Factors Affecting Students’ Achievements-
A Study of Public and Independent Schools in Sandviken and Gävle

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Abstract

The development of independent schools is a relatively new phenomenon, which has been increasing during the last 20 years. Most of the independent schools have been proliferated in the larger regions such as Stockholm, but are increasing more and more in smaller regions. This study aims to compare public and independent schools in the region of Sandviken and Gävle in order to analyse how the final grades are affected by different variables. From two different perspectives the focus is to see if location of schools and students makes any difference according to the distance decay and how important motivations are according to the choice theory and its ideas about motivation. This study is done by using statistics collected from the independent and public schools and also by a regression analysis. The conclusion is that there are no significant differences between the schools and students and the achievements, the location of the school, the relation between distance to school and achievements and there are no differences from a gender perspective. The schools themselves do also have an important role for good education as a good study environment may increase the students’ motivation for the education.

Key words: Human Geography, independent schools, public schools, achievements, location, motivation Sandviken, Gävle.
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1 Introduction

1.1 Background

In total there are about 4,600 schools within the education of elementary schools in Sweden and almost 900,000 students are participating in these schools (Skolverket, 2012a). A lot of them are independent schools and this type of schools have proliferated in Sweden during the last 20 years and today there are about 100,000 students participating in these types of schools. In the years of 2010-2011 the number of independent schools in Sweden were almost 750, most of them located in the regions of Stockholm, Göteborg and Malmö (Friskolornas Riksförbund, 2012a).

Development of independent schools has a long history, but it is a relatively new phenomenon in small municipalities in Sweden. However, there are today many independent schools proliferated even in these municipalities which results in competition between the schools in these places. This growth of many different types of schools implies that there is an opportunity for students to choose between independent schools and public schools and it is possible to choose an independent school not located in the students own municipality (Friskolornas Riksförbund, 2012a). Many of the schools coming up usually have good reputation, but does this mean they will be a better choice for students wanting high final grades?

Research about the school systems can, from a political perspective, help for future decisions concerning the development of schools. Rankka (2007) explains that politicians always must be more open-minded to consider not only one school system in the research. This in turn means that there must be many attributes having a big importance when making decisions about the schooling system. Political parties often have different suggestions about how to achieve the best possible school system, but no one of them have found the optimal solution. It is important to consider what is to be achieved and what is valued the most in decisions about a school system. Having a unified goal for achievements and having the same values would make it easier for the politicians since everyone then will know what is expected. But, there can be different ways to reach these goals and values.

The development of independent schools has been up for debate many times and the debates often include whether independent schools are good from a perspective about achievements (Calmar Andersen and Serritzlew, 2007). Some researchers argue that independent schools are good for student’s achievements while others say that it does not have any impact on student’s results in school or that it even has a negative impact for student’s achievements (Calmar Andersen and Serritzlew, 2007). It is difficult to give a good answer to which school system is the best since there are so many different findings and it needs more than a couple of investigations to be able to answer whether it is good or not with independent schools. Lindgren (2007) ask whether independent schools are needed or not. She comes up with the answer that it is not really needed as public schools can achieve competition and better quality just by making the right choices in there system. However, it is a theoretical answer given by Lindgren (2007), but in real world it is not an easy task to make possible. The real world is not perfect as there will always be pros and cons about different issues concerning schooling systems and therefore it is not an easy task to answer.
Many studies have been made with similar topics, but most of the earlier studies have been made in either the United States or in the United Kingdom. These countries have similar systems for private schools, but they are slightly different from what exist in Sweden. In the USA families pay enrollment fees to have their children attend an independent school while in Sweden the municipalities pay for children’s education in both public and independent schools.

Another important aspect looking at made research about differences between schooling systems, is that most of them have been made in relatively large municipalities. And, since most research in Sweden has been looking at schools in the large metropolitan areas (Stockholm, Göteborg and Malmö), it can be of interest to see if there are similar patterns within small municipalities. There is probably a difference between small and large municipalities when talking about the number of schools to choose between.

There can also be differences when it comes to the prerequisite for going to other neighboring municipalities for school attendance. Students can have different knowledge about their rights and possibilities to make a choice of the school of attendance, and there might be differences in family’s possibilities to afford sending their children to another municipality to attend a special school.

Most of earlier research has focused on achievements and how they are affected by a students’ motivation and personal attitudes. There is little research made on how distance to school affects a student’s achievements in school. It can be of interest to see if the schools locations might have an impact on a student’s achievements in school.

There are more school options to choose between today compared to a few years ago and there are more students today choosing schools that are not the one closest to home. Does this mean that students are more motivated for school since they make an active choice and not accepting the school closest to home? Does this have any impact on a student’s final grades?

1.2 Aim

The aim of this study is to make a comparison between the different types of schools that exist in the region of Sandviken and Gävle. For this study the focus is on how grades, for students in ninth grade, are affected by different variables. The study will look at if there are differences between independent schools and public schools. The public schools are getting a competitive market together with the independent schools, but would it really be that you would get better results depending on which school you choose? This study is made to see if there are any big differences between the two types of schools if located in smaller municipalities, where the supply of students may differ from larger municipalities. Sandviken is a relatively small municipality while Gävle is a quite large municipality within the region of Gävleborg County. At the same time this development of independent schools are a new phenomenon in the region and this is why the area is of interest for this study. To be able to do this study a few research questions will have to be answered. Focus has been on the following questions:
• Are there any differences between independent and public schools
• How big are the differences when it comes to achievements in the schools?
• How long distance to school does the students have?
• Are the schools segregated regarding achievement and gender?
• Are there any differences between boys and girls in commuting distance and achievements?

Many studies are made comparing the increasing number of independent schools to public schools, this with focus on the differences of achievements. This work however, is focusing on how students’ final grades are affected by different variables such as how far students have to go for school and the school environment. The paper is also focusing on if there are any differences between the schools, and the gender perspective is also considered in the study. This is to see if there are any differences between boys and girls, and if there are, how big differences there are.

When looking at different studies made in Sweden about schools, there is mainly a focus on the larger cities in Sweden. This means that Stockholm, Göteborg and Malmö are the main study areas in most of the research in Sweden. For this study the research is limited to schools in Gävleborg County, Sweden, and here the focus is on two municipalities, Gävle and Sandviken. These are the largest municipalities within the region of Gävleborg County, but are quite small compared to Stockholm, Göteborg and Malmö. Independent schools have a relatively short history in both municipalities of Sandviken and Gävle, but do exist in both of them today.
2 The development of schools in Sweden

In this chapter an introduction to the schools development will be given. In the first section the development of schools will be presented of how it was developing until 1992. The second section will introduce the development from 1992. From the third section an introduction of the independent schools development are given and section 4 and 5 introduces the schools in the study are of the thesis.

2.1 Development until 1992

Education is something that has been an opportunity since the 1000s. However, in the beginning education was mainly that a person got help to learn by the churches and monasteries (Högman, 2011). In the beginning this education was held in Latin and was mainly for people who were going to be priests or work related to the church. From the late 1600s there were new regulations saying that everyone had the right to be educated. The priests were going to educate the people within the parishes and the education was going to be for everyone, young and old and as well as both men and women (Högman, 2011).

In the year of 1842 elementary schools were introduced in Sweden. One of the main reasons for the development of the school might be because of the society’s development (Florin, 2012). There had been development of new technology and the behavior in the society had changed and to be able to follow this development the society had to be educated to be able to use these new ideas and technology (Florin, 2012). It was now said that all children in Sweden were going to get an education (Gerger, 1972), but in the beginning some municipalities were a bit critical to the new idea of giving all children an education. It was now said that all children should have the possibility to get an education from the age of nine. From the beginning the most important subjects for children starting school were reading, writing, history, geography, gymnastics and also gardening (Gerger, 1972). In 1936 there were some changes in the schooling system. It was now decided to be a seven year education but it was not yet a mandatory schooling. This was changed in the 1950s when the state decided to have a mandatory schooling on the elementary school level. In 1962 the schooling system developed even further as a mandatory education. In this time regulations for schools and curriculum was to be used by schools in Sweden in the ambition that schools were to follow the same guidelines for a good education for all children (Gerger, 1972).

The idea about independent schools has existed in Sweden for many years, actually already since the beginning of the 1900s (Hellman, 2005). In the beginning independent schools were focusing on giving girls the possibility for an education. The municipal schools were mainly accessible for boys and preferably for families with better living conditions (Hellman, 2005). This was during a period when men were supposed to have a job and support the family, while women were at home taking care of the home and the family. In the period of the 1960s and 1970s the independent schools were disappearing in favor for a more united school system, with a system giving the same opportunities for everybody (Hellman, 2005). This was part of reaching an equal society and not a society that were segregated and having large differences between different classes in the society. In the 1980s, however, there was a new turn when the independent school ‘Pysslingen’ started and ‘Pysslingen’ become a forerunner to other schools who came to develop in a near future, (Hellman, 2005)

Before the establishment boom of independent schools there had been discussions going on about this type of school system (Sandström, 2002). For example studies in the USA showed
that there were differences in achievements between independent schools and public schools (Sandström, 2002). Was it possible that it was positive for public schools to get a competitive schooling market? Sandström (2002) pointed at the importance of the study made in the USA showing that independent schools use their resources better and therefore has better results than the public schools. Competition seems to be an important factor for quality in schools according to, for example, Sandström (2002) and Bergström and Sandström (2007) among others.

2.2 Development from 1992

In the mid-year of 1992 the legislation about the Swedish education changed. Before this, only a few independent schools were established in Sweden and there were not that many students in these independent schools compared to the public schools (Sandström, 2002). Up to 1992 only 1 percent of the school children have attended independent schools but in the next ten years the development of independent schools in Sweden became quite significant. In 1992 there were about 105 independent schools established in Sweden and ten years later there were almost 500 independent schools in Sweden (Sandström, 2002) and another ten years later the number of independent schools are around 750. Total number of elementary schools is around 4 600 (Friskolornas Riksförbund, 2012a). As a comparison from the 1 percent of students attending independent schools before 1992, there is today 12 percent of the total elementary school students attending independent schools and 24 percent of the student at upper secondary school level are in independent schools (Friskolornas Riksförbund, 2012b).

The development of independent schools has mainly been in the larger cities in Sweden. However, it has also been developing in regions that are sparsely populated. Sandström (2002) says that some of the sparsely populated regions are having the largest percentage of independent schools. It has to be remembered, however, that these regions probably have a smaller amount of schools compared with the larger regions. This means that adding or removing a school have more effects on the percentage of different schools.

Even if the independent school’s system is developing in Sweden and has become relatively popular, it is still just in the beginning of its development and is low compared to the growth in other countries. The Netherlands is a country where independent schools are very popular and in the USA and also Denmark there are more students participating in independent schools than in Sweden (Sandström, 2002). More about this in chapter 3 of this paper where lots of earlier studies made in these countries are described.

2.3 Independent schools in Sweden

In many countries independent schools can be quite expensive for families mainly because the schools take high charges to be able to attend these schools. Sweden is in this case a kind of exception (Hellman, 2005). In Sweden it is not more expensive to go to an independent school compared to a public school. The municipalities have to put money into the independent schools for each student attending the school and therefore parents do not have to pay for their children’s education (Hellman, 2005). Private schools are organized in a similar way as independent schools and can sometimes be included when talking about independent schools as being operated by private actors. The major difference, however, is that most of the independent schools are getting funded by the state, and the private schools are funded by the
private actors running the schools and money that families pay to have their children in the private school (Ekonomifakta.se, 2011).

The development of independent schools has created new possibilities which in turn have created new types of schools within the Swedish school system. The reason for this is that today people involved in the schools have many different opinions about how schools should be run and there are also different believes and what to believe in (Hellman, 2005). According to the definition from ‘Skolverket’ there are six different categories of independent schools. These are:

- Independent schools with general focus. Who have similar goals and study guide as the public school but they have another responsible authority than the municipality.
- Independent schools with specific pedagogy. Here are Montessori schools and Waldorf schools included. Schools that believe in another type of pedagogy than the public school.
- Denominational schools. These are schools that have a religious philosophy, and in their schedules often have extra sessions in religion.
- Language or ethnic schools. These are schools wanting to keep a specific culture and do not want to mix that with other cultures in the education. It can also be schools that teach in another language than Swedish.
- Independent schools with specific study profile. This is schools that have an extra focus on profiles such as sports, music or science
- Other independent schools. This is a category that does not fit in to the other categories. It can for example be schools for students with a handicap who needs extra help (Hellman, 2005).

2.4 Development of Independent schools in Gävle

Gävle is a municipality with about 95 000 inhabitants and is located in the county of Gästrikland (Gävle kommun, 2012). Gävle is the largest city within the region of Gästrikland (see figure 1).

Of the inhabitants about 8 800 are students on the elementary school level and about 1 000 students are in the ninth grade (Skolverket, 2012b). There are 38 different schools educating the 8 800 students and 14 of these have education up to the ninth grade. Of the 38 schools six are independent schools. About 1 800 student are in the independent schools in total and of these almost 250 students are in the ninth grade (Skolverket, 2012b).

Statistics from the Swedish Skolverket goes back to 1998 and at that time there were 46 schools educating at the elementary level in Gävle. Of these 46 schools, ten schools were educating up to the ninth grade (Skolverket, 2012b).

Gävle was a little bit earlier with developing independent schools than Sandviken. The first independent schools started in Gävle in 1996 (Gefle Kristna Skola, 2012) but it was not until the early 2000s when the development really increased (Skolverket, 2012b). Statistics from Skolverket (2012b) shows that there were only 20 students in the independent school 1998 (1998 is the year where Skolverket has the first statistics from). It means that in a 12 year period the number of students in independent schools in Gävle went from 20 to about 1 800, a quite large increase.
2.5 Development of independent schools in Sandviken

Sandviken is a relatively small municipality in the county of Gästrikland (See figure 1). However it is the second largest community within Gästrikland and has today about 37 000 inhabitants (Sandvikens kommun, 2012). Of these inhabitants about 3 360 are children that are attending the elementary schools of which about 400 are in the ninth grade (Skolverket, 2012b). There are 19 schools in Sandviken teaching at the elementary level and of these there are 7 schools having students up to the ninth grade. Of the 19 elementary schools in Sandviken there are today two independent schools having a total number of students of about 200 students and of which 40 is in the ninth grade (Skolverket, 2012b).

In 2001 when the Montessori school first started in Sandviken there were 20 schools teaching at the elementary school level and seven of these schools had classes up to the ninth grade (Skolverket, 2012b).

Independent schools are a very new phenomenon in Sandviken with the first school starting in 2001 and the first intermediate school class started in 2003 (Sandvikens Montessoriskola, 2012). The second independent school in Sandviken is Prosperitas and it was started in 2008 (Prosperitas, 2012). When the Montessori school started in Sandviken 2001 there were only about 40 students attending independent schools in Sandviken. So there has been quite a large increase of students in the last ten year period.
3 Literature and used concepts

In this chapter some background and earlier studies will be presented. Earlier studies will be presented in different subheadings such as choice of school, travel to school, achievements, gender and segregation. Also the different concepts used for this thesis are being presented in this chapter.

3.1 Background

Education has become an important part of life and today students can choose between many different types of schools (Schindler Rangvid, 2008). There has been a development that has made independent schools proliferating and there are not only public schools anymore. The school market has become more competitive and it is today necessary for schools to set a special profile for the school and as a result most new independent schools have some kind of orientation. There are for example religious schools with connection to Catholic Churches (Schindler Rangvid, 2008) and many schools with focus on different sports. There are also international schools with students staying in the country for just a short period of time not planning to become citizens. Free schools are an alternative to private schools and they are usually working for individual development and base their education on the students experiences (Morrison, 2005). The development of independent schools are based on theories that they shall help diverse the education with more possible options for the students. The ambition is to develop the education and with that also improve the quality of the existing education (Bunar, 2008).

A lot has change also in the Swedish education system during the last 20 years. Independent schools have today taken a much larger role than earlier and these schools have become equally important as public schools in the educational system (Bunar, 2008). New words are today playing a main role within the education compared to 20 years ago. Words such as choice, privatization and competition have become more and more used when talking about education and they have been part of the development and change of the educational system in Sweden. The changes that these words stand for are not only visible in Sweden but also in some of the other Nordic countries and other western countries in the world (Johannesson et al, 2002). The education models in the Nordic countries are relatively close connected. The independent schools have though become more recognized in Sweden than in the other Nordic countries, where the public schools still are dominating, but they are developing even in those countries (Johannesson et al, 2002). Since 1992 Swedish students can choose an independent school instead of a public school. Families do not have to pay anything for being able to have their children in a specific school, public school or independent school, as all schools get money for each student from the municipalities (Friskolornas Riksförbund, 2011b). A private school, which is a kind of independent school, is a bit different. The private schools are run by others than the municipalities, but they are financed by the private actor running the school. (Ekonomifakta.se, 2011).

Independent schools are often small compared to public schools and have therefore also few students compared to the public schools, who can have hundreds of students in some cases even if there are small public schools as well. There are also independent schools with many students, but the most common number of students for an independent school in for example Sweden is under 50 students. The result with smaller schools is that teachers get a big impact on the education and they can take advantage of each student’s learning abilities to help him or her. This might also be one reason for parents choosing a particular school, for giving their
children the possibility to get good help from the teachers and thereby get a good education (Friskolornas Riksförbund, 2011b).

Examples of independent schools are real private schools, Montessori schools, international schools and schools with sport profiles. The last three examples are the types of independent schools located in the areas of Sandviken and Gävle which is of interest for this thesis. Montessori schools use pedagogy where they take advantage of the student’s interest in the learning process (Svenska Montessoriförbundet, 2012). For international schools are other languages important in the education. Their main goal is to give students a good knowledge in Swedish plus extra languages before they graduate from school (Internationella Engelska skolan, 2012). Schools with sport profiles are usually using the same educational goals as public schools, but combined with the possibility to do sports during the normal school day (Prolympia, 2012). At Prolympia, one of the schools in Gävle, students have sport lessons on the regular schedule a couple of times every week and they have the possibility to attend extra training in sports they want to develop in. There are many other types of independent schools, but these are some of the most well-known types of schools in Sweden at the moment.

3.2 Independent schools versus public schools

Studies have showed that there are some major differences between independent schools and traditional public schools:

- Public schools and independent schools in USA do not always have to follow the same goals and requirements for achievements, as independent schools have more freedom to set their daily curriculum compared to public schools, which sometimes causes problems when trying to compare achievements for different schools (Dills and Mulholland, 2010).
- Schindler Rangvid (2008) says that there are no differences in quality between public schools and private schools in Denmark. According to her it is more likely which school it is and how it is run rather than the type of the school that affects the quality of the school.
- Between public schools and independent schools in USA there might be differences looking at the size of the classes (Dills and Mulholland, 2010). Independent schools often have fewer students than public schools which will affect the size of classes. In independent schools there are probably not as many children as in a public school, which means that to fill the classes the students cannot be divided between different classes in the same way as in a public school (Dills and Mulholland, 2010).
- In USA, the working environment for teachers can be different in public schools compared to independent school. One example is that there are requirements for teachers in public schools having a correct background (education) for teaching at a certain class level which is not always the case in independent schools (Dills and Mulholland, 2010). The public school teachers are more likely to have the same background, while in independent schools important factors are experience which means teachers often have different experiences to live up to the orientations of the school (Dills and Mulholland, 2010).
- According to Morrison (2005) there are people in USA who argue that traditional public schools way of educating is based on memorization while in independent schools, education is based on students’ choices and interests. In the last case much of the education is built on education through different activities connected to the specific subject.
- Also according to Morrison (2005) some people in USA argue that free schools are more chaotic than normal public schools since they don’t follow a schedule the same way as public schools do even though both types of schools have the same guideline to follow of what should be achieved.
In the USA and to some extent in the UK there are places where rich people are divided from poor people (Butler and van Zanten, 2007). This has been the direction for a long time as the importance of belonging to a certain social class, and therefore selecting special schools, has become an important part of the society. In a European context however, this is not always the situation. Butler and van Zanten (2007) explain this by arguing that parents in Europe most times prefer public schooling since these schools are open for everyone and not excluding anyone from the schools.

One major difference between public and independent schools in USA is that independent schools have a high risk of being withdrawn. If an independent school has a bad economy or if students do not succeed in their studies a decision can be made to close the school and the risk for this is bigger for independent schools than for public schools (Bifulco and Ladd, 2006).

3.2.1 Choice of school
A student’s choice of school often depends on what class a family belongs to. According to Noreisch (2007a) middle-class parents tend to make different choices compared to working-class parents. There is a difference within schools when looking at socio-economic status. The students in independent schools have a higher socio-economic status than those in the public schools according to Schindler Rangvid (2008). There is also a division between students of the socio-economic groups, a division that is affected by if there are one or two parents in the family. An important factor when making the school decision is if the school costs money. Public schools and often independent schools can to some extent be seen to be free, even if taxes pay for the education (Sandy, 1989), which is the case in Sweden. Some private schools however, take a fee for having students in the school.

Sandy (1989) points at that many different types of schools make the choice of school tough. Choices have to be made about a suitable type of school for the student and if to choose the closest to home school. Sandy (1989) is dividing students into two groups, the ‘active’ choosers and the ‘conventional’ choosers. ‘Active’ choosers are those who make the choice of going somewhere while the ‘conventional’ choosers more accept the schools they have been placed in or is the closest to home school. It is good that parents want to see that their children get a good education. There is a problem though as there are limited numbers of places in every school and everyone can’t get a place in the best and preferred school. There are parents giving an address in a catchment area where they do not live just to improve the chance to get a place in the desired school. The address are later changed back to correct address as soon as the child is accepted to the desired school (Noreisch, 2007b). Looking at other Nordic countries it is so that Finland and Sweden have similar positive ideas concerning the possibility to choose a school outside the neighborhood. In Iceland a local public school is the option unless there are independent schools (Johannesson et al, 2002), meaning that a student can’t change to a public school outside of his or her own neighborhood.

When looking at different studies there are, according to Andersen, (2008), a lot of material built on the idea that decisions are made from an educational point of view. A school’s profile is important, the location of the school, if there are any siblings going at the school already and if it is on the way to work for the parents are also important factors for a student when choosing a school. An important factor for choosing an independent school, compared to public schools, in Sweden seem to be that these schools often have a specific type of pedagogy, often different from the pedagogy used in the public schools. That families are looking for a specific type of education as well as parents’ level of education can also have an
impact on a student’s choice (Sandy, 1989). Also Noreisch (2007a) say that a school’s profile and reputation, for all schools, are important factors on the good side while their catchment area school’s shortcomings can be on the bad side when applying for a school.

Noreisch is talking about parents knowledge about schools, but also Singleton et al. (2011) is talking about this but from a British perspective. There can be troubles since parents many times choose popular schools to a large extent (Singleton et al., 2011) In England they have a system where parents can choose up to six different schools for their children (Butler et al., 2007). The policy in England changed though in the mid-2000s when the number of possible school choices were limited. Parents are now to apply via authorities where they live, and the authorities place the children into a suitable school (Butler et al., 2007). However, siblings in the school and living in the catchment areas are important factors as is already mentioned. In Germany children have to take part of the primary school closest to home if the family doesn’t apply for another school (Noreisch, 2007a). To be accepted in a school that is located outside the catchment area the family live in is not so easy. First of all the chosen school has to have place for another student and the argument given in the application has to be accepted. In the Swedish case, the schools look at whether a student lives close to the school and if they have older siblings already attending the school (Lindbom, 2010). At the same time, for the schools in Sweden it is of relevance if the student lives in a relatively short distance from the school (Lindbom, 2010).

### 3.2.2 Travel to school

The idea about having different catchment areas is that this area shall include families that are closest to the school. This is, however, not always the case. There are situations when the closest school isn’t in the catchment area (Noreisch 2007a). It could for example be that a heavily trafficked road is separating the home and the school from each other. The longer distance to school children have the more dangerous their travel will be and the catchment areas would help to avoid this. Children living on the countryside or in smaller regions are travelling to school on their own in a larger extent than they do in the cities. One reason for this is of course the risk with heavy traffic (McDonald, 2008).

In some cases a long distance to school has to be accepted even if it is not voluntarily and then changes might influence the mode of travel. A school having to close down because of lack of students might force students to choose from a number of schools that can be further away. For instance, it might be too far to walk so the student has to take the bus or their parents have to drive them to school (Müller et al., 2008). Elias and Katoshevski-Cavari (2011) have found that cars have med the distance to school a less important issue when selecting a school.

### 3.2.3 Achievements

In an analysis made by Freudenthaler et al. (2008) they were looking at how the achievements were affected by personal factors. Examples of factors were intelligence (which was found out by different tests), motivation and personality. From a regression analysis they found that these factors explained the achievements with up to one third. It was found that intelligence is one of the most important factors for the student achievements, and this was evident for both boys and girls (Freudenthaler et al. 2008). It was also found that girls had higher results when looking at personal factors. On the other hand, boys had higher results when looking at the motivational factors (Freudenthaler et al. 2008). These factors are having a large effect on the
achievements among students, but as mentioned it is different factors depending on if it is boys or girls.

In a study made by Marchant et al. (2001) it is found that support is also an important factor for reaching good achievements. Having support from the parents and teachers may help the students to become more motivated in school. Having a good school environment is also important since it help the students to study in an atmosphere that where they can maximize their learning. Even if these factors are important Marchant et al. (2001) found that Motivation and student’s ability to learn are more important which is similar to what Freudenthaler et al. (2008) have found in their study.

Schindler Rangvid (2008) has found that there are no big differences between achievements for public and independent schools. Rather it seems to have to do with what kind of schooling best suits a student applying for a specific type of school. Students in her research seem to have better opportunities for good grades if they had been studying in a type of school that suited them well (Schindler Rangvid, 2008).

Lindbom (2010) have found that in Sweden a positive effect is seen on schools achievements when there is a competition between them. It could be completion of getting students, or the schools achievements for example. At the same time Lindbom points at results from Danish studies pointing at negative effects with competition between schools. Lindbom (2010) explain this by saying that the results will change over time. In Denmark school systems that are similar to the Swedish independent school system has been used for about 150 years while the system is still relatively new in Sweden and attracts curious people wanting to see how independent schools are functioning.

In a Danish case some independent schools have better achievements than other schools. However, this tendency could also have to do with the socio-economic status that the students have (Schindler Rangvid, 2008) and this is not just the case in Denmark as there are other countries, for example the Netherlands, that show a similar pattern (Andersen, 2008). Students coming from low socio-economic status families might improve more than students coming from high socio-economic status families. The reason for this might be that students with high socio-economic status are more likely to have better opportunities for a good study environments from the beginning, and not affected as much as the one from the low socio-economic status families if the environments improve (Schindler Rangvid, 2008).

In the USA Bifulco and Ladd (2006) have been looking at the achievements in Charter schools. Charter school is similar to the independent schools that exist in Sweden and is a type of school that has been growing rapidly in the USA during the latest years. The growth of number of charter schools and other independent schools might result in public schools making big efforts in improving their schools in the ambition to increase the achievements which is part of the ambition to be a better and more important alternative to historically better schools. It invites students to an effective learning environment and gives them other possibilities to do well in school (Bifulco and Ladd, 2006). Goldhaber (1996) mention that there are argumentations that a competitive school market will be one of the most important factors for improving and developing the education system, which some people might see as controversial. It would be one factor helping to keep students in their school instead of transferring to other and what they believe better schools. Sass (2006) have made a similar study as Bifulco and Ladd (2006), he found that there are low achievements in charter schools when they are relatively new and that the public schools have an advantage in the beginning.
However, the achievements are getting equal to public schools and to some extent even higher, when charter schools have been open for a couple of years (Sass, 2006). It is hard to have a good level of high achievement from the start, but when a school has been open for a few years teachers know what is expected from them and students know what to expect. The school has been able to create a reputation that is good for them, which they didn’t have in the beginning of its opening.

Hoxby (2003) have found similar results as the above mentioned studies, that there is no guarantee that achievements are higher in independent schools, compared to public schools. However, her study shows that there are positive achievements in independent schools when looking at the average. One reason why there are such mixed results is that there are different conditions for different schools depending on their location. Different cities do not have exactly the same conditions, and open an independent school could create more problems instead of opportunities. They are located in different places which can affect the accessibilities in different ways. The population structure might also be different, since some cities might have more immigrants or they are affected by segregation in different scales. Some places can be more segregated than others. In her study made in the USA, Hoxby (2003) points at the poverty issues in different cities. One point is that schools with high poverty are more likely to increase its achievements and development more than a school with less poverty (Hoxby, 2003). The study also point at black people and Latin-Americans being the ones who suffer from lower achievements, as they are the dominating population in poverty regions in the USA (Hoxby, 2003).

3.2.4 Gender
The gender perspective has recently become important when talking about education. One major reason for this development is that gender equality has become part of the millennium development goals (Kamwendo, 2010). Many times girls don’t have the same opportunities as boys to get a good education. This is especially evident in some of the African countries. For example in Malawi it is difficult for girls to get good results in their studies. Many of the independent schools take charges for a student, which not everyone can afford, and it results in differences for boys and girls due to if a family is poor or rich (Kamwendo, 2010). In the African case it shows that public schools make better achievements compared to independent schools as public schools gives more children, both boys and girls, the possibility to take part of the education (Kamwendo, 2010).

In many cases women are seen as being in more unsecure positions in the society than men. This is part of the problem considering boys and girls education. Looking over the world girls more often have duties at home and they don’t get to leave home as much as boys can. Girls might not be allowed by their parents to get to school by themselves and often girls don’t have the same freedom as boys in the same ages (McDonald, 2012).

3.2.5 Segregation
There is a risk that differences between public and independent schools might create segregation. Families with high socio-economic status are more likely to be part of the independent schools than families with low socio-economic status, who most likely take part of the public school (Lindgren, 2007). Butler and van Zanten (2007) describe this phenomenon as dividing the middle class children from the working class children which can lead to segregation as it might separate high performing children from low performing
children. Butler and van Zanten (2007) describe this as dividing the middle class children from the working class children. There are a few different articles that are describing this problematic issue of middle class and working class, and they have the conclusion that middle class families are more aware of their options than the working class when it comes to school choice (Noreisch, 2007a; Calmar Andersen, 2008).

An education that costs money give as a result that there are people who can afford going into that school while others can’t which in the long run, create a gap between rich and poor people since they don’t integrate with each other already in schools (Kamwendo, 2010). However, this is a phenomenon that is particularly evident in the United Kingdom and the USA and the same pattern is not so clear in other parts of Europe, also Sweden, or other parts of the world. Schools in Sweden cover a relatively large variation of population groups (Lindbom, 2010) and Lindbom points here at the residential segregation as the main reason for educational segregation in Sweden. At the same time, Östh et al. (2010) mean that it is the school choice, and not the residential segregation, that is the most important factor.

Independent schools in Sweden are normally not directed towards specific groups (Lindbom, 2010) as most Swedish schools are for everyone, both public and independent schools. There are however, some exceptions such as the religious schools. According to Lindbom and Almgren (2007) there is segregation in schools as a consequence of increasing divisions between different groups of people in the society. Lindbom and Almgren (2007) point at a study made where a school choose to have students with a Nordic background rather than having a mix of students. Lindbom and Almgren (2007) also mention the problem with families having a good socio-economic status taking advantage of the freedom of choice and as a result creating elite schools (Lindbom and Almgren, 2007).

There is also an issue about which students a school want to have in their school and Lindgren (2007) is mentioning that schools are segregated depending on how we look at them. Looking at the schools from a cultural or ethnic perspective she means that independent schools, compared to public schools will not be segregated since they are often schools where foreign cultures and ethnic backgrounds are dominating. In Sweden multicultural schools shall give the opportunity for immigrants to keep their cultural identity (Bunar, 2008). Most Swedish schools mix different groups of students and work for having differences in cultures disappear. Schools with an international orientation or a religious orientation might be different as they many times help keeping different cultures separated.

In a study made by Betts and Fairlie (2003) it was found that the number of native-born students decreases in schools if there are many children in the school who have an immigration background. Betts and Fairlie (2003) are pointing to that there are a lot of earlier studies about school segregation showing there is a division considering education between white students and black students and students from other minority groups and the white people. Racial composition is a factor that must be considered when looking at the quality of schools. It can also be indications to that more resources are put on helping people immigrate rather than having resources for educating students (Betts and Fairlie, 2003).

In New Zealand there was a baby-boom after the World War 2 which gave new schools a chance to start (Thrupp, 2007). To be able to give these new schools a chance to compete with other schools a zoning system was developed. This zoning system was going to make sure that new schools would attract students and also for them to get possibilities to grow. New Zealand, the USA and the UK all have a kind of zoning system, but the New Zealand case differ from the USA and the UK. One of the major reasons for this is that New Zealand does
not have the same problems around inequalities as the USA and the UK (Thrupp, 2007). In the USA and the UK they then put out much focus on creating policies to get mixed zoning, while in New Zealand this was not a focus since the inequality problem was not as severe (Thrupp, 2007).

### 3.3 Distance decay
Distance can be seen in two different ways, either in absolute terms or in relative terms (Knox and Marston, 2004, pp.18-19). When talking about absolute distance it refers to physical distance, in meters and kilometer. When talking about relative distance, it means that time can be included in the measure (Knox and Marston, 2004). A physical distance can be shorter if a person is gaining something by going that distance. Factors that can be related to the relative distance is if a distance is less time consuming than another distances or if one of the distances are cheaper to travel than the other one (Knox and Marston, 2004).

Distance decay is a term that is dealing with distance and its actions (Fellman et al., 2007). There are different kinds of events within a distance that have an impact on what is happening on the way from point A to point B. There are events that might make something increase or decrease depending on if it is a short distance or a long distance. The distance decay is saying that interactions between different parts are more common the shorter the distances are. The further away from the main source we get the interactions will decrease. Most people chose to go to the closest stores or may have more contact with friends living closely, instead of going longer distances to meet friends or going shopping (Fellman et al., 2007). One reason may be that it can be time consuming to go longer distances and it is probably more costly as well to go further. However, if it gets easier to go the long distances or if it gets cheaper than the distance decay may change (Fellman et al., 2007).

Distance to school is one of the variables in this study to see how it affects final grades for students, as different students have different traveling distance and final grades it is to some extent related to the idea about distance decay. It will be shown in this study if final grades for students changes in a positive or a negative way with an increasing distance to school or if it is even changing at all. This relates to distance decay as this says that attributes will change depending on increasing distance between two different points.

### 3.4 Choice theory
Choice theory is a theory developed by a man named William Glasser. This is a theory that to some extent explains motivation issues (Choice theory, 2012). The choice theory has a belief that motivation come from us and not from anyone else. People are driven by what is most satisfying to ourselves and what we believe is the most important choices to make us happy (Choice theory, 2012). There is a connection between our choices and our behavior. If a school is an active choice it might mean that the student will be more motivated, than if the school was not an active choice and just accepted the closest to home school.

The grades for students will most likely change depending on if a student is motivated or not. If there is an environment that is suitable for a student he or she will have good opportunities for higher grades. The choice theory would say that it is the student’s own motivation that is crucial for a student’s grades and no one else can affect the grades. The motivation comes up in different ways in this study and one example is that if students in independent schools are
more motivated than students in public schools, as students in independent schools might travel longer distances to school.

### 3.5 Commuting

It is very common that people travel some distance to get to their jobs. The definition from Nationalencyklopedien is ‘Regular trips between home and working place, usually daily and passing over administrative boundaries’ (Nationalencyklopedien, 2012, Authors own translation). It is a quite common phenomenon that people live in one municipality and work in the neighboring municipality (Sveriges kommuner och landsting, 2008). Commuting is something that is mainly associated with work, but education can also be included when talking about commuting (Sveriges kommuner och landsting, 2008). In the case of education it might be that one type of school does not exist in a student’s own municipality, than the option may be to cross the municipal border to go to the wanted school and by that commuting to school.

It is quite common that students chose schools further away when looking at a city like Stockholm. Common reasons for choosing commuting are to attend a school with the same cultural background (Stockholms Stad, 2012). Students may also commute to go to schools with better opportunities for higher achievements. There is also possibilities to commute because of other schools have other orientations or the closest schools do not have enough places in the schools, and the student have to go to other areas for a place in school (Stockholms Stad, 2012).

It is most likely that at least a few of the students travel from other communities or even municipalities. This is especially if a student has long distance to travel to school. This is a definition that is not directly part of the study, but if a student travel some distance it might also be said that he or she is commuting.
4 Method and Data

4.1 Data and Data collection

There are two types of data. There are primary data and secondary data. Primary data is the data that has been collected by the researcher himself. It can for example be data that has been collected via interviews, field studies or questionnaires. Secondary data are data that has been collected earlier by other people and have been used in other statistical research or documentation.

Primary data that were collected in this study was collected from people working at the municipalities and people working at the independent schools. To get the data of interest contact was taken with people working at the municipalities and people working at the independent schools (For more information see Appendix 4). For the independent schools contact was taken with the principals for the schools, both by emails and by telephone. For the public schools contacts were taken with people working with educational issues at the local government offices. From the people contacted material was asked about students’ gender, grades, which school a student goes to and material to be able to calculate each students distance to school.

The secondary data was collected from the internet. Needed data was possible to find from the independent schools web pages and from the web page of Skolverket. From Skolverket statistical data was also collected via the statistical database ‘SiRiS’. ‘SiRiS’ is a database where it is possible to find statistics about students participating in schools, Average grades for schools in the ninth grade, and other statistics related to the educational system in Sweden.

For the statistics, there were the distances to school for the students that were missing. From data received from the municipalities and the schools this data had to be worked with. For each student the collected data included the students living area. By using Google maps and its road description the distance to school were calculated. This was done by looking at the closest distance using a car. The reason for this was because some students live far away from the school while others have a walking distance to school. The students walking could have shortcuts that they could take which may give different results in comparison with the students living far away having to use public transport or being driven by their parents to school.

4.2 Statistics

Reliability is how accurate the measures are within a study. The reliability is affected by how the quality of a measure is. The reliability will be higher if the measure is accurate and it will get lower if the measure is approximate (Byström and Byström, 2011). What is included here as well is if the measure has been the same all the time. If the same measure is used all the way it will be more reliable but it will change if there are different types of data and the measurement might change (Byström and Byström, 2011). The reliability of the study is of importance for the whole study. This is because reliability can affect how good the quality of a study may be (Vetenskapsrådet, 2011).
Validity has to do with if the measure really is measuring what it is supposed to measure. If there is data that has been collected but it cannot really be used according to the research questions posted, than the validity may become low (Byström and Byström, 2001). When doing research it is therefore important to know what to look for before collecting data, otherwise it is a risk that the validity of the data will be low. The validity can be affected by which methods are used for research (Vetenskapsrådet, 2011). Different methods can give different results even if similar data have been used.

For this study data has been collected about the different schools in Sandviken and Gävle. There are 19 schools that are studied in this thesis and four of them are located in Sandviken and 14 of them are located in Gävle. In total there are data of about 1 300 students in total, Of these students 300 are in the schools in Sandviken and the remaining 1000 students are going to one of the schools in Gävle. The data containing information about final grades, gender, student’s home area and their schools have been collected in Excel files. This is to make it possible to make tables and figures. It is also to be able to handle the data in a smooth way and to make analysis in a good and easy way.

Different tables and diagrams have been created to show the statistics in different ways. There are tables showing the number of schools in each municipality and how many that are municipal schools and how many that is independent schools. There are also tables and diagrams showing how many students there are in the municipalities and how they are divided between the schools both by comparing school by school, but also by showing the difference between municipal schools and independent schools. There are tables and diagrams showing the division between boys and girls. How many girls are in independent schools compared to boys and how many boys and girls are in each school.

The first tables show how many students there are in the schools that are included in this study. The same table is also showing how many of the students that are boys and how many that are girls. There is also a table showing the division between boys and girls and how the division is compared with independent schools and public schools. This table is showing the division of boys and girls for both municipalities. From this division the table is also showing how large amount of the students that are in public schools and in independent schools.

There is one table and one figure that are showing how many students that are living within a certain distance from the school. In this case the statistics is divided into the different schools and also between the two chosen municipalities. Here it shows how the difference might be between the schools in relation to how long distance the students have to go to get to school. There is also a table showing the similar statistics, but showing it for the municipalities rather than the schools. This table is showing how many students that is in each group and also the division in percentage.

When looking at the achievements there is one table that is showing the achievement levels in relation to the distance to school. The table is dividing the students into categories of how far they have to schools in one categorization. As a second categorization the students have been divided into groups depending on the grades they have. Here it is possible to see what grades that are the most common within a given distance to school. It is possible to see if a distance has any effect on what grades that are the most common.
There is a final table that is showing the categorization of grades in relation to each school. This table is showing how the schools are performing in relation to each other. It is showing within which category that the most students within one specific school belong to.

### 4.3 Regression analysis

The purpose of doing a regression analysis is to look at how different variables are affecting each other. There are different ways of how the relations can be studied. It can be that what is wanted is to see if there are any relations, it can be to see how strong the relations are or it can show how to find the best relation (Leander and Vejde, 2005). A good program to do regression analysis in is SPSS. SPSS stands for Statistical package for the social science and it is possible to do statistical analysis in the program (Dometrius, 1992). This program is a tool that is very useful when doing quantitative research, and as the name show it is a tool that preferably can be used in social science (Dometrius, 1992).

In the case of this study a regression analysis can be used to analyze how the grade are affected by distance to school, what school the student are in or the size of the schools as examples. There are two major types of regression analysis being bivariate or multivariate regression analysis (Sundell, 2012). A bivariate regression analysis means that there are only two different variables that are taken into account for the analysis. In a multivariate regression analysis, however, there are more variables that have been taken into account at the same time. The bivariate regression analysis and the multivariate regression analysis are still, however, done in the same way (Sundell, 2012). The regression analysis used in this study is the multivariate regression analysis as there are five different variables that are used to see the effect on a sixth variable.

For this study there will be multivariate regression analysis that is going to be done. There are two types of variables in these analysis, dependent and independent variables. Here the dependent variable is the final grades for the students. This means that it is the final grades that are affected by other variables. The independent variables, meaning the variables that is affecting, are the distance to school for the student, size of the student’s schools, percentage of boys in the students’ school, which municipality the student’s school is in and finally if it is a public school or an independent schools that the student goes to. These independent variables will be used to see how much they affect the dependent variable and if it is a significant effect. Using these variables one analysis has been made using data for both Sandviken and Gävle in the same analysis, and there has been analysis made using data from the municipalities in separate analysis to see how they differ from the results when analyzing both municipalities. A third analysis has been made to see how the variables differ depending on the gender relation to see if there are any differences between boys and girls.

From this kind of analysis it is possible to see how much the independent variables affect the dependent variable. It is also possible to see if a variable have a positive or negative effect. Here it is also showing if the independent variables have a large effect or if it is a small effect one by one. When looking at the independent variables one by one it is also possible to see if these effects on the dependent variable are significant or not. The lower the number of significance show the more likely it is that the statistics are significant and thereby being trustworthy. If the variables are not significant it means that there can be a relation, but it is not for sure that there is a relation.
4.4 Geographical Information System (GIS)

GIS is a system that handles geographical data and makes it possible to store, search and analyze data in an easy way (Arnberg, 2006). In a GIS it is possible to create different kinds of maps where attributes such as location, looks and information about objects can be added. These maps are not showing the true world; rather it is showing a simplification about the world. Google maps (a map service on the internet containing maps over the world) is one of many examples on the internet that was developed by using GIS (Arnberg, 2006).

Of the data that has been collected from the municipalities and the independent schools. There are data about where the students home are located and also where the schools are located. However, it is not possible to just put this information into a GIS database. To be able to do this the information has to be geocoded and by that be given coordinates that is related to a coordinate system (Arnberg, 2006). GIS programs have many different functions and one of them is that it is possible to geocode data if it is not connected to a coordinate system. When the data has been geocoded and put into the map as points it also has an attribute table. When choosing one point the attribute table will show information about the point such as the location data, the coordinates and other data that is chosen and relevant for that point.

Some of the collected data has also been used to create maps in ArcMAP 10. The viewed map in Arc Map is one of the programs own base maps containing street maps of the world. The collected data has been used to be able to point out where the schools are located within the municipalities. GIS has also been used to point out the spread of the students. Here it is important to remember that the points are not showing the exact positions and are not a true representation of the municipalities. The points location are only approximate representation and not exactly given. The reason for the approximate representation is because of integrity issues where no personal data will be presented that can show a person’s identity.

4.5 Data limitations

Data concerning student’s grades have been collected from the Municipalities for the municipal public schools and separately for each independent school. Collected data may differ even though the ambition has been to get as similar data as possible. One major reason for the differences is that the schools have differed in what data they have been willing to hand out. Different people might not be prepared to give out exactly the same data, and therefore with fewer people to collect data from the more likely it is to get a unified data. In this study I have spoken to several people working in different schools. As mentioned by Byström and Byström (2011) it is also important to consider what questions have been asked and sometimes also how they were asked. We interpret things in different ways and one thing might mean the same for two people since they interpret it differently. Interview people for this study it can be noted that the persons within the municipal schools openly answered all questions while persons, principles in this case, within independent schools were concerned about the integrity of the students. Data was affected as some of the independent schools did not hand out data concerning student’s grades for this study.

Collected data in the study is not complete as grades in some cases are incomplete and number of grades is not the same as number of students. In some cases students grades are missing and in other cases the grade for an individual student are unknown which affect the study’s results. As in table 2 further down as an example. Here the table also include students without data and these students has been placed in the category of grades below 100, as the
grades are not known or the student doesn’t have full grades. The results could therefore be misleading with the missing data and it can be significantly different from the true result.

One major issue when dealing with the data in this study has to do with the addresses. Prolympia is one of the schools located in Gävle, but no correct address was found and therefore the address to Läkerol Arena has been used as the arena is situated next to Prolympia. Distances for students at Prolympia might therefore be slightly misleading.
5 Results

In this chapter the results of the study will be presented. The results will be presented under different subheadings who deal with the data from different perspectives. The first parts deals with the data in a way visible for the eye. When doing the regression analysis, the data has been used in the program SPSS which uses calculations to find connections.

5.1 The Schools

Sandviken and Gävle, two cities in the region of Gävleborg County in Sweden, have a difference in the number of schools. There are more schools in the Municipality of Gävle than it is in Sandviken (see Figure 2). One obvious reason for this is that Gävle is a larger Municipality than Sandviken, which have an effect on the number of schools and the number of students. It also has to be considered that there are more schools in Sandviken than shown in this study as not all of the schools have an education up to the ninth grade.

The first independent school in Gävle started, as mentioned in chapter 2, in 1996 and it was Gefle Kristna Skola (Gefle Kristna Skola, 2012) that started at that time, and this is the only independent school in Gävle that is part of the statistics in this study from Gävle from 1998 and until now, and the other independent schools are gradually coming into the statistics (Skolverket, 2012). Looking at Sandviken it shows that the first independent school started in 2001 (Sandvikens Montessoriskola, 2012). Independent schools are a relatively new phenomenon in the region of Gävleborg County where Sandviken and Gävle are located, and as mentioned especially new in Sandviken. One reason for this difference between the Municipalities might be the sizes of the municipalities, as Sandviken is smaller than Gävle and the knowledge about and demand for independent schools might, because of that, have come later to Sandviken than it did to Gävle.

![Figure 2: The Public and independent schools location](image)

Schools in Sandviken are concentrated into the city center of the town and are not as spread out as they are in Gävle (See figure 2). There are not as many city districts within the city in Sandviken as in Gävle which has an effect on the number of schools. It is no long distance before you get into the next city district, so there do not have to be many schools as the distances from home to school are relatively short. At the same time the number of students is smaller in Sandviken compared to in Gävle. Even if the schools in Sandviken are located relatively close together they are not competing about the same students. The schools have
their catchment areas directed in different directions. For example the students at Murgårdsskolan have a lot of students coming from the northern part of the city, Jernvallsskolan have a lot of children coming from the more southern parts of the city. While Söderskolan take students from the southwestern part of the city.

In Gävle the schools are spread out quite a lot within the city. Some of the schools are also located outside of the city of Gävle and located in the communities that belong to the municipality. Gävle is a bigger municipality than Sandviken which also makes the demand for more schools and schools with special philosophy more important. The schools in Gävle are to some extent also located to where the students live which makes the distances between the schools larger in some cases. For example two of the schools are located a bit outside of the city in Bergby and Valbo, it is communities that belong to Gävle but are some distance away from the city center of Gävle. The catchment areas are to some extent more located to the local area of the schools than in Sandviken. The catchment areas in Sandviken are covering larger parts of the city, since it is fewer schools and the students are spread out over the municipality. In Gävle however, many of the schools have a catchment area that cover more of a city district within the city where the school is located. To some extent it seems as each city district has its own school. With more and larger city districts within the city, the demand for having enough schools to locate all the students is of importance.

There is a large variation about how many students in the ninth grade there are in the schools in Sandviken and Gävle (See appendix 1). There is a variation from ten students in the school with the lowest number of students and 149 students in the school with the largest number of students. The statistics, however, show that most of the schools have around 50 to 100 students in the ninth grade in their school. A difference between Gävle and Sandviken is that there is a smaller jump in Gävle when looking at how the number of students is spread by looking at the schools going from the lowest number of students to the highest number of students. In Sandviken there is a larger increase as there are fewer schools and there are larger jump between the numbers of students for each school.

There are more schools in the region of Gävle than it is in Sandviken, and there are also more independent schools in Gävle. One factor is that Gävle is a larger municipality and thereby have a higher demand within education. The catchment areas may differ between the municipalities, covering a city district or going in different direction from the city center.

5.2 The Students

There are 1 341 students in total in the year cohort of 2011 for the municipalities of Sandviken and Gävle. Of these students 1042 are located in Gävle and 299 are located in Sandviken. Out of the 1 042 students in Gävle there are 500 students who are girls and the remaining 542 students are boys. In the municipality of Sandviken it is the boys who are dominating as they are being 161 students out of 299 students and 138 students are being girls. The Municipalities have a similar division between boys and girls going into the schools. In Gävle there are 52 % boys and 48 % girls. It is quite similar numbers for Sandviken with 54 % boys and 46 % girls as seen in table 1.
Table 1: Distribution of boys and girls within the municipalities

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Amount of Girls</th>
<th>Amount of girls in public schools %</th>
<th>Amount of girls in independent schools %</th>
<th>Amount of Boys %</th>
<th>Amount of boys in public schools %</th>
<th>Amount of boys in independent schools %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gävle</td>
<td>48%</td>
<td>80%</td>
<td>20%</td>
<td>52%</td>
<td>76%</td>
<td>24%</td>
</tr>
<tr>
<td>Sandviken</td>
<td>46%</td>
<td>94%</td>
<td>6%</td>
<td>54%</td>
<td>93%</td>
<td>7%</td>
</tr>
</tbody>
</table>

In Gävle there are 244 students who are taking part of the choice of independent schools. In Sandviken there are 21 students that have chosen to take part of the independent school in Sandviken. This shows that there is a larger amount of students who are in independent schools in Gävle than it is in Sandviken, for the schools used in this study. For Gävle it is also possible to see that almost one fourth of the students are in independent schools with a percentage of 24 % of the boys in Gävle being in independent schools (see table 1). While looking at the girls in the same say it is one fifth, 20 % of the students who are in independent schools. The same statistics show that Sandviken have a similar pattern but with smaller percentages within the independent school. Looking at the boys there are 7 % who have taken part of the independent school and 93 % are still in the public schools. The girls have almost the same numbers as 6 % of the girls in Sandviken have taken part of being in an independent school and 94 % are still in the public schools.

When looking at the difference between Sandviken and Gävle it is possible to see that there is a large difference when looking at the spread of students (See figure 3 and 4). The municipality of Sandviken have a much smaller catchment area of students as most of the students are located in the principal town of the municipality. Even if there are some students that are coming from other municipalities than Sandviken, they are not living that far away from their schools. When looking at the spread of students in Sandviken it shows that most students are located in the city Sandviken or in the neighboring communities of Järbo and Årsunda.

![Figure 3: Spread of students in schools in Sandviken](image-url)
When looking at the spread of students within the schools in Gävle it is possible to see that there is a much larger spread of students than in Sandviken (see figure 3 and 4). However, most of the students are located within Gävle and in the neighboring community of Valbo. It is also in these areas where the schools themselves are located to a large extent. Looking at the catchment area for Gävle it shows that there are some students that are crossing the county border between Gävleborg County and Uppsala County to get to school. In these cases, most of the students come from the Municipality of Älvkarleby, but there are students that travel even further than this to get to school.

The independent schools have quite similar catchment areas as the municipal school, there are no big differences. However, looking at the independent school in Sandviken it show some differences as some student come from the community of Storvik. Looking at the schools in Gävle there are almost no differences when looking at the catchment area for the independent schools and the municipal schools. There are, however, some smaller differences. There are some students studying at the independent schools that have slightly longer distances to go to get to school. The independent schools in Gävle have slightly larger catchment areas since some students come from other municipalities, which is not the case in the municipal schools.

So there is a difference between the independent schools in Sandviken and Gävle. The independent school in Sandviken has a much smaller catchment area and most of the students live within a very close area to the school. The independent schools in Gävle have on the other hand much larger catchment areas and some of the students come from other communities within Gävle municipality and some students come from other municipalities. But there are still quite short distances in most cases.

Of 1 341 students in this study most of them are placed in Gävle compared to Sandviken. The distribution of boys and girls are however quite equal with 52 % of the students in Gävle and 54 % of the students in Sandviken being boys. Of all the students in the study it is shown that they are more spread out over the city in Gävle compared to Sandviken where they are more gathered together.
5.3 Achievements

The average grade for students in municipal schools in both Sandviken and Gävle shows the same pattern. In the period between 2005 and 2011 the municipal schools have an average grade that is about the same. But of course, the average grades have been varying a little between the years. In the Case of Sandviken it shows that the variation has been varying from 195 to about 205 looking at the students’ final grades. When looking at the same statistics for Gävle it shows a similar pattern with the average final grade being about the same during the years 2005- 2011, but the differences between the years are not as big as the case for Sandviken. The average final grade has in the case of Gävle been almost the same during the time period and it is only one year, 2004, where the average final grade are significantly different (Skolverket, 2012b). At this year in 2004 it was also a year when the number of students in the ninth grade increased quiet large compared to the other years.

Looking at independent schools, it shows that the average final grade for both Sandviken and Gävle have been decreasing in the period from 2005 to 2011. For independent schools in Sandviken the average final grade has been varying quite significant during the years, and the average grade has been going up and down. There does not seem to be a pattern that the average grade is getting either better or worse, rather it is just a fluctuation during the years. For Gävle the average final grade has been decreasing quite significantly during the years 2005- 2011. In the beginning of the period between 2005 and 2011 the average final grade were varying quite large between the years while later in the period there were smaller differences between each year (Skolverket, 2012b).

To some extent the average final grade seem to vary in relation to the number of students that are attending the public municipal schools or the independent schools. There seem to be a pattern that if the number of students is increasing the average final grade will decrease and the final average grade seems to increase if the number of students is decreasing. At the same time, there does not seem to be a relation that the scores changes a lot if the numbers of students are changing with large numbers (Skolverket, 2012b). The scores can change a lot even if there are just a few more students the coming year.

When looking at the achievements in relation to the distance it seems as the majority of the students have one to three kilometers travelling distance to school and most of these students have a final grade somewhere in between 150 and 250 (see table 2). These grades are transformations of given grades from the Swedish school system that uses G, VG and MVG as grades. This is a transformation that is made by the Swedish school system to be able to weight student’s grades against each other when applying for the Swedish ‘Gymnasieskola’ (level 10 to 12 in school). It is the dominating view, with final grades in between 150 and 250, when looking at the number of students, but when looking at the percentage of the cohorts it seems to be an average number. For each distance cohort it is the interval groups of 150 to 200 and 200 to 250 that are the dominating groups. Looking at these groups they have a quite similar amount of students in percentage. Each distance cohort has a percentage of 30 to 35 % in the interval group of 150 to 200 and 28 to 32 % in the interval group of 200 to 250.
<table>
<thead>
<tr>
<th>Distance to school</th>
<th>&lt; 100</th>
<th>100 – 150</th>
<th>150 – 200</th>
<th>200 – 250</th>
<th>250 – 300</th>
<th>&gt; 300</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 km</td>
<td>20 (10%)</td>
<td>9 (5%)</td>
<td>69 (36%)</td>
<td>59 (30%)</td>
<td>31 (16%)</td>
<td>5 (3%)</td>
</tr>
<tr>
<td>1 – 3 km</td>
<td>54 (10%)</td>
<td>38 (7%)</td>
<td>191 (36%)</td>
<td>150 (29%)</td>
<td>81 (15%)</td>
<td>16 (3%)</td>
</tr>
<tr>
<td>3 – 5 km</td>
<td>19 (8%)</td>
<td>11 (5%)</td>
<td>80 (35%)</td>
<td>74 (32%)</td>
<td>37 (16%)</td>
<td>10 (4%)</td>
</tr>
<tr>
<td>5 – 10 km</td>
<td>19 (10%)</td>
<td>6 (3%)</td>
<td>59 (32%)</td>
<td>59 (32%)</td>
<td>28 (15%)</td>
<td>15 (6%)</td>
</tr>
<tr>
<td>&gt; 10 km</td>
<td>29 (14%)</td>
<td>13 (7%)</td>
<td>52 (26%)</td>
<td>56 (28%)</td>
<td>37 (18%)</td>
<td>14 (7%)</td>
</tr>
</tbody>
</table>

Looking at the final grade for school by school a similar pattern is seen as for the final grades in relation to distance; this is shown in Appendix 3. For each school it looks as the majority of the students have final grades in between 150 and 250. There are two schools that are standing out here. In Gävle it is Engelska skolan that have a large group of students that have final grades between 250 and 300. In Sandviken the Montessori school shows similar results where a large group of students have final grades between 250 and 300. For some of the schools there are large groups of students who have final grades under 100, these schools are Stenebergsskolan and Källmurskolan. In these cases, however, it might be that the students haven’t got their full grades yet and in some cases the students haven’t got grades at all that have been registered. The groups that have final grades under 100 are to some extent a group where students without full data have been placed, as in this study this is for Friskolan Lyftet and Gefle Kristna Skola.

The average grades within the public schools have been about the same during the period 2005-2011 while in independent schools it has been decreasing and in both cases there has been fluctuations during the years, this is evident in Both Sandviken and Gävle. When looking at the achievements in relation to distance most students have a final grade in between 150 and 250 no matter of how long the students have to school (table 2) and it is quite similar when looking at the schools (Appendix 3).

### 5.4 Travel to School

There are large variations about how long distances students have to their schools. Some students almost have their school as a neighbor while other students have to go several kilometers to get to their school. Many times a difference in students distance to school is if the student chooses to attend a municipal school or an independent school. In independent schools there are more students living in neighboring municipalities, which sometimes mean that they have to travel long distances to get to school. When looking at both municipalities in this study it shows that most students have a distance of one up to three kilometers to school. In Gävle there are 36 % of the students within the municipality having this distance to their school and the same pattern is shown in Sandviken. There are as much as 50 % of the students who have one up to three kilometers distance to school (Table 3). At the same time, most students in Gävle have less than ten kilometers to the school. While in Sandviken, however, the second largest group of students is the group with a distance to school of ten kilometers or more. In Sandviken they have many students coming from surrounding communities such as Järbo and Årsunda, which means they have to travel a bit longer to get into schools in Sandviken.
**Table 3: Distribution of students within a distance**

<table>
<thead>
<tr>
<th>Municipality</th>
<th>&lt;1 km</th>
<th>1 – 3 km</th>
<th>3 – 5 km</th>
<th>5 – 10 km</th>
<th>&gt;10 km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gävle</td>
<td>163 (16%)</td>
<td>381 (36%)</td>
<td>185 (18%)</td>
<td>163 (16%)</td>
<td>150 (14%)</td>
</tr>
<tr>
<td>Sandviken</td>
<td>30 (10%)</td>
<td>149 (50%)</td>
<td>46 (15%)</td>
<td>23 (8%)</td>
<td>51 (17%)</td>
</tr>
</tbody>
</table>

When looking at a student’s distance to their school there is one school in this study that is standing out. One of the independent schools has students who live a bit away from the school. It is the school with a religious orientation Gefle Kristna Skola that is standing out. Most of the students in this school have a distance of over six kilometers to get to school. There are, however, some exceptions with students living close to the school. One of the main reasons for students choosing this relatively long distance to school might be that the parents want their children to be educated with a Christian background and since this is the only school that can guarantee this, they have to travel some distance to get their choice school. In most cases the independent schools in this study have students that have more than three kilometers to school. It seems, however, as if most of the students in the independent schools have a distance somewhere in between three and five kilometers to school.

As shown in Appendix 2, the Montessori school in Sandviken and Friskolan Lyftet in Gävle are a little bit different compared to the other independent schools. In this study these two schools have most of the students traveling less than three Kilometers to school. These schools do not have specific orientations in their education as the other independent schools in the study have, which means that they are relatively similar to the public schools. Friskolan Lyftet in Gävle is also a relatively small school and therefore attracts students not too far away. The Montessori school in Sandviken is the only independent school in Sandviken, at the same time; it does not have a totally different orientation compared to other schools. It focuses rather on the individuals instead of having specific orientations as Prolympia and the English school has. This means that these two schools have more students traveling shorter distances rather than going long distances.

Looking at the other independent schools that are included in this study they show that there is more variation within the schools between student’s distances to school. For these schools there are no evident tendencies that students travel longer or shorter distances to school, as many of the students have short distances to school while other students have relatively long distances to school. Those students having long distances to school might have parents working in either Sandviken or Gävle which have affected their school choice. It is probably easier to choose a school further away if the parents work close to the school and it is easy to get to school. There are no significant differences between the Montessori school in Sandviken and the independent schools in Gävle. There is, however, one big difference and that is that there are no students coming from neighboring municipalities going to the Montessori school in Sandviken. The Montessori school is a small school and it is located in a small municipality which can have an effect on the distance to school since the numbers of students are not that many in the region and they live close to school. The independent school system is relatively new in Sandviken which also could have an effect on the spread of students participating in that school. There are also a Montessori schools in the region of Gävle which gives students in Gävle interested in that type of school the opportunity to still be in their own municipality.

The study shows that in the public schools most of the students have one to three kilometers to school. In almost all cases there are a large majority of the students in the group who have one to three kilometers to school. One exception in this case is the school called Bergby.
Centralskola. There are almost as many students who have one to three kilometers as there are those who have three to five, or five to ten kilometers to school. One reason for this spread for Bergby Centralskola might be that it is a school that is located more at the countryside than the other schools in Gävle. This may affect where the students come from as it on the countryside can be longer distances between neighbors and neighboring houses as it may be within the cities.

The schools within Sandviken have more in common with each other than the schools in Gävle. The independent school and the public schools in Sandviken have a quite similar pattern when looking at the distances to school. In Gävle there seems to be the pattern that there are more students living three kilometers or more from school in independent schools than it is in the public schools.

Looking at the main municipalities for this study it shows that it is more likely that students from Sandviken goes to Gävle for studies rather than students from Gävle going to Sandviken even though there are some exceptions. Most of the students are then going to the independent schools to a large extent. The students from Gävle going to Sandviken for studies are on the other hand going to the municipal schools and not to the independent school.

5.5 Differences between gender

When looking at the different schools it show that the distribution between boys and girls are relatively equal. In most schools the distribution of boys and girls are around 50 % of boys and girls (Figure 5). The distribution is weighting over to one side with just a few percentages in almost all cases. The independent schools have on the other hand a different look. In three out of five independent schools in the region there is one of the genders that are dominating in the school to a quite large extent; these schools are Friskolan Lyftet, Gefle Kristna Skola and Prolympia. In the two other independent schools, Engelska skolan and Sandvikens Montessoriskola, there are not such large differences between the genders. In the three independent schools with large domination of one gender, the distribution is about 80 % versus 20 % between the genders. There is no obvious tendency that there is more of one of the genders in general. This is something that is different by looking at the schools one by one. There is nothing telling us that there are more boys in all schools or more girls in all schools. Some of the schools have more girls while other schools have more boys.

The two largest schools in Sandviken are Murgårdsskolan and Söderskolan. These two schools have around 120 students each Jernvallsskolan have 40 students and Sandvikens Montessoriskola have 21 students. Murgårdsskolan and Söderskolan have a division between boys and girls that are almost 50 % boys and 50 % girls (Shown in figure 5). Murgårdsskolan have a few more boys than girls while Söderskolan have a few more girls than boys. Jernvallsskolan have a domination of boys for the year cohort of 2011. There are almost 75 % who are boys; there are 29 boys and 11 girls in Jernvallsskolan. For Sandvikens Montessoriskola there are almost as many girls as there are boys, there is just a few more boys than there are girls. In total there are 299 students in Sandviken. Of these students there is a small domination of boys that are in the year cohort of 2011 in Sandviken.
There are four schools that are relatively larger than the others. Stigslunds Skola, Solängsskolan, Sofiedalsskolan and Engelska skolan are the four schools who have over 100 students in their school. Solängsskolan and Stigslunds Skola have a fairly even division between boys and girls which has as close to 50 % boys and 50 % girls as there can be (see figure 5). For Sofiedalsskolan there are a few more boys than there are girls. Looking at Engelska Skolan there are, however, a domination of girls in comparison to number of boys. Looking at all the schools in Gävle it shows that there is a variation if there are more boys than girls or more girls than boys. There is not really a tendency in any way that some category is dominating in general. However, looking at the independent schools they are showing that there a one category that is dominating, but it is shifting depending on which school it is. Prolympia and Friskolan Lyftet have a clear domination of boys. Gefle Kristna Skola and Engelska skolan has a domination of girls, but this domination of girls is clearer in Gefle Kristna Skola.

In almost all schools the distribution are almost half of the students are boys and half of the students are girls. This is especially for the public schools, but one public school is standing out and it is Jernvallsskolan where it is 75 % of boys. For the independent schools three out of five schools have one gender dominating quite significant.

5.6 Regression Analysis
The regression analysis made in SPSS shows that the different variables used in the study have some effect on a student’s final grade when graduating from 9th grade in Comprehensive school. It is shown that distance to school, Number of students, percentage of boys, city and independent or public school have a small effect on what grade a student get. These variables are explaining the final grade up to 8.1 % (value 0.081 in the analysis shown in table 4). There are many other factors that are explaining the final grade for a student but all of the factors are
not mentioned in this study. Other factors that may affect the student’s achievements are for example the student’s motivation, self-confidence or the student’s learning abilities.

Table 4: The effects on the final grades

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.291*</td>
<td>.085</td>
<td>.081</td>
<td>63.262</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Independent/Public school, Distance to school (Meter), City, Percentage of boys, Number of students

One detail that is interesting to see from the regression analysis is that most of the variables given in this analysis have a positive effect on a student’s final grades and only one of the variables has a negative effect on the grades, the variable of percentage of boys (see table 5). On the other hand, it does not have a very large negative effect on a student’s grade. This is a result, but it is however vague. Looking at the statistics from the regression analysis it shows that the significance of amount of boys is 0.086. This means that the result is unsure since a reliable result show 0.050 or less. The closer to 0.000 the significance are the more likely it is that the result are trustworthy.

Table 5: Table showing the effects from chosen variables on the final grades

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>186.849</td>
<td>13.157</td>
<td>14.202</td>
<td>0.000</td>
</tr>
<tr>
<td>Distance to School (Meter)</td>
<td>5.875E-005</td>
<td>0.000</td>
<td>0.023</td>
<td>0.869</td>
</tr>
<tr>
<td>Number of Students</td>
<td>.031</td>
<td>.010</td>
<td>1.16</td>
<td>3.157</td>
</tr>
<tr>
<td>Percentage of boys</td>
<td>-3.348</td>
<td>.202</td>
<td>-0.50</td>
<td>-1.718</td>
</tr>
<tr>
<td>Independent/Public School</td>
<td>31.428</td>
<td>6.423</td>
<td>.184</td>
<td>4.893</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Final grades

The variables that are showing the most significance on the grades are what type of school the students are attending and the size of the school. These variables show significances of 0.000 and 0.002 which means that they are definitely having positive effects on the final grades (see table 5). When looking at the size of the schools the regression analysis shows that the large schools affects the grades positively. This result is the same for both independent schools and public schools. Students in a large independent school show better results than students in a smaller independent school, and the same tendency are shown when looking at public schools. In both cases the results are significant, but there are no big effects on student’s final grades from the size of the student’s school.
Most of the variables given in the regression analysis have positive effects on student’s grades and in most cases it is clear that the effects are noticeable. However, there is one case when the analysis shows no significant result on a student’s grade and this is when looking at the distance to school. This means that the student’s distance to school has no effect on the received grades. This analysis and its result show that distance to school does not really affect the final grades are similar to what have already been mentioned in this study (see section 5.3).

All the variables given as independent variables for the regression analysis have a quite small effect on the final grade. However, they have a positive effect in most cases except for the variable of percentage of boys who have a small negative effect. Those variables that have most effect on the final grades are the type of school and the size of school.

5.6.2 Analysis of Gävle and Sandviken separately

Looking at each municipality separately in this study it is shown that for Gävle the given variables in the analysis are explaining a student’s final grades up to 10 % and the same variables are explaining the final grades up to 5 % for students in Sandviken. This means that the selected variables are more important when explaining why final grades for students in Gävle look the way they do, while they are less important when explaining the final grades for students in Sandviken.

The results from the regression analysis show that a student’s final grades are highly affected by in which city the student’s school is situated and if it is a public or an independent school (see table 6 and 7). A student results differ if attending a school in Sandviken or in Gävle and it is clear that attending a school in Gävle has a fairly large positive effect on a student’s results compared to if the student attends the education in Sandviken. What is even more evident is that it makes a difference to a student’s final grades if the student takes part of the education in an independent school instead of the education in a public school. With a significance level of 0.100 for Gävle and a significance level of 0.453 for Sandviken, it is shown that Gävle is closer than Sandviken for being significantly affected by what type of school the student are attending, since the significance level are closer to 0.000 for Gävle than it is for Sandviken. Attending an independent school seems, according to the regression analysis made in this study, to be the best alternative if wanting good grades. And an extra plus if the school is in Gävle.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>182,140</td>
<td>13,856</td>
<td>13,146</td>
<td>.000</td>
</tr>
<tr>
<td>Distance to School (Meter)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.027</td>
<td>0.909</td>
</tr>
<tr>
<td>Number of students</td>
<td>0.062</td>
<td>0.012</td>
<td>0.261</td>
<td>5.299</td>
</tr>
<tr>
<td>Percentage of boys</td>
<td>-0.287</td>
<td>0.222</td>
<td>-0.044</td>
<td>-1.292</td>
</tr>
<tr>
<td>Independent/Public School</td>
<td>12,823</td>
<td>7,789</td>
<td>0.082</td>
<td>1.646</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Final Grade
Table 7: Variables affecting the final grades for students in Sandviken

<table>
<thead>
<tr>
<th>Coefficients8</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Constant)</td>
<td>230,188</td>
<td>35,639</td>
<td>6,459</td>
<td>,000</td>
</tr>
<tr>
<td></td>
<td>Distance to School (Meter)</td>
<td>5,149E-006</td>
<td>,000</td>
<td>,003</td>
<td>,057</td>
</tr>
<tr>
<td></td>
<td>Number of students</td>
<td>-.124</td>
<td>,039</td>
<td>-.223</td>
<td>-3,146</td>
</tr>
<tr>
<td></td>
<td>Percentage of boys</td>
<td>.137</td>
<td>,506</td>
<td>.016</td>
<td>,271</td>
</tr>
<tr>
<td></td>
<td>Independent/Public School</td>
<td>14,315</td>
<td>19,042</td>
<td>.052</td>
<td>,752</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Final grades

When looking at the municipalities separately it is shown that there is only one variable that is significant and significant for students in both municipalities, and this is the size of the student’s school. The size of school shows a significance level of 0.000 and positive coefficients for schools in Gävle, while it is showing significance level of 0.002 but negative coefficients for Sandviken if there are more students in the school. This difference indicates that the size of the school have a positive effect on students grades in Gävle while in Sandviken the school’s size instead have a negative effect on a student’s results. So this is showing that it might be possible to get slightly higher grades going to a larger school. Fewer schools and less students in Sandviken compared to the Gävle, might give in a much larger effect on the results in this regression analysis, since Gävle have a larger amount of data compared to Sandviken. The more data you have the more likely it is to have reliable results.

Another point to study is how a student’s distance to school might affect the student’s results in school. The analysis shows that a student’s distance to school is of being of non-importance for a student’s result in school when looking at the municipalities separately. The effects of a student’s distance to school seem to very small if there is any effect at all and at the same time the regression analysis shows that the results are not being significant. For Gävle the significance level is 0.364 which is fairly close to the results when including both municipalities. The results for Sandviken are showing significance level of 0.955 which is far from the results when including both municipalities. So looking at Sandviken on its own will show results that are unreliable, either there are not enough data to make the results trustworthy or there are very large difference between Sandviken and Gävle in this case.
In both the municipalities there are few students attending schools far away from home and few students that attend schools in other municipalities. Sandviken is a relatively small municipality and therefore often no long distances between a student’s home and the school and in Gävle there are schools in many if the city districts which also results in short distances between home and school for a student.

The performed analysis show that there is a general trend, looking at the municipalities separately, that Gävle is showing a more similar result to the common result when both municipalities are included, than is the case for Sandviken. This is evident also when using the variable percentage of boys, if it is an independent school as well as if it is a public school. Student’s achievements are for schools in Gävle closer of being significantly affected by the percentage of boys in the schools than is the case for schools in Sandviken. In Sandviken it is
shown that results in the school are far from being significantly affected by the number of boys attending the school.

The regression analysis shows that final grades are affected by the given variables in a quite similar way when looking at the study from a gender perspective. For both genders it seems to have a quite large effect on student’s grades if they attend an independent school or a public school. For both genders attending an independent school has a significant positive effect on the student’s grades. For the girls it also has an effect if they go to school in Gävle or Sandviken as there is a significant positive effect on the girls’ results in school if they attend a school in Gävle instead of a school in Sandviken. For the boys however, attending a school in Gävle instead of a school in Sandviken has no significant effect on their results. The significance level is 0.034 for the girls while the significance level is 0.407 for the boys.

With the size of school there is no significant effect on the student’s grades when looking at the distance to school. Looking at Gävle and Sandviken distance to schools didn’t have any effect on the student’s grades and the same results are seen when looking at the distance to school from a gender perspective.

For independent schools it seems to be better to be in smaller municipalities rather than being in larger municipalities. This analysis shows that within independent schools the final grades are better in Sandviken than in Gävle. At the same time it indicates that it is better to be in a public school in a larger municipality than being in a public school in a smaller municipality, as table 6 and 7 show a positive effect for Gävle and negative effect for Sandviken when looking at the variable of number of students. Within this study it also shows that there is a positive effect for the independent schools if there are more boys in a school. For the public schools there is no significant effect on having larger percentage of boys in a school.

All the variables given in the regression analysis as independent variables have most effect on the final grades for Gävle while they have a smaller effect in Sandviken. The size of the school is an important facto while a factor such as distance to school is non-important for the final grades. From a gender perspective the regression analysis show that there are no differences as it is the same variables that are important for the final grades.
6 Discussions

As seen in Figure 2, there are quite a lot of schools within the region of Sandviken and Gävle, especially in Gävle which is the largest city within the studied region of Gävleborg County (Figure 1). However, even if there are many schools, most of them are public schools and very few are independent schools. In the material for this study only five of the studied schools are independent schools. Compared to large cities in Sweden such as Stockholm, Göteborg and Malmö, the establishment of independent schools are relatively new in smaller regions in Sweden. In Sandviken for example independent schools are established in mid2000s (Sandvikens Montessoriskola, 2012). Sandviken, for example, is a municipality that is highly influenced by the company Sandvik AB. Sandvik AB is an international company with employees from many different countries. This in turn has increased the demand for different types of educational styles. Different countries have different types of education systems and people from these countries may therefore ask for other ways of education. Such factors may influence why new schools come up in small municipalities such as Sandviken.

Among all these schools it is shown in figure 3 and 4 that the students are relatively spread out within the municipalities. However, most of the students are concentrated into the city centers even if the students in Gävle are more spread out compared with the students in Sandviken. One thing that is interesting in this study is that the Schools in Sandviken are having their catchment areas in different directions compared to Gävle, who seem to have catchment areas with students who mainly are close to the school and not that many students who commute longer distances. There aren’t really any differences between the independent and public schools in the cases of Sandviken and Gävle. The major reason for this pattern is that Gävle is a larger municipality and there are more schools which also are spread out within the city. If there were more schools in Sandviken it would probably show a similar pattern as Gävle. There are more schools in Sandviken for the lower ages, from 1st to 5th grade, which are more spread out within the city. The students in Sandviken move to one of the schools in Sandviken mentioned in this study when they reach 6th or 7th grade.

With the new phenomenon with independent schools it might be thought that it would affect the school choice and maybe also the achievements among the students. When it comes to the choice of schools it can be two different effects, either students get skeptical about choosing a school because it is new and they don’t know much about them or the student choose a new school as it is new and thereby different from the schools that already are established and well known to the students. One way for schools to be different is to have a new type of pedagogy as described by Sandy (1989). This is also one important factor why a specific school is the choice for students. A school’s pedagogy or a school’s orientation, such as sport orientation, religious school or other language seem to be fairly important in the studied region of Gävle and Sandviken as there is a high number of students in schools such as Engelska skolan and Prolympia, as shown in Appendix 1, who both have strong school profiles. At the same time the students get more motivated themselves as they go to a school that they are interested in, as described in the choice theory. With a raising number of people coming from other parts of the world to this region and with more young people looking for an international career Engelska skolan, with a lot of the education being in English, is becoming a popular choice. There are a growing number of families in the region having an experience from being in non-Swedish countries. As the industries in the area, for example Sandvik AB, are becoming more and more global there will also be a growing interest for international schools in the future. Many Swedish families returning from being abroad for some years, with children having
been in schools where Swedish haven’t been the spoken language, wants as small changes as possible for their children when returning to Sweden. Choosing Engelska skolan can then be a way to at least keep the language when returning back to Sweden. Non-Swedish families moving to the region might want, in many cases, their children to attend a school where they understand the language. And for many children English might be easier compared to Swedish. In these cases it is also obvious that parents play an important role in the student’s choice of school which in turn can be an important factor for the students coming study results.

From the parents perspective an important factor for the choice of school might be their wish to have control over the child’s education. In most independent schools parents can and are expected to be active in the school’s daily operation and these parents also have high demands on the school and its education. This is often asked for in the public schools, but in general parents in independent school have a genuine interest in education and are prepared to give more of their time to their children’s education. This is also relating to the choice theory but in this case it is the parents who get motivated and satisfied rather than the students.

A schools reputation is often an important factor when a student chooses a school, which is partly also what Noreisch (2007a) mention. A good reputation connected to a high quality education where students reach high achievements is often important. However, such factors do not seem to be of importance in the region of Gävleborg County. One of the reasons for this is that the differences between the school’s achievements are not big. The average final grades do not differ to a large extent between the schools. Engelska skolan is though standing out from the rest as there are a slightly higher number of students with high grades here compared to in the rest of the schools in the region. The final results for the other schools in the study are very similar to each other, as can be seen in Appendix 3.

Even when looking at the differences between independent schools and public schools there are no significant differences between the students’ results. Stenebergskolan and Sandvikens Montessoriskola show slightly different results for the students compared to other schools, but not as big differences as are seen for Engelska skolan. This is positive in the sense that it probably shows there is a mix of students in the schools and the teachers seem to have a common way of setting grades for the students. This is a positive outcome for the education in the region.

In most American cases, shown by for example Bifulco and Ladd (2006) and by Sass (2006), it seems as independent schools are having a bad impact on the achievement level. This is though, as said above, not seen in this study with results similar to those from the study made by Schindler Rangvid (2008) who found that there were no big differences in achievements between independent schools and public schools. There does not seem to have been any large effect from the establishment of independent schools in the region of Gävleborg County. The public schools seem to be in about the same average grades over the period from 2005 to 2011. This in contrast with Lindboms (2010) statement, that competition gives positive effects on students’ achievements. With the independent schools being a new phenomenon in the region of Gäve and Sandviken it might be difficult to see any effect on achievements in such short time. However, it can be seen that the independent schools in the studied region have showed decreased average grades for the students since they started. Reasons for this are probably a change in attitudes and fewer differences between the schools will most likely result in similar grades between the schools. If students get similar conditions, such as same
resources, similar environments and similar class sizes it is a good possibility that they might
perform equally good.

What is evident from this study, shown in table 3 and appendix 2, is that most students in the
studied region of Gävleborg have less than three kilometers travelling to school, which can be
seen as not being commuting. It can be that most students and their parents prefer to be in the
closest to home school since they see small differences between them when it comes to
student’s achievements and the school’s reputation. As all schools, with some exceptions
mentioned above, seem to have a similar standard on their education they see no need to
choose another school than the closest to home school since it most likely will do no
difference for the student’s education and final grades. The exceptions are that students travel
longer distances to school if there is a specific orientation at a school which the student wants.

Which to some extent is related to the distance decay as the attitude towards education may
change the longer they travel to school. Examples in this study that shows this is Gefle
Kristna Skola and Prolympia where the students living closest to school still have a relatively
long distance to travel. But this has, according to the results in this study, no influence on the
students’ final grades. Motivation for a specific choice is here important. Families seeking for
a specific type of orientation in the education for children are willing to accept and handle
long travel distances to the school. Therefore are for example families with children in Gefle
Kristna Skola and with strong religious believes accepting long travel distances to school for
their children. Still the distances are not very long, but for some students longer than is
normal in the area.

This study shows that there are more students in Gävle that commute to school than there is in
Sandviken. Some students in Sandviken commute to school but it is not over long distances.
In Gävle there are more students with relatively long distances to school. One reason for this
is of course that there are more independent schools in Gävle, and these schools have larger
catchment areas since students from other surrounding municipalities take the opportunity to
choose these schools in their desire to attend schools with special profiles. Another reason is
that Gävle is a larger municipality which makes the distances within the municipality longer
than is the case of Sandviken. There are also students commuting from other municipalities,
and even counties, to attend schools in Gävle and here Engelska skolan is a popular choice.
There are students going from Älvkarleby which is a smaller municipality and located just
across the border to Uppsala County.

It is also seen that in the region of Gävleborg there are students commuting from Sandviken to
Gävle for studying but no students commuting in the opposite direction. One reason for this is
of course that Gävle is a larger municipality than Sandviken and thereby have more school
options to choose between. Another reason might be that students in Gävle are satisfied with
the education that exist there and they need no more options while students in Sandviken are
looking for something better or different than Sandviken can offer. Sandviken is also a quite
small municipality and the supply of education with high quality is not as big as in Gävle or
other larger regions. Sandviken has the public schools and the Montessori school, and these
types of schools are common in most municipalities. Montessori schools are independent
schools which to some extent make it different from the public schools, but at the same time it
is one of the largest and most common types of schools in Sweden today. In the municipalities
that have independent schools it is quite common that at least one of them is a Montessori
school. Again a student’s choice of school is highly affected by the surrounding and shown
expectations from parents. Despite the distance to school these students have grades similar to
other students, which are contradicting to what is said in the distance decay. This again goes back to motivation and student’s wish to achieve excellent final grades.

As shown in table 2 and table 5, there are no clear tendencies shown in this study that there is a relation between a student’s distance to school and the students’ final grades. Students seem to have the same opportunities if living close to school or have a long travelling distance to school. In relation to the distance decay, described by Fellman et al. (2007), a student living close to the school might have better opportunities to get higher grades than those living far away. This study shows no relation between a student’s distance to school and the grades and there are no significant differences between the independent schools and the public schools in the region. It might be that students in independent schools are motivated about school and working for getting high final grades and this since they have made an active choice of school. This in turn can affect the relation of grades and the distance to school, but these studies shows that in the studied region of Gävleborg it will be to a quite small extent and not to a significant level according to the regression analysis made. Students own motivation, as described in the choice theory, can be a good tool for getting good grades, but of course students in public schools can be as motivated in their studies as students in independent schools are. Therefore it can sometimes be difficult to say that motivation is one factor affecting the relation between distance to school and a student’s final grades. Sometimes it may also be asked who is the most motivated for making a specific choice, the student or the parents.

The results from this study showing no clear relation between a student’s distance to school and the final grades can be seen as if the schools in the studied region are doing a really good work. Students living further away from the school spend more time on travelling than the students living by the school, but a conclusion that can be made is that the schools are doing their best for giving all students the same possibilities for having a good education. This is clear since there are no real differences in achievements between students living close to school and those living further away from school. This study also shows that in the region of Gävleborg there are very few students having really long distances to school. Most students have a maximum of five kilometers to school and the largest group being the students who have one to three kilometers to school. Because of this it is possible to say that distance to school is not relevant for the final grades in the region of Gävleborg.

A big difference between schools in Sweden compared with the earlier studies (Thrupp, 2007; Butler and van Zanten, 2007) about schools and segregation, mainly from America, is that schools in Sweden are not as segregated as they can be in the American case. In American independent schools the families normally pay a fee for the student, while in Sweden the fees are paid by the municipalities. Already here it can be shown that there are risks for segregation. Not all families are able to pay the fees that exist in the American system and it creates different conditions between the different types of schools.

In this study there is one school that could have been more segregated than it is, it is Jernvallsskolan in Sandviken. It is a school that is heavily dominated by boys with a percentage of 73 % boys as shown in figure 5, and can therefore be seen as a segregated school. Looking at the school in other ways it is a school that is located in an area that historically has been dominated by upper-class families, with few students commuting from other areas. This has been affecting the school in a historical perspective and it has been quite segregated in the way described by Butler and van Zanten (2007), where the middle-class children have been divided from the working-class children. This is something, however, that
does not exist today in the area, but it could still have been affecting the school since it has such strong history about the segregated area. Jernvallsskolan has today a mix of students and is no different from the other schools in the community also when it comes to students results. The mix of students in Jernvallsskolan are today very equal to other schools in Sandviken also in relation to how far students travel to get to school and was said to their final grades. So even if Jernvallsskolan earlier were quite divided it has managed to have an equal education for all categories of children today. That there are difference in the distribution of boys and girls may as well be because it is a year cohort where more boys were born in the area. Looking at the year cohorts and distribution of gender it can be difficult to see any tendencies since it can change year by year.

According to Schindler Rangvid (2008) socio-economic factors are important and schools are chosen if they are in the right area. For a region like Gävleborg there might be few active choices of school in this case however. One reason might be that parents don’t have enough knowledge (Singleton et al., 2011) about possibilities or the parents don’t have such high education themselves (Sandy, 1989). Looking at statistics from Skolverket (Salsa, 2012) it can also be seen that in general parents to ninth grade children in the area do not have high education backgrounds. Historically there was no need for high educations for people living in the area as many big industries in the region hired lots of workers with no need of education. It is well known that a student’s motivation for school is affected by parents and if they do not consider a high quality education important it will have an impact on their children’s motivation to succeed in the studies, which is contradictory to the choice theory that motivation are not affected by someone else. One exception is Engelska skolan who have students coming from other communities and areas, and whose parents have a slightly higher educational level compared to parents to students in other schools (Salsa, 2012). As mentioned above students here also have a slightly higher average final grade than other students in the region when leaving school which might to some extent is a result from their home backgrounds.

In this study there are no specific and obvious differences between the number of boys and girls in the schools and no clear differences between given final grades. The distribution of boys and girls is fairly equal among the schools in this study. There are no problems as in Kamwendos (2010) example from Malawi where girls in some cases don’t have the same possibilities for an education as boys have. However, there might be some differences about the school choices made by boys and girls. Looking at the independent schools in this study, three out of five schools has one gender group dominating. Prolympia is an example where the male students are dominating. As it seems in this case more boys are willing to put down more work on a sports career and thereby choose Prolympia where they can practice their sport while at the same time getting a good education. And at the same time, there are many boys in the same situation and the boys will not stand out, with higher grades, among their friends to such large extent. Sometimes students who study a lot can be seen as geeky and being exposed to bullying. In public schools there are in almost all cases the same percentage of girls and boys and this minimizes the risk that there will be differences in conditions for boys and girls and there are no risk that a school will be seen as segregated with heavily dominating groups.

Table 5 show that the variables that have the most affect on students final grades is shown in this study to be the size of the student’s school, if it is an independent school or a public school and the school’s location. The variables given in this study, show that it is the schools themselves that can affect the grades. This is even though these variables explain the final
grade to a quite small extent (shown in table 4). Small schools have different possibilities to plan education of students compared to the situation for large schools. Large schools normally have more resources such as teachers, teachers with special competence teachers as well as money to be spent on the students. On the other hand a small school may have better opportunities for a more individualized education, since one teacher have fewer students to put their focus on. If a teacher have less students to be responsible for it means that the teacher easier can see who of the students that needs more support in a subject to not fall behind. In both cases it is positive for the student’s motivation and possibilities to receive good grades, but again it is important to note that parents attitude, support to the students and contact with the school often give a result on children’s grades.

There is also a question about where to find the best teachers that can help students receive good results in their studies. A larger school with good resources; such as more money, good computer programs for education and similar, may attract teachers since it is possible to get good help and support to teach in a good way. In a small school however there are maybe more opportunities for the teacher to participate in the schools plans for how to educate the students. Teachers get highly motivated in their job and might feel more satisfied with their situation as the choice theory explains. There is a similar attitude when looking at independent schools compared to public schools. In independent schools teachers normally have a more free role than teachers in public schools have and this since the two different types of schools many times do not have to follow the same goals and requirements for the daily curriculum, as described by Dills and Mulholland (2010), especially in the USA but also to some extent in Sweden. This is also one of the reasons why a variable such as independent or public school may affect the final grades. People have different ways of learning and need different conditions to learn. Some students learn well from the common and general education in the public schools, while some students learn more and gets more motivated if they are interested in a topic which the Montessori schools, for example, take advantage of. Considering these conditions it is good and very important to have the opportunity for having the independent schools as a possibility in the school system in Sweden since it gives new options, and also that there will be some competition between the schools about the students which is good for the development of the schools. The factor that students’ get better results depending on what school they attend also relates well looking at the region of Gävleborg. But as no big evident differences are seen between the schools we can make a conclusion that most students have made a choice of school that is suitable for them and where they feel satisfied.

The performed study shows, shown in table 6 and 7, a connection between a student’s final grades and in which municipality the student goes to school. Gävle is a larger municipality than Sandviken and has more options to offer when students make their choice for school. There is a larger variety of types of schools and there are more schools in general for the student to choose between, and the students have easier to find the type of education that suits them. Another factor for the difference in student’s grade in the two towns might be a difference in motivation for studies among the students in Sandviken and Gävle. As mentioned, Sandviken is a municipality that has one very dominating company. Almost all families living in Sandviken has one member of the family working for the company and the dream for many young people is to get a job in the company. This most likely affects the students’ motivation to work harder in school for getting a good education and high grades. Gävle also have many big industries, but with new independent schools and the University of Gävle, education has become a growing issue in Gävle. Prolympia, who shows that their students get slightly higher grades than other schools in the region, are fitting well in to the region with inhabitants having big and well known interest in sports.
The development of independent schools is a relatively new phenomenon in Sweden and even in the other Nordic countries as Johannesson et al (2002) is also mentioning. It is a phenomenon that has been dominating in the larger regions such as Stockholm, Göteborg and Malmö. But it is a development that has started to reach out to the small municipalities and regions in Sweden. A lot of the focus for research has been on the larger regions and there are not as much studies made on the smaller regions such as in this study, and one of the reasons are because of the lack of independent schools outside the larger regions. Most of the research that has been made has also been made on achievements and it seems to focus on the relation with the students’ motivation and personalities in the research. In contrast this study has had some focus on the schools location and the achievements. Therefore it might be difficult to see any significant tendencies here since there are not that much of similar studies to compare it with in relation to the location of the schools.
7 Conclusion

What is shown in this study is that there are no big differences between different types of schools. When it comes to the achievements the schools are on about the same level and there are no big differences between independent and public schools. This must then mean that the students get good support and help in their education no matter which school they attend.

It is also shown that the students seem to get equal opportunities for good grades no matter if they have a short or long distance to school. Since they might spend different amount of time on travelling they might get different results, but it is seen that there are no relation between distance to school and the final grades, such as students living close to school have better grades or vice versa.

One concern especially in the USA is that independent schools create elite schools which in turn may create segregation in the education, and no possibility for students to equal possibilities. This is a concern that is not needed in Swedish schools in my study area. The socio-economic system in Sweden allows all Swedish students to have the possibility to attend an independent school since the municipalities are paying the schools for educating students, while in America families pay independents schools to have their children there. This means that there are more equal opportunities, among different categories of students, for good education and to select any school in Sweden. An exception is those private schools that exist in Sweden where parents pay a yearly fee for the student. A school such as Gefle Kristna Skola could, however, create segregation since mainly students of Christian faith goes there, which can make them excluded from other categories of students.

As mentioned above there are no big differences between schools considering achievements among students and the schools. This is also the case when looking at differences between boys and girls. In general there are no differences in boys and girls achievements in school. When looking at the distribution of boys and girls in the independent schools there seem to be a slightly difference, but looking at achievements and distance to school, and the other mentioned variables in this study, there are no differences between the two sexes even when studying the independent schools. The distribution of boys and girls differ to some extent in the independent schools, but it most likely depends on the orientation of the schools. There are more boys than girls in the school with sport orientation while there are more girls than boys in the religious school of Gefle Kristna Skola. It seems to be that all schools in the region of Gävleborg give all students the possibility of good grades, but it could also be that there is a difference in motivation among the students. This, however, have to be studied in other research to find out the answer.

The results above are conclusions from the statistical material received from the schools. When using the same material doing a regression analysis a tendency can be seen that the school plays an important role if students are to succeed in their studies and getting good grades. Variables such as the size of the school, type of school and the schools location are more significant factors for schools and students achievements. A good environment for studies and a large school with resources for giving education to all students are useful tools for improving students’ achievements.
Further studies

As mentioned in this study most research is made in the larger regions in Sweden such as Stockholm, Göteborg and Malmö. This means that there is very little research made in smaller regions to compare this study with. With this study it is possible to make estimations and predictions of the outcome but with more studies made containing similar conditions it will be possible to make fair conclusions.

It would also be good to make studies containing more data from independents schools. For this study there were missing data from two out of five independent schools when it comes to the achievements. However, it is in this case quite few students that are lost here in relation to the rest of the data collected, which means that the results might not change that much as it could have been doing. But still, with complete data the results might have been different from what it is.
8 References


## 9 Appendices

### Appendix 1: Number of students and sex distribution for each school

<table>
<thead>
<tr>
<th>School</th>
<th>Percentage of Boys</th>
<th>Percentage of Girls</th>
<th>Total number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gävle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bergby Centralskola 1-9</td>
<td>49%</td>
<td>51%</td>
<td>35</td>
</tr>
<tr>
<td>Engelska Skolan i Gävle</td>
<td>44%</td>
<td>56%</td>
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<td>Friskolan Lyftet</td>
<td>79%</td>
<td>21%</td>
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</tr>
<tr>
<td>Gefle Kristna skola</td>
<td>20%</td>
<td>80%</td>
<td>10</td>
</tr>
<tr>
<td>Källmursskolan</td>
<td>51%</td>
<td>49%</td>
<td>72</td>
</tr>
<tr>
<td>Lillhagsskolan</td>
<td>37%</td>
<td>63%</td>
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</tr>
<tr>
<td>Milboskolan</td>
<td>50%</td>
<td>50%</td>
<td>58</td>
</tr>
<tr>
<td>Nynäs Montessori</td>
<td>52%</td>
<td>48%</td>
<td>27</td>
</tr>
<tr>
<td>Prolympia, Gävle</td>
<td>80%</td>
<td>20%</td>
<td>69</td>
</tr>
<tr>
<td>Sofiedalskolan</td>
<td>55%</td>
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<td>Stenebergsskolan</td>
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<td>45%</td>
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<td>49%</td>
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<td></td>
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<td>50%</td>
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<tr>
<td>Sandvikens Montessoriskola</td>
<td>57%</td>
<td>43%</td>
<td>21</td>
</tr>
<tr>
<td>Söderskolan</td>
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## Appendix 2: Number of students per distance cohort and school

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<tr>
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## Appendix 3: Distribution of students and final grades per school

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<td>3 (9%)</td>
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<td>50 (34%)</td>
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<td>0 (0%)</td>
<td>0 (0%)</td>
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<td>0 (0%)</td>
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<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
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<td>13 (18%)</td>
<td>3 (4%)</td>
<td>37 (51%)</td>
<td>12 (17%)</td>
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<tr>
<td>Lillhagsskolan</td>
<td>5 (12%)</td>
<td>1 (2%)</td>
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<td>39 (36%)</td>
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<td>6 (5%)</td>
<td>35 (28%)</td>
<td>46 (36%)</td>
<td>25 (20%)</td>
<td>8 (6%)</td>
</tr>
<tr>
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<td>19 (37%)</td>
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<td>20 (39%)</td>
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<td>7 (8%)</td>
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<td>12 (30%)</td>
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<td>3 (7.5%)</td>
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<tr>
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<td>7 (6%)</td>
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<td>Sandvikens Montessoriskola</td>
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<td>8 (38%)</td>
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### Appendix 4: Contacts

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<tr>
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<th>Contact</th>
<th>Telephone</th>
<th>E-mail</th>
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<td><strong>Gävle</strong></td>
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<tr>
<td>Public schools</td>
<td>Bo-Erik Simonsson</td>
<td>026-178936</td>
<td><a href="mailto:Bo-Erik.Simonsson@gavle.se">Bo-Erik.Simonsson@gavle.se</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>070-4141126</td>
<td></td>
</tr>
<tr>
<td>Prolympia</td>
<td>Principal Göran Larsson</td>
<td>026-6785121</td>
<td><a href="mailto:Goran.larsson@prolympia.se">Goran.larsson@prolympia.se</a></td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Prolympia</td>
<td>Administrator Camilla Hellberg</td>
<td>Tel 026-6785120</td>
<td><a href="mailto:camilla.hellgren@prolympia.se">camilla.hellgren@prolympia.se</a></td>
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<tr>
<td></td>
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<td>51 20</td>
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<tr>
<td>Internationella Engelska Skolan in Gävle</td>
<td>Principal Anneli Engvall</td>
<td>026-423 25 00</td>
<td><a href="mailto:anneli.engvall@gavle.engelska.se">anneli.engvall@gavle.engelska.se</a></td>
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<tr>
<td>Internationella Engelska Skolan in Gävle</td>
<td>Academic Coordinator Adam Hagman</td>
<td>026-42 32 503</td>
<td><a href="mailto:adam.hagman@gavle.engelska.se">adam.hagman@gavle.engelska.se</a></td>
</tr>
<tr>
<td><strong>Sandviken</strong></td>
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<tr>
<td>Public schools</td>
<td>IT-coordinator Rolf Johnzon</td>
<td>026-241765</td>
<td><a href="mailto:rolf.johnzon@utb.sandviken.se">rolf.johnzon@utb.sandviken.se</a></td>
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<td></td>
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<td>070-0897048</td>
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<tr>
<td>Sandvikens Montessoriskola</td>
<td>Principal Helen Öregård</td>
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<td><a href="mailto:helene.oregard@sms01.se">helene.oregard@sms01.se</a></td>
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