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Geographical Discrepancies in Higher Education in Sweden

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ABSTRACT: There is a growing awareness of the importance of higher education in Sweden to reduce social differences in society. There are also various mechanisms that individuals relate to that favour either the status quo or change based on an ideal of higher education. Individuals live in a geographical context with a number of 'key actors' who influence the perception of higher education with varying degrees of intensity. Paradoxically, despite several reforms to broaden recruitment, it can be seen that relative inequalities persist in terms of residents with higher education in Sweden, not least from a regional perspective. The purpose of this article is to shed light on geographical differences in the higher education level of the population over time from a Swedish perspective. The study shows that higher education has a geographical centre-periphery perspective, but not exclusively. There are thus additional influencing factors that in various ways relate to the social context in which the individual is located. We can conclude from our empirical data that the reforms implemented to broaden recruitment have not had the desired effect, especially for the group of men. We find it likely that what differentiates women and men is who their individual 'key players' are and how they interact. From an academic education perspective and as an intermediary of higher education, there is therefore a challenge to be able to identify who these "key players" are in order to be able to be an important actor in contributing to the desired broader recruitment that the government is striving to achieve.

Keywords: Higher education; Center-periphery; Knowledge; Key players; Regional development; Sweden

1. Introduction

"*Good education for all*" and the aim to "*Ensure inclusive and equitable education of good quality and promote lifelong learning for all*" are emphasized in education in Sweden and are also clearly stated in Agenda 2030 [1]. Although education is highlighted in various contexts as a fundamental human right, it can also be noted that there are still significant inequalities in this area [2]. From a broad perspective, both the purpose and impact of higher education in society have changed over time and in different ways. In higher education, it can be noted that from a Swedish perspective, there has been a clear increase in the number of highly educated people in the country since the turn of the century. Data from the Swedish Statistics Agency (SCB) from 2022 shows that 30 percent of Sweden's population has chosen to study further after completing upper secondary education in an education that is at least three years or longer. This proportion related to the corresponding figure from 2000 shows an increase of 16 percent [3]. At the same time, the same data shows that despite an increased local presence of higher education institutions (in this article, no distinction is made between higher education and university and university education, as both forms offer post-secondary education and research. Hence, the term higher education is used throughout this article) and improved opportunities to study at a distance, there are still major geographical differences in Sweden in terms of individuals who choose to go on to academic studies after completing upper secondary education. Similar regional discrepancies exist in terms of the proportion of the population with formal academic education. This is despite the considerable efforts made by the authorities to both increase the proportion of higher education graduates in the country in general and to promote a greater geographical spread of educational opportunities for academic education. At the same time, it is difficult to draw any general conclusions about whether the initiatives have had the intended effects on the population. However, it is a reasonable assumption that the regional differences would have been even more extensive if no measures had been taken at all to raise the level of formal education [4].

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In an increasingly pronounced knowledge society, both education in general and higher formal education in particular are highlighted as important success factors for creating development [5]. This is in the sense that it is formal academic education that is preferably considered the basis for creating welfare in society. In light of this discussion, we see the importance of discussing and exemplifying how the implementation of policies for broadened recruitment concerning the Swedish educational landscape in higher education relates to geography. Policy in this context refers to the objectives formulated by the government at various levels to raise the level of formal education in Sweden.

The proportion of the population participating in higher education has been steadily increasing over the last thirty years in Europe. This has been achieved through a number of reforms and policies that have focused on broadening recruitment to higher education [6]. The 2030 Agenda speaks in terms of higher education as a way to strengthen human rights [1]. In relation to Agenda 2030 there is an ongoing discussion about higher education and its role in reducing social inequalities in society. Despite several reforms over time aimed at broadening recruitment, we can still see that significant inequalities remain in terms of residents with higher education in Sweden, not least from a regional perspective.

The purpose of this article is to shed light on geographical differences in the higher education level of the population over time from a Swedish perspective. On this basis, the following two questions are discussed: How has the level of formal higher education changed over time in Sweden from a geographical centre-periphery perspective? Why does the educational landscape look the way it does in the country? The empirical data are drawn from geographically defined peripheral and centrally located municipalities in Sweden. The time period covered by the data is 37 years. In the article, higher formal education refers to higher education studies of 3 years or more.

2. Literature Review Related to Knowledge and Regional Development

The knowledge-related starting point in this article is the higher formal knowledge acquired in academia, which is often used as an indicator of a region's development potential [7–10]. In his doctoral thesis, Dzin [11] points out that Sweden is a distinctly knowledge-based society where economic profits are the primary goal and that formal knowledge is thus increasingly commercialized while the value of the education perspective has been toned down (see also Castells & Cardoso, [12]; Carbin & Rönnblom, [13]; Fagerberg, Landström & Martin, [5]). At the same time, it is difficult to clearly define what has been acquired in terms of knowledge from formal academic education and what has been acquired through practical knowledge and wisdom, which is based on acquired experience.

The concept of knowledge, with its different dimensions, has been discussed since antiquity. Plato (427–347 BC) distinguished between knowing and believing, and having knowledge or having an opinion. On this basis, knowledge is correlated to verified belief [14]. However, there is a certain complication in Plato's reasoning. On the one hand, knowledge and belief are set against each other while at the same time, it is expressed that knowledge is the same as belief, if it is true and thus legitimized. Western epistemology is largely based on this definition in the sense that if we consider what we believe to be true, it can be classified as knowledge. However, what is considered scientifically proven and thus considered 'true' varies over time. At a general level, there is an approach whereby the "true" applies until new knowledge is created through new "discoveries" that question the previous "true", which requires the old knowledge to be revised or rejected [9,15].

Aristotles (384–322 BC) referred to the theoretical, abstract, and secure knowledge usually related to the knowledge acquired in the academy as episteme. The form of knowledge that is sometimes referred to as 'knowledge of the hand' and that is developed over a long period of time through the practice of occupation was called techne by Aristotle. The collective wisdom that the individual gains through scientific and practical experience was called Phronesis [14,16].

There are different views on knowledge and how it is generated. Simandan [17], as an example, highlights knowledge from the perspectives; received wisdom, critical stance and true wisdom, which are different but at the same time not separate. Received wisdom is based on acquired knowledge and focuses on individual adaptation to society. Critical stance means questioning received wisdom. However, according to Simandan [17], questioning previous knowledge is a prerequisite for reaching a higher level of knowledge that is referred to as "true wisdom". One challenge in Sweden is that higher education is expected to fulfil all three elements highlighted by Simandan [17].

Regardless of the differences in viewing knowledge based on its origin, this article only discusses the knowledge whose starting point can be derived from what Aristotle called episteme and which, more concretely, is the form of knowledge acquired in the academy.

With regard to the view of the importance of formal knowledge for local and regional development, this has long been a well-established and prioritized issue for individual municipalities, counties, and from a national perspective in

Sweden [4,10]. In Sweden, the discussion on the importance of higher education intensified mainly during the 1980s and 1990s, when the belief in the importance of science, technological development, and higher education for national and regional growth had a significant place in the public debate. It was emphasized during this period that "*higher education is to be found in the knowledge explosion and the increasing importance of education for economic development*". Furthermore, it was emphasized that "*A high level of education in the population is an important asset for the development of society*" [18]. An important factor in the initiative was the establishment of new regional universities, an initiative that had already begun in the second half of the 1970s. Another reform in the effort to enable young people to continue studying after completing upper secondary school was that all upper secondary school programs, both vocational and theoretical, provided basic eligibility for higher education, which was not the case for those who left upper secondary school before the spring semester of 1997 [19]. The focus on education during this period was also reflected at the municipal level. During these decades, we could increasingly see in municipal development programs that academic education was highlighted as an important factor in creating opportunities for local and regional development in Sweden [10].

Although there has been repeated criticism of society's exaggerated faith in education [20], it can also be noted that the formal higher education level of the population is unevenly distributed in Sweden and there are large differences between municipalities close to large cities and universities compared to smaller rural municipalities [21]. However, it has been shown that it is not automatically a question of the geographical (spatial) proximity to a university being the only decisive factor in increasing young people's propensity to start post-secondary education [22]. Temporal proximity, social proximity and hypothetical proximity are factors that could be considered in this study alongside the spatial dimension [23]. However, we have chosen to only deepen the study related to the spatial dimension.

There are a number of examples in Sweden where the propensity to start higher education among young people is relatively low, even if a higher education institution is geographically close [9]. Svensson [24] highlighted the *conflict* between the center and the periphery, mainly regarding the power to define the expectations placed on young people, related to the geographical and social context. From the perspective of Swedish regional policy, initiatives have been implemented with varying intensity during different periods to equalize the regional differences in terms of young people's propensity to seek academic education after completing upper secondary school [25,26].

As early as 1988, Liedman and Olausson [27] highlighted the importance of implementing measures to broaden recruitment to higher education in Sweden. Some years later, in accordance with the Higher Education Act [28], it was stated that higher education institutions should actively work to promote and broaden recruitment to higher education. In 2002, this was further strengthened by an addition when the Higher Education Act introduced that higher education institutions in Sweden are tasked with promoting and broadening recruitment. The bill *"The Open University"* contained proposals for several measures in which higher education institutions were asked to draw up local action plans for how to broaden recruitment. Some concrete examples of this were the establishment of basic year courses and increasing the possibility of assessing real competence, with the aim of opening up higher education and reducing unequal recruitment [26]. In addition to the HEIs' own work, the Government established a recruitment delegation in 2002 to support the HEIs in this work, with special financial support. An authority was also created during this period, The Authority for Networks and Cooperation in Higher Education (NSHU), whose mission was to financially support activities for broadened recruitment. Today, the Swedish Council for Higher Education (UHR) is tasked with promoting widespread recruitment to higher education.

Previous research has focussed on the fact that there are different perspectives on knowledge and how it arises and is aimed at, on identifying what knowledge is in question when it comes to higher education, and on seeing higher education as a recipe for success for increased development potential for a geographical unit. A potential that is expected to lead to economic development for the place where individuals with higher education are active. During the last decades, the concept of *broadened recruitment* became an accepted concept in the higher education community in Sweden [29]. Despite the extensive measures implemented at different organizational levels in the country over the past decades, regional discrepancies in terms of both the transition rate to higher education among young people and the share of the population with higher academic education are significant. At the European level, the Bologna Process has contributed to repeatedly highlighting the issue of broadening recruitment and thus also the importance of raising the level of formal education [30].

To summarise, previous research shows that there is a perception that higher education leads to economic development. There are no studies comparing geographical differences in the proportion of the population with higher education from a Swedish perspective. Furthermore, there is a knowledge gap regarding the extent to which there have been changes over time, or not, regarding the proportion of the population with higher education between and within municipalities. Has the development been static or has it changed and, if so, in what way? Is spatial proximity all-important or do factors such as temporal proximity, social proximity or hypothetical proximity play an important role

from a Swedish perspective? In Sweden, however, the focus of the initiatives implemented with the aim of broadening recruitment to higher education in Sweden has mainly been on the spatial dimension.

3. Methodology

The empirical data in the study is based on longitudinal statistics from the Swedish Statistics Agency (SCB), which is an authority under the Ministry of Finance within the Government Offices and is the Swedish Government's body for economic policy issues [3]. The data is produced and compiled by SCB, which annually collects metadata from higher education institutions in Sweden. This metadata is cross-referenced with individuals' place of civil registration. The statistics are partly taken from the SCB database "Education and Research" and partly from the database "Population Statistics" [31]. Statistics from both databases thus form the basis for the discussion and the analyses made in the work, seen in the light of the reported theoretical framework. The statistical data for the study covers a period of 37 years (1985 to 2021) where residents in the age range 16–74 years with a post-secondary education of three years or more, distributed by gender, are related to the total number of residents in each studied municipality. The classification in this study is based on a recognised age range used in the compilation of education statistics in Sweden. According to SCB [3], those who have received a post-secondary education of three years or more are defined as highly educated, which is the starting point of the study.

The selected study areas in the study consist of three sparsely populated municipalities in Värmland (Årjäng, Eda and Torsby) which are placed in relation to the central town of Karlstad municipality, Grums municipality which borders Karlstad municipality, and Lidingö and Botkyrka municipalities in Stockholm County. The choice of the first three municipalities is based on a study conducted by Blom [7] in the late 1980s and early 1990s. The reason why the municipalities Eda, Torsby and Årjäng were selected in the first study from 1996 was that these municipalities are geographically peripheral to the county's main town. The choice of the municipalities Grums, Lidingö and Botkyrka is that they are directly adjacent to the respective county centres.

The study focuses on regional differences in the formal educational level of residents and shows that both young people's interest in higher education and the residents' formal educational level were relatively low in the municipalities studied. The geographical distances between the central cities in Årjäng municipality, Eda municipality, and Torsby municipality in relation to the central city of Karlstad are in all cases about 100 kilometers. The choice of Grums and Karlstad municipalities is based on a geographical (proximity) perspective where Karlstad has a university. The geographical distance between the central city of Grums and the central city of Karlstad is 27 kilometers. The choice of Botkyrka and Lidingö municipalities in Stockholm County is also based on a geographical (proximity) perspective. The geographical distance between the center of Lidingö and the center of Botkyrka is 29 kilometers and in between is the City of Stockholm. For a number of years, Lidingö municipality has also had a high proportion of highly educated people, from a national perspective. At the same time, Botkyrka municipality has a relatively low proportion of highly educated residents, seen from a national perspective [31].

The empirical data has its limitations as it is a sample of municipalities in Sweden. In order to limit these weaknesses, however, municipalities have been chosen that are located in rural areas relatively far from the county's centre, that are adjacent to the county's centre and that are in a metropolitan region. This is in order to capture differences and similarities between and within municipalities whose conditions differ. The different meanings of proximity, such as temporal proximity, social proximity and hypothetical proximity [23] are, like the spatial, interesting aspects to consider regarding proximity, but which are not recognised in this study.

Over the years, quality-enhancing changes have taken place in the statistical data from SCB, which affects the statistics in that the level of education in the country, according to the Education Register, increased significantly in 2000. A certain change in the basis for the statistics also took place in 1990 [31]. However, the purpose of this study is to focus on any relative differences between the selected municipalities studied over time and where the data is taken from the same statistical database. Consequently, we do not consider that these changes in the statistical data affect the conclusions we draw from the data.

4. Geographical Discrepancies in Higher Education with Examples from Some Swedish Municipalities

There are relatively few studies that have addressed the interaction between geographical distance and the choice to study at a university [32]. Despite this statement, there are a number of studies that have chosen to focus on the geographical distance to universities in relation to the extent to which it is important to actually apply for university studies. This interaction and its significance have been highlighted in studies by Frenette [33], Gibbons and Vignoles [34], Harris,

Singleton, Grose, Brunsdon, & Longley [35]. In Blom's [7] study of the regional differences in higher education in Sweden, it emerged that inhabitants of municipalities that are geographically peripheral in relation to a central city, where a range of higher academic education was available, showed a relatively low level of formal academic education.

Corresponding results are shown by studies by Frenette [33,36] who, using empirical data from Canada, studied the importance of distance for young people's choice to study at university level. Frenette [36] emphasizes that the importance of commuting opportunities to a university is an important factor in increasing the propensity to study further after completing upper secondary school. White and Lee [32] also note in their study that geographical distance has a direct impact on the extent to which people choose university studies or not. Their study, conducted in the UK, shows that if a person lives more than 40 kilometers away from a university, interest in university studies decreases. On this basis, and with reference to some other municipalities in the country that by definition cannot be considered geographically peripheral, but which nevertheless show a low level of formal education among their inhabitants, we want to discuss the center-periphery relationship with its various dimensions from the perspective of a regional educational climate.

In the study that Blom [7] carried out in Sweden concerning, among other things, the inhabitants' formal education level from a regional perspective, it appears that the municipalities of Eda, Årjäng, and Torsby in Värmland County showed low proportions of higher education graduates in relation to the number of inhabitants in relation to both the county and the national level. The same study also shows that the municipality of Grums showed a relatively low formal education level among the inhabitants [7]. This should be seen in the light of the fact that the municipality is de facto adjacent to the municipality of Karlstad where higher education has been provided since 1967 and where there are also good communications that enable commuting by public transport (see Figure 1).

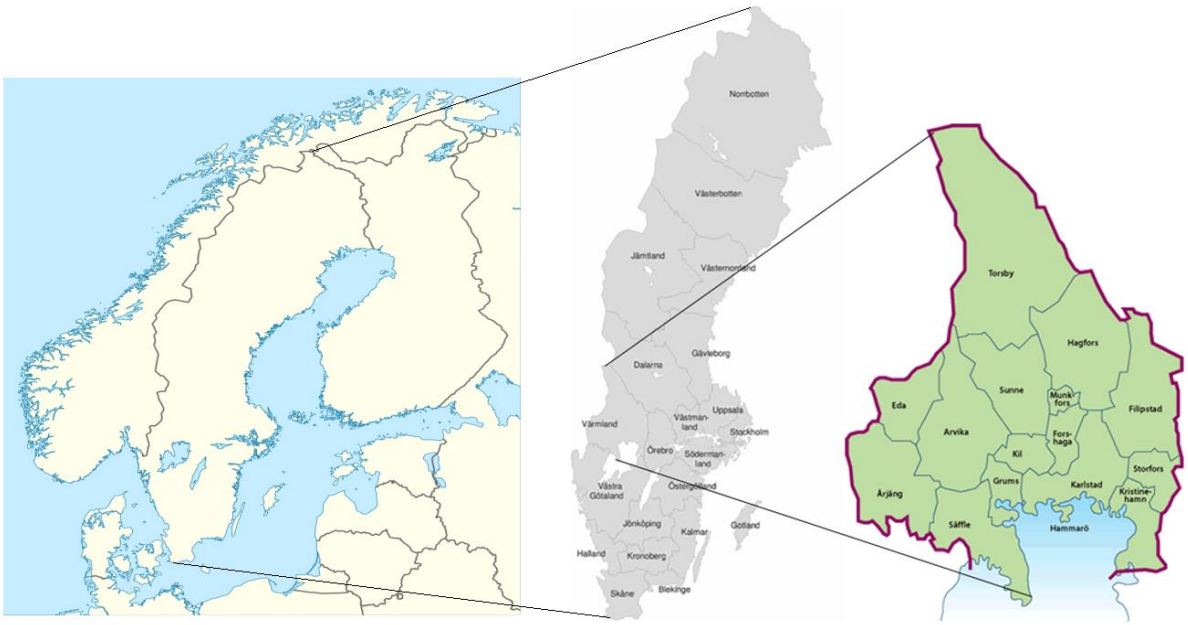

Figure 1. Municipalities in Värmland County.

In an analysis published by Statistics Sweden [31] it is highlighted that the geographical proximity to higher education is important if a pupil studies further after upper secondary school or not. Furthermore, it is emphasized that *"The vast majority of municipalities with a high proportion of students starting higher education are located near a university or college"* [3]. In another report from SCB [37], it is emphasized that *"Highly educated people often live in metropolitan areas or in municipalities near universities and colleges. This is largely because there are many jobs that require a high level of education there. The municipalities also often have a young population, which is more highly educated than older people."* According to SCB studies, many of the country's municipalities thus have an educational structure that clearly relates to the fact that the greater the distance to a place that offers higher education, the lower the interest of young people in starting higher education and thus obtaining an academic degree. Similarly, the percentage of the population with tertiary education decreases with the distance to a higher education location. This geographically related center and periphery discussion has relevance in most of Sweden's municipalities, but it turns out that there are deviations from this structure.

Eda municipality in western Värmland (see Figure 1) had a population of 8,490 in 2021 [31]. The municipality has a business structure that is largely based on ancestry related to mill traditions. Major of the private employers in the

municipality currently have operations in paper production and ammunition manufacturing. There is also an aluminum foundry and, in recent years, a major external trade center has been established in the grocery trade based on border trade with Norway [38].

If we look at the development that Eda municipality has had during the studied period, with regard to the inhabitants' formal education level, it is clear that there has been an increase during the past period, especially with regard to women's formal education level (see Figure 2). If we also compare this development with what happened during the same period in the county's central city, Karlstad municipality, it can be noted that there is still a significant discrepancy between these areas. The proportion of men in Eda municipality with a formal academic education of 3 years or more has had a modest increase during the studied period, from 1.52% in 1985 to 3.72% in 2021. The corresponding change during the same period among women, on the other hand, shows an increase from 1.78% to 9.78%. In comparison with Karlstad municipality, it can be noted that the level of formal education among women in Eda municipality is analogous to the development shown by Karlstad municipality, although with different proportions. Regarding the corresponding relative comparison among men, the difference has instead increased during the study period. In 2021, the difference was nearly 11 percentage points between men in Karlstad municipality relative to Eda municipality, which had a higher level of formal education.

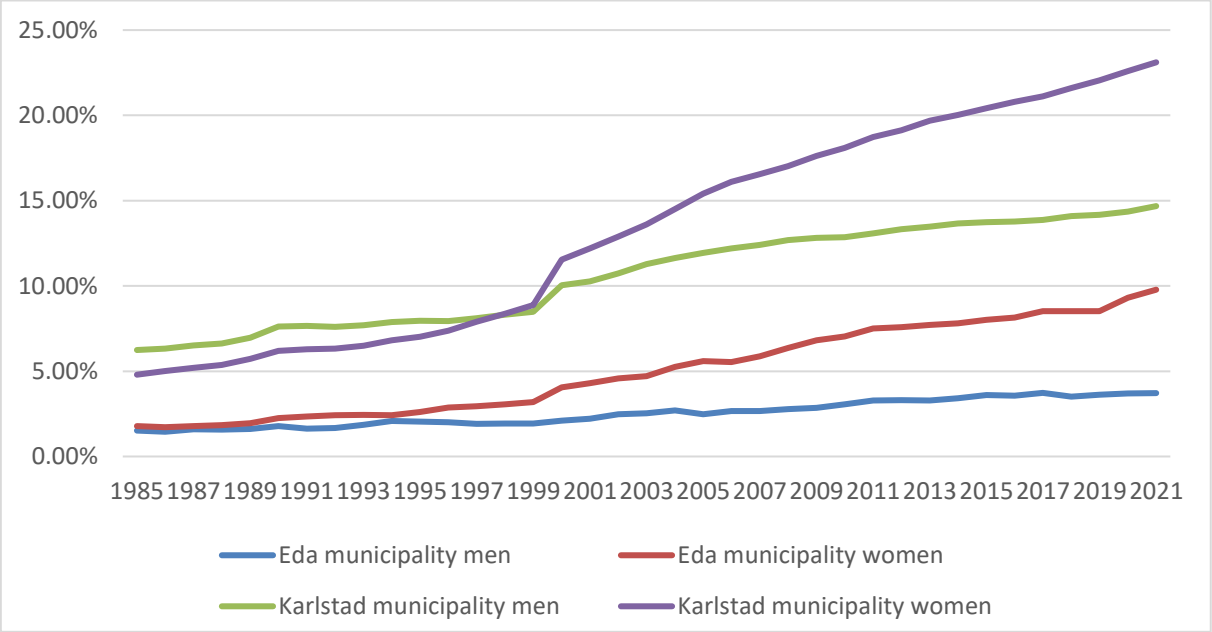

Figure 2. The proportion of inhabitants of the total number of inhabitants in Eda and Karlstad municipalities aged 16–74 with post-secondary education of 3 years or more, by gender. Source: [31].

Årjäng municipality in western Värmland (see Figure 1) had a population of 9 942 in 2021 [31]. The municipality has an economic structure based on trade and industrial traditions. The agriculture and forestry sector constitutes a significant part of the municipality's economy, despite the fact that this sector has reduced its share of employment in the municipality in recent years [39]. The municipality's business structure is characterised by a large number of smaller companies. Approximately 95 percent of companies have fewer than 50 employees and 9 out of 10 companies have fewer than ten employees [40]. In comparison with Eda municipality, Årjäng municipality has also seen the establishment in recent years of major commercial centers in the grocery trade, based on the extensive border trade with Norway.

The development of Årjäng municipality in relation to Karlstad municipality is comparable to the development of Eda municipality (see Figures 2 and 3). However, the proportion of women with a higher education in Årjäng municipality has clearly increased during the last twenty-year period and tends to approach the proportion of men with higher education in Karlstad municipality. The proportion of men in the total number of inhabitants in the municipality with an academic degree of 3 years or more in Årjäng municipality has during the 37 years studied only increased by about two percentage points. The opposite change among women is just over eight percentage points.

Torsby municipality in northern Värmland (see Figure 1) had a population of 11,472 in 2021 [31]. The municipality's economy is characterized by forestry and the processing of forest raw materials. There are also major

companies in the electrical engineering industry, trade, and construction. The tourism industry is also an important part of the business activities in the municipality, where Branäs Fritidscenter AB is a significant player [41].

Likewise, for Torsby municipality, the development in terms of residents with a higher academic education is relatively similar to what we have previously seen for Eda and Årjäng municipalities. While the proportion of women with an academic education has clearly increased during the period studied, the corresponding development among men has been relatively unchanged. The increase between 1985 and 2021 in the proportion of men in the population with an academic education of 3 years or more is 2.56 percentage points. The corresponding increase among women is 10.67 percentage points. During the same period, the corresponding development for women in Karlstad municipality is 18.31 percentage points (see Figure 4).

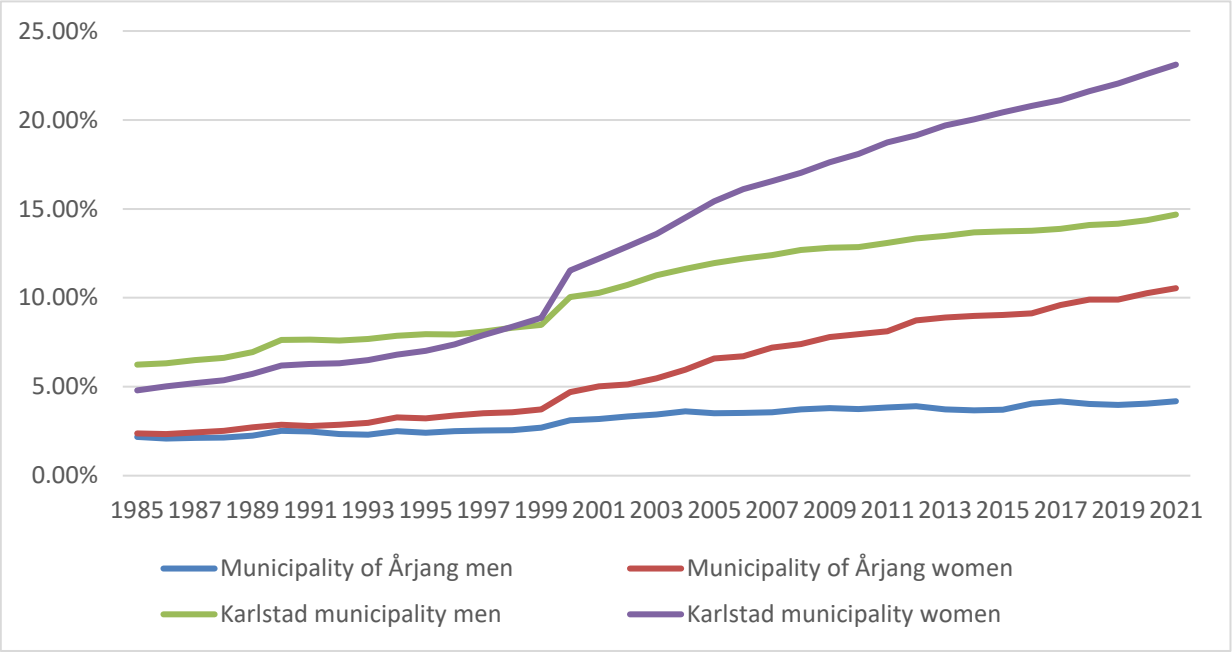

Figure 3. Share of inhabitants of the total number of inhabitants in the municipalities of Årjäng and Karlstad aged 16–74 with a post-secondary education of 3 years or more, by gender. Source: [31].

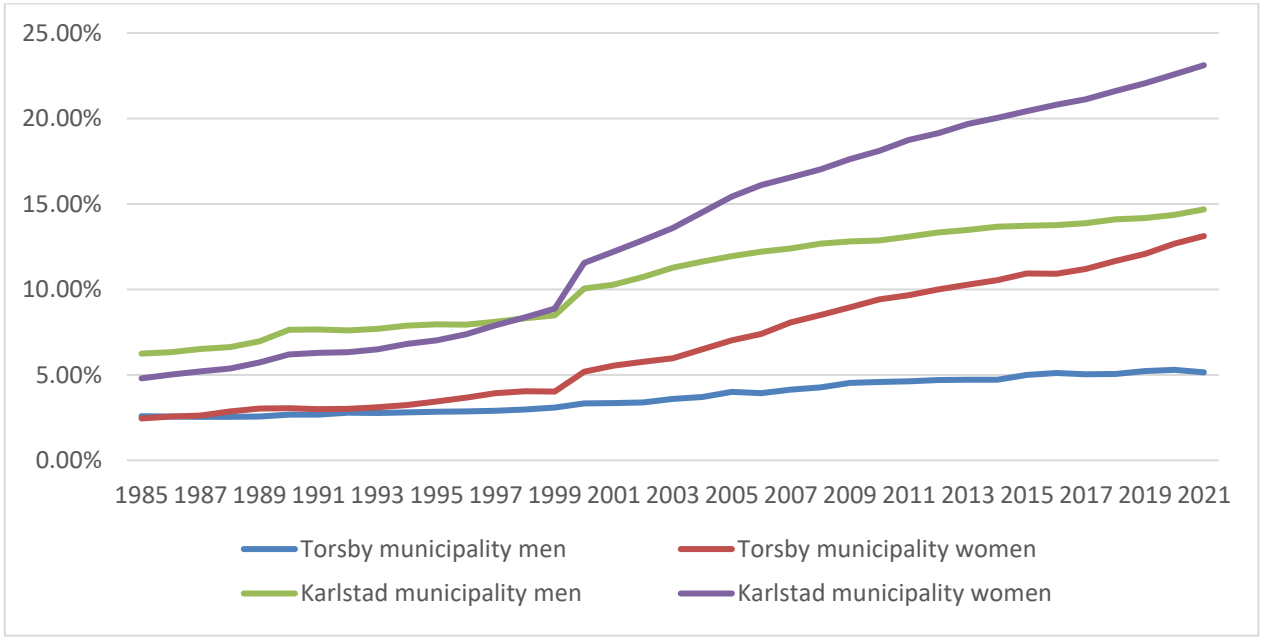

Figure 4. Proportion of inhabitants of the total number of inhabitants in Torsby and Karlstad municipalities aged 16–74 with post-secondary education of 3 years or more, by gender. Source: [31].

The municipalities studied so far have a clear peripheral geographical location in relation to a defined central city. Often, as previously discussed, geographical distance is highlighted as an explanation for regional differences in educational attainment, which also applies to young people's propensity to begin higher education after completing

upper secondary school [7,33,36]. In this context, we would therefore like to highlight and discuss the variable of geographical proximity, based on the discussion of higher education from a regional perspective. Our reference municipality in the study is still the municipality of Karlstad, which we here place in relation to the neighboring municipality of Grums. The distance between the central towns in each municipality is 27 kilometers and there are good public transport options between the towns by both bus and train. Grums municipality (see Figure 1) had a population of 9,091 in 2021 [31]. The municipality's economy is dominated by the pulp and paper industry, where Billerud AB (Gruvön Mill) and Stora Enso Timber (Gruvön Sawmill) are significant players [39].

Despite the geographical proximity between the two municipalities, there is a clear difference in the formal education level of the inhabitants (see Figure 5). If we look at the level of education among both men and women in Grums municipality, they are on a par with the previously reported municipalities of Eda, Årjäng and Torsby. Of particular note is the relatively low level of education among men. During the period studied, the level of education in the municipality among men has only increased by 2.72 percentage points, while the corresponding increase among women is 9.33 percentage points.

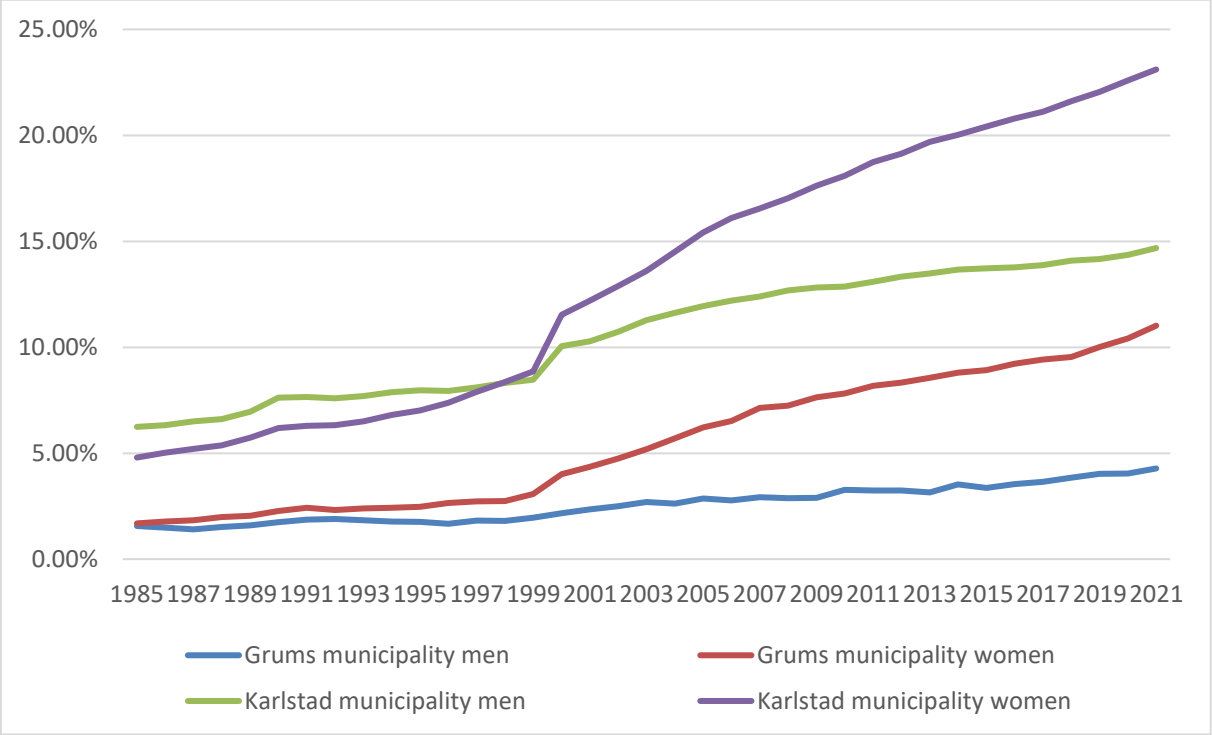

Figure 5. The proportion of inhabitants of the total number of inhabitants in Grums and Karlstad municipalities aged 16–74 with post-secondary education of 3 years or more, by gender. Source: [31].

To study the dilemma of the geographical dimensions, we have chosen to compare two municipalities that are both part of the Stockholm metropolitan area. Figure 6 shows the two municipalities studied, Lidingö and Botkyrka. The choice of the two municipalities is based on the assumption that metropolitan regions with proximity to a university entail a higher level of formal education among residents [3,31].

Botkyrka municipality had a population of 95,218 in 2021 [31]. The municipality's business community is dominated by small businesses, with around 90% of businesses classified as small businesses. Of the working day population, 40% work in the public sector, where the municipality and the region are the largest employers. The manufacturing industry employs 9% of the workforce. Significant shares of employment are also found in trade and communication and financial activities [39].

In 2021, Lidingö municipality had a population of 48,162 [31]. A large part of the municipality's jobs are in the service and service sectors, while the manufacturing industry contributes just over 4 percent. According to Lidingö municipality's website, "*Lidingö is in the top 10 among Swedish municipalities in terms of, for example, new entrepreneurship, level of education, life expectancy, earned income and low municipal tax*" [42].

Looking at the development of the two municipalities over time (see Figure 7), we would like to highlight two factors in particular. Both municipalities show a higher relative proportion of highly educated men than women during the initial years studied. For Botkyrka municipality the breaking point, i.e. when the proportion of women had a higher

level of formal education than men, was in 1998 and in Lidingö this shift occurred ten years later. As shown in Figure 6, it can also be noted that both the municipalities studied have a relatively similar development curve over time in terms of higher education among residents, but with the difference that the relative increase among women in Lidingö has increased from a low level in 1985 to a relatively high level in 2021. The increase is about 17 percentage points, while the corresponding increase in Botkyrka Municipality is about 11 percentage points.

A comparison between the municipalities studied shows that although there are differences in the proportion of residents with higher education, the development over time is relatively comparable in terms of the ratio of men and women.

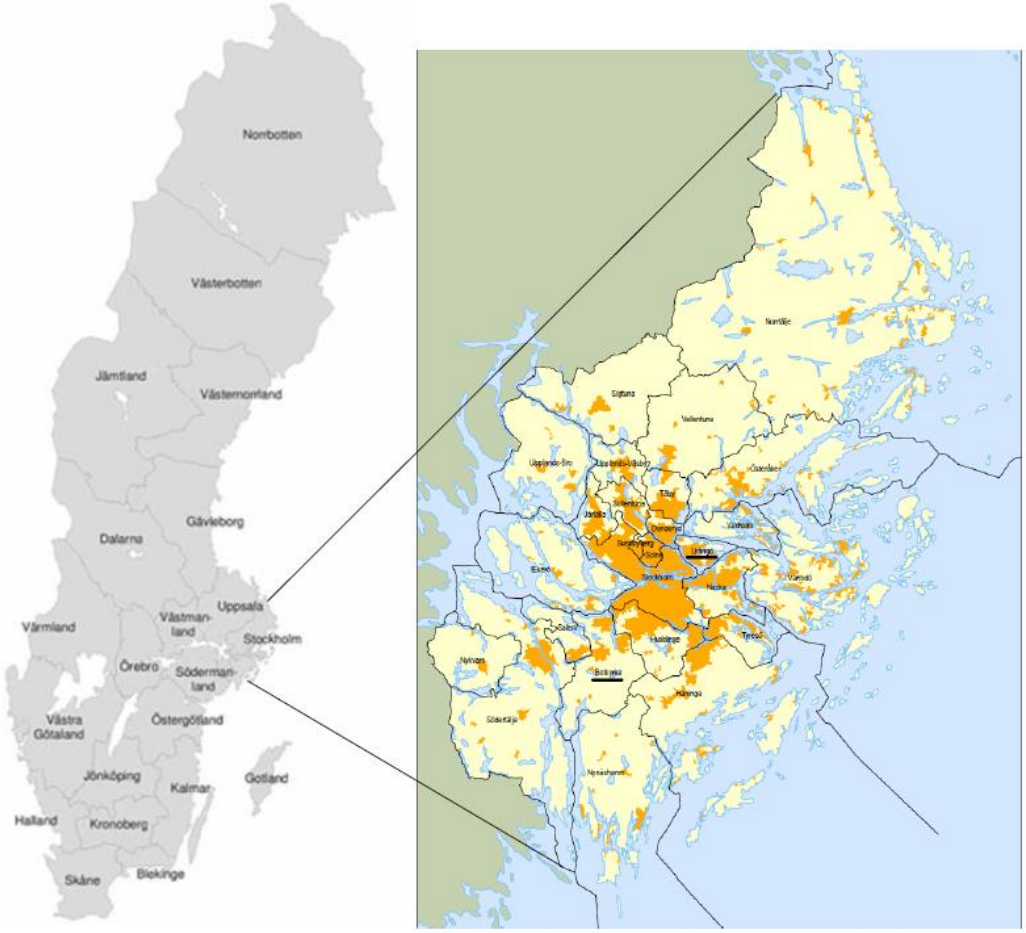

Figure 6. Stockholm County with highlighted studied municipalities, Botkyrka and Lidingö. Source: Stockholm County Administrative Board, n.d.

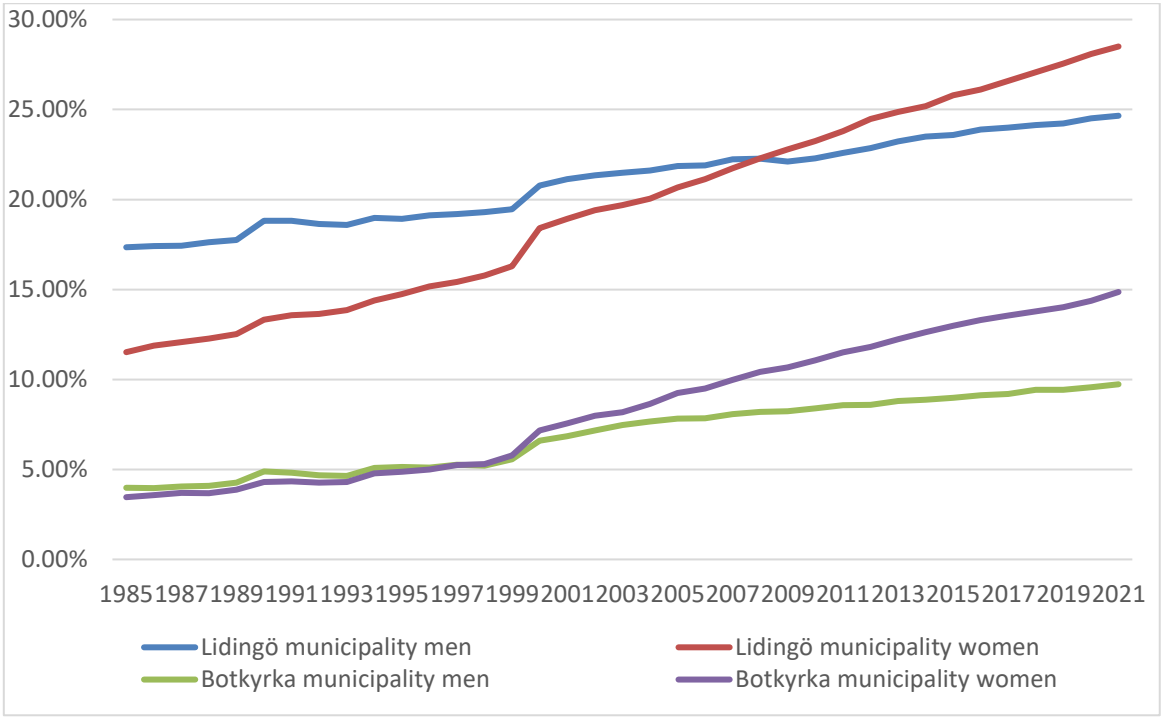

Figure 7. The proportion of inhabitants of the total number of inhabitants in Botkyrka and Lidingö municipalities aged 16–74 with post-secondary education of 3 years or more, by gender. Source: [31].

5. Discussion

In Sweden, post-World War II higher education has been characterised by gradual reforms whose overall aim has been to enable a broader recruitment base in society. The ambition to offer higher education to the wider public was a model that developed into a common education policy across Europe (Shapiro, 2005). Such policies have been boosted by the advent of Information and Communication Technologies (ICT). Various initiatives in Sweden have been initiated and also gradually implemented by public institutions at different levels. Based on the results of this study, these initiatives have not always had the effect expected by decision-makers. This is particularly evident in studies from a geographical education perspective. It is true that in the municipalities studied in Sweden, there has been a de facto increase in the proportion of inhabitants with a higher education qualification of three years or more. However, it is also clear that there are still significant differences between municipalities, as well as gender differences both within and between municipalities. It turns out that they have been relatively constant over the 37 years covered by the study. Despite the ambition and concrete measures realised in recent decades in higher education with varying degrees of intensity, we can, like Durkheim's [43,44] discussion in the 1950s, ask to what extent and with what emphasis there are mechanisms whose inherent inertia influences young people to maintain what has always been. Based on our study, we can conclude that these mechanisms and inherent inertia, with their different influencing effects, differ between men and women.

It is noteworthy that the level of formal education between men and women was relatively equivalent until the mid-1990s in Eda, Årjäng, Torsby and Grums municipalities. Since then, we can see something of a trend break in that the proportion of highly educated women has increased significantly in relation to men. For Botkyrka municipality, this trend break took place at the turn of the century. A similar development can also be seen in the municipalities of Karlstad and Lidingö. However, what makes these two municipalities different from the four aforementioned municipalities is that the proportion of highly educated women in Karlstad municipality increased rapidly in the latter part of the 1990s. A similar increase can be seen for Lidingö municipality ten years later. If we assume that the development curve for each municipality and in relation to the municipalities continues in the same way as it has done over the past ten years, the gap between the proportion of highly educated women and men in the municipalities studied will increase further. Assuming that this trend will continue, it can be assumed that the proportion of highly educated women in Eda, Årjäng, Torsby and Grums municipalities will soon pass the proportion of highly educated men in Karlstad municipality.

If we look at Botkyrka and Lidingö municipalities, we can see that the proportion of women with higher education shows a clear increase, while the corresponding situation among men shows a relative increase but at a much slower pace. We can also see that the development curves for the two municipalities follow each other fairly well, albeit at different levels in proportional terms.

As previously highlighted, Goal 4 of the 2030 Agenda states that Sweden should have an education system that can meet people's educational needs throughout their lives [1]. This means that higher academic education should be accessible and an option for all people who want and are able to study at university level. At the same time, we can note that there are significant regional differences in both the number and gender of people who complete higher academic education, which by extension means differences in educational level between different regions of the country as well as within regions based on the relationship between women and men. The residents' formal education level seen from a regional perspective is therefore important to highlight in light of the various initiatives that have been implemented over a long period of time with the aim of generally raising the residents' formal education level. During the period studied, it is clear that there has been an actual increase in the proportion of highly educated people, but at the same time, we can see that the regional differences are consolidated and that the difference between women and men who have acquired a higher academic education has increased.

If we take the municipalities of Grums and Botkyrka as a starting point, it is clear that geographical proximity to a university does not automatically mean that the level of education among the inhabitants is high. However, the geographical proximity factor is in many respects of great importance in this context, but there are also other important proximity as social, temporal and hypothetical and factors where the parent's level of education is a factor that is usually highlighted. If we look at Sweden as a whole, we see that among the students who graduated in 2017 and whose parents only have an upper secondary education, 40 percent had started a higher education program within five years. In contrast, students whose parents had a post-secondary education had almost 70 percent start a higher education course within the same period [37].

The introduction of ICT in higher education was expected to increase the interest and opportunities for obtaining higher education. Although the empirical evidence for this study does not focus on the role of ICT in this context, it can be noted that the introduction of ICT in higher education programmes has not significantly changed the propensity of men to pursue higher education. In this context, it is also important to emphasize that higher academic education is not a universal solution for the various needs of a functioning society. A society needs different knowledge and competencies where education in higher education is not necessarily a prerequisite. The individual's needs and wishes about how they want to shape their lives are of course also central in this context. However, from society's perspective, conditions must be provided for the individual to be able to acquire higher education.

The strength of the present study is the visualisation of the fact that the proportion of the population with higher education has increased for all geographical units within the time period, but that the difference between them remains and in some parts has also been reinforced. It thus shows that many of the investments made in higher education in Sweden have thus had little effect with regard to the aim of equalising geographical differences in the level of education. The study could have been strengthened by an in-depth analysis of differences and similarities over time regarding men and women within and between the geographical units. However, the focus of the study has been to study higher education in relation to selected geographical areas, but the study has also identified additional factors that have significance beyond the spatial that this study has not taken into account. The strength of the study, however, is that it lays the foundation for further work to identify what can be termed 'stumbling blocks' in order to enable more and more people to acquire higher education. We should re-evaluate from primarily looking at the spatial aspect to also study to a greater extent the importance of other factors in facilitating individuals' entry into higher education.

6. Conclusions

The purpose of the article is twofold: to study how higher education has changed over time in the light of a geographical centre-periphery perspective, and to provide a picture of what the higher education landscape looks like in Sweden based on a number of examples. From this study, we can conclude that the concepts of centre and periphery cannot be related solely to what can be termed a geographical 'educational shadow' Blom [9,45], but that there are additional factors that influence individuals' choices in different ways according to the social context in which they find themselves. Here, we would like to return to Durkheim's [43,44] argument about mechanisms and their inherent inertial factors that interact with the individual with varying degrees of intensity in the social context in which they find themselves. Bronfenbrenner [46] insists that the inequalities that can be identified are not due to differences between individuals' abilities, but rather to institutional constraints that can be perceived as insurmountable for the individual and that can thus contribute to maintaining the status quo. Based on Durkheim's and Bronfenbrenner's reasoning, we can find parallels to the discrepancies we see in our study regarding men and women's propensity to obtain higher education. We believe that Kozol [47,48] also links this discussion based on his studies of the social context of schools

in the United States, focusing on the relationships between students, teachers and parents. Kozol [47, 48] argues that in society there are a number of actors who can be labelled as "key players" and who in various ways shape and influence individuals' different positions and choices in life.

Paradoxically, despite several reforms aimed at broadening recruitment over time, it can be noted that the relative inequalities between men and women remain in terms of the propensity to obtain higher education in Sweden. Our study shows that the proportion of women with higher education has continuously increased during the period studied, while the increase among men has been relatively modest. Despite living in the same municipality, our study shows that there are significant differences between men and women in terms of the propensity to obtain higher education. We therefore consider it likely that there are "actors" who constitute "key players" and who in various ways have an impact on the choices individuals make, as the choice to acquire higher education is not solely an individual choice.

We therefore believe, based on our study, which more attention must be paid to factors other than creating technical solutions or increasing the geographical proximity of higher education. Important "key players" who should be given a more prominent role in this context are the business community and public sector representatives so that they can act as role models in this context. As it is not uncommon in regions with a relatively low proportion of inhabitants with higher education, there are businesses that do not traditionally or on the basis of their business orientation demand employees with higher academic education, these key players should therefore come "from outside", where a different tradition exists. The challenge of increasing the relative proportion of men who acquire higher education is to find suitable key players who can act as role models and thus create confidence in the individual. This should be done in close co-operation between academia, industry and the public sector.

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