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The Regional "Skill-Gap". Educational Preferences And Recruitment Problems In The Regional Manufacturing Industry In Norway

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The Regional skill-gap. Educational Preferences and Recruitment Problems in the Regional Manufacturing Industry in Norway.

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Abstract:

The purpose in this paper is twofold. First to draw out some central findings of three regional studies on the relationship between youth's educational preferences and recruitment problems in regional industries, particularly traditional manufacturing industries. Second to discuss their implications for policy.

In several regions in Norway there seems to be a growing tendency that young people choose types of education that do not correspond well with the skills needed in local firms. A large percentage of the traditional Norwegian industries are located in small regional communities. But young people, and especially females, wants to educate themselves for professions mainly located in larger cities. The result is a "skill-gap" expressed as the difficulties, which some regional industries, have in recruiting skilled personnel.

In the paper we examine the mismatch between youth's educational preferences and the local labour market in order to identify some of the mechanisms behind the "skill-gap". We analyse values, attitudes and preferences influencing young people's choice of a future career and discuss if and how their ambitions and expectations can be more consistent with what the local business life can offer.

The paper is based on several data sources. Firstly, we draw from a comprehensive survey carried out in three different regions in Norway, inquiring pupils at lower- and upper secondary level about their expectations and preferences concerning education and future work career. Secondly, we use statistics to give an overview of trades and industries, the education system and the composition of the population in the three different regions.

Introduction

This paper takes as its point of departure the so-called ‘competence gap’ in the Norwegian manufacturing metal industry, which results from a growing shortage of skilled labour in Norway. The main reason for this is the inclination of young people to choose further education courses leading to university entrance qualifications rather than to pursue more traditional vocational education. This is a serious development for the manufacturing metal industry, because it depends entirely on easy access to skilled labour for its productivity. The result then is the emergence of a competence gap, i.e. a gap between the industry’s need for competence or skilled labour and the availability of such skilled labour in the labour market. This competence gap is further reinforced by the fact that a large segment of the traditional manufacturing metal industry is located in the more scarcely populated areas of Norway, and as such has a limited recruitment base. Hence, the competence gap in the manufacturing metal industry is very much a regional problem.

The emerging competence gap in the manufacturing industries has in recent years been an important issue in the public debate in Norway. The debate has engaged central politicians, representatives of the industrial sector concerned, as well as other actors affected by the problem in their day-to-day activities. It has led to an increased focus on issues concerning competence and competence development among industrial relations and researchers, and it has generated a wide variety of public and private initiatives in an attempt to bridge that gap. The results of the debate, of all the research carried out, and all the initiatives taken, have been to bring out the complexity of the problem, and make evident the fact that there are no clear-cut answers or simple solutions to the problem.

Competence gaps come into play when enterprises are unable to satisfy their need for skilled labour. An enterprises ‘competence need’ denote the need for a particular type of skill that will produce the best solution to a particular problem, or the optimal execution of a task or a job. Competence need is often measured in terms of the type of education and/or the duration of work experience most appropriate for an employee, in taking on a new job, to properly fulfil the requirements of that position. Thus, in enterprises where there is a competence gap the situation is one in which there is insufficient access to the right type of labour, i.e. lacking the right type of education and/or type of work experience.

The competence gap witnessed in the Norwegian manufacturing metal industry is caused by several factors. Much attention, however, has been given to the lack of interest among youth to take vocational subjects at the upper secondary school level, and especially courses in engineering and mechanical trade. Engineering and mechanical trade courses, as with a wide range of other vocational courses in the national system for further education, form part of the national apprenticeship scheme. Despite the opportunities inherent in this scheme to combine theory and practice in the learning process, and despite the fact that an apprenticeship increases the possibilities for temporary employment after training, young people still choose not to enter into this type of education. Thus, one may ask the following questions:

- 1) Why is it that only a small number of youth choose vocational education directed at the regional industry?
- 2) What factors govern the educational- and occupational choices of young people?
- 3) How can the national authorities encourage young people to choose vocational training adapted to the regional labour market?

The study is based on several sources of data. Firstly, it makes use of official statistics to describe labour markets and industries, demographic developments, and the educational systems in three different regions. Secondly, the study employs data from a representative survey of the three regions in 1998 and 1999, in which more than 1700 pupils were asked about the preferences on which they base their choice of further education and profession.¹ In the paper we analyse young peoples preferences within a regional context and in relation to different qualities of students. See Appendix I for more information about the survey data.

The paper is organised as follows. Section 2 gives an overview of the regional context as a structural framework for youths preferences with regards to education and work. Section 3 examines young people's preferences with regards to education, work and place of residence in light of such factors as social background, school attainments and sex. Section 4 describes main challenges that arise from the regional competence gap, and presents some possible policies to overcome these challenges. Section 5 concludes the paper by summarising the empirical evidence.

The three regions

The region of *Harstad* is located in the county-municipality of Troms, which is the second most northern county of Norway. The region comprises three municipalities; Harstad, Kvæfjord and Skånland. Its population, which numbers approximately 29 500 people, is mainly located in the central municipality of Harstad, which surrounds the town of Harstad. The primary industries have traditionally been relatively strong in the region, and especially primary activities such as fishing and hunting. However, the region is highly dependent on the employment provided by the public services, because almost 42 percent of the working population in the region are employed in the public services. The main reason for the relatively large proportion of public service employees in the region is the presence of several military or defence establishments, which also promotes civilian commercial activity and services. Approximately one in five employees are employed in the wholesale- and retail trade sector and the hotels- and restaurant sector, and this figure is significantly higher than the national average. The employment rate in the manufacturing metal industries, however, on the other hand, is much lower than the national average. There is a wide range of subjects and courses on offer in the regional curriculum, and with regards to further education it is provided by seven upper secondary schools. In addition there is a technical vocational school in welding, as well as a regional advanced college providing a variety of courses in economics, political and social science, and health- and social studies.

The region of *Ytre Søre Sunnmøre* consists of a group of islands located at the north-western part of Norway in the county-municipality of Møre og Romsdal. The county consists of five municipalities; Ulstein, Hareid, Herøy, Sande, and Vanylven. All in all 26 400 people are living in the region, and as such it is the smallest in terms of population size, of the three regions in the study. The region is a typical industrial area dominated by a few large shipyards, and the manufacturing metal industry constitutes almost 1/3 of the total employment. The structure of trade- and industrial activity in general is coloured by the fact that there is no town or city in the region, and as such it lacks an administrative-, business-, industrial centre. Public and private service employment is relatively low, since these are activities most commonly found in towns and more urban areas. Primary industry, such as fishing and hunting, on the

other hand is important to employment in the region. The educational possibilities are limited in Ytre Søre Sunnmøre with only three upper secondary schools, and no technical vocational schools or regional advanced colleges. However, the region is geographically close to more urban centres such as Ålesund and Volda, both with regional advanced colleges providing education in among other things engineering, journalism and teaching.

The region of *Kongsberg* is located in the eastern parts of Norway, and in the county-municipality of Buskerud. The region consists of five municipalities; Nore og Uvdal, Rollag, Flesberg, Kongsberg, and Øvre Eiker, and it is with its 44 000 inhabitant the largest of the three regions. A large proportion of the population is located in, or in the surrounding areas of the town of Kongsberg in the municipality of Kongsberg. Like Ytre Søre Sunnmøre, the industrial centre of gravity is in the manufacturing industries, in which almost a quarter of all employees is employed. The basis for industrial employment in the region was established in Kongsberg Våpenfabrikk (arms manufacturer). The company has been reorganised to comprise one large and several smaller and medium sized enterprises, but the manufacture of arms is still its main line of business and production. There has also been a growing infusion of high tech industrial production in the region. This development has also had a bearing on the provision of services directed towards the regional industry, and as such there is a relatively high employment rate within corporate services in the region, both if compared to the other two regions as well as the nation as a whole. Kongsberg also enjoys a highly developed educational system with five upper secondary schools, a technical vocational school providing courses in the areas of machine manufacturing, computers, mecatronics and electronics, and a regional advanced college offering education in engineering, political sciences and economics, and public administration.

The competence gap and structural developments

There are significant differences between the three regions. They are located in completely different parts of the country, and there are variations in industrial basis, demographic lay out, and systems of education. However, they do have certain structural features in common. All three have been part of the upward economic trend experienced in Norwegian business and industry in recent years, they have witnessed shrinking populations, and share similar systems of further education. As such the

upper secondary school system in all three regions rests on the wishes and the needs of the pupils. In the following part of the paper we discuss these features in light of the competence gap in the manufacturing metal industry. Ytre Søre Sunnmøre will be used as an example since it is the most typical industrial region of the three.

During the 1990-1998 period the employment rate increased in all three regions. Ytre Søre Sunnmøre, however, is the only region in which the main bulk of this growth came in the form of employment in the manufacturing metal industry. The upward trend from 1993 to 1998 followed several decades of decreasing employment in the manufacturing industry in general. The growth in employment in Ytre Søre Sunnmøre reflects to a large degree the employment growth witnessed in the rest of the country in the same period (Pedersen and Andersen 1999). In Ytre Søre Sunnmøre it creates greater demands for qualified and skilled labour in the manufacturing metal industry.

In the same period the number pupils taking upper secondary education in Ytre Søre Sunnmøre drops by 15 percent. This dramatic fall is due to a variety of demographic developments leading to a decline in the regional population, the most important of which is a general decline in fertility in the Norwegian population during the 1970s. The decline in the population was greater in the regional areas than in the more urban areas. Furthermore, it has been coupled by a long term centralising pattern of migration, which has enabled new parent generations to grow up in more central and urban areas (Orderud and Sørli 1998). Thus, the population decrease denotes two demographic processes, and together they create significant changes in the regional dissemination of the population. First of all there has been a decrease in the regional youth population – in most regions the decrease is greater in the more scarcely populated areas than in the central or more densely populated areas. Secondly, a situation has emerged in which the child population is underrepresented in the scarcely populated areas (Sørli 1999). In Ytre Søre Sunnmøre it is the latter process which is the most pressing, because it contributes to problems such as a decline in the recruitment of skilled labour to the manufacturing metal industry.

The recruitment problem is reinforced by the fact that the local educational system is not adapted to the competence needs of the regional business- and industrial community. The national curricula of the system for upper secondary school is at the outset instituted on the basis of three main principles – the applicants demand for education, the labour market's need for skilled labour, and the existing subject

structure. Ideally it should be possible to influence the distribution of pupils in the educational system according to the needs of the labour market. Indeed, in the case of Ytre Søre Sunnmøre this may be a useful initiative in order to compensate for the problems in recruiting new employees witnessed in the regional manufacturing metal industry. However, it is the first of the three principles, the demands of pupils, that predominates. In Ytre Søre Sunnmøre the number of youths pursuing engineering and mechanical at upper secondary level, expressed in percentage, was more or less the same in the year 1998/1999 as in the year 1994/1995. At the same time the total number of pupils in that area of study has dropped as result of the general drop in pupils.

Thus the competence gap in the manufacturing metal industry in Ytre Søre Sunnmøre cannot be said to be a result of a falling interest for engineering and mechanical subjects among young people, because the proportion of pupils applying to take these courses has remained relatively stable in the period analysed. However, there is a case to be made that the degree of interest among youth is not proportionate to the needs of the labour market. There are probably several reasons for this, some of which will be considered in the next part, which investigates young people's preferences with regards to education and work. So far it seems that demographic developments, especially in the form of a decreasing regional youth population, may go along way to explain the competence gap in the manufacturing metal industry. This factor becomes especially significant in times of prosperity and upward economic trends in the labour intensive parts of the manufacturing industry, and is further reinforced by the system of further education, which only to a limited extent is governed by the needs of the labour market.

Youth's educational and occupational choice

Young people's educational and occupational choices are based on the wishes and interests of the individual, but at the same time it is important to bear in mind that individual decisions are taken within a social and a cultural context. Preferences are formed partly out of expectations, but social norms may limit the type of wishes formed and the type of actions taken (Elster 1989). Thus, there is a case to be made in

arguing that young people are both *pulled* and *pushed* in their educational and occupational choices (Gambetta 1982).

For most people their choice of education will have serious implications for future career opportunities as well as for their lives in general. In this part of the paper we will assess young people's preferences in their choice of education, and later in their choice of occupational careers. More specific we will be concerned with the factors emphasised by young people when they decide to pursue a vocational education or a more theoretical education within the further educational system. The educational choices are analysed on the basis of attitudes and expectations young people have with regards to the courses they choose, and we attempt identify variations in choices by social status, school attainments and sex. Young people's attitudes vis-à-vis future work as well as future place of residence will also be incorporated into the discussion on educational choice.

Choice of education – status, attainments and sex

Educational differences based on social status is well documented in a wide range of national as well as international studies (Nordlie Hansen 1986, Grøgaard 1993). A common denominator for most of these studies is that they show significant variations in school attainments and in enrolment to further education depending on social background. In Norway studies of the large reforms in the upper secondary education system during the 1990s seem to indicate that social selection has been strengthened in recent years.ⁱⁱ Thus, what does it look like in our regional survey, and are the findings of our study in line with the general trends?

There are several theories attempting to explain this social misrepresentation in the recruitment to different types of education. Among the more famous is the theory of Boudon (1974), who distinguish between three different main types of explanations or traditions of socially based educational differences; “value-“, “culture-“, and “social position theory”. Each of these positions focuses on different factors to explain differences in education.

The *value-theory* explains differences in educational behaviour with reference to differences in norms and values of various social classes or strata. For young people belonging to high status groups higher education at university level is regarded as a precondition for success in their professional life, while young people from low status groups enter working life sooner with the view to start earning money. This

variation in value orientation seems to suggest that youths from the lower strata of life focus less on attainment within the school system than youth from the higher social strata. This is made evident by the fact that youth from the lower classes are to a lesser extent choosing further education than youth from the upper classes are. Furthermore, when they do pursue further education they chose more vocationally oriented courses and their school attainments are poorer.

The *culture theory* directs attention to variations in *social attainments* as the source of educational variations and differences. The basic line of argument is that variations in the socialisation processes of children create differences in their intellectual abilities. Children and youth from families with little or no intellectual resources will be lose out in the school system, because they will have to acquire values and skills which they only to a limited extent have acquired at home. Within this tradition the importance of the cultural foundation is emphasised with regards to school attainments.

The *social position theory* provides an alternative explanation to the value- and culture explanations. This tradition views educational choices as rational and utilitarian actions, and as a result of an individual evaluation of future costs and benefits. Boudon (1974) draws a distinction between “primary-” and “secondary effects” of social background. Primary effects refer to how cultural differences affect children’s attainments at school, while secondary effects denote the effects of social differences on educational choices, which basically means how perceived costs and benefits of choosing education appears different to different social strata.ⁱⁱⁱ

Choice of education and occupation is also closely linked to gender. The Norwegian educational system and the Norwegian labour marked are both highly segregated with regards to sex. There is a tendency for girls and boys to choose different courses at the upper secondary level of education. Boys tend to choose courses within the realms of industry, natural sciences and technology, while women by and large opt for courses directed towards health- and social care related occupations (Jørgensen 1997). Youth’s educational and occupational choices, thus, appears to be dominated by traditional gender role patterns. There may be several reasons why there have been so few changes to this traditional pattern. Generally speaking one may argue that girls and boys give priority to different values, and that this also has an effect on their educational and occupational choices. According to the feminist tradition the health- and social sector is highly female dominated because of

its close association with the concept of 'caring', which is a highly feminine characteristic, and denotes a typical female role (Rose 1994). It may be added from the same point of view that the typical industrial worker is a man possessing masculine characteristics such as practicality and physical strength (Cockburn 1985).

Course choices in upper secondary education

Half of all Norwegian pupils nation wide choose general studies courses or vocational courses at the level of upper secondary education. The dominating vocational subjects are Health- and Social studies, Engineering and Mechanical studies, and Arts, Crafts and Design studies. Around 10 percent choose engineering and mechanical studies, which is the most relevant subject in order to qualify for a position as a skilled worker in the manufacturing metal industry. The distribution of pupils within the three regions is similar to the national average. There is however a greater proportion of pupils choosing vocational courses, and more specific engineering and mechanical studies, in Ytre Søre Sunnmøre, than the case is in the other two regions. This may be explained by the strong position of the shipbuilding industry in this part of the country.

The youths that participated in the regional surveys were asked what their primary wishes were in their choice of courses at the upper secondary level of education. The dissemination of answers seems to indicate that choice of education is affected by social background, among other things measured by father's education. Two in three pupils (66%), whose father had higher education, gave first priority to general studies courses, while only two in five pupils (42%) among those from the lower social strata had general studies courses as their first priority. The variations among pupils in their choice of education, however, are greater by school attainments. Pupils with medium or good grades in written Norwegian, mathematics, and English, choose general studies courses to a greater degree than those pupils with grades below the median level. The latter group prefers vocational courses. Three out of four pupils (75%) with better than medium grades choose general studies courses, but only one in three (33%) pupils with below medium grades. Social background and school attainments are however tightly connected, and pupils social status do not only affect their choice of education, but is also transmitted indirectly through their achievements in school. This is made evident by the fact that 82 percent of pupils with high social status and good school attainments choose general studies courses, while only 26

percent of low status pupils with poor school performances make the same choices. General studies courses is thus dominated by pupils with high social status and good school attainments, while vocational studies are chosen by those with low status and poor school attainments.

Course choices – educational ambitions and self-fulfilment

In the survey we have also tried to catch the motivations behind youths choice of education. The pupils were therefor asked a range of questions concerning the factors of importance to pupils in the process of choosing education. Attitudes are usually complex, and for the purpose of better understanding the more intrinsic characteristics of pupils' motives, which are normally difficult to measure in a direct way, we have created certain indexes.^{iv}

Four indexes have been constructed that influence youths' choice of education – *educational ambitions, self-fulfilment, school exhaustion* and *work orientation*. In our discussion the emphasis is put on the two former measures. It is in relation to these two that variation according to social status, school attainments and gender/sex is found.

Almost half (47%) of pupils have great ambitions with regards to education, see figure 1. This means that they emphasise that they will go on to pursue higher education at a later stage, that the course opens up for a multiplicity of choices, that they are uncertain about their final choice of education, that they enjoy theoretical subjects, that there are high-quality teachers in the course, and that their grades from lower education also influence their choice of further education. It is especially those choosing general studies courses that score high on this index. Among those in this group approximately three in four pupils have great educational ambitions connected to their choice of course, while for those choosing vocational studies the same figure is only one in four.

Furthermore, educational ambitions also vary according to school attainments from lower secondary school and social status, while sex have little effect. Approximately 70 percent of pupils with school achievement above middle have great educational ambitions, and among these a large majority have general studies courses as their first priority, while only 30 percent of those with grades below the middle have similar ambitions. There is also a significant increase in educational ambitions according to fathers' education. Nearly 60 percent of pupils with highly educated

fathers have great educational ambitions, and the equivalent is 47 percent among those with vocationally educated fathers, and 40 percent of those whose fathers have only primary or lower secondary education. Within this latter group of pupils school attainments are generally poorer than within the other two groups.

Thus, the educational ambitions of pupils are first and foremost associated with course choices and school attainments. Pupils with good achievements and high educational ambitions choose to a large degree general studies courses at further education level. This is most probably down to the fact that general studies courses are traditionally regarded as the most typical preparatory course for a place at university. This is confirmed in our study which show that while four in five pupils in general studies courses have decided to pursue higher education after upper secondary school, the equivalent figure is only two in five with regards to vocational students. This despite the fact that reform 94 was intended to make it easier for pupils pursuing vocational education to acquire qualifications to be accepted at university of advanced college level. The survey also shows that approximately half of pupils have decided to pursue higher education after upper secondary school.

Self-fulfilment is also an influential factor with regards to youth's choice of education. Nearly 60 percent of pupils are concerned with self-fulfilment in their choice of course at the upper secondary school level. Those who score well on this index have chosen course on the basis of their own interests, because they believed the course to be the most enjoyable, because they enjoy practical subjects, and/or because they wanted to choose a less conventional subject. Pupils that have chosen vocational subjects score high on this composite measure. Within this group four in five pupils (80 %) are very concerned about self-fulfilment in choosing course, while the same figure is only one in three (36%) for pupils pursuing general studies courses. The result is that those choosing general studies courses score high on educational ambitions with emphasis on theory and multiple choice with regards to higher education. Those choosing vocational education on the other hand are more concerned with the practical aspects of the education and that the education they choose is enjoyable and interesting. This distribution of answers is intuitively understandable and as expected. As with educational ambitions there is a significant connection between school attainments and self-fulfilment. Those pupils with the lowest grades are more concerned with self-fulfilment. 70 percent of pupils within this group scores high on this composite measure as opposed to 45 percent of those with high grades.

There is no or little difference to be found according to social status, but boys seem to be more concerned with self-fulfilment than girls.

To be 'fed up' with school may also have an effect on pupils' choice of courses in upper secondary education. Those who score high on this index emphasise that they are tired of school, that they want to finish it as soon as possible, and that they want as little home work as possible. This goes for almost one on third pupil totally, and almost three in four (75%) of those having vocational education as their main priority, and have poor performances from lower secondary school. This does not mean that vocational subjects are best suited for pupils tired of school, but that the entrance requirements of some vocational subjects are lower than for general studies courses. Furthermore, almost twice as many boys are tired of school than girls (39% as opposed to 19%).

Only a minority of pupils (18%) is concerned with the extent to which their choice of courses will allow them employment straight after school, and that it provides a job within or outside the region they live. This applies first and foremost to pupils choosing vocational education, boys and those with low school performance. The general lack of work orientation illustrates probably the fact that for many pupils further education is only the first preparatory phase in a longer educational process. This is confirmed by the fact that a large proportion of pupils have made prior decisions to pursue higher education after upper secondary school.

Education – work and place of residence

Our survey shows that youth have a poorly developed relationship with working life, and that relatively few are concerned with acquiring a vocational education adapted to the regional labour market, especially directed at local manufacturing industry. There may be several reasons for this. One important explanation may be that a job in the manufacturing industries is not compatible with their expectations about a future profession. It is possible that to be a skilled worker is associated with lower status than other practical as well as theoretical occupations. Poor recruitment may also be down to cyclically determined factors. In the last three decades there has been a general drop in industrial activity in most industrial countries, and in Norway approximately 12 percent of the labour force is employed in the national manufacturing industry. Thus, the prospects of pursuing education leading to employment within a "sun-set" industry may not seem too appealing to young people,

especially when these jobs are highly volatile and dependent on economic cycles. Finally, youths may be labelled “looser” if they choose to stay put in the regions and work in the local industry. The general trend is that “bright” ones leave for the urban areas, while the “losers” stay put. Recruitment to the regional industry is thus hampered by a wish for higher education as well as a widespread urge to get out among young people.

The survey has tried to uncover youth preferences with regards to work and place of residence in order to assess its possible impact on educational- and career choices. Only the most significant findings will be referred to in the following section.

Figure 2 shows that *security, challenges and autonomy* are important to youths' choice of work.^v Almost all pupils (95%) give first priority to security, which means that the most important factors are as follows; a safe and permanent job, pleasant colleagues, safe working conditions, a decent salary, and plenty of leisure time. The index is as such a composite measure for social-, health-, and economic security. Nearly 90 percent believe that important factors in choice of work are also a multiplicity of tasks, good career options and possibilities for individual development. Three in four (75%) emphasise autonomy, i.e. that the job allows for individual responsibility, significant challenges and flexible working time. Along these dimensions there are only small or no variations among pupils according to status, school attainments or sex.

A relatively large proportion of pupils (61%) also believes the possibility to work internationally to be important to their choice of work. Those with good school attainments and that have chosen general studies courses are more concerned with this than those with weaker achievements are and vocational studies. Only a small minority of pupils (18%) emphasise traditional values in choice of work. Those who score high on this index believe that it is important to be able to define the work as either male or female occupations, and that it involves physical activity, and that it is the same occupation as pursued by other family members. Here we find that boys are more traditionally oriented than girls are (25% and 10% respectively), and the same goes for vocational pupils compared to general course pupils (24% and 11% respectively). Some of the occupations that vocational subjects are directed at fit relatively well with such criteria, among other occupations within the mechanical industries or within the health- and social sector.

The pupils were also asked about their attitudes toward skilled work in the regional industry. Almost half are positive and believe that such a job may entail security and challenges, which means important factors that affect their choice of work. Nevertheless, only one in ten have deliberated becoming a skilled worker in the regional industry. This seems to indicate that the generally positive attitude is weakened when directly confronted with the possibility of working in the industry. It must be added, however, that a large proportion of pupils have answered that they do not have an opinion on what it is like to work as a skilled worker in the regional industry. This seems to indicate that they have limited knowledge about what it entails to be a skilled worker in the regional industry.

Pupils' wishes with regards to place of residence may also correlate with their educational- and occupational choices. In the survey we asked youths about where they would prefer to live in their youth just after leaving upper secondary school, and where they would prefer to live as adults settled with children and family. The results indicate that a majority would prefer to live outside the region in the early years, but in their adult life the answers suggest a 50/50 distribution. However, only one in three argue that they would like to live in the region even after they have settled down with family. This seems to suggest that attachment to place of residence is not particularly strong among youths in the regional areas. However, other studies, shows that there is a significant gap between people's actual migration habits and their residential preferences. However, the wish to live dispersed, in the regional areas, has diminished radically in recent years. Most people want to live in the rural areas, but preferably in the smaller cities/towns rather than the big city (Juvkam 2000, forthcoming). Our survey further indicates that those who wish to live away from the region are first and foremost girls, those with good grades, and those that have chosen general courses. A similar pattern is made evident with regards to the question on how they want to live as settled adults, but here the differences between groups are not as significant.

The results of the survey then show the propensity to migrate is greatest among youths with good school attainments and among girls. Boys and those with weaker school attainments are more prone to stay put. From a variety of studies we know that education leads to migration (Sørli 1998), and most indications are that the demographic thinning of the regional areas will continue (Sørli 2000, forthcoming). The greatest challenges for these regions in the future then are how to become more attractive and establish a residential identity (Juvkam 2000, forthcoming). To succeed

the regions must be able to attract and maintain a sufficient population, as well as encouraging young people to choose an education that corresponds with the needs of the local labour market. There are small if any variations in youths' preferences with regards to education work or place of residence according to where in the country they live. Thus the challenges are more or less the same for all three regions in our survey.

Challenges and political implications

The fundamental question for business and industry, and the authorities, in relation to the regional competence gap is as follows: What can be done to achieve a better adaptation of youths educational- and occupational choices to labour market needs? Our analysis and other studies show that there are no simple solutions and single answers to this question. The problems are complex, and solutions must be differentiated. In this part of the paper we will discuss two challenges connected to the regional competence gap. One is connected to the possibilities of influencing pupils' preferences in direction of choosing vocational subjects. The other is concerned with changing the structural framework in order to make it adjustable to the preferences of youths in choosing education, occupation and place of residence. The first challenge focuses on the need for more and better information, and the second on how to create a viable regional policy.

Influencing the preferences of pupils

Our survey shows that few youths are worried about the course/subject they choose providing work opportunities immediately after upper secondary education, and that it provides work within or outside the region in which they live. At the same time we find that many are limited in their knowledge about what it is like to work in the regional industry. Most pupils seem to base their decisions on traditional patterns such as gender/sex, social background and school attainments. When the manufacturing industries in the three regions face problems in recruiting skilled labour it may be down to the factors mentioned above. Thus for the industry and the authorities the challenge is to encourage more youths to choose vocational subjects, and to contribute with more and better information about what the regional labour market may offer.

Increased knowledge about career opportunities, both in relation to education as well as in working life may have an effect on youth's choice of education and occupations.

In order to motivate youths to pursue vocational education one is dependent on a functional system for educational and occupational counselling and guidance. Such activity in primary schools and upper secondary schools is formally placed under the National Counselling Service. It was originally meant to be the extended arm of the Labour Market Administrations within the national schools system, but has acquired additional functions over time. At present the counselling service have the dual purpose of, on the one hand, advising and preparing pupils in relation to their future career and professional choices, but also on the other hand to give advice to pupils with special needs and problems. The effect of this dual purpose is to make co-ordination of the service difficult, with the additional effect of preventing the proper functioning of the service.

The Ministry of Education, Research and Church Affairs is in the process of initiating a project with the view to strengthen educational and occupational counselling service in the national school system. The project involves a selection of lower and upper secondary schools in four different counties, in which the National Counselling Service is split in two in order to separate educational and occupational counselling from the social and psychological counselling service. One further seeks to change the content of educational and occupational counselling by arranging for closer co-operation between the various school levels, and between schools, the local community, working life, and relevant authoritative bodies in the regions/counties.

The extent to which these initiatives will encourage more pupils to pursue vocational education adapted to the needs of regional labour market is unclear. There are good reasons to believe that school attainments, status, and gender will continue to exert influence on youth's choice of education and occupation. Improved information may encourage some young people to choose vocational education and occupations adapted to needs of the local industries, but they still have to find it attractive to live and work within the region. If industrial work is associated with low social status and great insecurity, and the youths do not feel a strong sense of belonging towards the region, then guidance and counselling may be nothing more than a shot in the dark. Thus more and better information alone is not enough it is also necessary to create a viable regional development policy.

The creation of a viable regional development policy

To change the structural framework in such a way as to make it more adaptable to the needs and wishes of young people with regards to education, occupation and place of residence is probably more important and harder than changing the counselling services. Not only does our survey show a significant need to “get out” among young people, but also that relatively few want to live in the home region when they are settled with family, in fact only one in three pupils. This may imply that the regions are not regarded as attractive places to live and work. A weakened sense of belonging among young people may be the result of the fact that professional - and residential careers - to a larger degree than before are shaped in the course of young peoples educational and professional life outside their local regions (Juvkam 2000, forthcoming). With an increasing multiplicity of options with regards to work and place of residence, it is therefor becoming more important for regions to improve their images, in order to attract different educational and occupational groups.

At the regional level planning processes are already initiated with the view to establish larger regional residential- and labour markets in order to maintain the main residential patterns in Norway. Improved relations between the industrial community, demography and the educational system, as well as arranging for larger administrative units than provided for by the county municipalities, are important elements in this planning process. The main objective is to create a versatile interplay between cities, and other densely populated areas, as well as districts with less concentrated populations, focusing on issues such as the provision of residential areas, infrastructure, education and labour marked.

In many outlying regions industrial activity is located in small local communities with only a limited range of service-, cultural-, and educational facilities. In order to be able to maintain the population in these areas and make them more attractive, the local communities should be attached to larger centres with a more diverse labour marked, better service facilities and a more diverse cultural- and educational services. Young people’s residential preferences indicate that it is this type of urban centres that they want.

In order to achieve a closer interplay between cities with regions infrastructures must be improved, and may also require an enhanced intra-municipal co-operative scheme on education. Infrastructure is necessary for people in order to be able to commute between place of residence, place of education and work place. It is

vital not least for people deciding to live in their home regions, but choosing to work or study in other areas. It is also important for those who choose to live in the city, but work in the regional industries. Larger regional residential- and labour markets may make it easier to maintain residential areas in the sparsely populated regions, and it may also improve recruitment conditions for industries located in these areas.

A strong intra-municipal co-operative scheme may make it easier to develop a more unified system of education in which the emphasis is on the local professional environments and on local needs. In this way each individual upper secondary school may offer well developed courses in selective areas, which may aid in reducing competition between schools to attract pupils to subjects with low recruitment potentials.

A close relationship between the educational facilities on offer and the labour market may, however, in case of considerable economic cycles, increase the volatility of the industrial community, the educational system, as well as the pupils themselves. This volatility may be reduced by making the educational system more flexible and by improving schemes for further and continuing education. Flexibility may be achieved by developing broader and less specialised foundational courses in further education to allow pupils more options to choose from in the final educational phase of specialisation. It may also be accomplished by allowing for easier crossovers between subjects during the course of an education, which will allow pupils to change their minds in the educational process without it having a negative effect on their educational progression. Improving the scheme for further and continuing education may take the form of expanding the scope of those opportunities that already exist for adults, and by making the facilities more accessible. This may compensate for some of the problems enterprises are experiencing with regards to recruiting qualified labour.

Conclusion

Recruitment problems in the regional industry may be regarded as a typical regional problem. The population is usually sparse because of the more radical reductions in the regional youth cohorts than the case is in the cities, and because the children cohorts are usually underrepresented in the regional population. The recruitment problems may be relieved if migration to the sparsely populated regions was greater,

and migrants stayed put once they settled in the regions. Research show, however, that in real life migration is low, and that a majority of migrants move on after some time. It is also apparent that people moving out of these regions seldom return (Sørli 1998).

Furthermore, the educational facilities available are not always sufficiently adjusted to the competence needs of the local business- and industrial community. In this regard it may be possible to shape and arrange the supply of education according to the demands of the labour market, although in case of large economic cyclical changes it is often difficult to match supply and demand. Improved career counselling arrangements may also contribute to increase interest in pursuing a vocational education and industrial employment. However, in order to attract pupils to these occupations, the work itself must be seen to be interesting and fulfilling, and living conditions to be appealing. At present it seems that both the industrial community and the regions in general are unable to meet these expectations.

Finally, young people's own preferences with regards to educational- and occupational choices, as well as working- and living conditions, are also causes of concern for the regions. An increasing number of people want to live in central or urban areas, even when they settle down with children and families. Few people want to become skilled workers in the regional industry, and only a handful chooses, for this purpose, to pursue vocational education. It is mainly pupils from low status families and with poor school attainments that chose vocational subjects. They remain in the region, while "brighter" pupils with a higher social status move out to pursue higher education. The implication of this trend is a draining of intellectual resources from the regions. Thus, a vital source of recruitment for the regional industry is weakened by a wish for higher education as well as a widespread need to 'get out'.

Appendix I: The survey data

The three regional questionnaire surveys includes in reality three different groups of pupils; pupils in final-year classes from the lower secondary school level, pupils pursuing vocational education at Advanced Course I (VK1) and pupils in general studies courses Advanced Course II, both at the upper secondary school level. However, in this paper they constitute a collective group of pupils, because we do not separate the pupils according to the sub-groups mentioned above. This is done despite the fact that the three groups may be said to be located at different stages in the process of choosing. The pupils from the final-year classes at lower secondary school level were nevertheless interviewed at a point in time when they had already made up their minds about which courses to take at the upper secondary level.

The selection of pupils includes all final-year pupils from the lower secondary school level in each region, and all pupils attending vocational education Advanced Course I (VK1) and pupils in general studies courses Advanced Course II at the upper secondary school level. The total universe of pupils is 1736, of which the lower secondary pupils makes up a clear majority (63%), while the other two constitute respectively 18% and 19%. The number of survey respondents in percent is generally high among the lower secondary school pupils, while it is not as high among the other two groups from the upper secondary school system. We may nevertheless assume that the answers are more or less representative for young people in the three regions, although we do not attempt to make the same generalisations for the rest of Norway. The regional variations in Norway are too great for such an exercise, which may generate variations with regards to people's social and economic context.

The regional statistics are by and large collected from three sources; 1) Statistics Norway (SSB) compiles statistics for a wide range of issues concerning population developments in Norwegian municipalities. Our description of the demographic developments in the three regions is based on these figures, which is also available from the SSB's web-site. 2) SSB also work out statistics for developments in the labour market, which among other things provide information about employment by industry for each municipality. Our account of developments in employment for each of the three regions is based on these statistics. 3) The county municipalities collect annual educational statistics showing capacity, number of pupils and applicants to the upper secondary school system. The statistics are compiled on the basis of the educational entrance systems for each county. These statistics has been used in our account of the educational systems of the three regions in our survey.

Notes

ⁱ Three reports based on these data have been published earlier. For a more detailed overview of the regional surveys see Berg (1998) and Østberg (1999 and 2000).

ⁱⁱ Evaluations of the so-called reform⁹⁴ indicate that the proportion of pupils, whose fathers possess little education, taking *general course subjects* has declined in recent years, among other things because the reform has led to a shift towards more vocational subjects (Skjersli og Aamodt 1997, s.274). An increasing number of pupils attending *general course subjects* have fathers with higher education. The *social selection* thus has been strengthened as result of the reform.

ⁱⁱⁱ The social position theory deviates from the value theory by treating educational choices as utilitarian actions, and that they should not be regarded as a type of norm-governed behaviour not subject to reflective thought. Furthermore, in contrast to the culture theory where focus is solely on primary effects, the social position theory opens up for a dual emphasis on both primary- and secondary effects. An important point with regards to secondary effects is that they come into play with each single choice of education, and as such is accumulated over time.

^{iv} The choices of indicators that constitute the indexes are partly a result of theoretical contemplation/deliberation and partly based on an empirical approach by means of a factor analysis. The procedure for the construction of the type of index chosen is described in Petersen 1996.

^v These are indexes based on a wide range of individual questions and constructed in the same way as the indexes constructed in relation to educational choices.

References

- Berg, L. (1998): *Utdanningsuget. Ungdoms utdannings- og yrkesvalg sett fra skipsindustrien i Ulsteinvik*. Oslo: Fafo Institute for Applied Social Institute (FAFO), rapport 258.
- Boudon, R. (1974): *Education, opportunity and social equality*. New York, US.
- Brandth, B. and Kvande, E. (1995): "Maskulinitet og barneomsorg". In *Kvinneforskning* no. 1, Norway.
- Cockburn, C. (1985): *Machinery of dominance*. Pluto Press Ltd. London, UK.
- Elster, J. (1989): *The Cement of Society: A Study of Social Order*. Cambridge: Cambridge University Press.
- Gambetta, D. (1982): *Were they pushed or did they Jump?* Cambridge: Cambridge University Press.
- Grøgaard, J. (1993): "Hvorfor har sosial bakgrunn så stor betydning?" In *Samfunnsspeilet* No. 1/93, Oslo: Statistisk Sentralbyrå.
- Hansen, M. N. (1986): "Sosiale utdanningsforskjeller. Hvordan er de blitt forklart – hvordan bør de forklares?". In *Tidsskrift for Samfunnsforskning*, no. 27. Norway.
- Jørgensen, T. (ed.) (1997): *Utdanning i Norge*. Oslo: Statistisk Sentralbyrå.

Juvkam, D. (2000): *Stedsidentitet og demografisk utvikling*. Prosjektrapport (forthcoming). Oslo: Norwegian Institute for Urban and Regional Research (NIBR).

Orderud, G. I. and Onsager, K. (1998): *Flytting – mønstre og årsaker. En kunnskapsoversikt*. Oslo: Norwegian Institute for Urban and Regional Research (NIBR), prosjektrapport 1998:6.

Pedersen, P. and Andersen, M. (1999): *Når mange banker på, men få kommer inn*. Tromsø: NORUT Samfunnsforskning, SF 1/99.

Petersen, T. (1996): "Some Simple Procedures for Estimating Regression Models with Multiple Indicators of Latent Constructs". Unpublished Paper. University of California, Berkeley.

Rose, H. (1994): *Love, power and knowledge*. Polity Press Ltd. UK.

Sørлие, K. (1998): "Bosetting, sysselsetting og flytting i livsløpsperspektiv". In *Søkelys på arbeidsmarkedet*, 15/98. Oslo: Institutt for samfunnsforskning.

Sørлие, K. (2000): *Flytting og utdanning for kvinner og for menn belyst i livsløps- og kohortsperspektiv*. Unpublished paper. Oslo: Norwegian Institute for Urban and Regional Research (NIBR).

Sørлие, K. (1999): *Bosetting og flytting i Tromsø og Harstad*. Oslo: Norwegian Institute for Urban and Regional Research (NIBR), prosjektrapport 1999:12.

Østberg, T. (1999): *Utdanningsambisjoner og utferdstrang. Ungdoms utdannings- og yrkesvalg sett fra verkstedindustrien i Harstad-regionen*. Fafo Institute for Applied Social Institute (FAFO), rapport 265.

Østberg, T. (2000): *Mobil og omskiftelig. Ungdoms utdannings- og yrkesvalg sett fra industrien i Kongsberg-regionen*. Fafo Institute for Applied Social Institute (FAFO), rapport 326.

Figures and tables

Figure 1: Important for Course Choices in Uppers Sencondary Education

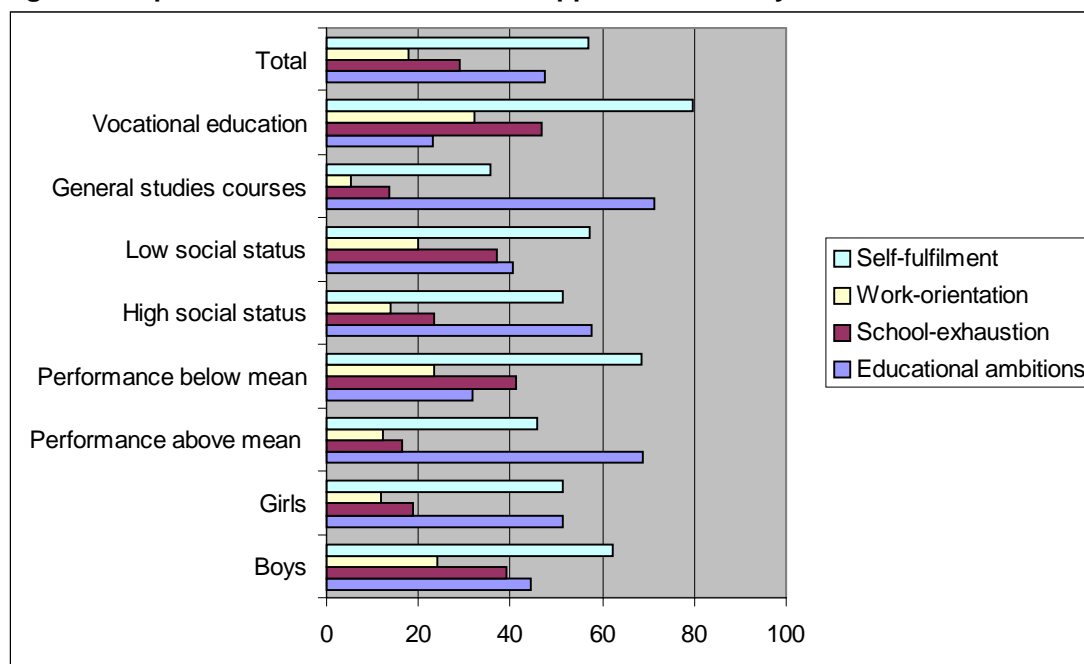


Figure 2: Important factors for Choice of Work

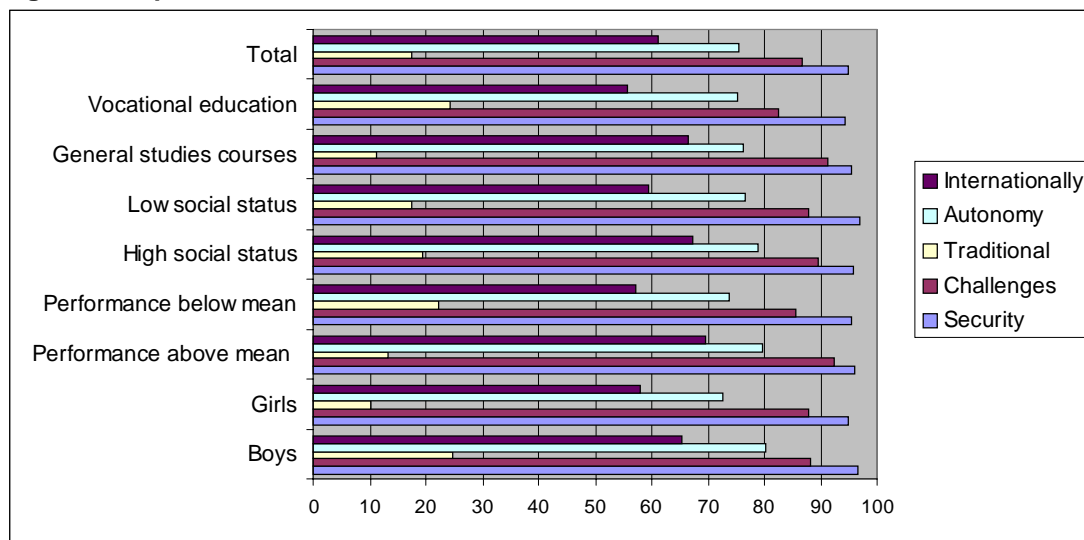


Table 1: Selection of pupils at regional level

	Harstad	Ulstein	Kongsberg	Total
Lower Secondary School	308	334	438	1080
Upper Secondary School	77	247	332	656
Total	385	581	770	1736