

Mind maps of employment development in sparsely populated regions of Sweden

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Employment options form an essential part of individuals' and households' living conditions. In this paper we present how people in Sweden perceive current and future job options. The empirical case is the northern half of the Swedish territory, which is divided into four counties. The analysis is based on data from a questionnaire, distributed to 4,000 inhabitants aged 15–85 years in September 2008. After reminders a response rate of 64.1% was reached. The ANOTA method is used as the analytical instrument. Two categories of determinants behind attitudes to job options in general on the local labor market have been chosen. The first category includes a set of personal attributes, while the second includes a set of locational characteristics. Further, it is analyzed how the respondents perceived the specific role of the manufacturing industry, the service industry and R&D in the development in their county. The two categories of determinants are used in this part as well. The analysis reveals a rather widespread anxiety about both the current and future provision of job options. The most satisfied and optimistic respondents were young, male and high-income earners living in coastal municipalities with a low unemployment level. There were also some striking differences in views among sub-groups on the role of the manufacturing industry, the service industry and R&D, with greatest contrasts found between the manufacturing industry and R&D. The highest share of respondents who regarded the manufacturing industry as very important was among men, over 30 years, with a low education and living in municipalities with a high unemployment level. The highest share of respondents who regarded R&D as very important was among women, under 30 years, highly educated and living in coastal municipalities with a low unemployment level.

Keywords: Northern Sweden, employment, ANOTA analysis, path dependency, manufacturing industry, service industry, R&D

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Introduction

A majority of peripheral and sparsely populated regions across the Western world are characterized by stagnation and depopulation. In various regional science publications, problems with growing gaps in terms of socio-economic conditions between expanding and declining communities, and measures to handle them, have been discussed over several decades. In Gløersen et al.

(2006) and Gløersen et al. (2009), recent analytical overviews across the Nordic countries are presented. These studies highlight the demographic sparsity and remoteness, reflected by distances to main European markets, as core elements for the understanding of the specific problems of and challenges to economic activities and service provision, which are important determinants of good socio-economic living conditions.

A major dimension of the problem has been, and will continue to be, the provision of job opportunities. The Nordic overview by Gløersen et al. (2006: 125–130) shows that northern Sweden has problems rather similar to those in the north-east parts of Finland. Almost all municipalities have had unemployment rates above the national average over long periods of time.

In this paper we will discuss the mindset among people in the Swedish north about this important prerequisite for life chances and welfare. We will analyze how the current local labor market situation is perceived as well as perceptions about job options in general 10–15 years ahead. The view on the role of the manufacturing industry in regional development compared to the view on the role of the service industry and research and development efforts will also be examined. These three sectoral approaches have been used over several decades as active elements of governmental regional development programs in lagging regions across Sweden as well as in several other countries. Our hypothesis is that opinions about this vary to some extent, due not only to personal attributes such as gender, age, education and income, but also to the place characteristics of the areas where people have settled.

The empirical case is the northern half of the Swedish territory, which is divided into four counties – Jämtland, Västernorrland, Västerbotten and Norrbotten. The total population is 878,000. As shown in Figure 1, a majority of the population lives in cities and the nearby surroundings along the coast of the Gulf of Bothnia.

During a period of 200 years, from early 1800 up to around 1960, the territory went through both a very long and strong population growth. Since then, stagnation or decline has occurred in most municipalities. In the counties of Norrbotten and Västerbotten, for example, the population increased by approximately 750% between 1800 and 1960. In Jämtland and Västernorrland the increase was approximately 350%, the same as the total for Sweden during that time period. Since 1960 the total population in the north has decreased by 5.8%, and as the total population of Sweden has increased significantly the relative share has been reduced from 12.4% to 9.4%. The only county that has a higher population today compared with 1960 is Västerbotten (increase of 7.5%). However, this growth has been concentrated to the university city of Umeå with the establishment of the university there in the 1960s as the major explanation.

Empirical data and method

The analysis is based on data from a questionnaire, which was distributed to 4,000 inhabitants aged 15–85 years in the four counties in September 2008. The respondents were chosen through a random sampling procedure. After reminders up to December 2008, an overall response rate of 64.1% was reached. The main task was to investigate and analyze opinions among people living in these counties regarding an institutional change in the form of regionalization. A more precise precondition for the study was that politicians in this regional context had suggested that the central government merge these four counties into two regions with empowered political mandates to handle regional development issues, regional transport infrastructure issues and the organization of advanced health care. The questionnaire also included questions about how the respondents perceived various dimensions of place-related living conditions and their views about living conditions in the future (Lidström 2009).

All chosen specific tasks addressed in this paper are operationalized into dependent variables and tested toward a set of explanatory variables. These are a mix of the respondents' personal attributes and indicators of place or sub-region characteristics. In the analysis the method ANOTA is used, which can handle categorical data (Keller et al. 1985; Bethlehem 2006). It is a method for the analysis of contingency variables with a nominal variable (Y) to be explained by a set of nominal variables (X_1, \dots, X_n). The method is a direct derivative of the linear model of regression analysis or analysis of variance, and translates a series of bivariate contingency tables into tables of regression coefficients. In these, the effects of category j of X_p on category i of Y is standardized for the effects of the other explanatory variables included in the analysis (Dana 2001). The calculated coefficients are corrected for possible effects of other explanatory variables and thus present "pure" effects (Bethlehem 2006).

Theoretical perspectives

As mentioned in the introduction the regional setting addressed in this paper may, in both a spatial and societal sense, be characterized as marginal with related development problems (for a definition of marginality, see e.g. Sommers et al. 1999;

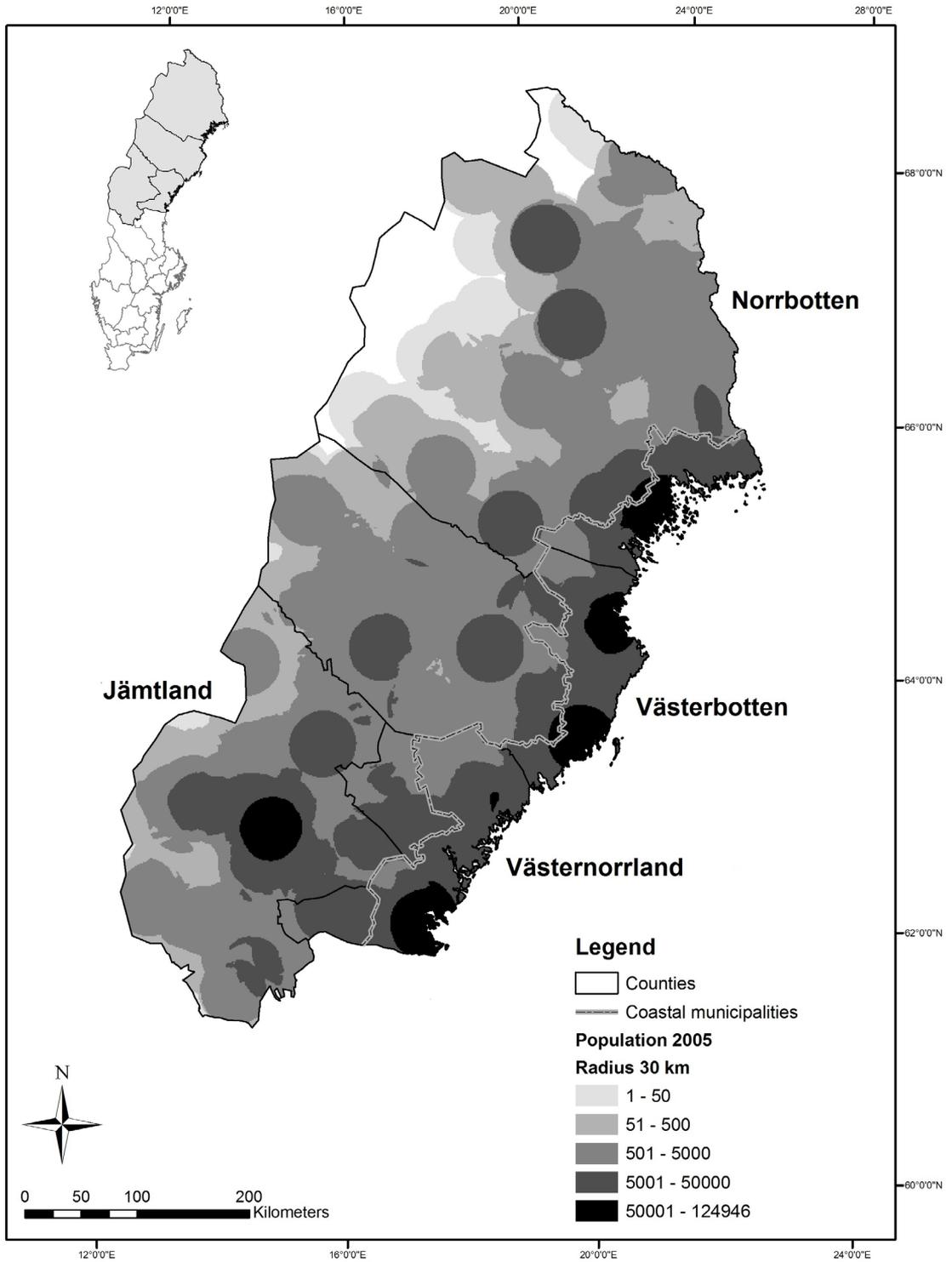


Fig. 1. Population distribution in 2005 in the four northernmost counties of Sweden – number of inhabitants within a radius of 30 km.

Gurung & Kollmair 2005). Since the mid 1900s there has been a significant population decrease in most municipalities. This negative path started as a consequence of technical advances within labor-intensive basic industries with rather low productivity, especially agriculture and forestry, in combination with a rapidly growing demand for labor in other sectors with higher productivity in southern Sweden. The more peripheral locations in relation to the main European markets were a further disadvantage for production of heavy goods in the north. The adjustments in the region have resulted in high efficiency, an advanced standard of industrial production and services, growing production volumes and increased export, but have led to a diminishing demand for labor. We may describe this restructuring, driven mainly by global market forces and the related division of labor, as both a push and pull process (see e.g. Pettersson 2002).

Since the mid 1960s, educational efforts and a wide range of regional policy measures have been implemented to handle the imbalances that have appeared, but it has been a great challenge to achieve an economic restructuring with sustainable results in terms of jobs and positive net migration. It should also be noted that there has been a substantial expansion of jobs in public welfare service institutions. This has resulted in a considerably high proportion of public employment in several municipalities in the north. The highest dependency is found among the municipalities with low population numbers (Gløersen et al. 2006: 131). This fact represents a major structural weakness across the four counties. In a report from the Commission of the European Community (CEC 2005), some policy implications related to this are addressed (see also Shucksmith et al. 2009). A viewpoint expressed in this report is that the promotion of economic competition and growth with the greatest potentials could mainly favor the cities in marginal and peripheral regions. A reason for this is that these communities have more available resources and thereby the potential to act as economic dynamos with high productivity within a gradually increasing knowledge-oriented economy.

The development pattern in the Swedish northern periphery is far from unique in an international comparison. Development paths of places and regions are often rather stable in character over time. A suggested concept for the main barrier to breaking a negative trend is "path dependency". The principle of path dependency originates from stud-

ies of the development of technologies, which have shown that technologies used over a long period of time, but increasingly inefficiently, cannot be easily replaced by new and more efficient ones. There often arises a "lock-in effect", when well established tools and methods block out the introduction of new technology (David 1985). The principle of path dependency has also been noted in organizational frameworks. In studies of institutions, American economist and Nobel Prize winner Douglass C. North (1990) has found a similar pattern of barriers to renewal in cases of institutions having become inefficient.

These findings are close to results reached by the human geographers Gould and White (1986), who testified that it is easier to change economic conditions than an image in people's eyes, or mental maps in their terminology. According to this statement we may expect that a majority of people living in a region have well established, but rather rigid, attitudes to economic, social and cultural place-related conditions and development perspectives.

Opinions are related to subjective norms and are thus rooted in personal values, which are formed through experiences of and influences from meetings with other people (Ajzen 1991). These personal meeting experiences may vary between a dominance of contacts in a local community context to a wide global contact pattern. The opinions may also be influenced by the ethnic composition of the local population. In general, the share of inhabitants born outside Sweden is much lower in the sparsely populated northern regions compared with the metropolitan areas. In the four counties, the share of people born abroad is presently 7%, while the corresponding share in the county of Stockholm is 20% and the average for Sweden is 14% (Statistics Sweden 2011). This means that the northern periphery has had much less in-migration of people with experiences of other both formal and informal organizational frameworks for economic, social and cultural life and development patterns across time. Thus, there may be a much lower potential for breaking path dependency by introducing concepts based on influences from successful economic transformations elsewhere.

The concept of "social capital" was coined to highlight the importance of networks, common norms and trust as facilitators of coordination and cooperation for mutual benefit (Westlund 2006). Putnam (1993) has also stated, on the basis of em-

pirical findings in Italy, that social capital is a crucial factor behind the successful development of regions. This viewpoint is in conflict with the above-mentioned view on path dependency as a barrier to early reactive strategies to handle risks of stagnation and decline. Putnam's results have also been criticized by Portes and Landolt (1996), for example, who argue that common norms create conformity, which implies restrictions both on daily life among people and on business initiatives and entrepreneurship.

Based on questions in the same questionnaire as in the empirical part of this paper, Westin (2009) has found that the northern part of Sweden can generally be characterized by strong local social capital. People also have a strong connection to the county where they live, although there are vast internal differences. Comparisons with studies across the whole of Sweden also indicate that the social capital in the north is a bit above the average level for the nation (Rothstein 2007, 2009). Social and cultural life are well organized, with a plurality of civil organizations. A rather high proportion of people in the survey state that they trust other people in the region, and are also active in various voluntary organizations. This may be regarded as both a strength for and a barrier to a creative economic renewal process.

Florida (2002) has launched another important dimension behind successful regional development, stressing the share of the population that could be defined as the creative class. These people often have a higher education, but Florida also stresses that the specific creative potential lies in attitudes and capacities in form of tolerance, talent and technology. According to his perspective, places that may attract this category will have a high capacity to react to early warnings of the need for reorientation of the present economic profile and to launch a revised growth-oriented development path. In northern Sweden we may find empirical support for this viewpoint. Among the five local labor markets with population growth in the north since 1960, four host a university campus and firms linked to research profiles there. In these city regions, the share of people with a higher education is also clearly above the national average.

As a consequence of policy changes aiming at the reduction of barriers to flows of information, people and goods across national borders, and a rapid expansion of ICT capacities, today national economies are very open and dependent on glo-

bal economic processes. Embedded in this are both threats and challenging options. For firms that have based their production and sales relations on restrictions for outsiders to compete on the same market, this causes a new, very vulnerable situation. For other firms, the reduced barriers provide opportunities to widened market relationships and growth of production. This globalization pattern may thus be regarded as having disadvantages for some firms and advantages for others. Also here, we can refer to a study based on questions in the same questionnaire as in the empirical part of this paper. Lundgren (2009) has found that large proportions of people in the north have international contacts and personal experiences from other countries, and often use another language than Swedish in these contacts. A majority of the inhabitants may thus be characterized as having "globalized" minds. Further, he found that 48% saw advantages for Sweden with globalization while 42% saw advantages for the northern part. Only 22% saw obvious disadvantages with globalization for the northern communities. A general characteristic of those who were positive to globalization is that they are high-income earners, have a high education and have an active interest in societal development issues. Those with a negative attitude toward globalization are low-income earners, have short educational experience and have a low interest in societal issues.

The earlier discussed path dependency dimension has an interesting connection to the concept of product cycles, which is rooted in Schumpeter's (1939) ideas on business cycles (see e.g. Törnqvist 1993: 143 ff.) According to the product cycle concept, products and whole firms can be divided into different categories depending on the revenue generated by the product and its competitive qualities. In the introductory stage, R&D may often play a critical role in the product development. The competitive dimension is very much about unique features – product competition. In later stages, the competitive advantages of products and firms gradually turn into a matter of price competition. Sectors that have reached a mature status thus also contribute to high path dependency.

At a general level the manufacturing industry, service industry and R&D in the north represent these three product life-cycle stages. Most of the manufacturing industry has a long history in the region and many of the firms have reached a mature level, characterized by standardized products

and price competition. A major part of the service industry is younger, and more characterized by competition rooted in product renewal or the development of completely new products. R&D clearly represents efforts toward more knowledge-intensive production, including the development of quite new product concepts and market niches. All three are currently well established across the four counties, but R&D activities are much more concentrated to the main cities and linked to their universities than the others are.

Perceptions of current and future local labor market conditions

During the early 21st century, Sweden in general faced a rather good economic development associated with a growth of jobs. The territory in focus in this study was no exception to this pattern. Official statistics (Statistics Sweden 2011) show that during the period 2004–2008 the number of employed men and women increased across all four northern counties. The total number of employed men increased by 1.3%, and women by 0.9%. The economic crisis that started during the latter part of 2008 did not immediately result in a reduced number of jobs, but several private firms announced the need to fire a number of employees during 2009.

The results concerning views on the current and future local labor market situation presented in Tables 1 and 2 reflect that the change toward more problematic conditions had been considered by many people. A total of 51.6% of the respondents had the opinion that the current labor market situation where they live was bad. Table 2 reveals that the view among 29.7% was that the conditions will get worse in the future, and only 18.9% had an optimistic view of the future.

The tables also show the results of the ANOTA analysis in terms of partial effects of various predictor variables on the dependent variable. Significant values on at least a 5% level are in bold text. The values may be interpreted in exactly the same way as regression coefficients in a multiple regression analysis with dummy variables or the interpretation of effects in an analysis of variance (Bethlehem 2006).

According to the hypothesis presented in the introduction, we have examined the extent to which opinions are shifting due to personal attributes, and whether locational characteristics matter. The

Table 1. Opinions in 2008 on the current local labor market situation in the four northernmost counties of Sweden.

	Good	Bad	No Opinion
Overall distribution	40.4	51.6	8.0
Effects of:			
Gender			
Man	2.9	-1.8	-1.1
Woman	-2.6	1.6	1.0
Age (Year)			
15–29	-4.5	2.0	2.5
30–49	2.2	1.8	-4.0
50–64	-2.9	5.9	-3.0
65–	4.4	-13.1	8.7
Education			
Lower education	1.6	-1.6	0.0
Upper secondary school	-0.7	1.5	-0.8
Higher education	0.1	-2.1	1.9
Household income (SEK)			
0–200 000	-14.5	10.1	4.3
201–400 000	-4.1	3.7	0.4
401–600 000	4.1	-2.3	-1.8
601–	13.5	-12.1	-1.4
Opinion about globalization			
Advantages	3.7	-3.7	0.0
Neither nor	-2.6	2.6	0.1
Negative	-4.3	5.9	-1.6
No opinion	-1.6	-0.5	2.1
Municipal type			
Coast	4.4	-6.0	1.7
Inland	-6.4	8.8	-2.4
County			
Norrbotten	7.4	-6.9	-0.6
Västerbotten	0.6	-1.0	0.4
Västernorrland	-4.3	4.6	-0.3
Jämtland	-6.8	6.1	0.7
Unemployment			
Less than 3%	7.9	-8.6	0.7
More than 3%	-6.6	7.2	-0.6

*) Bold numbers mean a significant effect at a 0.05 level.

latter dimension is operationalized in three ways. The first is to compare respondents living in the coastal municipalities with the much more sparsely populated inland municipalities (see delimitation in Fig. 1). The second is to make comparisons across the four counties. The third is to control for the unemployment rate in the municipality where the respondent lived during 2008, which had a mean value of 3%. Based on the mean value, the unemployment variable has been transformed into a dummy variable: over and under 3%.

Among the tested predictor variables we identified some significant differences related to both personal attributes and locational characteristics. The control of personal attributes shows that a higher proportion of men perceived the current job situation as good. When controlling for age groups we found that a significantly higher proportion of those aged 50–64 regarded the job situation as bad, while educational level revealed no significant differences. A much more significant and important dimension was household income. As expected, a much higher share of respondents in low-income households were less satisfied compared with respondents in high-income households. We also checked for opinions on globalization. A significant pattern is that among respondents who see advantages with globalization there was a significantly higher proportion who perceived the local labor market as good. Among respondents with a negative opinion about globalization, the share who perceived the local labor market as good was significantly lower.

When checking for different locations across the four counties we found a significantly more positive view among respondents living in the more densely populated municipalities along the Gulf of Bothnia compared with the interior municipalities. A comparison across the four counties shows the most positive views in the northernmost county of Norrbotten, while we found a significantly opposite situation in the county of Väster-norrland. We also found that in municipalities with a high unemployment rate there was a significantly higher share of dissatisfied people.

The ANOTA analysis presented in Table 2 reveals the following differences in views about the job situation on the local labor market 10 to 15 years in the future. Among the tested personal attributes, age group, household income and opinion on globalization showed significant differences. The most positive view on future job options was found among the youngest respondents, while the most pessimism was found among respondents between 50–64 years of age. This is further reflected when controlling for household incomes. The largest proportion of optimistic respondents was found among those with the lowest incomes. Plenty of them are presumably currently students or just on the threshold of the labor market. Those who are positive toward globalization expect that the labor market will improve, while those who are negative toward globalization expect that the labor market will be worse in 10–15 years.

When checking for locational attributes we found a significantly larger proportion of respondents with an optimistic view among those who live in the coastal municipalities compared with the interior parts. A comparison across the counties shows that the share of optimistic respondents was highest in the county of Norrbotten and the highest share of pessimistic respondents was in Väster-norrland county. It was further found that the most

Table 2. Opinions in 2008 on job options in the coming 10–15 years in the four northernmost counties of Sweden.

	Better	Same	Worse	No Opinion
Overall distribution	18.9	39.4	29.7	12.0
Effects of:				
Gender				
Man	1.4	1.5	0.1	-3.0
Woman	-1.3	-1.4	-0.1	2.7
Age (Year)				
15–29	4.8	1.4	-7.2	0.9
30–49	1.7	0.8	1.6	-4.1
50–64	-2.0	-2.8	5.1	-0.3
65–	-2.7	2.2	-5.2	5.7
Education				
Lower education	-2.2	1.8	0.1	0.3
Upper secondary school	1.0	-1.2	0.6	-0.4
Higher education	-0.1	0.9	-1.5	0.7
Household income (SEK)				
0–200 000	5.5	-5.9	-2.2	2.6
201–400 000	-0.1	-3.7	2.5	1.4
401–600 000	-2.0	4.3	-0.4	-1.8
601–	-1.0	4.3	-1.9	-1.5
Opinion about globalization				
Advantages	3.3	3.5	-4.0	-2.8
Neither nor	0.4	1.0	1.3	-2.7
Negative	-3.4	-2.3	8.0	-2.3
No opinion	-5.2	-7.9	-1.3	14.3
Municipal type				
Coast	0.6	3.7	-4.6	0.3
Inland	-0.8	-5.5	6.7	-0.4
County				
Norrbotten	3.8	-0.0	-3.4	-0.4
Västerbotten	-1.2	2.0	-0.6	-0.3
Västernorrland	-0.4	-3.3	4.4	-0.7
Jämtland	-3.8	2.1	-0.6	2.3
Unemployment				
Less than 3%	1.9	3.1	-5.5	0.4
More than 3%	-1.6	-2.6	4.6	-0.4

*) Bold numbers mean a significant effect at a 0.05 level.

optimistic respondents live in municipalities with low unemployment. A comparison between the results in Tables 1 and 2 shows that the pattern of differences across the various parts of the territory is characterized by high congruity.

Against this general background we will highlight opinions about the roles of the manufacturing industry, service industry and R&D in regional development. Table 3 shows that almost half of the respondents, 46.9%, regarded the manufacturing industry as very important for regional development. The results from the ANOTA analysis show smaller differences than those presented in Tables 1 and 2. Nevertheless, we found some significant differences. As regards personal attributes, a significantly higher share of men compared with women had the opinion that this sector is very important. Much greater significant differences were found when checking for age groups. The strongest contrasts were between the respondents up to 29 years and those over 50 years. A much smaller proportion of the young respondents regarded this sector as important for regional development. This is also reflected in differences among respondents when considering household income. When checking for views on globalization, we found that a significantly higher proportion of respondents who have a positive view on it regarded the manufacturing industry as very important. Further, it can be noted that among respondents living in locations with high unemployment a significantly larger proportion regarded this sector as very important.

As mentioned, the service industry in the north generally has a shorter history than the manufacturing industry. Many service firms are also much less rooted compared with manufacturing firms, and may thus be much easier to relocate if needs arise for adaptation to changed competitive conditions or other locational preferences. However, even with rather small local markets many of these firms have developed efficient and competitive solutions to overcome distance friction toward national and international markets. Ambitious public efforts in terms of investments in ICT infrastructure and the promotion of adequate education and competence building across the territory have created comparative advantages for many firms.

Table 4 shows that 37.4% regarded this industry as very important for regional development, but we can note that this share is quite lower compared with the corresponding figure for the role of the manufacturing industry. Among the age groups

Table 3. Opinions in 2008 about the importance of the manufacturing industry for the socio-economic development in the four northernmost counties of Sweden.

	Very Important	Quite Important	Not Important	No Opinion
Overall distribution	46.9	38.8	5.8	8.5
Effects of:				
Gender				
Man	4.3	-0.3	-0.3	-3.7
Woman	-3.9	0.2	0.3	3.3
Age (Year)				
15–29	-16.4	-3.0	7.9	11.4
30–49	-1.7	2.6	0.8	-1.6
50–64	5.4	-0.5	-2.4	-2.5
65–	5.3	-0.5	-2.7	-2.1
Education				
Lower education	1.5	-2.3	0.3	0.5
Upper secondary school	0.2	0.4	-0.6	0.0
Higher education	-2.5	2.0	1.2	-0.7
Household income (SEK)				
0–200 000	-5.0	-1.8	1.5	5.3
201–400 000	1.3	-1.0	-0.8	0.5
401–600 000	3.1	0.3	-1.0	-2.4
601–w	-3.3	3.4	1.9	-1.9
Opinion about globalization				
Advantages	5.8	-1.5	-0.2	-4.0
Neither nor	-0.2	4.1	-0.5	-3.3
Negative	0.5	1.0	2.0	-3.5
No opinion	-13.8	-1.3	-1.4	16.6
Municipal type				
Coast	-0.8	0.9	0.1	-0.3
Inland	1.2	-1.4	-0.2	0.4
County				
Norrbottn	0.1	-1.0	1.1	-0.2
Västerbotten	1.9	1.0	-1.7	-1.1
Västernorrland	-2.0	0.2	0.2	1.6
Jämtland	-0.1	-0.3	0.8	-0.3
Unemployment				
Less than 3%	-3.9	2.9	1.0	-0.0
More than 3%	3.3	-2.5	-0.9	0.0

*) Bold numbers mean a significant effect at a 0.05 level.

we found that the most negative opinions appeared among the youngest and the most positive opinions among respondents aged 50–64. Further, we found that a significantly higher proportion of respondents with a lower education regarded this industry as not important. We can also note that, even in this case, we found that among respondents who see advantages with globalization there was a significantly higher share who regarded this

industry as very important for regional development. When checking for locational characteristics, we found a pattern similar to that of the manufacturing industry. In locations with high unemployment, a larger proportion of respondents regarded the service industry as very important.

As discussed above, R&D activities mean a clear opportunity to restructure the economy into a more knowledge-oriented profile and thus

achieve a break of path dependency based on mature product concepts and market orientation. Table 5 shows that 44.5% regarded R&D as very important for regional development. When we checked for personal attributes there was a significant gender difference, with a larger share of women regarding this sector as very important. Between the age groups there were also some differences. Among respondents in the 30–49-year

Table 4. Opinions in 2008 about the importance of the service industry for the socio-economic development in the four northernmost counties of Sweden.

	Very Important	Quite Important	Not Important	No Opinion
Overall distribution	37.4	43.3	9.2	10.0
Effects of:				
Gender				
Man	0.8	1.9	0.6	-3.3
Woman	-0.8	-1.7	-0.5	3.0
Age (Year)				
15–29	-6.9	-7.0	3.6	10.3
30–49	0.8	1.1	0.7	-2.6
50–64	2.1	2.7	-1.9	-2.9
65–	0.7	-0.3	-0.6	0.3
Education				
Lower education	-3.2	-0.7	2.5	1.4
Upper secondary school	0.3	0.5	-0.6	-0.3
Higher education	3.1	-0.5	-1.6	-0.9
Household income (SEK)				
0–200 000	-3.5	-2.2	1.2	4.5
201–400 000	0.4	-0.3	-0.4	0.3
401–600 000	0.1	1.4	0.5	-2.0
601–	2.7	0.1	-1.3	-1.5
Opinion about globalization				
Advantages	7.5	-1.1	-1.4	-4.9
Neither nor	-2.7	6.2	-0.7	-2.9
Negative	-0.7	0.6	4.2	-4.1
No opinion	-14.3	-3.8	-1.0	19.1
Municipal type				
Coast	-1.0	1.0	0.4	-0.4
Inland	1.4	-1.4	-0.5	0.6
County				
Norrbottn	1.7	-1.1	-0.0	-0.6
Västerbotten	1.0	0.5	-0.3	-1.2
Västernorrland	-2.5	0.5	0.1	1.9
Jämtland	-0.5	0.2	0.5	-0.2
Unemployment				
Less than 3%	-3.0	2.7	0.5	-0.2
More than 3%	2.6	-2.3	-0.5	0.2

*) Bold numbers mean a significant effect at a 0.05 level.

Table 5. Opinions in 2008 about the importance of R&D for the socio-economic development in the four northernmost counties of Sweden.

	Very Important	Quite Important	Not Important	No Opinion
Overall distribution	44.5	39.2	9.6	6.7
Effects of:				
Gender				
Man	-2.4	1.9	1.2	-0.7
Woman	2.1	-1.7	-1.1	0.6
Age (Year)				
15–29	-4.9	0.2	1.8	2.9
30–49	-5.4	1.3	4.4	-0.3
50–64	1.7	1.9	-2.8	-0.7
65–	7.1	-4.1	-2.6	-0.4
Education				
Lower education	-2.3	1.2	-1.0	2.1
Upper secondary school	-2.5	1.1	1.6	-0.2
Higher education	9.3	-4.3	-3.0	-2.0
Household income (SEK)				
0–200 000	1.8	-6.2	0.1	4.4
201–400 000	0.1	-1.5	1.3	0.1
401–600 000	-1.5	4.2	-1.4	-1.3
601–	0.9	1.3	0.0	-2.2
Opinion about globalization				
Advantages	3.1	1.3	-1.9	-2.6
Neither nor	3.1	-2.1	0.8	-1.8
Negative	-0.8	-0.2	4.0	-2.9
No opinion	-9.1	-0.9	-1.0	11.0
Municipal type				
Coast	2.9	-1.0	-1.1	-0.7
Inland	-4.2	1.5	1.6	1.1
County				
Norrbottn	3.3	-2.8	-0.4	-0.1
Västerbotten	-0.6	2.8	-1.2	-1.0
Västernorrland	-2.7	1.8	0.4	0.5
Jämtland	-0.2	-3.0	2.2	1.1
Unemployment				
Less than 3%	1.1	-0.3	-0.7	-0.1
More than 3%	-0.9	0.2	0.6	0.1

*) Bold numbers mean a significant effect at a 0.05 level.

age group, a significantly lower proportion regarded this sector as very important compared with the over 65-year age group. Checks on educational level showed, as might be expected, that a significantly larger proportion of respondents with a higher education regarded R&D as very important, but household incomes showed no significant differences. When checking for locational characteristics, we found that the coastal regions had a higher share of people claiming that R&D is very important for the future of the county, but checks for county and local unemployment level showed no significant differences.

Conclusions

The analyses carried out in this paper intended to present opinions among people in the Swedish north on employment options, which is a crucial dimension of welfare and an important prerequisite for achieving a balance in population development and demographic composition. For several decades, strategies for economic growth and job creation have been on the agenda in both specific regional policy programs and several sector policy fields. The efforts in the north have generally, from a long-term perspective, managed to compensate for consequences of market forces through the concentration and relocation of plants and service supply to more cost-efficient locations nationally or internationally. But the rather limited expansion of jobs has not led to even stabilization of the number of inhabitants. For example, official statistics (Statistics Sweden 2011) show that the total number of those employed in the four counties increased by 0.4% between 1985 and 2008, while the total population decreased by 2.9%.

We found that a rather high proportion of the respondents across the territory worry about the employment situation and how job options will develop further on. When controlling for a set of personal and locational attributes, we found some significant contrasts. The most satisfied and optimistic respondents were young, male and high-income earners living in coastal municipalities with a low unemployment level. However, we did not find that a larger share of people with a higher education are satisfied and optimistic compared with the others. This indicates that this category feels a rather high degree of uncertainty about a sufficient supply of relevant job options for them in the north.

Other studies in European regions support our findings in Tables 1 and 2 about contrasts between coastal and inland municipalities in perceptions of job opportunities now and in the future. According to CEC (2003), rural inhabitants appear to be less optimistic about the future compared with urban inhabitants. Ray and Ward (2006) present an interesting explanatory, arguing that it may be difficult to imagine a positive rural future. Their viewpoints relate to the pastoral rural discourse in which quality of life is considered the antithesis of change. This means that preserving economic, social and cultural structures and related values of the past is more desired than elaborating and striving for a new, alternative structural composition. This viewpoint has a clear connection to the path dependency dilemma discussed above.

Further, we can make the following comments regarding the opinions revealed on the role of the manufacturing industry, service industry and R&D in regional development. The high share of respondents who regarded the manufacturing industry as very important can be interpreted as a further indication of a strong path dependency. On the other hand, we can note that almost as large a proportion of the respondents regarded R&D, with its trend-breaking potential, as important. This could be interpreted as an open attitude toward a renewal of the economic structures throughout the Swedish north. But to achieve this, more offensive strategies and entrepreneurial initiatives are needed.

However, when controlling for personal attributes we found some distinctions in line with the theoretical discussion above. The highest share of respondents who regarded the manufacturing industry as very important was among men, over 30 years of age, with low education and living in municipalities with a high unemployment level. The highest share of respondents who regarded R&D as very important was found among a quite different mix of people. Those were women, younger than 30 years of age, highly educated and living in coastal municipalities with a low unemployment level. None of the tested groups regarded the service sector as the most important one.

The results concerning opinions on the role of manufacturing industry and R&D can be compared with those from a similar study in Västra Götaland county in southwestern Sweden (Nilsson & Weibull 2007). There, the share of respondents who regarded the manufacturing industry as very important for future regional development was 44% and thus slightly lower than in the north. The

corresponding share who regarded R&D as very important was 49%, which was slightly higher than in the north. Similar to the results in our study, higher proportions of respondents who are women, highly educated, aged over 65 years and living in the most densely populated areas regarded R&D as very important.

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