration achievement and factors such as mental health and sickness absence. Furthermore, aspiration achievement was found to explain some of the relationship between socio-economic background and mental health. More research on both the relationship between aspiration achievement and other health indicators are needed, as well as research on aspiration achievement as a mediator on the relationship between socio-economic status and health.

All in all, these results imply that aspiration achievement may be a relevant factor to study in social epidemiological research. However, further studies are needed, preferably studies that can clarify the casual relationship to a greater degree than the current study.

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Appendix – the four papers

Paper 1

Gjerustad, C. and von Soest, T. Occupational aspirations – development and predictors. *Submitted to Journal of Career Development.*

Paper 2

Gjerustad, C. and von Soest, T. (2012) Socioeconomic status and mental health – the importance of achieving occupational aspirations. *Journal of Youth Studies, 15 (7): 890 – 908.*

Paper 3

Gjerustad, C. and von Soest, T. (2010) Socioeconomic status, achieving occupational aspirations and sickness absence: A population based longitudinal study of Norwegian youths. *Norsk Epidemiologi, 20 (1): 85-92.*

Paper 4

Gjerustad, C. Predicting unemployment: Occupational aspiration–achievement discrepancy as a risk factor in Norwegian young adults. *Accepted for publication by International Journal of Social Welfare.*

Socioeconomic status, achieving occupational aspirations and sickness absence: A population based longitudinal study of Norwegian youths

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ABSTRACT

This paper examines whether the degree of convergence between occupational aspirations and actual occupational achievement can elucidate the relationship between socioeconomic status and sickness absence. The analyses draw on survey data from a longitudinal study following 1,552 respondents from adolescence through young adulthood linked to register data on sickness absence. Occupational aspirations in adolescence were contrasted with actual occupational achievement in young adulthood and used to predict sickness absence. In accordance with existing research, socioeconomic status significantly predicted sickness absence, even after controlling for several relevant variables. Including aspiration achievement in the analysis reduced the relationship between socioeconomic status and sickness absence, while aspiration achievement was significantly related to sickness absence. The findings indicate that aspiration achievement mediates the relationship between socioeconomic status and sickness absence.

INTRODUCTION

Low socioeconomic status has repeatedly been shown to be related to increased risk for sickness absence [1-3]. Previous research has focused on examining health behavior and physical and psychosocial environment at work as potential mechanisms explaining this relationship [2,4-6]. However, the relationship between socioeconomic status and sickness absence is still poorly understood [7].

This paper examines whether achieving occupational aspirations, hereafter referred to as aspiration achievement, is a mechanism that may contribute to explain the relationship between socioeconomic status and sickness absence in young adulthood. The relationship between previous aspirations and current occupational achievement could be related to how rewarding people perceive their work to be, thereby influencing sickness absence [8]. Furthermore, failure to achieve occupational aspirations is probably most common in lower socioeconomic strata because this involves occupying a lower occupational position than expected. Although aspiration achievement may be related to socioeconomic status and sickness absence, this has not yet been examined.

The present study investigates these issues through analyses of survey data derived from a population-based longitudinal study of Norwegian youth linked to register data on sickness absence, covering the period from adolescence to young adulthood. The combination of the two data sources makes it possible to contrast aspirations in adolescence with later occupational achievement and sickness absence.

Sickness absence

Whereas sickness absence is clearly related to health, it is not caused by health problems alone [9]. The relationship between health and sickness absence is com-

plex; people can experience health problems without being absent from work, or they can be on sick leave without experiencing health problems. This means that theoretical and empirical explanations of sickness absence must go beyond simply explaining health and socioeconomic differences in health. The reasons for sickness absence must be made explicit.

The effort-reward imbalance theory by Siegrist provides just such a theoretical framework by proposing that imbalance between work-related efforts and rewards explains sickness absence [8,10]. The theory was originally designed to explain how opportunity structures at work influence health in general, but was later specified to explain sickness absence as well [8]. The basic theory is that the ratio of invested effort to perceived reward at work is related to health, and that imbalance between efforts and rewards (high effort and low reward) influences health and sickness absence through reduced self-esteem [10,11]. Empirical research has confirmed that effort-reward imbalance predicts sickness absence [8,12-14].

Siegrist views effort-reward imbalance as particularly evident in low-status occupational positions [10, 11]. The low wages that characterize low status work are not necessarily followed by low effort, thereby increasing the risk of effort-reward imbalance. However, empirical findings on this are inconclusive. Bosma and colleagues [15] found that effort-reward imbalance was more common in low-status occupations, Kuper and colleagues [16] found it more evident in higher socioeconomic strata, whereas Rugulies and colleagues [17] found it to be similarly present in occupations at all socioeconomic levels.

Status control

In the effort-reward theory, efforts include demands and obligations of an occupational position and the

performance of the individual employee, whereas rewards include money, esteem and status control. The term “status control” refers to the degree of control over one’s own occupational position, and is of particular relevance to this paper. Drawing on Mead [18], Siegrist proposes that occupational positions are crucial social roles, and that threats to these roles affect self and identity. According to Mead, people’s view of themselves is strongly influenced by the views of others. Social roles have consequences for others’ view of a person, and for how persons view themselves. In line with this, Siegrist considers status control as fundamental for perceived rewards from work, and relates it to “those aspects of occupational life that threaten a person’s self-regulatory functions, his or her sense of mastery, efficacy and esteem by evoking strong recurrent negative emotions of fear, anger or irritation” [10:30].

For Siegrist, both negative changes in a job situation, such as termination, forced occupational change, downward mobility and stable negative situations such as lack of promotion prospects and inconsistency between education and occupational positions involve low status control and low rewards. By examining effort-reward imbalance and sickness absence, Peter and Siegrist [8] found that status incongruence, the mismatch between efforts and aspirations on the one hand and career achievements on the other, was the most consistent predictor of sickness absence. The authors concluded that status incongruence is probably a particularly frustrating situation that may easily lead to withdrawal and “giving up.” The achievement of occupational aspirations is closely related to what Siegrist views as status control. To fail to achieve aspirations could therefore involve low status control, reducing the perceived rewards from work and increasing the likelihood of sickness absence.

Occupational aspirations and aspiration achievement

Occupational aspirations are expressions of expected or preferred future occupation, and have been found to be closely related to actual occupational achievement [19,20]. Adolescence is a particularly important period for the development of aspirations, laying the ground for later aspiration achievement. During adolescence, occupational aspirations stabilize [21] and start to have real-life consequences to a greater extent than before. Many important decisions regarding education and occupation are taken in adolescence, decisions that are influenced by aspirations [22,23]. Having unrealistic aspirations during this period can lead youths towards pursuing educations and occupations they will fail to achieve.

Socioeconomic background is commonly regarded as particularly important for occupational aspirations [24,25]. Empirical research confirms this; socioeconomic background and academic performance have been found to be the two variables that best predict the level of occupational aspirations [21,26-28].

Exactly how socioeconomic background influences occupational aspirations has been much debated. Bourdieu [29] considers socioeconomic background to influence people’s habitus, which in turn influences how they act and think. When youths consider their future education and occupation, their decisions are guided by their habitus. Therefore, youths tend to choose occupations that are relatively similar to those of their parents, because this is what they consider appropriate and natural. In contrast to Bourdieu, Goldthorpe [30] sees decisions regarding education and occupation as primarily based on rational consideration of available possibilities. However, he suggests that an important premise when considering possibilities is that the youths must achieve at least the same occupational status as their parents. Hence, Goldthorpe also views socioeconomic background as having a substantial influence on decisions regarding education and occupation.

Furlong and Cartmel [31] have suggested that beliefs on the societal level also influence adolescents’ occupational aspirations. They see current Western societies as being characterized by beliefs about the importance of achieving high-status occupations and unrealistic views of the possibilities of achieving such occupations. This situation could pressure young people into setting ambitious goals. Furlong and Cartmel’s suggestion is supported by empirical findings that youths in the year 2000 had higher and more unrealistic aspirations than those 20 to 25 years earlier [32,33].

Sickness absence in Norway

Norwegian employers are allowed self-reported sickness absences of up to 12 or 24 days a year, depending on the agreements at the workplace. Beyond this, a medical certificate confirming the inability to work is necessary. Sickness benefits are normally 100% of the income up to six times the basic national insurance amount, which was NOK 453,846 in 2010. This means that for most employees, with the exception of those with high earnings, sickness absence does not involve reduced income. Benefits for the first 16 days of a sickness absence period are covered by the employer, whereas benefits beyond 16 days are covered by the National Insurance Scheme.

Research questions

Empirical findings and theoretical frameworks suggest that aspiration achievement could be related to sickness absence. The present paper aims to investigate whether aspiration achievement can be seen as a mechanism explaining the relationship between socioeconomic status and sickness absence. The analyses were conducted on survey data derived from a population-based longitudinal study of Norwegian youth linked to register data on sickness absence. The combination of the two data sources makes it possible to assess aspiration achievement and whether it is significant in the relationship between socioeconomic status and the number of sick-leave days.

METHODS

Participants

This paper is based on data from the *Young in Norway* longitudinal survey study, with data collected at four time points: 1992 (T1), 1994 (T2), 1999 (T3), and 2005 (T4). The survey data were moreover linked to time series data on sickness absence from Statistics Norway's "FD-Trygd" databases.

The initial sample at T1 was composed of 12,287 students in grades 7–12 (12–20 years of age), drawn from 67 representative high schools in Norway with a response rate of 97%. At T2, students who still attended the same school as in T1 were followed up with questionnaires at school. Because a sizable proportion of the students had completed their three-year track at the junior or senior high school they attended at T1, participants no longer at their original school at T2 received the questionnaire by mail. The response rate of those still attending the same school at T2 was 92%. Only students who completed the questionnaire at school at T2 ($n = 3,844$) were followed up at T3 because of the lower response rate among those receiving the questionnaire by mail. Because a two-wave study was originally planned, informed consent had to be obtained again at T2. Those then consenting ($n = 3,507$; 91%) received questionnaires by mail at T3 and T4, with data received from 2,924 participants (84%) and 2,890 (82%) participants, respectively. At T4, the respondents were asked to consent to linkage of data to several registers. In all, 2,606 respondents (90%) agreed to this, setting the overall response rate to 60%. For a more detailed description of the *Young in Norway* study, see Pedersen [34] and Wichstrøm [35].

Multiple logistic regression analysis was conducted to examine potential selective attrition from T2 to T4. Being female (OR = 1.32, $p < .001$) and having higher socioeconomic background (OR = 1.10, $p < .001$) increased the probability of participation at T4, whereas greater age (OR = .74, $p < .001$) decreased the probability. Because this paper focuses on sickness absence, respondents who reported not working at T4 were not included in the sample. Hence, 672 respondents not working at T4 were excluded, leaving 1,934 persons reporting full- (1,638) or part-time (296) work at T4. Furthermore, because answers were missing on one or several items either at T2 or T4, an additional 382 respondents were excluded. Thus, data from 1,552 persons were included in the analyses, 727 (47%) males and 825 (53%) females.

Measures

Sickness absence. Register data from Statistic Norway's FD-trygd databases were used to obtain time series data on sickness absence. The FD-Trygd database contains all sickness absence compensated by the National Insurance Scheme. Since the first 16 days in a sickness episode are not compensated by the Scheme, sickness absence shorter than 17 days was not included

in the database. In this study, sickness absence was the number of days the respondents were reported to be absent from work in the time frame of one year after completing the T4 survey.

Occupational aspirations. At T2, respondents were asked to respond to the following open-ended question about their future occupation: "Which job or occupation do you think you are most likely to have when you are 40? If you are not sure, write what you believe or take a guess." The answers were categorized into a four-digit code according to the International Standard Classification of Occupations (ISCO-88) [36], and then assigned to one of five groups according to the effort required to achieve the aspiration, ranging from "1 – workers" to "5 – higher administrative occupations". This approach is common when measuring aspirations [19,37–39]. Assessing expected future occupation, as was done in the *Young in Norway* study, leads to more realistic considerations and lower aspirations than assessing a preferred future occupation [37,40,41]. The measurement of aspirations from T2 was chosen over measurements at other points in time to ensure that the aspirations were relatively realistic, and, at the same time, expressed goals rather than positions already achieved. At T2, the respondents were in the last two years of junior high school or in the last two years of senior high school.

Aspiration achievement. At T4, the respondents were asked to state their current occupation. The open-ended answers were, as for occupational aspirations, transformed into a four-digit ISCO and then assigned to one of five different occupational groups as described above. Aspiration achievement was calculated by subtracting the score for occupational aspirations from that for current occupation. The variable thus ranges from -4 to $+4$, where -4 indicates an occupational status four levels lower than that for the corresponding aspirations at T2, 0 indicates a match between occupational status and aspirations, and $+4$ indicates an occupational status that is four levels higher than aspirations at T2. Aspiration achievement was constructed as a continuous variable because the distance between the aspirations and the actual status, not simply the achievement of the aspirations, may be relevant [42].

The item regarding aspirations at T2 assesses expectations of occupational achievement at age 40. However, data for these individuals at higher ages do not exist, so occupational expectations for the age of 40 were compared with actual achievement before the age of 30. Using this "pre-mature" measure of what the respondents have accomplished occupationally could produce a result showing a lower average level of aspiration achievement than is actually the case.

Socioeconomic status. Achieved education in 2005 was used as an indicator of socioeconomic status. Based on data from Statistics Norway's FD-Trygd databases, a variable ranging from 1 (no education beyond junior high school) to 6 (completed PhD) were constructed.

Covariates. Questionnaire data on gender, age and

whether the respondents had children at T4 were used in all analyses as covariates. Finally, at T4, women were asked to indicate whether they were pregnant and a dummy variable was constructed to indicate pregnancy.

Analyses

Mediation testing is a common way to examine whether a variable is a mechanism for the relationship between two other variables. The analyses in this paper follows a procedure for mediation testing described by Baron and Kenny [43]. According to them, a variable mediates the relationship between an independent variable and a dependent variable when the following criteria are fulfilled: (1) there has to be a significant relationship between the independent and the dependent variable; (2) the independent variable must be significantly related to the mediator; (3) the presumed mediator must be significantly related to the dependent variable; and (4) the relationship between the independent and dependent variables is reduced or no longer significant when the presumed mediator is added as predictor in a multiple regression analysis.

Still, if a variable fulfills these criteria, it cannot automatically be concluded that the variable is a mediator, in the sense that it is caused by the independent variable and causes the dependent variable. Other directions of causality are possible within the mediation testing framework of Baron and Kenny. The presumed mediator could, instead of linking the independent and dependent variable, result from these variables, thereby creating a collider bias [44]. Moreover, the presumed mediation effect could result from confounding variables, i.e. variables not included in the mediation model that are related both to the presumed mediator and the dependent variable [45]. This means that the findings must be interpreted with caution, and that conceptual considerations also must be involved when examining variables as mediators [46].

For all regression analyses, Poisson regressions were applied, because Poisson regression models are an estimation method suggested for count outcomes [47]. Robust standard errors were used to correct for possible violations of the assumptions in Poisson regression models.

RESULTS

Descriptive statistics for variables included in the analyses are presented in Table 1. The table shows that the average number of days with sickness absence was more than four times higher for women than men, whereas there were only minor gender differences in socioeconomic status and aspiration achievement. Examining the aspiration achievement variable in more detail reveals that 31% of the sample reported not having achieved their aspirations (values -4 through -1), 41% reported having achieved their aspirations (value 0), whereas 28% reported achieving an occupation

with higher status than they expected at T2 (values 1 through 4). Furthermore, 31% ($N = 495$) of the sample had one or more children at T4, whereas 9% ($N = 79$) of the women were pregnant at T4.

Further examination revealed that men who had achieved their aspirations on average were absent for 1.93 days ($SD = 9.81$ days) due to sickness in the year following the T4 survey, whereas the average absence for men who had not achieved their aspirations was 7.60 days ($SD = 37.73$ days). The average number of absent days for women who had or had not achieved their aspirations was 15.96 ($SD = 43.47$) and 21.84 ($SD = 51.60$), respectively.

Mediation testing

As a first step in testing for mediation, Poisson regression analyses were conducted to examine the relationship between socioeconomic status and sickness absence, while controlling for covariates. The results of the analyses are presented in Table 2. The highly significant negative regression coefficient for socioeconomic status indicates that high socioeconomic status was related to fewer days with sickness leave compared to respondents with lower socioeconomic status, even when controlling for covariates. Moreover, women had a significantly higher risk of being absent than men. Likewise, being pregnant increased the risk for sickness absence.

As a next step, the relationship between socioeconomic status and aspiration achievement was examined by a simple correlation analysis. The results showed a correlation of $r = .20$ ($p < .001$) between the two variables. As a third step, aspiration achievement was included as an independent variable in Poisson regression analyses in addition to the variables presented in Table 2. The results of these analyses are displayed in Table 3. The table shows that aspiration achievement was significantly related to sickness absence: Those who achieved their aspirations had fewer days with sickness absence compared with people who did not achieve their aspirations to the same degree. Even though socioeconomic status remained a significant predictor of sickness absence, the regression coefficient was reduced from $-.36$ to $-.33$. Moreover, since no well-established methods are available to test whether Poisson regression coefficients are significantly reduced when including covariates, as an approximation, such tests were conducted by using linear regression analyses. The analyses showed a significant reduction of the coefficient ($t=2.44$, $p<.05$), thereby indicating a mediation effect. The results thus indicate that aspiration achievement partially mediates the relationship between socioeconomic status and sickness absence.

Further analyses of the Poisson coefficient revealed that one unit positive change in the variable aspiration achievement decreases the expected number of sickness absence days with 14%, holding other variables

Table 1. Mean and standard deviations (SD) for sickness absence, socioeconomic status, age, occupational aspirations and achievement for women and men.

	Men		Women		Total	
	Mean	SD	Mean	SD	Mean	SD
Sickness absence, days	3.64	22.39	17.80	46.22	11.02	37.45
Socioeconomic status	3.45	0.94	3.61	0.88	3.53	0.91
Aspiration achievement	-0.04	1.20	-0.09	1.26	-0.07	1.23
Aspirations T2	2.86	1.10	2.88	1.13	2.87	1.12
Age T2	16.65	1.81	16.69	2.05	16.67	1.94

Table 2. Poisson regression results with number of sickness absence days as dependent variable and socioeconomic status and covariates as independent variables

	Poisson coefficient	Robust SE	95% CI		P
			Lower	Upper	
Socioeconomic status	-0.36	0.08	-0.52	-0.20	<0.01
Gender	1.53	0.24	1.05	2.00	<0.01
Age	0.00	0.04	-0.08	0.09	0.96
Children T4	0.32	0.18	-0.04	0.67	0.08
Pregnant T4	0.63	0.22	0.20	1.06	<0.01

Table 3. Poisson regression with number of sickness absence days as dependent variable and socioeconomic status, aspiration achievement and covariates as independent variables

	Poisson coefficient	Robust SE	95% CI		P
			Lower	Upper	
Socioeconomic status	-0.33	0.08	-0.49	-0.16	<0.01
Aspiration achievement	-0.15	0.06	-0.28	-0.03	0.01
Gender	1.50	0.24	1.03	1.98	<0.01
Age	0.01	0.04	-0.08	0.09	0.90
Children T4	0.31	0.18	-0.04	0.66	0.09
Pregnant T4	0.68	0.22	0.25	1.11	<0.01

constant. Interaction effects between gender and aspiration achievement were not found ($p > .05$), indicating that the relationship between aspiration achievement and sickness absence is similar for men and women.

DISCUSSION

The empirical findings suggest that some of the connection between socioeconomic status and sickness absence may be explained by the relation of the achieved occupational position to previous aspirations. This has implications both for the understanding of how socioeconomic status relates to sickness absence and for how occupational aspirations should be viewed.

Socioeconomic status, sickness absence and aspiration achievement

The relationship found between aspiration achievement and sickness absence is in accordance with Siegrist’s [8,10] proposal regarding effort-reward imbalance and sickness absence. The findings suggest

that not having achieved occupational aspirations reduces the perceived rewards from work, which in turn influences sickness absence. Not having achieved occupational aspiration resembles what Siegrist refers to as low status control, a factor that he sees as particularly fundamental for perceived rewards from work, and therefore as important for effort-reward imbalance.

Because the analyses in this paper were conducted without information about respondents’ perceptions of efforts at work, this study can not be seen as directly testing Siegrist’s theory. However, this study supports his suggestions regarding status control, and its relationship to sickness absence. Furthermore, the findings in this study are in accordance with findings by Peter and Siegrist [8] of status incongruence as a particularly important predictor of sickness absence.

Current research on socioeconomic status and sickness absence has focused on health behavior and the physical and psychosocial environment at work as mediators in this relationship [2,4-6]. Aspiration achievement has not previously been tested as a mediator, and

distinguishes itself from the previously examined mediators by involving comparisons of the current situation with previous expectations. However, aspiration achievement explained only a part of the relationship between socioeconomic status and sickness absence, thereby indicating that also other factors, like health behavior and psychosocial environment at work, are important for explaining the relationship between socioeconomic status and sickness absence.

Not surprisingly, aspiration achievement was found to be related to socioeconomic status; high socioeconomic status at T4 increased the probability of having achieved aspirations. Siegrist sees effort-reward imbalance as related to socioeconomic status, with higher levels of imbalance in the lower strata. Empirical research on this is, however, inconclusive. This study shows that aspiration achievement, a variable probably important for perceived rewards from work, is related to socioeconomic status. Still, this finding can not contribute to understand the relationship between socioeconomic status and effort-reward imbalance in general, as information about efforts at work was not included in the analyses in this paper.

Implications for occupational aspirations

When aspiration achievement is connected to sickness absence, this could imply that occupational aspirations express expectations towards future occupation that it is vital to fulfill. Siegrist [10] suggests that occupational positions are important social roles connected to self and identity, and that involuntarily changes in these positions has negative consequences for the individual. Also occupational aspirations could be related to self and identity, with negative consequences if they are not achieved.

In spite of having quite diverging views on how youths decide on which education and occupation to aim for, both Bourdieu [29] and Goldthorpe [30] sees this process as guided by the socioeconomic level of the parents. Several empirical studies have shown that socioeconomic background predicts occupational aspirations [21,26-28]. Hence, occupational aspirations could be connected to identity, in the sense that, based on socioeconomic background, aspirations reflects youth's views on what it is natural for them to achieve. Failure to fulfill occupational aspirations could therefore mean not achieving the appropriate or natural occupational level, thereby threatening feelings of identity and belonging.

Also attitudes on a societal level could influence occupational aspirations. According to Furlong and Cartmel [31], occupational aspirations are influenced by societal beliefs about both the occupational status level that should be achieved, and the efforts required to achieve this level. They consider these beliefs to be unrealistic in Western contemporary societies, something that can lead to an unfortunate combination of to high expectations to own achievement among youths, and feelings of failure if they do not meet these ex-

pectations. Apart from supporting that occupational aspirations are important to achieve, this study can not determine whether Furlong and Cartmel's proposals are correct or not. Little empirical research have been conducted on this subject, but some studies have found that today's youths have higher and more unrealistic aspirations than those 20 to 25 years earlier [32,33], supporting Furlong and Cartmel's suggestions.

Mead's [18] theoretical suggestions regarding human behavior, which Siegrist draws on to account for why occupational positions are important social roles, can also contribute to explain the formation of occupational aspirations and why they could be important to achieve. For Mead, individual's behavior is strongly influenced by the opinion of and stimulus from significant others, like parents, and from generalized others, which is the organized attitudes of larger groups of people. However, Mead does not consider the surroundings as directly influencing the behavior of individuals. The stimulus from significant and generalized others is actively interpreted and organized by the individual. Mead's views on human conduct and opinion imply that the individual plays an active role in interpreting and acting on input from the surroundings when deciding on occupational aspirations. Through this process, the aspirations become related to the self, which could make them important to achieve.

Limitations of the study

This study has several limitations. First, even though the response rates at all time points were fairly high, a relatively large number of respondents were not included in the data analyses. Examination of the data showed selective attrition in some areas, which may affect the representativeness of the results.

Second, due to the lack of established procedures for testing whether Poisson regression coefficients are significantly reduced when including covariates, such a test had to be approximated by using linear regression models. However, occupational aspirations were related both to socioeconomic status and to sickness absence, thereby – combined with the results from the linear regression models – indicating partial mediation.

Third, although aspiration achievement is conceptually plausible as a mediator, other explanations for the found connection exist. Health problems could be a confounding variable, explaining socioeconomic status, aspiration achievement and sickness absence. Unfortunately, the available data do not include measures of health problems. Furthermore, even though sickness absence was measured after the assessment of aspiration achievement and socioeconomic status, it is possible that sickness absence before T4 is related to aspiration achievement and later sickness absence. In this scenario, aspiration achievement is a collider, not a mediator. The causal direction between aspiration achievement, socioeconomic status and aspiration achievement could, therefore, not be completely delineated in the study.

Fourth, the data regarding sickness absence included neither self-reported sickness absence nor sickness absence with medical certificate shorter than 16 days. Information about this would have increased the accuracy of the analyses.

Fifth, the respondents' occupational aspirations were based on and measured in terms of their expectations for the age of 40, whereas their actual occupational achievements were measured when they were in their late 20s. Contrasting occupational achievement from the late 20s with aspirations for the age for 40 might inflate the number of people that have not achieved their aspirations. Ideally, the information about occupational achievement should have been collected at 40.

CONCLUSION

Drawing on longitudinal survey data linked to register data, the findings in this study suggest that aspiration achievement mediates the relationship between socioeconomic status and sickness absence. Aspiration achievement has not previously been examined in research on the relationship between socioeconomic status and sickness absence. The study's strengths are the introduction of this variable as a possible mediator, and the testing of the variable on longitudinal data.

However, further research is needed to confirm the relationship between aspiration achievement and sickness absence. Studies controlling for health problems would be particularly useful, because this could aid in determining the role that health plays in aspiration achievement.

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