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# Economic Development and Place Attractiveness:

## The case of Karlskoga in Sweden

**Keywords:** regional economic development, population change, place attractiveness, old industrial towns

*In this short paper we introduce a research project currently underway exploring the industrial development, and accompanying socio-economic changes, in an industrial town in Sweden: Karlskoga. Here we consider specifically the confluence of factors and issues around economic development on the one hand, and population and migration on the other hand. We illustrate, through the Karlskoga case of a town that has experienced profound ups and downs both in its economic trajectory but also in accompanying population and migration trends, the importance of considering these two elements in harmony. We posit that to undertake sustainable economic development in the future, old industrial towns such as Karlskoga need to centre their efforts around quality of life and place attractiveness, and not only think of industrial development in a narrow sense. This is an introductory work relating to a project which is ongoing.*

### Introduction

This short paper introduces a case study currently underway into economic transformation in one of Sweden's oldest industrial towns, which is located in a relatively peripheral location in central Sweden: Karlskoga. The city is an interesting case study through which to examine issues of regional economic development, path-dependency, migration and employment, and much more, because it

is a town that has experienced something of a roller-coaster over the past few decades as its economic fate has risen and fallen in various stages. Because of the dominance in the town of one of Sweden's oldest and probably best known manufacturing firms, the weapons manufacturer Bofors, the story of the town has been inextricably woven with the changing fate of this company. We trace the story of the company's establishment and foundation as a major employer in the town, through to the crisis in the 1990s for the company and accompanying socio-demographic decline in the town, to the rejuvenation of industry and employment in the town today, and accompanying stabilisation of the population.

In this paper we present, briefly, the story we have pieced together through a combined programme of qualitative and quantitative research, in our attempts to tell the economic story of the town. As economic geographers, our investigations were initially very economy and industry oriented, but as we delved further into the case study, and spoke to more people involved in the Karlskoga economy, we realised that the town's story, and its fragile future trajectory, was also a migration story. More specifically, we understood that the main challenge facing the town, and its planners today, is enhancing place attractiveness and increasing the working and living population of the town in order to sustain the (re)grow-

ing industrial clusters that are located there. We increasingly realised that we cannot understand economic geography and economic development without paying due attention to issues of population and migration.

The paper uses information from a longitudinal geo-referenced micro data on individuals that covers the period 1990–2014. The database (Bergslagsdata/BeDa) is compiled from a number of administrative registers held by Statistics Sweden, and consists of longitudinal information, for every third year, for all individuals (16 years of age and older) working and/or living in one of the four counties (Värmland, Örebro, Västmanland and Dalarna) in Central Sweden. We also use information collected from 10–15 interviews with representatives from the larger firms and business associations in Karlskoga.

## Economic History

Our story begins in 1646 when a hammer mill was established in Karlskoga, on a convenient lake-side location, as a company called Boofors. The business made bar iron and had some manufacturing of tools for farmers. The turning point was in 1879 when a man called Carl Danielsson managed to make cast steel at Bofors which had a strength superior to the pig iron which had been standard material for guns up till then. This made the military authorities interested and Bofors would soon start manufacturing cast steel for the gun manufacturing firm Finspång in Östergötland. In 1883 Bofors started their own gun manufacturing firm. In 1884 the first cannon workshop was opened. These are the roots of the world-famous Bofors weapons manufacturer.

Around this time, there is a twist in the story of Karlskoga's (and Bofors') development, when the most famous of Swedes Alfred Nobel steps into the picture. In 1893 he became interested in finding a company to purchase, and the following year purchased the ironworks at Bofors, which soon became the Bofors arms producer we know today. It was not only explosives that Nobel tested and developed in Karlskoga: he also made several other inventions such as artificial silk and leather and registered altogether over 350 patents in different countries. But he remains most famous for his pioneering work developing explosives, which were of course used in the production of Bofors weapons.

The presence of Nobel looms over Karlskoga today: its premier tourist and historical destination is the home of Alfred Nobel, which today houses a museum complete with the original, and largely unchanged, workshops where Nobel developed his in-

ventions. The legacy of Alfred Nobel is at the heart of how the town of Karlskoga presents and markets itself to residents, tourists, and also to companies, drawing on the rich historical and industrial legacy of being the Swedish residence and commercial centre for the famous man. An active place branding strategy is being pursued in Karlskoga around the person of Alfred Nobel.

Karlskoga is located in central Sweden, between the cities of Örebro and Karlstad (around 45 minutes travel time from each) and around three hours travel from both Stockholm and Oslo. It is still an industrial town today, with industrial sites, some of which are heavily securitised and inaccessible to civilians, dominating the city centre and lake-side locations. In addition to the industrial manufacturing and testing sites in the city, just outside Karlskoga is one of the largest and most accessible commercial testing sites, which companies from all over Europe visit to test their products and this represents an important economic source for the town and its resident companies. The Bofors Test Center (co-owned SAAB and BEA) offers, among other things, test firing, destruction, tests with unmanned aircraft systems, safety tests and environmental impact.

Moving to more modern times, perhaps Bofors is most well known for the Bofors gun. Bofors is also well known for a high profile scandal which caused political turmoil in both Sweden and India: a contract signed between Sweden and India in 1986 was found by Radio Sweden journalists to have involved heavy bribes at the highest political level to Indian politicians. This moment is key in the modern history of Bofors and in our research with those employed at Bofors was pinpointed as the turning point that led to the following break up of Bofors and "scattering" of the economic system of the town that we see today.

In 1999 the other famous Swedish defence company SAAB bought the Celsius group, which was the parent company of Bofors. In 2000 United Defence Industries (USA) bought Bofors Weapons Systems, the heavy artillery division. Saab retained the missile division. In 2005 BAE systems acquired the whole of UDI including the Bofors subsidiary. The divide between heavy artillery (to BAE systems) and missiles (SAAB) remains today. These are now the two large employers in Karlskoga (outside of public sector activities, of course), but the economic system today is much more diverse than this.

So, the previously monolithic company got split into these two parts, but what we discovered upon interviewing actors in the Karlskoga system is that the story is much

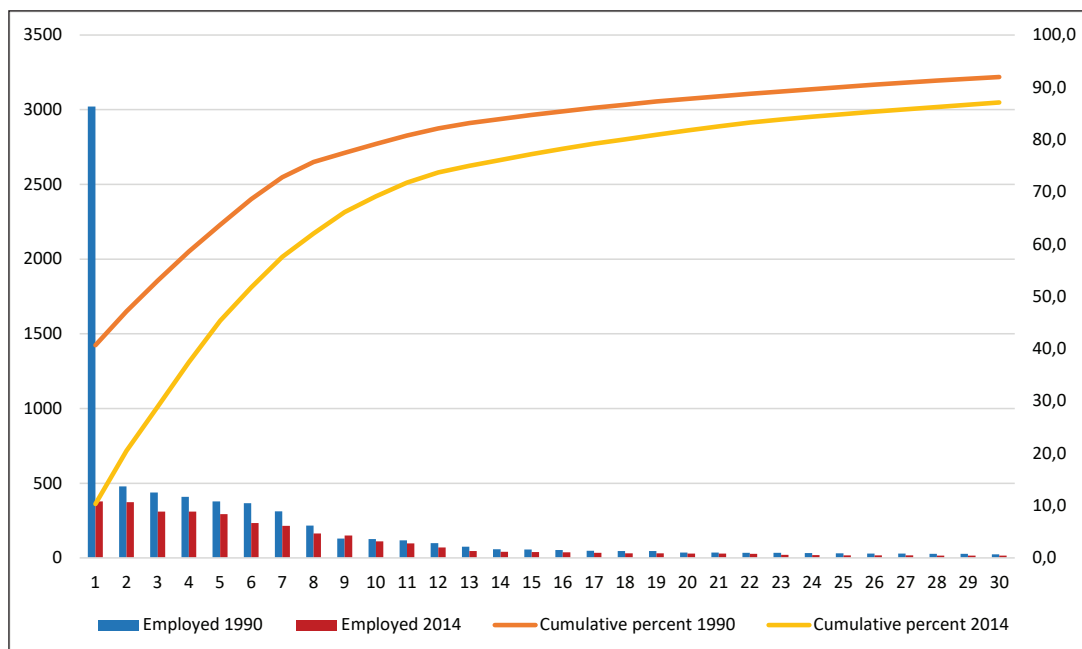


Figure 1. Manufacturing workplace structure in Karlskoga 1990 and 2014. Number of employed (left hand scale) and cumulative percent (right hand scale). Source: BeDa/Statistics Sweden.

more complex and diverse. The Bofors split actually catalysed a huge amount of change and diversity in the economic system of the town. Companies moved in, some from abroad, to acquire different parts of the old business, for example units of technologies. One example is a medical company that acquired technology and staff to make blood centrifuges. A dental implant company was created from old Bofors staff and technologies, also chemical production companies. An interesting development recently is the growth of a small but leading within Europe 3D printing cluster with staff and technologies from the old firm in combination with new people and ideas. Some of the old Bofors employees we interviewed left the Bofors firm and began a new career as entrepreneurs using their contacts and engineering know how to start up businesses in areas as diverse as electronic shop displays and innovative ways of printing envelopes.

It is very difficult to capture the full extent of the changes that happened following the break-up of Bofors, and everyone we spoke to had a different view of exactly what happened and why and how. But we can categorise it broadly thus: there was a large scale movement of people, knowledge, and technologies. We heard several different stories of people who had moved to new companies, started their own companies, and those who remained in the much smaller remaining Bo-

fors companies (BAE and Saab). The following charts illustrates how the Karlskoga economy has become increasingly characterised by several smaller firms rather than the monolithic employment structure of the past. The labour market in Karlskoga was in the early 1990s clearly dominated by one single workplace, accounting for roughly 40 % of all manufacturing employment. In 2014 the largest manufacturing workplace had approximately 10 % of total employment (see Figure 1).

Table 1. Self-employment (1990 and 2014) and foreign ownership (2002 and 2014) in Karlskoga, (%).

Employment type	1990	2014
Employed	99,2	97,3
Self-employed	0,8	2,7
<b>Total, %</b>	<b>100,0</b>	<b>100,0</b>

Ownership	2002	2014
State owned firms	3,6	0
Swedish independent firms	13,9	8,0
Swedish firms part of a larger group	42,1	30,7
Foreign owned firms	38,6	59,2
Other	1,9	2,1
<b>Total, %</b>	<b>100,0</b>	<b>100,0</b>

Source: BeDa/Statistics Sweden.

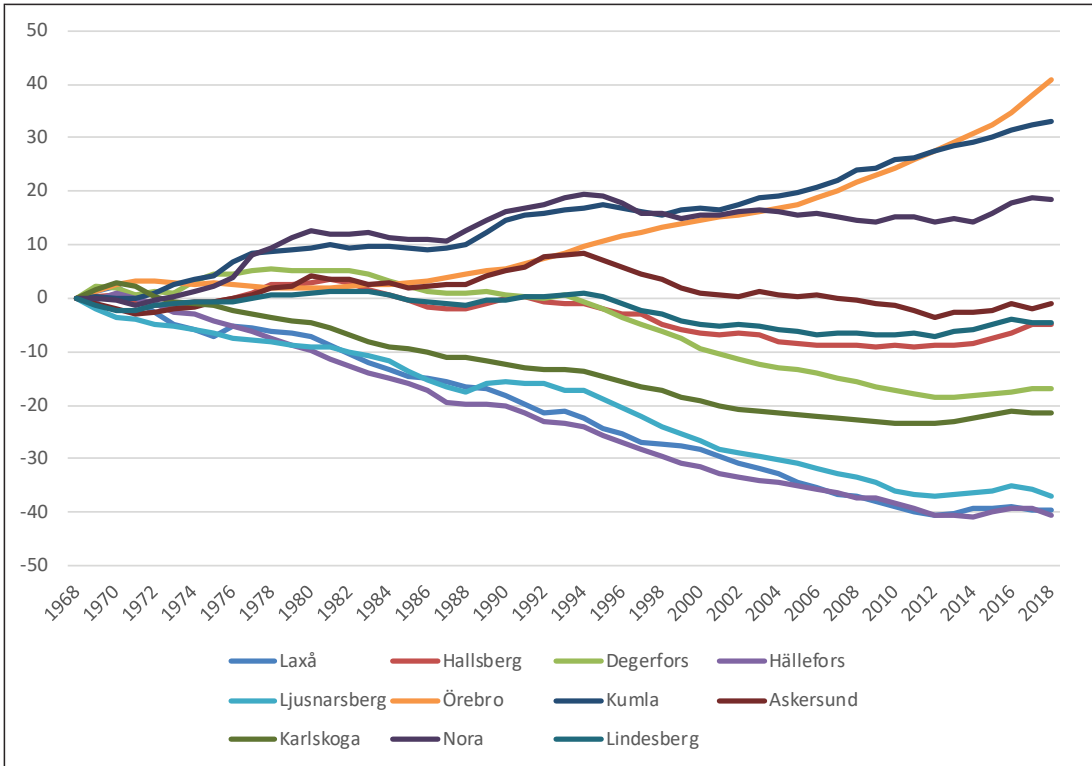


Figure 2. Relative population change (%) 1968 to 2017 in municipalities in Örebro County. Source: Statistics Sweden.

We can also see changes in the economic structure of the town in terms of self-employment and foreign ownership of companies, both of which have increased in recent years, adding to the picture of a more diverse and fragmented economic system: The increase in self-employment is, however, modest and still clearly below the average for the country as a whole. There is a huge variation between municipalities in the region, some having more than 20 % self-employed in the manufacturing industry. Karlskoga is, however, at the lower end of the scale. In the case of foreign ownership, the increase is related not only to the take-over by British BEA Systems, but also to other acquisition by owners from Norway, France and India.

### The Population and Migration Story

As was the case in other towns in this region, Karlskoga experienced quite significant population decrease from the 1970s to the present day, whereas the largest municipality in the region, Örebro city, experienced rapid increases (see Figure 2). This decline in Karlskoga has begun to stabilise and turn around, but there has definitely been an overall trend

in decline of population, which can be compared to the significant decline in manufacturing employment in the town.

The deep crisis for Bofors in the early 1970s is mirrored in a massive deficit in net migration during a couple of years (see Figure 3). The rest of the 1970s and large parts of the 1980s show a more moderate negative net migration. Since the turn of the century, net migration has been more balanced, and even showing a net gain between 2010 and 2015. Manufacturing employment in general has been decreasing since 1990 (Figure 3), but a slight upturn is evident since 2014. The curves in Figure 3 indicates that covariation between manufacturing industry and migration is becoming less directly related, reflecting a transformation into a service economy even in municipalities like Karlskoga.

It should be mentioned that during the good years after the Second World War Bofors, like most iron and steel producing companies in the Bergslagen region, relied heavily on labour migration from other countries in Europe, mostly from Finland, but also from countries like Yugoslavia, Italy, Germany and Austria (Lundmark 2018). Since the 1970s, in-migration to Karlskoga (as in the rest of

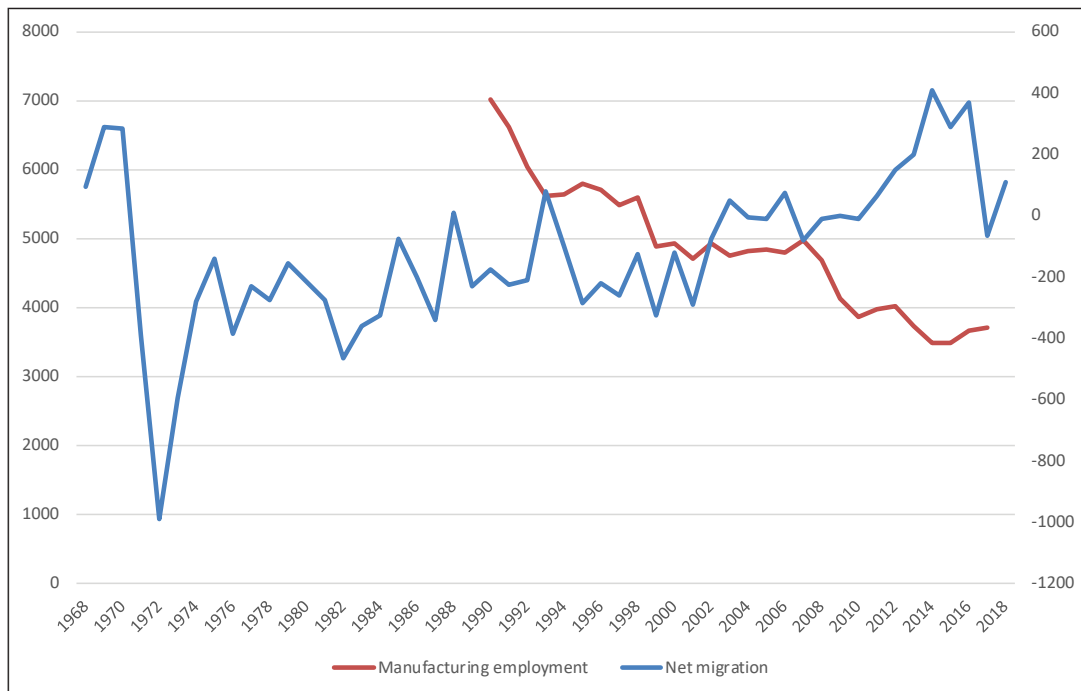


Figure 3. Net migration (1968–2018, right hand side) and employment in manufacturing industry (1990–2017, left hand side) in Karlskoga. Source: Statistics Sweden.

the country) has been totally dominated by refugees from countries like Bosnia, Somalia, and more recently from Syria.

Although in the past there was a decline in employment in manufacturing in the town of Karlskoga, today the economy is looking to be in a much better situation. The firms in Karlskoga reported to be doing well, and told us that their main challenge or issue at the present time is actually finding scientifically and engineering educated workers to fill the vacancies they have. Today in Karlskoga there are more jobs than there are qualified people to fill them. Thus, the major concern for those managing businesses in Karlskoga but also the public sector economic and town planners, is trying to attract more highly qualified personnel to move into the area. To do so, they are currently planning an ambitious regeneration programme for the whole town. This includes building a new railway to connect Karlskoga to the mainline Stockholm–Oslo route, physically expanding the city centre to be nearer to the lake side, and thus more attractive, and building whole new attractive neighbourhoods with villas and lake side views to make the property offering of Karlskoga more attractive to the relatively

well paid and highly educated workforce they need to attract for the industry there.

A problem that the Karlskoga planners currently perceive is that the thriving Karlskoga industry is attracting many people to commute to the town, but because of the way taxation is constructed in Sweden this means the municipality misses out on tax dividends that it would gain if those people were actually resident in the town. This is the conundrum planners are faced with, and are working in partnership with the firms who are facing recruitment challenges to address. Figure 4 shows that when it comes to the highly skilled workers in the science and technology sectors, a higher proportion of these are commuting from other cities and towns rather than residing in Karlskoga.

### Discussion: Karlskoga's challenges as a place attractiveness problem?

Karlskoga town is currently suffering from the effects of previous decades of decline and out-migration, and a lacking focus on place attractiveness leading to a situation where the town is lacking essential elements to make it attractive to the well paid workers it is trying to

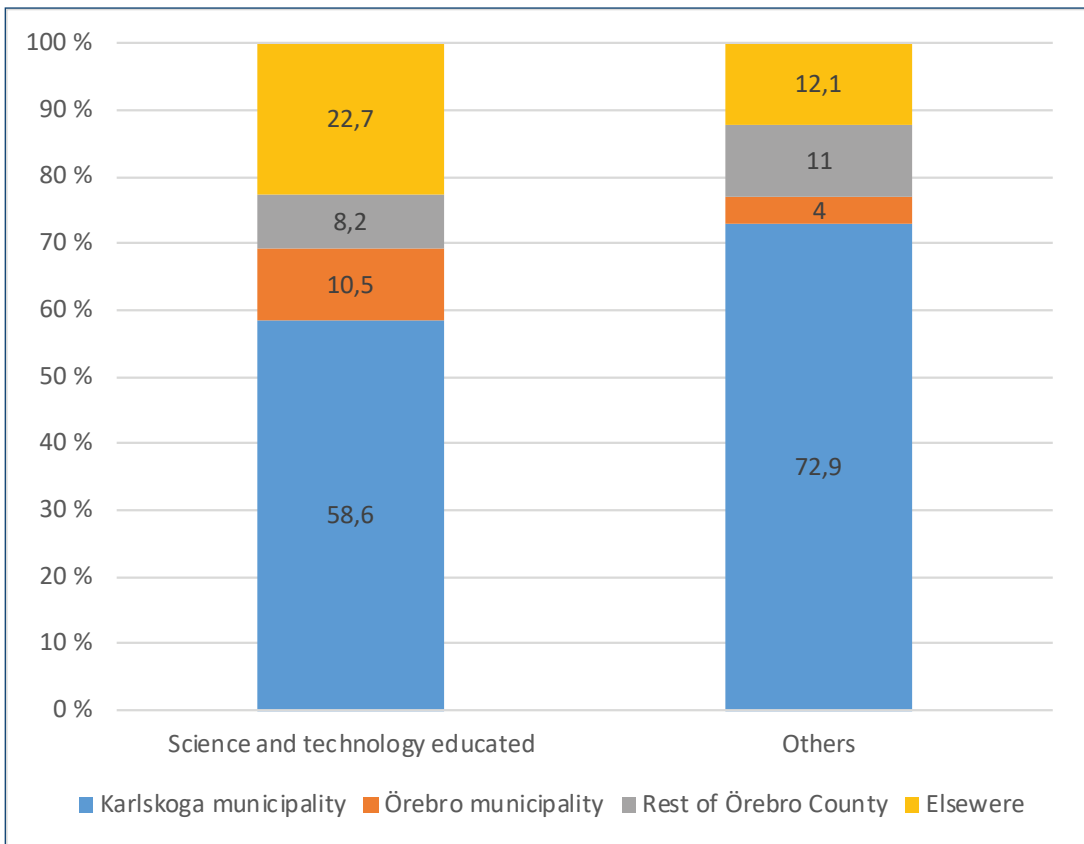


Figure 4. Place of residence for science and technology educated working in Karlskoga 2017, compared to the rest of the workforce. Source: BeDa/Statistics Sweden.

attract to live there. Interviewees we spoke to highlighted broader issues such as the town's under-performing school system, the roll-back of public services such as the closure of the town's maternity ward in the hospital, and an old fashioned and unattractive housing stock. The physical environment of the town was also mentioned: the prominence of both dilapidated and also currently used industrial sites around the town which are inaccessible and often on contaminated land due to the industrial heritage of the town meant residents were excluded from large areas of the city and in particular old industrial areas near the attractive lakeside area of the town. Also, previous generations of ill thought out planning meant the town is divided in half by a large highway which is very difficult to navigate on foot or cycle. These issues highlighted to us the fact that we cannot see the economy and its development in isolation, because if these other underlying place attractiveness factors are not taken care of, they will ultimately put the brakes on economic growth. That is the situation facing Karlskoga today.

It is not a Karlskoga only problem, over Sweden there are reports of technical and engineering sectors, including even the Stockholm ICT cluster, reporting skills and worker shortages. A recent report into the Swedish IT sector found a need for 70 000 more employees in this sector by 2022 (IT & Telekomföretagen, 2017). Clearly programmes for technical education need addressing on a national level as well as ease of recruiting highly skilled workers from outside. However, towns like Karlskoga suffer especially from these issues due to their peripheral locations and lack of place-attractiveness. By place attractiveness we do not only mean in the limited "creative class" sense of Florida (2002) whereby a "hipsterisation" and neo-liberalisation of urban space is taking place, but in terms of making sure the correct public and community services are in place to ensure a good quality of life for perspective employees and their families. In towns such as Karlskoga, addressing the place attractiveness and quality of life for families and young people is key, to ensure a healthy population structure to support the



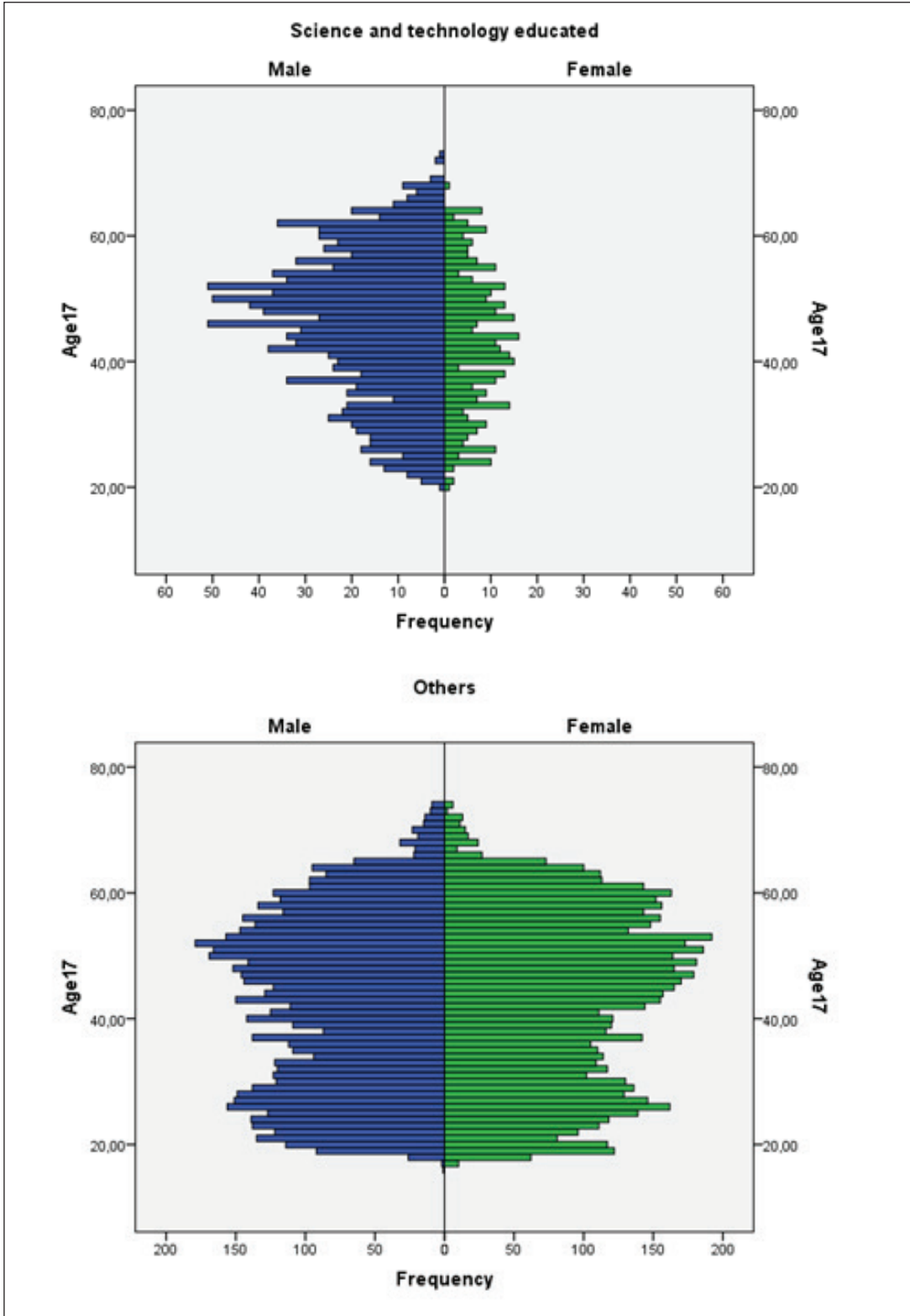


Figure 5. Age profile for science and technology educated working in Karlskoga 2017, compared to the rest of the workforce. Source: BeDa/Statistics Sweden.

industry and economic development of the town. These are two sides of the same coin, which cannot be looked at in isolation. Figure 5 illustrates this point, firstly by showing the narrowing population pyramid of the town, which is of course a concern, but also the fact that the science and technology educated workforce is ageing, and as these workers retire and leave the system, the Karlskoga economy is in danger of struggling even more to grow and sustain itself.

### Conclusion: How can Karlskoga overcome its place-attractiveness challenges to thrive as an industrial town in the future?

The industry and economy of Karlskoga is experiencing an upturn at the present time. Interesting new developments are taking place in the town such as the development of one of Europe's leading 3D printing clusters with the inception of innovative new firms in the town drawing on previous engineering skills and heritage. Also, the incumbent companies such as SAAB and BAE systems which bought up the main parts of the old Bofors company remain in the town as large employers. There is also an increasing diversity of the town's economic ecosystem following the decline of Bofors, and increased foreign investment into Karlskoga companies and increased levels of entrepreneurship.

However, Karlskoga is facing problems in growing its population, and challenges in funding and supporting the services in the town. Interviewees in the town highlighted the closure of hospital functions such as the maternity ward in the town and the under-performing school system as particular challenges facing the town. In terms of the physical fabric of the town, planners are facing huge projects to update the housing stock, and to "move" the city centre closer to the attractive lakeside of the town and clean up old industrial sites that are dotted around the city due to its industrial heritage. None of these measures come cheaply, and Karlskoga faces the problem that many of its well paid (i.e. high tax paying) workers are not resident in the city but instead commute from other neighbouring settlements which have higher levels of place attractiveness.

Finding solutions to these place attractiveness issues is, as mentioned, costly and time consuming but measures are underway. Adding Karlskoga to the Stockholm—Oslo mainline will be an important development in the town's future but is a long term project. Through upgrading housing stock and creat-

ing a more beautiful physical environment exploiting the lakeside location of the town and proximity to nature reserves and forests may tempt more workers away from the more expensive cities of Örebro and Karlstad which are both within commuting distance. It is clear that investment in public services such as healthcare and school is key in developing the place attractiveness and making the city an attractive place for the well paid and highly educated workforce of the town's engineering based industries to locate their families.

When we think about place attractiveness we need to think holistically about jobs, creating an attractive and creative city (as per Florida, 2002) but also investing in decent housing stock for all and good public services. Criticisms have been made (Peck, 2005; Dorling, 2016) against Florida in particular for promoting a vision of place attractiveness that is elitist and does not focus on this holistic perspective on what makes a city an attractive place to live for everyone and not only a narrow class of workers often from a certain demographic. This critical perspective on place attractiveness is, we argue, key to understanding the Karlskoga case and in turn the Karlskoga case provides a perfect illustration about why we need to think about place attractiveness in this linked up manner which appreciates the importance of affordable housing, good public services, access to safe nature spaces, in addition to thinking about jobs and economic development.

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### Acknowledgements

The authors would like to thank the Migration Institute of Finland for the invitation and opportunity to present this work in progress at the International Seminar on Migration and Regional Economic Development.

In particular, we would like to thank Mika Raunio for the invitation and inspiration for this paper, as well as the other presenters and attendees for their feedback and thought provoking questions that have helped us to push forward our thinking on this project. We would also like to thank Cecilia Beckmann of Örebro University for providing information about the historical development of Bofors that we used in this paper.



Seminar attracted full house of experts and other stakeholders to discuss on highly topical matter. Picture: Toni Ahvenainen.