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University attractiveness and the creation of an improved ranking model

As the university sector turns into a more highly competitive industry and as the amount of university rankings is growing, the need for good information increases: how to more efficiently attract students and what is the relevance of the comparisons between the universities in the form of university rankings? In this thesis we address these issues by studying university attractiveness in a university-ranking context. More specifically, we firstly examine the underlying dimensions that influence university attractiveness from the student perspective. To do this, we have collected and analyzed survey responses from more than 15,000 Swedish students through mainly factor analysis and multiple linear regressions. As a measure for university attractiveness we argue for a combined index of attitude and purchase intention, which should be based only on evaluations of universities that the students do not study at. The results show that university attractiveness can be explained by seven factors: facilities and practical values, students, social values, education, reputation, location and academic values. In addition, there is provided evidence that rankings have significant and positive impact on university attractiveness. Secondly, we also propose a university ranking that is based on how much the factors found influence university attractiveness. The proposed model avoids common criticism of rankings by having a clear perspective and a non-subjective choice of variables and weights.

Keywords: university attractiveness, university ranking, students

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1. Introduction

In this first section of the paper we are first familiarising ourselves with the problem area, including the universities' position today, how university rankings works today and what we hope to achieve by studying this problem area. We will also cover some delimitations, some necessary definitions of the vocabulary that we intend to use and present a basic disposition for the rest of the study.

1.1 The problem area

Higher education today faces a far more competitive landscape than before. The universities have turned from being non-profit institutions into competitive businesses due to the competition between the universities to attract as many and as bright students as possible.[1] This shift has occurred during the last 20 years and many institutions are still working on how to adapt to the new competitive environment. Countries have been examining their educational systems and introduced marketization policies and market type mechanisms instead of the previous strong governmentally controlled model.[2] It is a process that has emerged primarily from the English speaking countries, with USA, Canada, UK and Australia as driving forces. But also other large industrial countries have begun to deregulate their educational systems; some of the most prominent are Japan, Holland and Spain.[3] This process has also reached Sweden where there is an increasing amount of reports about the more highly competitive educational environment. In Sweden, the amount of money the universities spent on attracting every new student increased by 31 % from 2004 to an average spending per new student of SEK 1978 in 2007.[4] This highlights the effort that universities today need to put in to stay competitive.

In this increasingly competitive landscape, the use of rankings and other competitive comparisons between universities are becoming more frequent. A number of newspapers have their own rankings and separate companies produce and publish yearly rankings based on different variables. The main idea is often to find out which

[1] Bunzel, 2007
[2] Jongbloed, 2003
[3] Hemsley-Brown et al. 2006
[4] Dagens Nyheter, 2008-12-06

university is the best in specific areas and how universities differ from each other. There is a high public interest in these kinds of rankings, which make them attractive for the newspapers to print. Many of the proponents of rankings claim that rankings add transparency in the otherwise quite blurry selection process that the potential student faces today. The rankings simply increase the transparency and competition in the selection process. The critics of rankings claim them to be subjective in both their choice of variables and their weightings and that most of today's rankings take the perspectives of the universities rather than the students. In Sweden, there are only two yearly rankings of Swedish universities and none of them take the perspective of the students, which is evidence of a gap in the information available. Further, the Swedish authorities see potential to create good and accurate national university rankings, since the governmental control over the Swedish universities makes the collection of data for potential rankings easy and cheap. [5]

1.2 Task

This paper's main task is to try to establish what makes Swedish universities attractive to students, in a university-ranking context. We also want to suggest a model to transform the criteria that creates university attractiveness into a model for ranking universities. We will with help from theory state open research questions that we will answer throughout our study. The proposed model for ranking universities will be based on what creates university attractiveness and take into account the critique of the current rankings. Our aim with the ranking model is not the ranking itself but rather to present a model on how to conduct improved rankings.

1.2.1 Thesis question

What are the most important factors explaining university attractiveness in Sweden and how do we create a ranking based on those factors?

1.2.2 Expected contributions

Our first main contribution of this thesis is to provide information about what criteria that affect university attractiveness and how much the criteria explain university attractiveness. This information should be relevant for universities to take part of since it can help the universities to develop their offerings and communications so that they

[5] Almgren 2008

can attract new students in better and more efficient ways, especially when trying to understand how to attract master students.

Our second main contribution is the information provided to potential students. By creating a ranking that takes the student perspective, the potential students can make more informed decisions on what university to choose since it addresses how the universities perform based on what students find attractive. On a side note, the news magazine Fokus has already used the model[6] as a base for their university ranking.

1.3 Delimitations

This paper is delimited to universities in Sweden and to Swedish students. Therefore, the survey was also done in Swedish, which means that any respondent that didn't understand Swedish was unable to answer the survey. The survey questions are presented in Swedish in the appendix and the ones that are presented in this paper are thereby a translation.[7] The reason why we chose to do the survey in Swedish was firstly that we wanted clear target group since foreign students in Sweden probably have quite different criteria when evaluating Swedish universities. Foreign students also don't apply to universities through the same system as Swedish students do and we didn't get hold of contact information to the foreign students. Thirdly, we thought that we would be able to more accurately communicate the intended meaning of the survey questions in Swedish to native Swedish-speaking people.

We decided to limit down the total number of 49 Swedish universities to 26 universities to be studied. The 26 selected universities are the ones that have permission to educate on basic, advanced and scientist level.[8] The reason for this selection is mainly since we didn't want to overextend ourselves given the time and space that we had dedicated for this study. We also saw that there was a lack of good independent data available for some of the universities not included. The list below show the universities included in the study:

[6] Fokus
[7] Appendix #5 & #6
[8] Rapport 2011:8 R, Universitet & högskolor Högskoleverkets årsrapport 2011

The following universities are part of this study:

- Blekinge Institute of Technology
- Chalmers University of Technology in Gothenburg
- Gävle University
- Halmstad University
- Jönköping University Foundation
- Karlstad University
- Karolinska Institutet
- Linköping University
- Linnaeus University
- Luleå University of Technology
- Lund University
- Malmö University
- Mid Sweden University
- Mälardalen University
- Royal Institute of Technology
- Skövde University
- Stockholm School of Economics
- Stockholm University
- Swedish University of Agricultural Sciences
- Södertörn University
- The Swedish School of Sport and Health Sciences
- Umeå University
- University of Borås
- University of Gothenburg
- Uppsala University
- Örebro University

We have also decided to only focus on students practising studies on a basic or advanced level. This means that the focus on science that usually is quite strong in other studies of rankings is less in ours.

In short, our main delimitations result in a focus on Swedish students that practice studies on basic or advanced level, at the 26 Swedish universities offering basic, advanced and scientist level of education. As you will notice, we will also present some delimitations in the theory and method part as well, those can however be seen as being minor delimitations.

1.4 Definitions

In this section we are defining some of the words that we are using more specifically.

University: Refers both the Swedish “universitet” and “högskola”.

Student: a person that is studying at a university in Sweden on either basic or advanced level.

Basic level of education: Bachelor level or equivalent.

Advanced level of education: Master level or equivalent.

Higher education: refers to university level education.

Attributes: refers to the different aspects that influence university attractiveness. One example of such could be that you get a high salary after completed education and another if the university has good facilities.

Factor: refers to a grouping of attributes.

Independent data: the independent data chosen to represent the attributes when creating the ranking. The independent data is officially available data, from a wide range of sources on how the universities perform.

1.5 Disposition

We will in this study begin by presenting theory about the universities’ place in the market and use assumptions derived from the theory as a guide for the design of the study and the analysis of university attractiveness. In the theory section will we also pose several research questions that we will provide answers to in the result and analysis part. Based on the assumptions made in the theory part, our suggested method is then presented, including how we did a pre-study followed by a main-study. Based on the both studies, the results and analyses will lead to a discussion and conclusions. Finally, we will provide recommendations on future studies needed on the topic and some critique of our own study.

2. Theory and questions

In this section we present basic assumptions about higher education based on what has been suggested by previous researchers. We will then use these assumptions to present a number of research questions that we in the following chapters will try to answer.

2.1 Different assumptions

2.1.1 From local non-profit organisations to globalized businesses

The competition between the universities is increasing and this primarily concerns attraction and retention of students, both domestic and international. The domestic students have, because of the increased transparency in society, become more informed and they also have more possibilities to choose different educations based on their own preferences. This creates a situation where they are more likely to choose an educational route suitable for them personally instead of what's most convenient and close by.[9]

Globalization and the increased cooperation between countries have also created a new stream of international students studying at Swedish universities. To be able to attract these international students, the universities need to adapt to the global market and thus become more market driven. Universities have shifted from being highly controlled by the government[10] towards higher levels of academic autonomy, resulting in more freedom to act according to market needs.[11] Earlier, many international students chose Sweden because there were no tuition fees and thereby cheaper than its European counterparts. As of today, the Swedish government is trying to force the universities to compete on quality and has introduced fees on international students that come from outside the EU. This initiative efficiently has cut off a large part of the international students, forcing the universities to spend even more money on marketing to keep up with their international profiles.[12]

[9] Bunzel, 2007
[10] Jongbloed, 2003
[11] Young, 2002
[12] SVD, 2011-07-15

All of these issues have lead to an increased focus on commercialization of the Swedish universities. The universities are no longer local non-profit organizations but rather global businesses that need to succeed in a tough environment.[13]

2.1.2 From product to service

The literature on marketing in educational environments emerged in the 1980:s in the UK and the US. The ideas focused on converting models developed for the business sector to an educational environment. In the beginning of the 1990´s the focus became narrower when an increasing amount of the studies focused on market communication specifically. Later, around the mid 1990´s, the realization that higher education wasn't a product but rather a service was presented.[14] This drastically changed the scene for researchers of higher education; the marketing of services was quite different than the studies and models used for products. There are still authors that view higher education as a product but they are decreasing in numbers to the more popular idea that higher education is recognized as a service industry where the universities are acknowledged as service sector businesses.[15]

2.1.3 Relationship marketing

During the recent years, it has been recognised that relationship marketing seems to be much more compatible with the service nature of the university business than the former transactional approach. This is because it promotes the involvement of students in the marketing effort since the university needs to fulfil the students' expectations of the education and university. Otherwise, the students share their negative opinions with others. This sharing will create a situation which marketing and advertising can't solve.[16] The universities need to work with a relationship approach towards the students to succeed in the future.

2.1.4 The student as a customer

In the service delivery process of university education it is an ongoing debate regarding the definition of the student; for example, there's been a discussion whether the student should be seen as a product that match the market need, or seen as a customer and

[13] Bunzel 2007
[14] Nicholls et al, 1995
[15] Mazzarol 1998
[16] Oplatka and Hemsley-Brown, 2004

treated as such.[17] The question is of relevance for this paper, since we are examining university attractiveness from the perspective of students and if universities would not care about students' perceptions of university attractiveness, this paper would be of little to no value from the universities' points of views. However, most articles in this area claim that students are at least one of the stakeholders among as well the state and parents.[18] Even though Swedish students don't pay any fees for their education at the universities, they have the costs of living and the alternative costs of studying. We thus assume that universities regard students as at least part customers and that the universities have the possibilities to gain from tailoring their offerings to better suit the demands of the students.

2.1.5 Conclusions assumptions

The main assumptions that we have presented are that universities are businesses that are competing in a competitive environment mainly focused on getting a larger market share by attracting new students, which can be seen as customers. This creates an increased need of marketing and it defines the business that universities conduct. Literature shows that the university market is a service business and should be treated as such. When you recruit and later educate the students, the service business gets connected with relationship management.

2.2 Attractiveness from the student perspective

The choice of university is by some argued to be the second most important decision in life, exceeded only by the choice of husband or wife and in monetary terms, attending university is considered to be the second largest investment in life, exceeded only by buying a house. It is thus not surprising that the decision process of choosing a university is seen as risky and complicated.[19] In this part we will examine the literature on what makes universities attractive from the students' perspectives.

2.2.1 The purchasing process of university services

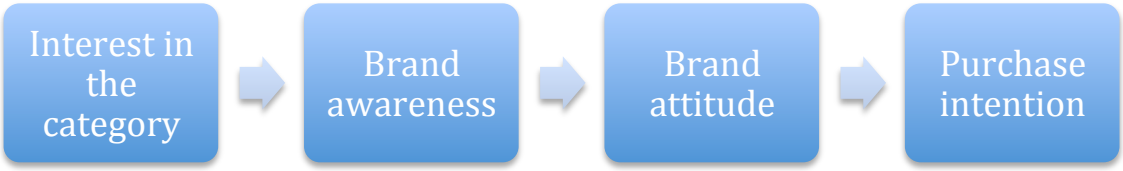
As we have already concluded, universities are service-selling businesses in a competitive environment, and like any other businesses, universities want to sell their

[17] Emery, Kramer and Tian, 2001
[18] Eagle and Brennan, 2007
[19] Moogan et al, 1999

service, which in this case is education. In most studies made concerning university attractiveness, market share or the ability to attract new students has a central role.[20] In the service-selling business context, the growth of market share through attraction of new students is central for the universities.[21] From the universities' points of views, attractiveness could thus be viewed as the students' willingness to purchase what the universities are selling; another way of stating this would be that the universities are trying to increase the students' purchase intention.

Based on our assumptions, we've looked at other fields and how they are portraying the purchasing process of services. Our previous assumptions suggest that we can view universities as businesses selling services to the students and one model covering the purchasing process is illustrated in figure 1.[22]

Figure 1



Since we are studying university attractiveness from the student perspective, we assume that students both have an interest in the category and that they have at least some basic brand awareness. These assumptions are basically done to limit the study in size. Since we are studying students, an interest in the category seems to be quite natural and to assume at least some brand awareness of the studied universities can be justified by arguing that the choice of university is a high involvement choice and that the students thus are likely to at least have heard something the universities.

In the model illustrated above, there is a component that is not presented, and that is what happens between the steps when the students gain brand awareness of the university and when they form their attitudes towards the brand.[23] We are in this study going to refer to these as factors, and these factors consist of several attributes. We

[20] Chapleo, 2010
[21] Bunzel, 2007
[22] Dahlén and Lange, 2007
[23] Domino et al, 2006

believe that the connections between the different parts of the process are connected as presented in figure 2.

Figure 2

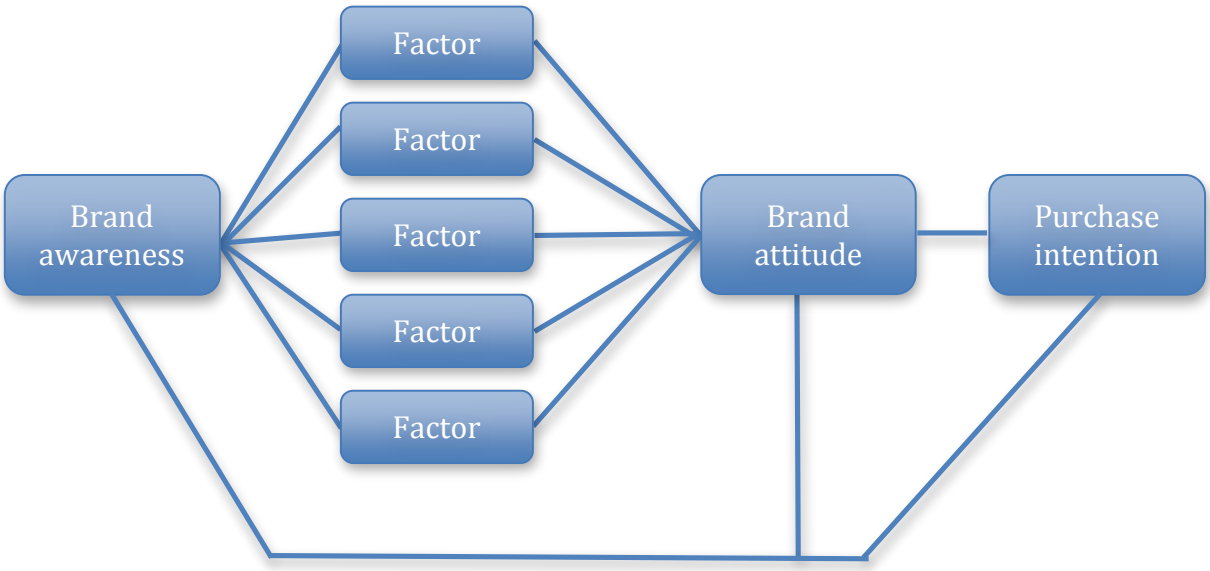


Figure 2 suggests that the students' conception of the attractiveness of different universities is based on these steps. Firstly, the student needs to know about the university and with that knowledge the potential student, depending on how much and deep information he/she has about the university, then creates different opinions (named factors in figure 2) about that university that later leads to an attitude towards the university. Since a positive brand attitude is required to get a purchase intention, both these types of measures can be assumed to work as measures for what makes universities attractive.[24] Since the choice of university is as previously discussed, such a high risk and high involvement decision, we might believe that attitude could be a good measure for university attractiveness. However, in some previous literature on university attractiveness, the enrolment decision has been used as a measure for university attractiveness.[25]

Research question:

Q1: Which measurement of attractiveness is most suitable to use: attitude, purchase intention or a combination of the two?

[24] Blackwell et al. 2006
[25] Kallio, 1995; Soutar and Turner, 2002

2.3 Factors affecting university attractiveness

University attractiveness is argued to be influenced by two major areas; students' characteristics, which include socioeconomic status and level of educational aspiration, and external factors, which include significant persons, fixed university characteristics and universities' efforts to communicate with students.[26] In this paper we will not cover the student characteristics at all, but instead focus on the external factors affecting university attractiveness since those factors are more relevant to examine the importance of in a university ranking context.

There has also been made a distinction between uncontrollable factors that affect university attractiveness, such as distance from home, and controllable factors such as academic level.[27] In this paper we bring up both controllable factors and uncontrollable ones but have a focus on controllable factors since controllable factors are more relevant for universities. A factor that we regard as an uncontrollable factor and that we will not include in this study is the availability of the subject that you want study. It is by some authors argued that the availability of a particular course is a hygiene factor, meaning that it is essential for considering an institution, but not seen as the factor that differentiates the institution from another.[28] The availability of the course or subject that you want to study is a prerequisite for people to want to attend a university. Domino et al express it as "If their major is not available, they will not attend the college".[29]

There is a wide range of articles investigating the attributes that affect university attractiveness. These attributes can usually be grouped into factors. We have however not been able to identify any large-scale study on university attractiveness made in Sweden. The six studies that we have chosen as comparative studies in this thesis are selected based on their relevant scope and that we have seen them to be frequently referred to. The studies and their findings are summarized in table 1. Please note that

[26] Chapman, 1981
[27] Gorman, 1976
[28] Matzdorf, Smith and Agahi, 2003
[29] Domino et al, 2006

they were all carried out in English speaking countries, which also highlights the necessity of additional studies in non-English speaking countries.

Table 1: Summary of the six comparative studies on university attractiveness

Author(s)	**Country**	**Sample**	**Most important factors**
Kallio, 1995[30]	US	894 admitted college students	Residency status, academic quality, work related concerns, financial aid and the campus social environment
Briggs, 2006[31]	UK	651 undergraduate students	Academic reputation, distance from home and location
Soutar and Turner, 2002[32]	Australia	259 high school leavers	Course suitability, academic reputation, job prospects and teaching quality
Matzdorf, Smith and Agahi, 2003[33]	UK	8,742 undergraduates at 12 universities	Facilities, course/subject, reputation and location
Domino et al, 2006[34]	US	289 students at a private college	Tuition, location, major & courses, school size and campus environment
Maringe, 2006[35]	UK	387 sixth form pupils	Programme, price, prominence and place

As is evident from the studies in table A, there is a wide range of variables affecting university attractiveness. In some articles the variables are overlapping or similar to the factors in other articles, however the factors are often given different weights in explaining university attractiveness. On top of the variations in variables and their impact on university attractiveness, there are also indications that there are differences across national borders to what degree different variables affect university attractiveness.[36]

Research questions:

Q2: What factors explain university attractiveness in Sweden?

Q3: How much do these factors affect the university attractiveness in Sweden?

[30] Kallio, 1995
[31] Briggs, 2006
[32] Soutar and Turner, 2002
[33] Matzdorf, Smith and Agahi, 2003
[34] Domino et al, 2006
[35] Maringe, 2006
[36] Soutar and Turner, 2002; Kusumawati, Yanamandram and Perera, 2010

2.4 The ranking of universities

2.4.1 The definition of ranking

Salmi & Saroyan define rankings as; "League tables, also referred to as institutional rankings and report cards [...], are constructed by using objective and/or subjective data obtained from institutions or from the public domain, resulting in a "quality measure" assigned to the unit of comparison relative to its competitors."[37]

However, the variety of rankings might demand a broader definition, when the Swedish National Agency for Higher Education in 2008 defined the term ranking, it was said to be very broad but includes several expected components:

- Rankings include a collection of indications
- These indications are assumed to measure some sort of quality
- The indications are collected from some sort of data source, but it can be a large variety in types between these data sources. All from subjective experiences to official statistics.
- The indications are describing some sort of unit, but the type of unit can vary from entire universities to single programs.
- The indications are sometimes weighted, but not always, together into a collected aggregated result.
- In the end a ranking means that a competitive list is made, where the units are compared.[38]

2.4.2 Rankings of universities

We have previously established that university rankings affect the universities and the people around them. The research highlights three major recipient groups for university rankings: (1) prospective students, (2) universities or other higher educational systems and (3) a wider group that consists of governmental entities, graduate recruiters and the rest of society.[39]

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[37] Salmi & Saroyan, 2007
[38] Almgren, 2008
[39] Merisotis, 2002; Sarrico et al., 1997; Taylor & Braddock, 2000; Yorke & Longden, 2005.

The main relation between these three groups seems to be that the students are searching for information about where to study and the universities tries to convince the students that they are the right choice. The third group (3) is something that we are choosing not to elaborate on in this study primarily because it has less to do with attractiveness and more with politics.

The attracting of new students is, as we have previously stated, a way for the universities to increase their market share. Studies have shown that universities that score high in rankings also get an increased market share, which highlight the importance of rankings to the universities.[40] Today, most universities have acknowledged rankings as a success factor and many institutions even have internal reviewing of their ranking positions to further improve their ranking positions.[41] The universities not only adjust their strategies after the rankings, they also actively employ people in charge of improving their rankings.[42]

The students on their parts are interested in information that will help them make the right choice of university. Several studies have concluded that students are considering university rankings as a tool in the selection process.[43] However the relationship between the use of rankings when choosing university and the actual choice of university is more doubtful. Several studies are questioning the relationship between high placements on rankings and the actual choice of university.[44] In a Swedish study it was concluded that a majority of the prospective students didn't take university rankings into consideration when deciding where to study.[45]

This is however, according to some authors, beginning to change. When students and their families invest more money in their education, the demand for transparent and easy understandable comparisons between the available options rises.[46] As the methods of university rankings progress and become more sophisticated, the usefulness of

[40] Bunzel, 2007
[41] Hazelkorn, 2007
[42] Hultberg and Jacobson, 2011
[43] McDonough et al. 1998; Monks & Ehrenberg, 1999
[44] Eccles, 2002, Hossler & Foley, 1995
[45] Almgren, 2008
[46] Usher A. and Savino M. 2006

rankings also increase. The critics have forced the creators of the rankings to specify their aims and improve their methodology, which in combination with increased transparency from the universities and the government will lead to even better rankings in the future.[47]

Research question:

Q4: How much does a university's ranking affect the university's attractiveness?

2.5 Discussions and criticism of university rankings

Hultberg and Jacobson, who studied the rankings of economics bachelor programs in Sweden in 2011, concludes that the relationship between rankings and university attractiveness might be doubted due to the shortcomings of the current rankings and their failure to inform the students about the differences in quality of the different universities.[48] During the last couple of years, the amount of university rankings has increased and this has led to a debate regarding what the rankings really measure.[49] We will not comment on any specific rankings and their models in this paper but rather present three of the most common themes for discussion and critique when it comes to rankings.

2.5.1 The rankings of whole universities

The topic of ranking entire universities or just single disciplines has been widely debated among researchers. One of the most common arguments used against rankings of entire universities is that the information is worth less than if done on a single discipline since the quality between the different disciplines might differ too much.[50] However this argument is fading given that the variability across disciplines is diminishing, especially among the top universities.[51] To conduct a study on single discipline also demands much more data and that increases the risk of getting poor validity and reliability in the results. Many students are also unsure about what subject

[47] Van Dyke, 2005
[48] Hultberg and Jacobson, 2011
[49] Uppsala Nya Tidning, 2012-04-02
[50] Van Dyke, 2005
[51] Van Dyke, 2005

to study and then general rankings of universities suits them better in aiding them in their decision.[52]

2.5.2 The use of weighted attributes

Most rankings today use weighted attributes[53] and in this approach the raw data is collected and then split into sub groups and weighted depending on certain rules. The result of the weighted raw data is then summed up to a final score, which determines the placements in the ranking. A typical critique of this kind of weighting is that the creators of the rankings usually do the weighting subjectively.[54] Van Dyke suggests that you should overcome this problem by surveying the target group on what weights to apply.[55] Some researchers argue that even if this makes the weighting less subjective, the weights still are based on opinions from the people you choose to survey.[56]

2.5.3 The choice of what attributes to include

There are several authors that bring up the choice of attributes as a major problem with university rankings. Some argue that there is a problem when the ranking data is provided directly by the universities. This because they could influence the attributes in order to perform better in the rankings.[57] Another critique is the focus on research versus teaching quality: there is too few good attributes that concern teaching quality and the researcher usually weigh them down.[58] Generally, you could say that this critique is based on the fact that everyone has different opinions on what is important to include. To summarize the critique of the attributes, it is mostly concerning the decision to include an attribute, dismiss it or weigh it wrongly or subjectively.[59]

2.5.4 The potential improvements in university rankings

Given the major areas of critique we have found, we can conclude that a new model for university rankings should:

- Try to measure universities in a more specific and less blunt way.

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[52] Van Dyke, 2005
[53] Clarke, 2002; Guarino et al. 2005
[54] Marginson & Van der Wende, 2007; Clarke, 2002
[55] Van Dyke, 2005
[56] Taylor & Branddock, 2000
[57] Oswald, 2001
[58] Oswald, 2001
[59] Almgren, 2008

- Find a way to make the weightings less subjective.
- Find a way to make the choice of attributes less subjective.

Research question:

Q5: How to create an improved ranking model?

2.6 Summary of research questions

- Q1. Which measurement of attractiveness is most suitable to use: attitude, purchase intention or a combination of the two?
- Q2. What factors explain university attractiveness in Sweden?
- Q3. How much do these factors affect the university attractiveness in Sweden?
- Q4. How much does a university's ranking affect the university's attractiveness?
- Q5. How to create an improved ranking model?

3. Method

In the method section we are describing how we conducted our study. It will begin with a short overview of our approach. Then we will move on to general discussion about population and respondents followed by a section concerning topics that are represented in both the pre- and main study. The pre-study is thereafter presented more in detail, followed by the main study. The section is ends with a description on how we intend to use the results from the pre- and main-study to create a university ranking.

3.1 Approach

The study of university attractiveness was conducted in two major stages, firstly a pre-study and then a main-study. The pre-study was done to find the factors affecting university attractiveness that were used in the main-study.

3.2 Population and respondents

3.2.1 Population choice

Since our study focus on trying to establish what creates university attractiveness, we first thought that we would use potential students as the target group for our surveys. However, since the choice of university is such an information intensive decision, we decided that it would be more relevant to examine what university attractiveness is for the current Swedish students. In addition, students are used as targets groups in order to determine university attractiveness in several of the articles on the topic of university attractiveness.[60] With the term Swedish students we mean all people that are currently studying at one of the 26 universities that we have delimited this study to.

Through the Swedish Agency for Higher Education Services[61] we got hold of email addresses to all the people that had applied to courses and programs offered at Swedish universities during spring 2012, in total a list of 255,155 email addresses. The list consisted of email address, first choice university and course or program applied to. Due to the study's delimitation to 26 universities, we directly cut 30,420 email addresses from the list that were linked to applications to the Swedish universities not included in

[60] Kallio, 1995; Briggs, 2006; Matzdorf et al, 2003
[61] Swedish Agency for Higher Education Services

the study, since we regarded them as being unlikely to be in our target group, leaving us with 224,735 email addresses.

What is important to note is that at most Swedish universities, the students apply to courses through The Swedish Agency for Higher Education Services, even though they are already enrolled in a program. This means that we had email addresses to students covering all years, from the first year of bachelor's programs to the last year of a master's programs, as well as people studying individual courses. The one exception, as far as we observed, to this system is the Stockholm School of Economics at which the students apply to courses internally. By publishing a link to the main-survey on the internal web page, which is only visible to students at the Stockholm School of Economics, we were able to collect responses from this university as well.

3.2.2 The survey distribution

Before sending out the surveys to our target group, the surveys were first carefully tested on approximately ten students in our target group, which should be done in order to see that the questions for example are interpreted correctly.[62] Both the pre-study and the main-study were designed using the web based survey tool Qualtrics.[63] This enabled us to deliver the 224,735 surveys over email. Due to the size of the target group, we removed as much of the manual handling of the information as possible. Among other things, we avoided open-ended questions that would need manual analysis. The pre-study was distributed two times, one time to everyone and a second time to those who did not answer the first round, to a sample of 1981 email addresses taken randomly from our list of email addresses. The main-study was distributed one time to all of the 224,735 respondents, in two batches, which results later were put together. The people that had already received an email about the pre-study were not sent an email about the main study.

3.2.3 The response rate

When conducting a survey distributed over email, a typical problem is a low response rate, this because web based surveys distributed through email usually have lower

[62] Malhotra, 2010, p. 354
[63] Qualtrics

response rates than other ways of surveying.[64] Some of the most prominent influences to the response rate are the number of questions in the survey, the number of pre-notification contacts, the number of follow-up contacts and the survey topic salience.[65] The amount of questions in the survey will be explained further down in this section but during the question selection process we worked with trying to keep the number of questions as low as possible so that the respondents would not grow tired of answering the survey. We also had a goal that we would try to send our respondents as few emails as possible, and this resulted in the decision to not send out a pre-notification e-mail or a follow up email that would remind the receivers that did not answer our survey to answer it for the main-study. We were aware of the fact that this would bring down our response rate but felt that we would have enough answers because of our already large target population. The topic of the survey is also connected to the target group given the fact that they are students and we are researching the views of students, which also should help the response rate.[66]

3.2.4 The incentives

An easy way of increasing the response rate of surveys is to offer a prepaid or promised monetary incentive so the respondent's feel that they are getting something back for the time they spent on the survey.[67] Our incentives were chosen based on what we thought would be an appealing incentive for students. The incentives for the pre-study were gift cards for 500 SEK on the web shop CDON.SE; we thought 500 SEK would be a sufficient amount given the web shop's selection. We then held a lottery where two people won the gift cards. In the main-study, five of the respondents won a yearly subscription to the Swedish magazine Fokus[68]. The subscriptions are each worth 975 SEK and we received the subscriptions as sponsoring from the magazine.

[64] Manfreda et al 2008; Shih and Fan 2008
[65] Sheehan K., 2001
[66] Sheehan K., 2001
[67] Malhotra, 2004 p.225
[68] Fokus

3.3 Survey design concerning both pre- and main-study

3.3.1 Scales

There are mainly four categories of scales that you can use for a survey of this kind it is: nominal scales, ordinal scales, range scales or scales based on quotas.[69] We decided to use ranged scales for the majority of all questions in the main-study and to all of the questions in the pre-study. This decision was based on the nature of our surveys and the high number of expected respondents. A ranged scale allowed us to see what the respondents' thought of the question and in the same time keep things simple for us when analysing the results. With the ranged scales the respondents are allow to answer by choosing one of seven steps on a line. The line goes from one, which represents "don't agree at all" to seven that represents "agree totally".[70]

We had a discussion about how many steps we should include in the ranged scale and decided on seven. The choice of seven was based on the fact that it includes a neutral option in the choice four. Most of the sources we consulted recommended seven steps as the optimal solution if you wanted to have a neutral option; nine that is the next alternative seemed too high.[71] If we for example had chosen a scale from one to ten there would be no middle. This is also important to stress because we chose to exclude a "don't know" alternative to all the questions. It is also often argued that if you have more than seven steps on the scale, the respondents might get confused and thereby give you bad answers.[72]

Some different scales were also included in the main-study. For age we used a quota scale, which means that the respondents can enter any value.[73] We limited this option to range between 15- 99 because we didn't want any unnecessary problems from respondents trying to intentionally sabotage our survey by supplying us with unrealistic

[69] Malhotra & Briks, 2007, p. 338
[70] Malhotra & Briks, 2007, p. 340
[71] Survey Fundamentals
[72] Questionnaire design, p 1-22
[73] Malhotra & Briks, 2007, p. 341

answers. A nominal scale is used to answer simple questions with limited answer possibilities, for example what gender the respondent has.[74]

3.3.2 Don't know alternative

The choice not to have a "don't know" alternative was made in consultation with our tutor and was based on several reasons. Given the fact that we needed the respondents to answer the entire study (because the beginning and the end was connected through regression analysis) we were afraid that the respondents would use the "don't know" alternative to finish the survey faster. We also took into account that we had seven steps on our scale giving the respondent a neutral option. In addition, in one of our comparative studies on university attractiveness, a "don't know" alternative was used, and that researcher suggested not including a "don't know" alternative for future research. This to force the students to think seriously about the questions they are being asked and not just click "don't know" and move on.[75]

3.4 Pre-study

The goal of the pre-study was to find the underlying dimensions of university attractiveness in Sweden. An article studying the components of employer attractiveness was used as a source of inspiration to the method used in the pre-study. In that article they first generate a wide range of attributes affecting employer attractiveness, test the importance of those attributes in a survey and finally use a factor analysis to find the underlying dimensions of employer attractiveness.[76] For the pre-study, we will basically go through the same steps as in that article.

3.4.1 The attributes

The attributes were collected in several ways and the first goal was to assemble as many attributes as possible to later cut the list down to the core essential ones that we were going to include in the main-study. First of all, we used the literature study on university attractiveness as guidance on what attributes to include. Further, we also looked at which attributes that are used in several different university rankings and took

[74] Malhotra & Briks, 2007, p. 336-337
[75] Domino et al, 2006
[76] Berthon, Ewing and Hah, 2005

inspiration from them, for example Financial Times university ranking[77] and the Swedish independent ranking Urank.[78]. In addition to the literature study and examination of existing rankings, we also held a focus group with students that even further helped add attributes to the list.

The full list of attributes was summed up to 51. From these attributes we identified 13 attributes that did not fit with the goal of the study or with the Swedish society. For example did we remove all attributes related to tuition fees, which are not used in Sweden. We also removed the ones that were too much focused on the life of a scientist due to our focus on basic and advanced students. Left after the selection were 38 attributes.[79] These attributes were tested in the pre-study survey.

3.4.2 The pre-study survey

The pre-study survey had one question, "How important would you consider this attribute to be when choosing university?". The question was selected based on its simple and straight nature. According to Malhotra you should always use as simple words and questions as possible to minimize the risk of being misunderstood.[80] Then the respondents had the option to rank the attribute from one to seven based on how much they agreed with its importance for their choice of university. An article on employer attractiveness inspired the survey design and the use of self reported importance of attributes by the respondents is as well used in several of our comparative studies on university attractiveness.[81] The pre-study is found in the appendix.[82]

3.5 Finding the factors explaining university attractiveness

Since we couldn't have all 38 attributes in the main-study we conducted a factor analysis in SPSS and found 7 factors. First, in order to determine if the sample size was suitable to perform a factor analysis on, we took into account the recommendation of a minimum

[77] Financial Times Business Education Ranking
[78] Urank
[79] See Appendix.
[80] Malhotra & Briks, 2007, p. 347
[81] Berthon, Ewing and Hah, 2005; Maringe, 2005; Kallio 1995; Soutar and Turner, 2002
[82] Appendix #5

level of 150 respondents' and a ratio of at least five cases for each of the variables.[83] A prerequisite to be able to perform a factor analysis is also that the variables correlate with each other.[84] To check for correlations, we first of all inspected the correlation matrixes for correlations that were greater than 0.3, which is in line with what Tabachnick and Fidell recommend. If too few correlations above this level were found, factor analysis may not be appropriate.[85] Further, we also tested the null hypothesis that the variables were uncorrelated with Bartlett's test of sphercity. [86] If the values on Bartlett's test of sphercity are significant ($p<0.05$) there is evidence that the variables are correlated. A final way of determining if the variables were sufficiently correlated is by looking at Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which compares the correlations with the partial correlations.[87] The KMO measure should have a number greater than 0.5 as to be seen as appropriate.[88]

To determine the number of factors extracted from the analysis we used eigenvalues larger than one and looked at the scree plot for suitable factor solutions. The method used was a principal components analysis, which is preferred by for example Stevens.[89]

3.5.1 Interpretation of factors and selection of surrogate variables

In order to make it easier to interpret the meanings of the factors, we used a rotation method called the varimax procedure, which is the most commonly used method of rotation.[90] We also used prior research to help interpret the factors.

The next step was to select surrogate variables for the factors found. According to Malhotra, one can select the variable with the highest loading on that factor as a surrogate variable.[91] We chose the two variables that loaded the highest on each factor to represent the factor in the main-study. This operation was decided in consultation with our tutor.

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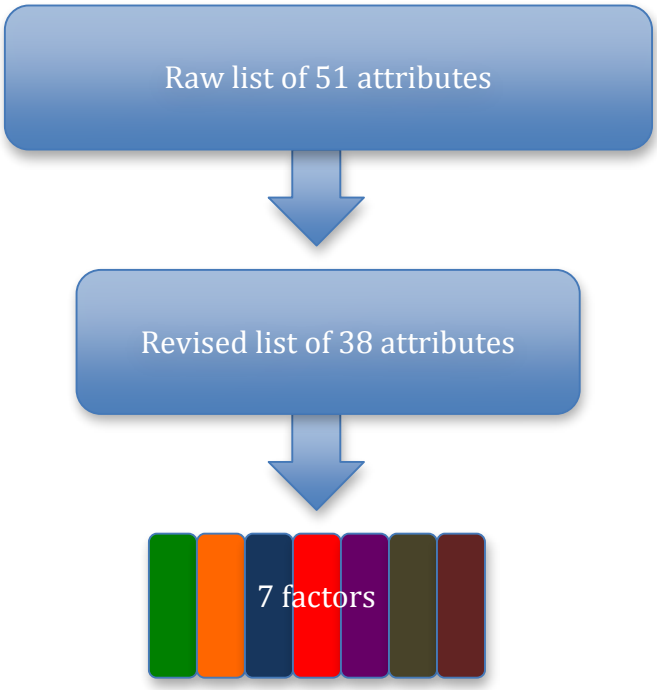
[83] Pallinge, 2007, p. 185
[84] Malhotra, 2010, p. 640
[85] Tabachnick and Fidell, 2007
[86] Malhotra, 2010, p. 640
[87] Malhotra, 2010, p. 640
[88] Malhotra, 2010, p. 641
[89] Stevens, 1996, p. 362-363
[90] Malhotra, 2010, p. 645
[91] Malhotra, 2010, p 646-647

3.6 Pre-study conclusion

To summarize the pre-study, we first generated a list of 51 attributes that were collected from a number of sources. In line with our goals and the objectives of our study we reduced the list to 38 attributes. These 38 attributes then went into the pre-study survey where the respondents ranked the importance of them. Through a factor analysis of the responses, we found 7 factors. The process is illustrated in figure 3.

Figure 3



3.7 The main-study

In this part, the design of the main-study survey is covered and the analytical tools used to analyse the data from the survey. The questions included in the main-study survey can be found in the appendix.[92] The design of this survey is mainly inspired by an employer image study in which the respondents are not asked directly about how much different attributes affect the attractiveness of employers; the influence is instead analyzed through regression analysis.[93] In addition, two articles on university

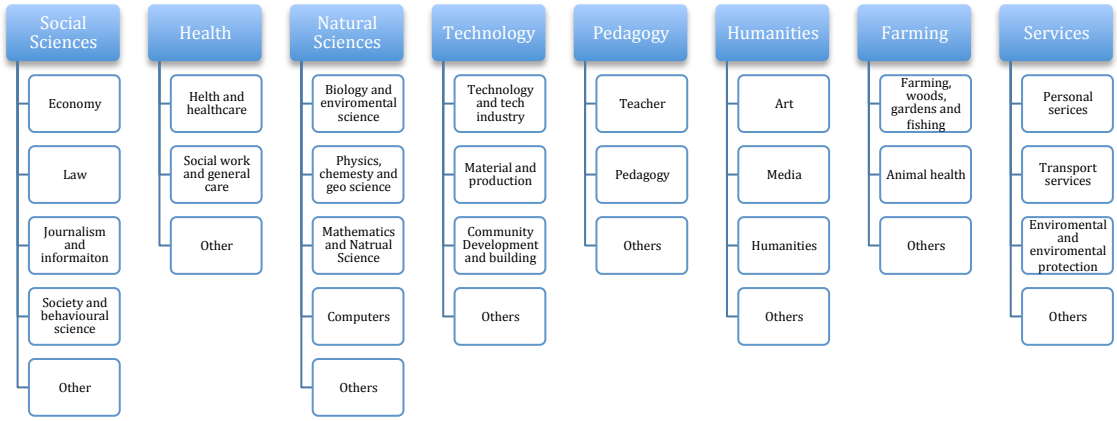
[92] Appendix #6
[93] Wahlund, 2001

attractiveness use a similar approach to determine what explains university attractiveness.[94]

3.7.1 Identifying the respondents

In order to qualify the respondents and to be able to provide them with questions about universities relevant to their current education, we asked them about what and where they study. The people stating that they did not study or that they did not study at any of our selected 26 universities ended the survey after the first qualifying questions. The choices of subject areas provided to the respondents were based on the SUN standards, which is a system employed by the Swedish National Agency for Higher Education to classify educations. The current standard is called SUN2000 and is adjusted to fit the international standard ISCED97, which is used abroad.[95] We decided that the top two layers of the SUN2000 were sufficient to ask about, which can be seen in figure 4 where the blue squares are the main subject areas and the white squares are the sub-subject areas.[96]

Figure 4



3.7.2 Answering on questions for multiple universities

Based on the first identification, the respondents were for each subsequent question asked to give their views on two randomly chosen universities that offer an education in the respondents' subject area and that they don't study at, as well as the university that they were studying at. As an example, if you study social sciences at Uppsala University, you were for each question asked to both state your view on Uppsala University and on

[94] Kallio, 1995; Soutar and Turner 2002
[95] Svensk utbildningsnomenklatur, SUN
[96] Statistiska centralbyrån, 2011

two random universities that you don't study at and that also offer studies in social sciences. By making the respondents provide their views on both their own university and two universities that they do not study, all answers were put in relation to their own university. This decision was made in consultation with our tutor. In this way, we also collected three times as many observations as we would have had if only asking the respondents about one university. This also highlights that we tried to make the survey as relevant as possible for the respondents, in order to avoid a low response rate. [97]

3.7.3 Questions for the measurement of the attractiveness variables

After the first identification, the respondents were provided with questions aimed to measure what we call university attractiveness. The measures included were brand attitude and purchase intention. To stabilize the results and make them more accurate we chose to ask several similarly posted questions regarding the same topic. The method is developed for surveys that use ranged scales, which we are using for these questions.[98] For indexes created of more than two questions, a Cronbach's alpha has been calculated to get an indication of the reliability. All indexes had an alpha that exceeded 0.7, which is considered an acceptable level of internal consistency.[99] The order of the questions was also randomized as to avoid order bias.[100] To measure purchase intention we asked the following two questions:[101]

- To which extent do you want to study at the following universities? (the scale was between "I do absolutely NOT want to study here" and "I do ABSOLUTELY want to study here")
- How probable is it that you would accept if you were offered to study at the following universities? (the scale was between "I would absolutely NOT accept" and I would ABSOLUTELY accept")

To measure brand attitude three questions were asked:[102]

- What do you think about the following universities? (the scale was between "not at all appealing" and "very appealing")

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[97] Helgeson et al. 2002
[98] Söderlund, 2005
[99] Söderlund, 2005
[100] Malhotra, 2010, p. 357
[101] Öhman, 2010
[102] Aaker, 1996

- What is your opinion about the following universities? (the scale was between "very negative" and "very positive")
- What is your opinion about the following universities? (the scale was between "very bad" and "very good")

3.7.4 The attributes

From the pre-study we got the seven factors that were to represent the total number of 38 attributes. In the main-study, the respondents were asked to assess how much, on a scale from one to seven, each attribute, put forth as a statement about the university, matched their views of the different universities. When writing the instructions to the respondents we carefully highlighted the fact that we wanted their perceptions about the universities and not the actual circumstances at the universities. To test the importance of rankings we also included a statement regarding this issue. The order in which the question were presented was as well as for the attractiveness questions randomized.

3.7.5 The background information

In the last part of the survey we asked some background information about the respondents in order to provide us with the possibility to perform interesting analyses based on the background information and to be able to see if the sample could be said to be representative for the population.[103] The background information we chose to ask about was: gender, age, if they had attended any other university than the university that they were studying at and how many years they had studied at university. We also provided the respondents with the option to enter their email address in order to take part in the lottery of the incentives. The email addresses were, when downloading the survey data from Qualtric, not connected to any specific answers to ensure the anonymity of the respondents.

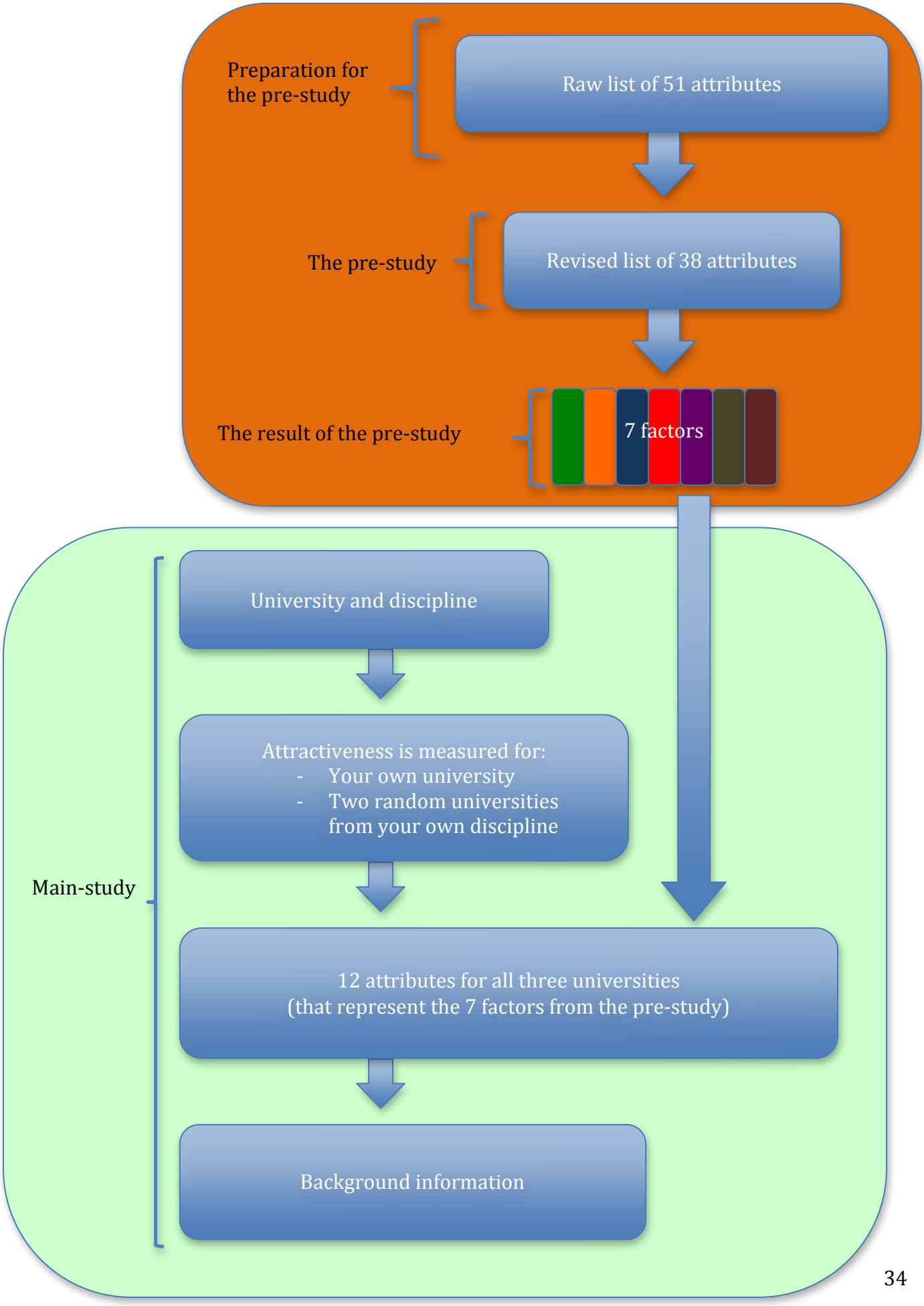
3.7.6 Overview of the pre- and main-study and how they are connected

In the pre-study we firstly collected 51 attributes of which 38 were tested in a survey, which resulted in 7 factors. Figure 5 displays how the pre- and main-study are connected. In the main-study the respondents answered on questions about which university and subject they are studying at, then on questions about the attractiveness of

[103] Malhotra, 2004 p. 64

his/her own university and two other random universities, followed by questions concerning the 7 factors from the pre-study, both for the own university and the two random one. At the end, the respondents were asked about their background information.

Figure 5


Preparation for the pre-study
Raw list of 51 attributes
The pre-study
Revised list of 38 attributes
The result of the pre-study
7 factors
Main-study
University and discipline
Attractiveness is measured for:
- Your own university
- Two random universities from your own discipline
12 attributes for all three universities
(that represent the 7 factors from the pre-study)
Background information

3.8 Regression analysis

In order to test how much variation in attractiveness that is explained by the factors, we conducted multiple lineal regression analyses. The coefficient of multiple determinations, R^2 was tested not to be zero by doing an F-test in order to determine if the models were significant.[104] Our sample size was found to be satisfactory when comparing with the recommendation of having at least 15 respondents per independent variable.[105]

3.8.1 Test of assumptions

Since regression analysis comes with assumptions about the error terms, we have performed several tests to determine if these assumptions hold true.[106] First of all, we have examined the histograms for the standardized residuals, where the residuals should fall on a 45-degree line when being normally distributed. Correlation between the error terms has been tested with the Durbin-Watson test. Constant variance has been checked by plotting the standardized residuals against the standardized predicted values of the dependent variable.[107] For all the regression models presented in this thesis, these assumptions about the error term hold true.

3.8.2 Multicollinearity

A risk when performing multiple regression analyses is that high intercorrelations between the independent variables, so called multicollinearity, can cause problems, for example that the regression coefficients may not be estimated precisely and that it becomes difficult to assess the relative importance of the regression coefficients.[108] To determine if there was any presence of multicollinearity, we looked at the two collinearity diagnostics in SPSS called tolerance and VIF. If VIF takes a value higher than 10 or if the tolerance value is lower than 0.1, there is evidence of multicollinearity.[109]

[104] Malhotra 2010, p. 581
[105] Pallinge, 2007, p.148
[106] Malhotra 2010, p. 577
[107] Malhotra 2010, p. 582
[108] Malhotra 2010, p. 586
[109] Pallinge, 2007, p. 155-156

3.8.3 Relative importance of predictors

All the independent variables have been examined in order to know if they contribute significantly to the variation in the dependent variable. Significance values larger than 0.5 were regarded as not making significant contributions to the variation in the dependent variable.[110] Since we are interested in comparing the relative importance of the independent variables, we chose to focus on the standardized coefficients, which are converted to the same scale so that you can compare them.[111] They also take into account the influence of the other independent variables on the dependent variable.[112]

3.8.4 Controlling for university bias

Since the respondents answered, as previously noted, on questions about both the university that they presently study at and on questions about two randomly chosen universities that they do not study at, we have reasons to believe that the evaluations of universities that they study at and universities that they don't study at might differ. There are possibly two parts concerning the differences in evaluations:

1. You might consistently evaluate the university that you study at more favorably or less favorably than the universities that you don't study at.
2. An evaluation of a university that you study at might be based on different criteria compared to an evaluation of a university that you don't study at.

These possible differences in evaluations are from now on called university bias. To control for the first type of university bias, the possibility that you consistently evaluate the university that you study at more favorably or less favorably than universities that you don't study at, we created a dummy variable for if an evaluation is about the universities that you do not study at, which was given the number 1, or the university that you study at, which was given the number 0. This 0-1 variable thus takes into account if people consistently evaluate the university they study at more favorably than a university that they do not study at, or vice versa. We call this variable the differential intercept dummy.

To test for the second type of university bias, if you base your evaluation of universities that you do not study at on different criteria than the university that you study at, we

[110] Pallinge, 2007, p. 159
[111] Pallinge, 2007, p. 159
[112] Malhotra, 2010, p. 587

multiplied the differential intercept dummy with each ordinary variable used in the regression model, so that there were created as many additional variables as the ordinary variables. In this way, we were able to compare the evaluations of universities that you do not study at and the evaluations of university that you study, in order to see if there were any differences in the regression coefficients. We call the resulting variables, which make up the difference between the evaluations of universities that you study at and universities that you don't study, differential slope variables.

3.8.5 Independent variable

To be able to answer our first question, Q1, if we should use attitude, purchase intention or a combination of the two as independent variables, we first did regression models separately for these types of measures. We did this without taking into account any university bias, simply in order to make the analysis easy to follow. To determine which measure to use, we foremost looked at how much the factors in the models were able to explain the variation in the independent variable.

3.9 Creating a university ranking

In order to be able to propose a university ranking that is based on how much the factors found influence university attractiveness, we have collected officially available data that is supposed to be as close to the actual reality as possible. In this part, we will cover how the data was collected and put into the same scales.

3.9.1 The independent data connected to the attributes

When selecting the data, we tried to make sure that there were values for all the universities from the same source. There are also several indicators that not are university specific, but instead focused on the location of the university. In these cases we have chosen areas such as municipalities or cities that are comparable for all universities. Some of the universities are situated in multiple locations and for those universities, all locations were identified and a mean value of all the data was calculated.

3.9.2 Standardizing the data

Since the independent data is collected from a number of different sources and are on different scales, there is a problem when trying to compare them directly against each other. To convert the independent data to the same scale, we standardized them. This calculation converts the raw independent data to new variables that have the mean of

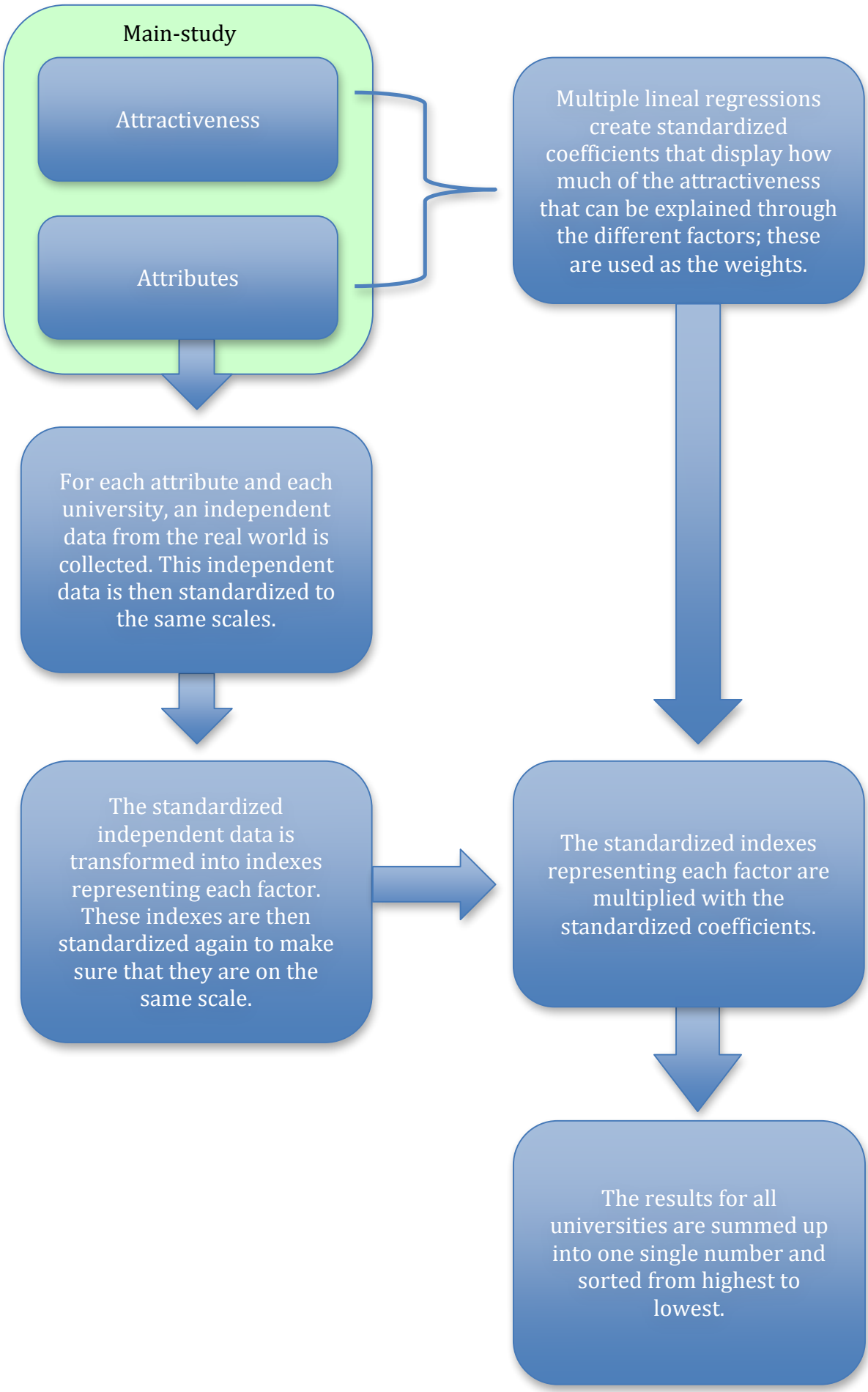
value of 0 and a standard deviation of 1, this while they still keep their internal relative differences.

3.9.3 The creation of indexes

Having standardized the independent data into the same scales, indexes of the different variables were created, according to which factor they belonged to. In this way, we have been able found the "true" circumstances at the universities for each factor. Since the standard deviation of 1 was lost when creating indexes of the standardized independent data, we standardized the indexes, giving the resulting indexes a mean value of 0 and a standard deviation of 1.

3.9.5 The complete ranking

The ranking is put together when the different standardized indexes that represent each factor are multiplied with the standardized coefficients and then summed up for each university into one final score. The scores were then listed in falling order to determine the positions in the ranking. Figure 6 summarize the model for the ranking and in the same time demonstrate the connection between the main-study and the ranking.


Main-study
Attractiveness
Attributes
Multiple lineal regressions create standardized coefficients that display how much of the attractiveness that can be explained through the different factors; these are used as the weights.
For each attribute and each university, an independent data from the real world is collected. This independent data is then standardized to the same scales.
The standardized independent data is transformed into indexes representing each factor. These indexes are then standardized again to make sure that they are on the same scale.
The standardized indexes representing each factor are multiplied with the standardized coefficients.
The results for all universities are summed up into one single number and sorted from highest to lowest.

4. Results & Analysis

In the results & analysis part of the paper we present the results of our studies and comment on them in the light of the theories. The section is chronologically ordered meaning that the results are presented in the most logical order and not in the order the research questions are presented in the theory. The reason for this is that some of the results from one question might be needed to answer another and so forth.

4.1 Pre-study

4.1.1 What factors explain university attractiveness (Q2)?

The pre-study was sent to 1980 randomly chosen email addresses from our list of emails and from them we received in total 508 responses, which equals a response rate of 25.6 percent. After having cleaned the data from incomplete answers, we used 391 of the responses in our analysis.

To answer the research question (Q2): "What factors explain university attractiveness in Sweden?" a factor analyses was performed to see the underlying dimensions of the 38 attributes that we asked our respondents about in the pre-study.

An initial explorative factor analysis with a varimax rotation of the 38 attributes resulted in an extraction of 8 factors based on eigenvalues larger than one. By looking at the mean values of the factors, we found that the eighth factor that consisted of only two variables ("that the university is located close to your home" and "there are few students that study at the university") had a mean value of only 2.3 (one a one to seven scale), which was much lower than the other variables that scored mean values around 4, thus meaning that the respondents regarded that factor as unimportant in the choice of university. We also could not find sufficient support for this factor in the previous literature, which resulted in that the factor was removed from the further analysis since it was regarded as not having any positive explanatory power on the university attractiveness.

After having removed that factor, we ran the analysis again and the extraction resulted in seven factors. We could not find a solution that fit better with the data by looking at

the scree plot. Total variance explained by the seven factors was 61.5 percent. To determine the appropriateness of the analysis, we looked at the correlations matrix and found that the values were above 0.3, which provided evidence that the data was suitable to perform a factor analysis on. Further evidence of correlations were found by inspecting KMO's measure of sampling adequacy which showed a number of 0.938 and Bartlett's test of sphercity which was significant at the 0.000 level.

The variables connected to each factor and their loadings can be found in table 2. The factors were interpreted as: 1. Facilities and practical values, 2. Students, 3. Social values, 4. Reputation, 5. Education, 6. Location and 7. Academic values.

Table 2: Factor loadings

Factor	Variable	Factor loading
1	There is a good access to databases and articles through the university's library.	0,696
1	There is a good availability of group and study rooms.	0,654
1	There is a wide range of elective courses.	0,613
1	The university's facilities keep high standards.	0,612
1	The university has many people working with administration.	0,602
1	The teachers are available besides the teaching. They answer for example quickly on answers over email.	0,536
1	It is easy to find accommodation in the town the university is located in.	0,527
1	The university works with gender equality.	0,495
2	You have a good opportunity for a high salary after graduation.	0,694
2	A large proportion of the students are employed upon graduation.	0,676
2	The university has high admission requirements.	0,607
2	A large proportion of the enrolled students graduate from the university.	0,547
2	The university has a large number of applicants in relation to the number admitted.	0,53
2	The students at the university have a high degree of motivation.	0,514
2	There are many students who study at the university.	0,464
2	The university makes it easy to meet recruiters in addition to teaching.	0,463
3	The university has an alumni association.	0,71
3	There are many foreign students on campus.	0,673
3	The university provides opportunities for scholarships.	0,613
3	There is a well-functioning student organization.	0,503
4	The university is recommended by your friends.	0,885
4	The university is recommended by your family.	0,765
4	The university has a good reputation.	0,652
4	The university ranks high on rankings of Swedish universities.	0,521
5	Teaching is conducted in small classes.	0,69
5	Some of the teaching includes contact with external actors. For example internships at companies.	0,594
5	The education includes much teacher led classes.	0,502
6	The university is located in a city other than where you grew up.	0,761
6	The university is located in a city with a large proportion of students.	0,635
6	The university is located in a city with good opportunities for stimulating leisure activities.	0,622
6	The university offers the ability to study an exchange semester at another university.	0,485
6	It is cheap to live in the city that the university is located in.	0,311
7	The professors and doctors account for a large part of the teaching.	0,751
7	There is wide range of master's programs.	0,625
7	The university participates in international networks such as CEMS.	0,558
7	The teachers are well paid.	0,39

The factors are to a large extent supported by previous literature. All the factors from the six articles we use in this paper as comparative literature are represented in the factors that we have found, except tuition and course suitability, which we chose not to include in this analysis as previously explained. For example, the factors reputation and

location are factors included in most of our comparative studies. The dissimilarities between our factors and the ones found in the comparative studies lie mainly in how wide or narrow the factors are defined. As an overview, the links between each factor and its counterparts in our comparative studies are listed in table 3.

Table 3: Connections between our factors and previous research

1. Facilities and practical values	**Kallio 1995, Matzdorf, Smith and Agahi 2003, Domino et al 2006**
2. Students	**Kallio 1995, Soutar and Turner 2002**
3. Social values	**Kallio 1995, Domino et al 2006**
4. Reputation	**Briggs 2006, Soutar and Turner 2002, Matzdorf, Smith and Agahi 2003, Maringe 2006**
5. Education	**Soutar and Turner 2002**
6. Location	**Briggs 2006, Matzdorf, Smith and Agahi 2003, Domino et al 2006, Maringe 2006**
7. Academic values	**Kallio 1995, Briggs 2006, Soutar and Turner 2002**

1. Facilities and practical values. In this factor there are variables that solve practical issues, such as good administration and access to study areas. This factor has commonalities with factors brought up in three of our comparative studies. It is however a mix of two factors from the comparative studies; both residency status, brought up by Kallio, and the facilities, which is brought up by Matzdorf et al and Domino et al. We are however not surprised that those factors go together since they are both practical aspects of university attractiveness. An odd variable in this factor is the "gender equality" variable which at first sight does not seem to fit in this factor, however, when examining the other factors, there is no clear fit with any of those either.

2. Students. The second factor covers the quality of the students at the universities. This factor includes job prospects, which is seen by Kallio and Soutar and Turner as one of the most important factors influencing university attractiveness. Other variables in this factor are students' degree of motivation and the grades required to be admitted. These factors might be seen as separate from job prospects, but however be seen as connected by students. For example, from a recruiter's point of view, the past experiences of the students' quality from a certain university might be of crucial importance for how a student from that university is evaluated, and the students are probably as smart as they recognize that.

3. Social values. The third factor includes the possibilities to interact with other students, such as the presence of a student organization and an alumni association. We call it social values and it has similarities with a factor brought up in only one of our six comparative studies of university attractiveness where it is called campus social environment. Since it is only brought up in one of our comparative studies, we might assume already that this factor not is one of the most influential ones explaining university attractiveness.

4. Reputation**.** This factor consists of recommendations from friends and family, general reputation and university ranking. Reputation as a factor influencing university attractiveness is brought up in four of our six comparative studies. We also don't find it surprising that recommendations, general reputation and university ranking are found in the same factor since they don't cover any specific aspect of a university, but are rather simplifications of a complex issue.

In the creation of the ranking model, the reputation factor from the factor analysis is excluded. That is due to our focus on controllable factors and due to our goal to propose a model to rank universities based on what explains university attractiveness. For such a model to be relevant there needs to be adequate independent data available and a variable such as "the university is recommended by your family" is one that can't be found as independent data.

5. Education. The education factor includes small classes, contact with external actors and the level of professor-led education (in comparison with self-studies). This is a factor that's present in only one of the six comparative studies, called teaching quality in the article by Soutar and Turner.[113] It can thus as well as the social values factor be assumed to have a lower impact on university attractiveness relative the other factors.

6. Location. In one of our comparative studies, the article by Briggs, distance from home and location are seen as two separate factors.[114] As our analysis show, distance from home and location, however, belong to the same factor. We don't regard that as

[113] Soutar and Turner, 2002
[114] Briggs, 2006

surprising since with a certain location, the distance from home is given. The only variable that we were somewhat surprised to find in this factor is the "possibilities to study an exchange semester at another university" variable. Our interpretation of it being in this factor is that a large part of studying an exchange semester at another university can be seen as to experience another location.

7. Academic values. This factor consists of variables concerning the academic level at the university, such as how much of the education that is tutored by professors and doctors and if the university participates in international networks. This factor is covered by two of our comparative studies.

4.1.2 Answer Q2: The factors that explain university attractiveness.

The answer on the research question: "What factors explain university attractiveness in Sweden?" can be summarized by the seven factors and the attributes they represent: facilities and practical values, students, social values, reputation, education, location and academic values. This is supported by our pre-study and we consider it a reasonable conclusion given the literature that we've studied on the subject.

4.2 Main-study

The main-study was distributed to 224,735 email addresses, which resulted in a total of 29,949 received answers, meaning a response rate of 13.3 percent. From the 29,949 responses we use 14,867 in the following analyses. The reason to why we use only approximately half of the responses are that we downloaded the survey from Qualtrics before we received all responses, not all respondents were students or they did not study at one of our 26 selected universities and some of the answers were incomplete and therefore not used.

4.2.1 Profile of the survey respondents in the main study

To make sure that the sample that we used in the main-study was representative for the total population, we performed an analysis of our target population. First of all, the sample of 14,867 respondents is equal to a share of 4.2 percent of the total target population. We would consider the profile of the respondents to be representative of the entire population since the number of respondents per university divided by the total sample is similar to the actual number of students at the universities divided by the total

number of actual students. All of these calculations can be seen in table 4. The largest relative difference is for the Royal Institute of Technology, which only has 0.4 percent of the respondents in the sample compared to 4.3 percent of the students in the population. The reason we found for this is a shortage of email addresses from that university in our list of emails and not that the students at the Royal Institute of Technology did not respond to the same degree as students from other universities. We do however not regard this as having a major impact on the results since the analyses are made on the sample as a whole. The rest of the sample looks representative.

Table 4: Sample divided on the universities

University	Number of students in the population, autumn 2011[115]	Percent of number of students in the population	Difference in percent between sample and population	Percent in the sample	Number of respondents in the sample
Blekinge Institute of Technology	5645	1,6%	-0,9%	0,7%	110
Chalmers University of Technology in Gothenburg	9466	2,7%	-2,0%	0,7%	103
University of Gothenburg	32764	9,2%	2,4%	11,6%	1723
The Swedish School of Sport and Health Sciences	476	0,1%	0,0%	0,1%	12
Stockholm School of Economics	1731	0,5%	0,0%	0,5%	76
University of Borås	8043	2,3%	-1,0%	1,3%	190
Gävle University	4431	1,2%	2,0%	3,3%	488
Halmstad University	6854	1,9%	-0,7%	1,2%	181
Jönköping University Foundation	11870	3,3%	-1,9%	1,4%	209
Skövde University	7022	2,0%	-0,9%	1,0%	155
Karlstad University	11424	3,2%	1,3%	4,5%	670
Karolinska Institutet	7333	2,1%	-0,4%	1,7%	251
Royal Institute of Technology	15146	4,3%	-3,8%	0,4%	65
Linköping University	20882	5,9%	-2,9%	3,0%	450
Linnaeus University	20728	5,8%	0,6%	6,4%	958
Luleå University of Technology	9796	2,8%	-0,4%	2,3%	348
Lund University	31851	9,0%	0,8%	9,8%	1457
Malmö University	15182	4,3%	-0,7%	3,6%	528
Mid Sweden University	12586	3,5%	-0,9%	2,6%	392
Mälardalen University	9857	2,8%	-2,3%	0,5%	77
Södertörn University	10021	2,8%	-1,1%	1,7%	259
Stockholm University	36065	10,2%	0,2%	10,4%	1548
Swedish University of Agricultural Sciences	5058	1,4%	0,5%	1,9%	280
Umeå University	21583	6,1%	4,5%	10,6%	1571
Uppsala University	26341	7,4%	5,5%	12,9%	1918
Örebro University	12713	3,6%	2,1%	5,7%	848
In total	**354868**				**14867**

Also noticeable is that the percentage of women in the sample is larger than in the population, as can be seen in table 5. Women are however seen to be more likely to take part in studies such as this and the relatively low percentage of male respondents should thus not be seen as something unique for this sample.[116] The mean age of the respondents in the sample is 28.76 years and the average respondent in the sample has studied at university level for 3.45 years that. Given that an education takes between

[115] Högskoleverket
[116] Matzdorf et al, 2003

three to five years to complete, this means that we have a distribution of students in different stages of their university education.

Table 5: Sample divided on men and women

	Sample size	Sample size in percent	Percent in population, spring 2011[117]
Men	4525	**31%**	42%
Women	10209	**69%**	58%

In short, we regard the sample as being adequate on the different aspects reported on. Although not having a perfect sample, we believe that we are able to perform analyses on it that quite accurately should reflect the true circumstances in the population.

4.2.2 How much do these factors affect the attractiveness of Swedish universities (Q3)?

Now when the factors that affect university attractiveness in Sweden are known, we can try to answer the next research question Q3: how much do these factors affect the university attractiveness in Sweden? To answer this question, multiple linear regression analyses were performed on the data from the main study. These multiple linear regressions show how much each factor contributes to the variance in university attractiveness. To be able to perform this calculation, a dependent variable, that represents attractiveness, needs to be found first. This will bring us to another of our research questions, Q1: Which measurement of attractiveness is most suitable to use: attitude, purchase intention or a combination of the two? This question needs to be answered before we can continue with Q3.

4.2.3 Which measurement of attractiveness is most suitable to use: attitude, purchase intention or a combination of the two (Q1)?

To answer this research question (Q1), three separate regression analyses with the dependent variables attitude, purchase intention and the combined index of attitude and purchase intention were performed, all with the six factors used as independent variables. The explanatory power of each model is presented in table 6, where model 1 has purchase intention as a dependent variable, model 2 has attitude as a dependent variable and model 3 has the combined index of attitude and purchase intention as a dependent variable. The lowest explanatory power can be found in model 1 and the highest explanatory is for the combined measure in model 3. The explanatory power of

[117] Högskoleverket

model 3 is as high as 53.8 percent, which provides evidence of a strong causal relationship. You find a slightly lower explanatory power of 47.9 percent by using purchase intention as a dependent variable.

Table 6: Explanatory power of regression models

	Model 1: Purchase intention	Model 2: Attitude	Model 3: Combined index
Adjusted R Square	47,9%	53,7%	53,8%
Number of obs.	40980	40809	40982

4.2.4 Answer Q1: Which measurement of attractiveness to use

Since the explanatory power of the model with the combined index of attitude and purchase intention as a dependent variable is higher than any of the other two models separately, we will only present the regression data for the combined index of attractiveness in our subsequent analyses, hereafter labeled university attractiveness. The explanatory power for all subsequent analyses has been tested and the university attractiveness measure consistently scores higher on the adjusted R square value than the two other measures. The measure shows a good internal reliability, with a Cronbach's Alpa of 0.944.

4.2.5 Controlling for university bias

Before we can address the question of how much the factors affect university attractiveness, we need to consider the university bias. The university bias is (as explained in the method part) a bias that is a consequence of our decision to ask the respondents in the main-study to evaluate both the university that they study at and two universities they do not study at for each question. The university bias is a potential difference in evaluation of the university that you study at and the universities that you do not study at.

By adding variables to control for the university bias, we receive an even higher explanatory power of the model, as can be seen in table 7. Model 4 is exactly the same as model 3, except that it includes a differential intercept dummy which takes the number 1 for an answer on a university which the respondent study at and the number 0 for an answer on a university which the respondent does not study at. This model provides an explanatory power of 66.3 percent, which is higher than the 53.8 percent of model 3. It

thus seems as if the differential interception dummy, simply called dummy in table 7, provides extra explanatory power to the model. Since the coefficient of the differential intercept dummy is positive, there is evidence that students tend to consistently evaluate their own university more favorably than universities that they don't study at.

Model 5, in which the evaluations of the university that you study at are compared with the evaluations of universities that you do not study at, provides an explanatory power of 66.8 percent, which is slightly higher than the 66.3 percent of model 4. It thus seems as if you on top of evaluating your own university more favorably than universities that you do not study at, the factors explaining university attractiveness of the university that you study at compared to a university that you do not study at are also given different importance. There however arises some evidence of multicollinearity in this model (VIF>10 and tolerance<0.1), but since most variables in the model are significant, we can disregard the multicollinearity as to have a negative impact on the model. Further, the regression coefficients of the answers on the university that you study at are in model 5 labeled own university, the coefficients of the answers on the universities that you do not study at are called other universities and the differential slope coefficients are called difference own-other.

Judging from the differential slope coefficients, location and social values are more important when evaluating the attractiveness of universities that you do not study at, since the standardized differential slope coefficients are negative with values of -0.187 and -0.172. The factors education and facilities and practical values, however, are more important factors when evaluating your own university, with the standardized differential slope variables of 0.078 and 0.128. The only non-significant difference in the coefficients is for the student factor, which thus seems to be equally important when evaluating your own university and when evaluating universities that you do not study at.

The differences between the coefficients for the attractiveness of your own university and the coefficients for the attractiveness of universities that you do not study at, raises the question regarding which evaluations to include in an analysis on university attractiveness. Are the evaluations of the universities that you do not study at more

speaking for what really should be said to be university attractiveness? Or are the evaluations of universities that you study at more accurate since it is only when you study at a university that you can really determine how the university performs on different aspects? Or should the answers be treated equally, such as in model 4?

Due to the differences in evaluation criteria between the evaluations of universities that you do not study at and universities that you study, we find support that only either one of the types of evaluations should be used to measure university attractiveness. Further support for this is that model 5 provides a higher explanatory power than model 4. When it comes to the choice between the evaluations on the university that you study and universities that you do not study, there is no evidence in the model supporting the one or the other alternative. We however believe that the evaluations of universities that you do not study at are more speaking for what really should constitute university attractiveness since an evaluation of a university that you study at might be more of a post purchase type of attitude or satisfaction evaluation. A more in depth discussion about this choice is found in the discussion part of this thesis.

4.2.6 Answer Q3: How much do the factors affect the attractiveness of Swedish universities?

Since we have decided that the university attractiveness measure should consist of both attitude variables and purchase intention variables, in addition to have chosen to only measure these variables for evaluations on universities that you do not study at, we have at last arrived in a final model. In this model, the most important factor influencing university attractiveness is the location factor, with a standardized coefficient of 0.215. The academic values factor and the social values factor come in second and third place in importance, with standardized coefficients of 0.180 and 0.136 respectively. The student factor is the fourth most important factor with a standardized coefficient of 0.125. The education factor does not have any significant influence on the attractiveness measure and the facilities and the practical values factor only has a small influence, with a standardized coefficient of 0.033.

Table 7: Regression models on how much the factors influence university attractiveness

	Model 4			Model 5									
				5a: Other university			5b: Own university			Difference			
Variables	Coefficients	Standardized coefficients		Coefficients	Standardized coefficients		Coefficients	Standardized coefficients		Own-Other Coefficients	Standardized coefficients		
(Constant)	0,231		***	0,122		***	2,406		***	2,283	0,587	***	
Facilities and practical values	0,078	0,059	***	0,044	0,033	***	0,136	0,162	***	0,092	0,128	***	
Students	0,162	0,124	***	0,163	0,125	***	0,153	0,112	***	-0,01	-0,013		
Social values	0,126	0,097	***	0,177	0,136	***	0,047	-0,036	***	-0,131	-0,172	***	
Education	0,042	0,029	***	0,011	0,007		0,079	0,085	***	0,068	0,078	***	
Location	0,187	0,174	***	0,231	0,215	***	0,101	0,028	***	-0,13	-0,187	***	
Academic values	0,214	0,176	***	0,218	0,180	***	0,197	0,150	***	-0,021	-0,030	*	
Dummy	1,658	0,427	***										
Adjusted R Square	66,3%			66,8%									
Number of obs.	40982			40982									

4.2.7 Effect of rankings on university attractiveness (Q4)

In order to answer research question Q4 "How much does a university's ranking affect the university's attractiveness?", a regression analysis is presented in table 8 that displays a variable measuring the effect of rankings on university attractiveness. The variable ranking comes from the following statement in the survey: "This university places high in university rankings". The statement was presented in random order among the 14 attributes that make up the factors already presented. As can be seen in table 8, the ranking variable has a larger impact on university attractiveness than any of the other factors separately. Also noticeable is that rankings have higher influence on university attractiveness when evaluating a university that you do not study at than when evaluating a university that you study at.

Table 8: Effect of rankings on university attractiveness

	Model 5					
	Other university		**Own university**		**Difference**	
Variables	**Coefficients**	**Standardized coefficients**	**Coefficients**	**Standardized coefficients**	**Own-Other Coefficients**	**Standardized coefficients**
(Constant)	0,327		2,369		2,042	0,526 ***
Facilities and practical values	0,052	0,039 ***	0,133	0,152 ***	0,081	0,113 ***
Students	0,049	0,038 ***	0,088	0,089 ***	0,038	0,051 ***
Social values	0,094	0,072 ***	0,011	-0,037	-0,083	-0,109 ***
Education	0,027	0,018 ***	0,077	0,076 ***	0,050	0,058 ***
Location	0,172	0,160 ***	0,073	0,017	-0,099	-0,143 ***
Academic values	0,088	0,072 ***	0,102	0,093 ***	0,014	0,020
Ranking	0,322	0,328 ***	0,226	0,188 ***	-0,096	-0,140 ***
Adjusted R Square	70,4%					
Number of obs.	40679					

4.3 How to create an improved ranking model (Q5)?

This section answers the research question Q5 on how to create an improved model for ranking universities. All of the research questions that we have covered this far will work as stepping-stones in the creation of the model. Q2 concluded what factors the Swedish students find attractive with Swedish universities. Q1 found which measure of attractiveness that is most suitable to

use and to answer Q3 we used that measure of attractiveness to determine how much the factors influence university attractiveness.

4.3.1 Collecting the independent data

Q2 provided us with 6 factors consisting of 32 attributes to be used in our proposed ranking. This part covers how we found the independent data that corresponds to the attributes in order to be able to create a ranking based on independent data.

Many of the sources of the independent data were selected from the Swedish National Agency for Higher Education[118], which is a very common source in rankings focused on Swedish universities. Since the attributes were selected by the students and decided through the pre-study, some other, more non-classical, attributes such as indicators connected to the location of the universities were added. For these types of attributes, we mostly used the agency Statistics Sweden[119]. There are however a few attributes for which we had to use other more non-conventional indicators of the attributes, one of them is concerning how expensive it is to live in the city the university is located in. For this attribute we used a yearly price comparison from the Swedish senior society, PRO[120].

Table 9 shows all the included attributes and the corresponding independent data. In total we were able to collect independent data for 23 of the 32 attributes. There is also a complete list in Swedish with the original attribute phrases and independent data sources in the appendix. We decided to keep the original Swedish language in that version because it is the same phrases that were used in the main-study and some of the underlying meanings might be lost or transformed in the translation. For those interested, the raw data, together with the sources, is presented in the appendix as well.[121]

[118] http://www.hsv.se/
[119] http://www.scb.se
[120] http://www.pro.se/
[121] Appendix #3 & #4

Table 9: List of independent data used in the ranking

Factor:	Attribute:	Independent Data:
Practical values	• There is a good access to databases and articles through the university's library.	➢ Library personnel/Total amount of students
	• There is a good availability of group and study rooms.	➢ The students own perceptions (from the main study)
	• The university's facilities keep high standards.	➢ Percentage of total cost that is spent on facilities
	• The university has many people working with administration.	➢ Amount of people that works outside of the education at the university/Total amount of employees at the university
	• It is easy to find accommodation in the town the university is located in.	➢ Availability of housing for students in the different cities where the universities are located
Students	• You have a good opportunity for a high salary after graduation.	➢ Salary after graduation
	• A large proportion of the students are employed upon graduation.	➢ Actual percentage of the students that have established themselves in employment
	• The university has high admission requirements.	➢ Admission requirements (group BI & BII)
	• A large proportion of the enrolled students graduate from the university.	➢ Total amount of degrees/Total amount of students
	• The university has a large number of applicants in relation to the number admitted.	➢ Amount of applicants/Amount of admitted students
	• The students at the university have a high degree of motivation.	➢ Performance grade
	• There are many students who study at the university.	➢ Total amount of students
Social values	• There are many foreign students on campus.	➢ Total amount of incoming students and all free-mover students
	• There is a well-functioning student organization.	➢ Percentage of students that pay the student association membership fee
Education	• Teaching is conducted in small classes.	➢ Amount of full year students on every teacher, the number is inverted
	• The education includes much teacher led classes.	➢ Amount of teaching hours
Location	• It's cheap to live in the city the university is located in.	➢ PRO price comparison 2012, the number is inverted
	• The university is located in a city with a large proportion of students.	➢ Percentage of the population that are students in the region
	• The university is located in a city with good opportunities for stimulating leisure activities.	➢ Culture cost/citizens, amount of liquor licenses/citizens and sport clubs/citizens
	• The university offers the ability to study an exchange semester at another university.	➢ Total amount of students going on exchange/Total amount of students
Academic values	• The professors and doctors account for a large part of the teaching.	➢ Percentage of personnel with PhD
	• The university participates in international networks such as CEMS.	➢ Amount of programs the university are a part of together with IPK
	• The teachers are well paid.	➢ Teacher salaries on average

4.3.2 The proposed ranking

When weighting the independent data with the standardized coefficients we get the ranking presented in table 10. The ranking is weighted with the standardized coefficients from the regression model 5 that are based on the evaluations of universities that you do not study at. Before weighting the independent data, the data has been standardized, as described in the method part.

Table 10: proposed ranking

University	Ranking
Blekinge Institute of Technology	12
Chalmers University of Technology in Gothenburg	3
University of Gothenburg	13
The Swedish School of Sport and Health Sciences	25
Stockholm School of Economics	1
University of Borås	15
Gävle University	20
Halmstad University	14
Jönköping University Foundation	9
Skövde University	24
Karlstad University	22
Karolinska Institutet	10
Royal Institute of Technology	8
Linköping University	7
Linnaeus University	17
Luleå University of Technology	11
Lund University	2
Malmö University	18
Mid Sweden University	16
Mälardalen University	23
Södertörn University	26
Stockholm University	19
Swedish University of Agricultural Sciences	6
Umeå University	5
Uppsala University	4
Örebro University	21

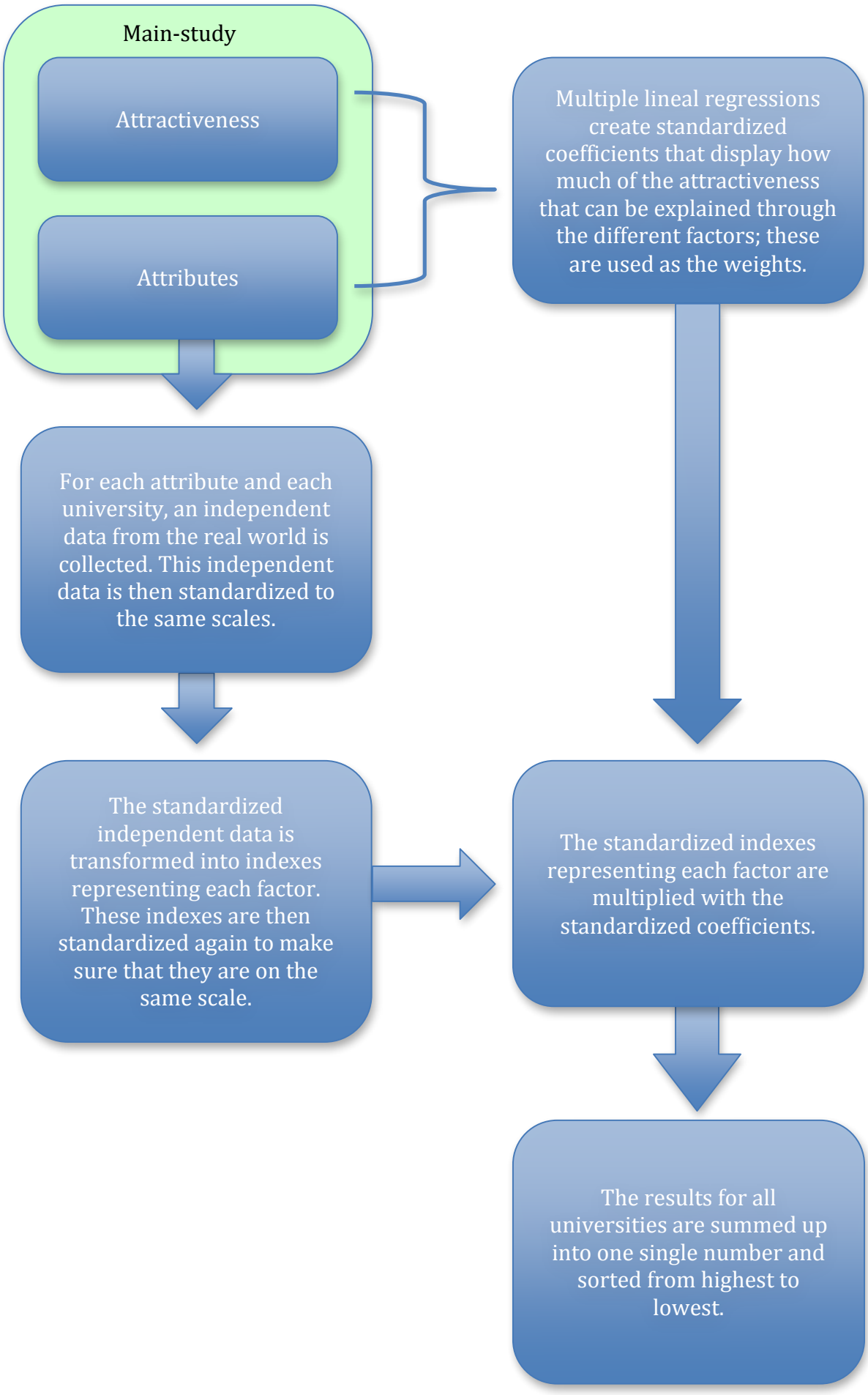
4.3.3 Validating the independent data

Since we have information on how students evaluate their own universities, we can validate the independent data by comparing how well the students' evaluations of the universities that they study at correspond with the independent data. To do this, a ranking based on the standardized coefficients of

the evaluations on universities that you study at in model 5 was created. The resulting ranking positions have then been compared with the mean attractiveness that is based on the evaluations of the own universities. The Spearman correlation coefficient between those values is 0.678, which means that there is strong correlation. We thus find support for that the independent data that we have collected for our proposed ranking model can be seen as being quite close to how the students regard their own universities to be.

4.3.4 Answer Q5: The resulting models

To summarize the process of this new model, the attributes are selected through the pre-study and then matched with independent data, which then is divided into factors and standardized. These standardized factors are then weighted with the standardized coefficient. The standardized coefficients are found through multiple lineal regressions where we calculate how much of the variance in the attractiveness that each factor is responsible for. The proposed model avoids common criticism of rankings by having a clear perspective and a non-subjective choice of variables and weights. The process can be summarized by figure 6 that also was presented in the method section.


Main-study
Attractiveness
Attributes
Multiple lineal regressions create standardized coefficients that display how much of the attractiveness that can be explained through the different factors; these are used as the weights.
For each attribute and each university, an independent data from the real world is collected. This independent data is then standardized to the same scales.
The standardized independent data is transformed into indexes representing each factor. These indexes are then standardized again to make sure that they are on the same scale.
The standardized indexes representing each factor are multiplied with the standardized coefficients.
The results for all universities are summed up into one single number and sorted from highest to lowest.

5. Discussion

In the discussion we are going to comment on and criticise the results. We will also discuss the more practical implications of the findings in this thesis.

5.1 Discussion of university attractiveness

To begin with, we have proposed a university attractiveness measure consisting of both attitude variables and purchase intention variables, since this measure provided us with regression models that showed high explanatory power. In support of this choice, the measure consists of as many as five variables, which should make the measure stable. The internal reliability was also confirmed with a high value on Cronbach's alpha. However, by using only either one of attitude or purchase intention as measures for university attractiveness, it would perhaps be easier to interpret what we really are measuring. What is certain though is that the purchase intention measure not should be used separately as a university attractiveness measure, due to the low explanatory power the models with purchase intention as a dependent variable resulted in. The relative low explanatory power of the purchase intention measure can probably be explained by the high risk and high involvement decision as we have assumed the choice of university to be.

When controlling the answers for university bias, we first of all found that students consistently evaluate the universities that they study at more favorably than the universities that they do not study at, which we do not find surprising. More interestingly though, students also evaluate the university attractiveness of the university that they study at based on different criteria than universities they do not study at. This realization brings once again up the question of how university attractiveness should be measured, but this time in regards to which target group that should be used to evaluate the universities. Since all but one of the differential slope coefficients were significant in model 5, we came to the conclusion that we should either the evaluations of universities that you do not study at or the evaluations of the university that you study at, to measure university attractiveness and we decided to use the evaluation of universities

that you do not study at. An argument against this decision is that we are missing a degree of knowledge that the evaluations of the universities that the respondents study at consist of. However, it is not the knowledge that we are intending to study, but rather an attractiveness that is based on the perceived circumstances at the universities, not the actual. The evaluations of universities the respondents study at could be seen as more of satisfaction evaluations or post purchase attitudes. We also believe that there is a degree of rationalization of universities that they have chosen not to study at, but we believe that effect to be lower than the effect that you are biased towards the university you study at.

Having decided to only measure university attractiveness based on evaluations of universities that you do not study at, the question should be raised: was it unnecessary to ask the respondents to evaluate the university that they study on top of two universities that they do not study at? We are arguing that this is not the case, since we in this way have put the answers of the respondents on the same scale due to that they all had their own university as a benchmark for their responses concerning the universities that they do not study at.

Further, we have also shown that rankings do matter for university attractiveness, even though being criticized. Perhaps they have such influence on university attractiveness since the choice of university is such a high risk and high involvement decision and that a ranking that simplifies the complex reality can serve as a good source of information.

5.2 Discussion of Method

5.2.1 The choice of respondents

The big difference between our ranking model and the general one is that ours takes power from the creator and gives it to the respondents of the study. In our study we chose students to be the respondents and thereby made a ranking based on their preferences, but we could as easily have chosen the university faculty or the rest of society to be the respondents. This gives our ranking model a variety of different possible outcomes depending on whom you choose as your respondent group. This should create an additional value for the ranking model

because you can modify it to suit your needs depending on which one of the interest groups you belong to.

5.2.2 The response rate

The importance of response rate in surveys is a debated topic. Many agree that if you get too few answers your conclusions will suffer and we are aware that the response rates presented are relative low. However, since we regard us to have collected a sample that is representative for the population; we believe that the effect of the low response rate does not have a significant impact on the results, since the response rate is not as important as the representativeness as long as the response rate does not affect representativeness.[122] Further, the response rate of our survey is affected by the fact that the email addresses were linked to applications to universities and thus, not all email addresses were linked to students. Since we already in the email informed about the purpose of the survey, it was thus clear for people not studying that they were not in the target group, and were then not likely to follow the link to the survey which was included in the email. There is also no way for us to know how many of the email addresses that we distributed the surveys to that were active and checked. It might be that some of the email addresses not were active, not checked regularly and that some emails were caught in spam filters.

5.3 Discussion of our proposed ranking model

Our model is based on independent data on the whole universities, which is one of the main critiques of the current rankings and is bad due to several different reasons (presented in our theory). However, to find reliable independent data for each and every educational discipline would as we judge, be impossible without collecting primary data. We believe that our model offers a middle way to this dilemma, since our data provides us with the possibility to weigh the data with specific taste preferences of the individual disciplines. With the information we have, we could create rankings for each top SUN layer and on several second SUN layers such as only on Sweden's law or journalist students.

[122] Cook et al. 2000

This highlights another benefit with our ranking model; the weightings are not subjective since the weighting is based on the evaluations from students. They are also better than most survey based models since we have not asked the respondents directly to assess the importance of different attributes. By using multiple lineal regressions to find the weights we are hoping that our model gives more honest weights than if you let students self report the perceived importance of different attributes. With our model we have also averted the researchers' subjective role in the choice of which attributes to be included. The argument could be made that our choice of raw attributes to include was somewhat subjective but since our method included a selection process prior to the pre-study survey we believe it to be a limited subjectivity. A point of improvement would obviously be to have more raw attributes to chose from in the pre-study and increase the size of that. However this argument continues indefinitely because you could always argue for the benefits of a larger study or having a bigger sample to conduct your study on.

There is also the question of what independent data to connect to what attribute. This is where the creator of the ranking has some influence on the results. In our ranking, one of the biggest concerns was to actually find independent data that matched our attributes since there were not that many alternatives to choose from for each one, so this was not really a concern that we had. With access to more independent data sources we might have had this problem however.

Another problem, which is harder to get around with the independent data, is the location-based data, if the data for example only applies to Stockholm and not to a specific university. In that case the same score affects all universities in the Stockholm area. This is a problem if the data is supposed to be university specific but is not. It could also be a problem because some universities are located in several locations. Since we decided to take the mean value of all the locations in those cases, without taking into account how many students that are studying at each location, the location-based data is not as accurate as it could have been. A way to improve this would have been to weight the location based independent data according to how large each of the specific universities'

campus were, and thus creating a more realistic approximation of the universities' situations.

5.3.1 Practical implications:

First of all, the results provide marketers at universities with information about how to more efficiently make students attracted by their universities. The practical importance is of special relevance for how to attract students that are about to choose where to study their master program, since the respondents of our survey are current students. What is also important to note is that the factors do not influence university attractiveness equally for the universities' own students compared to students at other universities. For example, in communication with students at other universities there should be more emphasis on location and social values. These implications are however only relevant if our assumption that universities regard the students as at least part customers holds true.

Further, we strongly believe that this thesis can be of guidance for people working with creating rankings. The method we have used in order to create our proposed ranking is one that can be applicable to a number of different fields, not to say other perspectives on universities; for example there could be created university rankings from employers' perspective based on the method used in this thesis. We also give the supporters of rankings some extra weight to their arguments. As our results indicate, rankings do matter for students, and should thus probably matter for people in general that have an interest in the university business. Finally, the university ranking proposed gives students information about the universities on variables that are relevant to them, making an otherwise complex choice perhaps somewhat easier.

6. Conclusion

In the introduction of this thesis we defined our thesis question to be: "What are the most important factors explaining university attractiveness in Sweden and how do we create a ranking based on those factors?". To be able to answer this dual question in a suitable manner, we created five more specific research questions, which results we now will summarize.

Q1. Which measurement of attractiveness is most suitable to use: attitude, purchase intention or a combination of the two?

To answer this research question, three separate regression analyses with the dependent variables attitude, purchase intention and the combined index of attitude and purchase intention were done. Since the explanatory power of the combined index of attitude and purchase intention was higher than any of the other two separately, we found support for using the combined index of attitude and purchase intention as a measure for university attractiveness. Further, the measure showed a good internal reliability, with a satisfactory Cronbach's Alpha.

In connection to this, we were also faced with the question of which evaluations to use in order to measure university attractiveness. Since there were substantial differences in the evaluation criteria between universities that you do not study at and the evaluation criteria of the university that you study at, we found evidence that only one of these types of evaluations should be used. Since the regression model which took into account the differences in evaluation criteria, was higher than the model without than consideration, we found further support to only use only one type of evaluation. After having had a discussion regarding which type of evaluation that is most suitable to measure university attractiveness, we decided that evaluations of universities that you do not study at should most accurately reflect the universities' true attractiveness.

Q2. What factors explain university attractiveness in Sweden?

Through a factor analysis of 38 different attributes, we found eight factors, of which one was excluded due to low expected influence on university attractiveness and a loose connection to theory. The resulting seven factors were facilities and practical values, students, social values, reputation, education, location and academic values. The factors were to a large extent supported by previous literature. The dissimilarities between our factors and the ones found in the comparative studies were mainly in how wide or narrow the factors were defined.

Q3. How much do these factors affect the university attractiveness in Sweden?

In the final model found explaining university attractiveness, the most important factor was the location factor, with a standardized coefficient of 0.215. The academic values factor and the social values factor came in second and third place in importance, with standardized coefficients of 0.180 and 0.136 respectively. The student factor was the fourth most important factor with a standardized coefficient of 0.125. The education factor did not have any significant influence on the attractiveness measure and the facilities and the practical values factor only had a small influence, with a standardized coefficient of 0.033.

Q4. How much do rankings influence university attractiveness?

By adding the ranking attribute to the model in Q3, it was evident that rankings have a large impact on university attractiveness. In fact, with a standardized coefficient of 0.328, it had a higher influence on university attractiveness than any of the other factors separately.

Q5. How to create an improved ranking model?

As an answer to this question, we created a ranking model based on the factors influencing university attractiveness. Important to note: it is the ranking model proposed that is the important, not the actual ranking positions. After having collected and standardized independent data that represents the true circumstances at the universities and that is connected to the factors, the data

was weighted with the standardized coefficients. The resulting ranking model proposed avoids the most common criticism of rankings by having a clear perspective and a non-subjective choice of variables and weights.

7. The future

In this section we are bringing up critique to our own study in combination with thoughts on improvements and what future research might bring to this subject, both trough using the data we collected and by collecting new data.

7.1 Criticism and possible improvements to our study

Most of the problems experienced during the process have been about how to approach the target population and about asking the right questions.

- First of all, we could have held more focus groups in the attribute collection phase of the pre-study. When gathering the raw attribute list we took attributes from several sources (every attribute that we could find). But we also held a focus group with students from the Stockholm School of Economics. If we were to redo this we might consider travelling around to different universities with different disciplines to gather even more attributes.
- For the study to be more relevant for universities wanting to attract bachelor students, we should perhaps have had a target group consisting of potential students and not current students. You could however argue that the current students are more interesting to study since the issue of how to attract master's students is of a more general interest.
- We chose to only send the pre-study survey out to 1980 people resulting in 508 answers. If we would have chosen to send out more emails to get even more respondents in the pre-study, the ratio of respondents between the main-study and the pre-study would not be so large and since the main-study is based on the pre-study this might have improved our results.
- We also saw a slight difference between the factors that were created from the pre-study and when we tried to factor the attributes again in the main-study. This might be due to not asking about the attributes in exactly the same way in the pre-study as in the main-study.
- One of the things that several respondents felt that we should have included was a "don't know" alternative. The decision to not have a "don't

know" alternative is argued for in the method part of this study, but as an improvement to any additional studies done on this subject one might consider to even more clearly inform the respondents that they are not supposed to know the actual circumstances at the universities.

7.2 Future suggested research

As an observant reader might have seen, our main-study consists of more questions than are brought up and analyzed in this thesis. We feel that the data that we have collected during the course of this thesis has possibilities to conduct further analysis on. The data holds opportunities to gain more knowledge about the Swedish university industry in the following ways:

- Segmentation based on the attributes explaining university attractiveness and on the basis of for example subject studied, gender, and time studied at university. An analysis of such segmentation would provide universities with information on how to attract different groups of students.
- Comparisons between universities. What are the reasons to why they are perceived to have different characteristics?
- Is there a linear relationship between the factors found and university attractiveness or can some of them be seen as hygiene factors? We can for example guess that a factor such as location can for at least some people be seen as a hygiene factor.
- An examination of how perceived quality, word of mouth intention and awareness are connected to the attractiveness measure.

Even though the data collected as part of this thesis holds good possibilities to analyze further, there are of course limits to what analyses that can be made on it. During the course of this thesis, we have seen some areas within this subject could be interesting to investigate further and which demand new data to be collected:

- Since we have excluded international students from this study and due to a growing need to attract them, we would suggest a similar study of what makes international students attracted by Swedish universities.

- An examination of the impact of brand personality on university attractiveness. This is a dimension that we excluded when designing our surveys. Although the choice of university can be seen as a mainly rational decision, it might still be affected by more irrational factors.
- Since we have excluded the influence of student characteristics on university attractiveness, it would be rewarding to know to what degree student characteristics affect university attractiveness and to know how to tailor university offerings to fit students with similar characteristics.
- The creation of rankings based on subject specific data. As earlier noted, rankings of whole universities are not as useful for students that need guidance in their choice of university, since the choice of subject comes before the choice of university in the decision process.
- Tuition fee influence university attractiveness in US and UK studies. It could thus be interesting to try to determine what kind of effect tuition fees would have in Sweden. Especially also since there has been a discussion at the Stockholm School of Economics about this issue.[123]

[123]Dagens Nyheter, 2005-04-16

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9. Appendix

In this section of the paper are we presenting additional data that the reader might find interesting or informative.

9.1 Table of content appendix

1. The included universities (including the abbreviations)
2. The total number of students studying at each University fall 2011
3. The independent data sorted after factor belonging
    a. This is the raw data, before the standardizations
4. The independent data sources
5. Questions from the pre-study (Swedish)
6. Questions from the main-study (Swedish)

Appendix #1 The included universities

BTH	·	**Blekinge Institute of Technology**
CTH	·	Chalmers University of Technology in Gothenburg
GU	·	University of Gothenburg
GIH	·	The Swedish School of Sport and Health Sciences
HHS	·	Stockholm School of Economics
HB	·	University of Borås
HG	·	Gävle University
HH	·	Halmstad University
HJ	·	Jönköping University Foundation
HS	·	Skövde University
KaU	·	Karlstad University
KI	·	Karolinska Institutet
KTH	·	Royal Institute of Technology
LiU	·	Linköping University
LNU	·	Linnaeus University
LTU	·	Luleå University of Technology
LU	·	Lund University
MaH	·	Malmö University
MiU	·	Mid Sweden University
MdH	·	Mälardalen University
SH	·	Södertörn University
SU	·	Stockholm University
SLU	·	Swedish University of Agricultural Sciences
UmU	·	Umeå University
UU	·	Uppsala University
ÖU	·	Örebro University

Appendix #2	**Total numer of students, fall 2011**
BTH	5645,00
CTH	9466,00
GU	32764,00
GIH	476,00
HHS	1731,00
HB	8043,00
HG	4431,00
HH	6854,00
HJ	11870,00
HS	7022,00
KaU	11424,00
KI	7333,00
KTH	15146,00
LiU	20882,00
LNU	20728,00
LTU	9796,00
LU	31851,00
MaH	15182,00
MiU	12586,00
MdH	9857,00
SH	10021,00
SU	36065,00
SLU	5058,00
UmU	21583,00
UU	26341,00
ÖU	12713,00

F1	Library personal/Total amount of students	The students own assessed values (from the main study)	Percentage of total cost that is spent on facilities	Amount of people that works outside of the education at the university/Total amount of employees at the university	Availability of housing for students in the different cities where the universities are located	Salary after graduation
BTH	0,0023	4,64	11,30	0,49	2,00	25129,13
CTH	0,0034	4,88	15,00	0,50	1,00	26562,40
GU	0,0042	4,68	12,30	0,44	1,00	23963,31
GIH	0,0084	3,67	17,30	0,30	1,00	26776,85
HHS	0,0058	3,13	16,40	0,45	1,00	29944,00
HB	0,0027	5,07	14,00	0,39	2,00	23345,80
HG	0,0034	4,71	10,80	0,31	3,00	26776,85
HH	0,0020	4,66	15,50	0,39	2,00	23723,35
HJ	0,0019	4,75	11,80	0,41	2,00	22881,30
HS	0,0016	4,64	14,50	0,33	2,00	21859,46
KaU	0,0019	5,04	12,70	0,36	2,00	23324,43
KI	0,0087	5,15	11,30	0,54	1,00	26776,85
KTH	0,0021	4,75	16,50	0,49	1,00	27361,50
LiU	0,0034	5,14	14,30	0,44	2,00	23358,77
LNU	0,0020	4,70	12,10	0,41	2,00	22997,31
LTU	0,0033	5,16	12,50	0,47	2,00	21720,20
LU	0,0047	4,94	13,80	0,48	1,00	24207,86
MaH	0,0024	4,82	14,30	0,41	1,00	23866,92
MiU	0,0031	4,87	13,00	0,40	2,33	25188,25
MdH	0,0022	5,00	13,10	0,40	2,00	24772,25
SH	0,0024	5,30	16,10	0,42	1,00	23684,45
SU	0,0027	4,22	16,90	0,39	1,00	24692,27
SLU	0,0087	4,38	10,10	0,51	1,50	24055,18
UmU	0,0033	4,96	9,60	0,46	2,00	22271,00
UU	0,0048	4,72	12,60	0,44	1,00	25012,04
ÖU	0,0020	4,62	16,60	0,41	2,00	24120,92

F2	Actual percentage of the students that have established themselves in employment	Admission requirements (group BI & BII)	Total amount of degrees/Total amount of students	Amount of applicants/Amount of admitted students	Performance grade	Total amount of students
BTH	0,79	14,57	0,16	3,43	73,00	5645,00
CTH	0,82	19,00	0,22	9,49	88,00	9466,00
GU	0,78	17,36	0,15	4,21	81,00	32764,00
GIH	0,82	16,75	0,13	4,60	88,00	476,00
HHS	0,81	19,80	0,16	10,95	89,58	1731,00
HB	0,75	15,54	0,24	4,05	81,00	8043,00
HG	0,77	13,96	0,02	2,32	60,00	4431,00
HH	0,79	15,57	0,16	3,72	76,00	6854,00
HJ	0,80	15,68	0,18	3,57	82,00	11870,00
HS	0,81	13,81	0,16	2,15	77,00	7022,00
KaU	0,74	14,86	0,14	2,19	79,00	11424,00
KI	0,88	17,61	0,28	6,65	94,00	7333,00
KTH	0,84	16,90	0,15	5,87	83,00	15146,00
LiU	0,82	15,68	0,17	4,95	84,00	20882,00
LNU	0,76	14,91	0,12	2,80	75,00	20728,00
LTU	0,70	13,75	0,14	2,12	88,00	9796,00
LU	0,77	17,35	0,15	4,41	82,00	31851,00
MaH	0,78	15,06	0,13	3,48	78,00	15182,00
MiU	0,75	15,04	0,12	3,83	66,00	12586,00
MdH	0,81	14,83	0,18	2,23	79,00	9857,00
SH	0,74	15,81	0,08	6,23	73,00	10021,00
SU	0,80	16,77	0,12	3,71	74,00	36065,00
SLU	0,81	16,78	0,14	2,29	89,00	5058,00
UmU	0,75	15,62	0,19	2,33	80,00	21583,00
UU	0,80	15,57	0,17	2,96	82,00	26341,00
ÖU	0,79	14,89	0,14	3,05	80,00	12713,00

F3	Total amount of incoming students and all free-mover students	Percentage of students that pay the student association membership fee
BTH	0,37	0,30
CTH	0,20	1,00
GU	0,08	0,46
GIH	0,04	0,37
HHS	0,20	0,90
HB	0,12	0,48
HG	0,27	0,30
HH	0,12	0,31
HJ	0,14	1,00
HS	0,09	0,09
KaU	0,09	0,15
KI	0,10	0,74
KTH	0,31	0,50
LiU	0,16	0,30
LNU	0,11	0,44
LTU	0,11	0,30
LU	0,15	0,83
MaH	0,12	0,32
MiU	0,09	0,31
MdH	0,14	0,30
SH	0,06	0,27
SU	0,10	0,60
SLU	0,19	0,85
UmU	0,12	0,59
UU	0,15	0,90
ÖU	0,06	0,10

F4	Amount of full year students on every teacher, the number is inverted	Amount of teaching hours	PRO price comparison 2012, the number is inverted
BTH	28,57	2,59	98,96
CTH	40,00	2,84	88,70
GU	35,29	2,84	88,70
GIH	60,00	2,44	85,91
HHS	25,00	2,44	85,91
HB	26,09	2,59	96,60
HG	24,00	1,93	93,75
HH	26,09	2,59	98,45
HJ	23,08	2,79	91,63
HS	33,33	2,59	96,60
KaU	37,50	2,59	100,00
KI	100,00	2,44	85,91
KTH	37,50	2,44	85,91
LiU	37,50	2,93	87,03
LNU	26,20	2,77	92,20
LTU	40,00	2,36	92,58
LU	37,50	2,70	91,94
MaH	31,58	2,70	91,94
MiU	26,09	2,13	89,42
MdH	31,58	2,57	89,66
SH	27,27	2,44	85,91
SU	27,27	2,44	85,91
SLU	85,71	3,03	91,67
UmU	46,15	3,07	90,26
UU	37,50	2,98	89,54
ÖU	28,57	2,14	89,72

F5	Percentage of the population that are students in the region	Culture cost/citizens, amount of liquor licenses/citizens and sport clubs/citizens	Total amount of students going on exchange/Total amount of students
BTH	16,80	28,17	0,0048
CTH	22,30	22,00	0,0416
GU	22,30	20,36	0,0179
GIH	15,50	22,00	0,0000
HHS	15,50	22,00	0,0999
HB	18,20	25,59	0,0113
HG	17,60	27,77	0,0018
HH	18,20	29,85	0,0127
HJ	20,90	24,67	0,0361
HS	21,10	24,03	0,0038
KaU	21,10	24,54	0,0088
KI	15,50	22,00	0,0247
KTH	15,50	22,00	0,0344
LiU	27,00	22,45	0,0323
LNU	21,85	25,62	0,0180
LTU	20,90	31,45	0,0115
LU	31,10	23,69	0,0323
MaH	19,00	27,05	0,0113
MiU	14,10	30,90	0,0061
MdH	16,05	23,27	0,0269
SH	15,50	22,00	0,0114
SU	15,50	22,00	0,0139
SLU	22,83	27,24	0,0144
UmU	28,60	27,48	0,0114
UU	28,30	21,19	0,0336
ÖU	21,90	22,50	0,0070

F6	Percentage of personnel with PhD	Amount of programs the university are a part of together with IPK	Teacher salaries on average
BTH	0,42	6,00	730,73
CTH	0,57	6,00	844,17
GU	0,66	8,00	699,68
GIH	0,45	1,00	770,87
HHS	0,80	5,00	1195,47
HB	0,42	6,00	650,89
HG	0,43	4,00	655,62
HH	0,44	4,00	641,73
HJ	0,44	6,00	761,06
HS	0,40	2,00	669,91
KaU	0,45	4,00	679,56
KI	0,72	4,00	716,44
KTH	0,59	6,00	826,39
LiU	0,63	5,00	749,36
LNU	0,45	2,00	658,24
LTU	0,62	5,00	775,29
LU	0,69	8,00	719,42
MaH	0,46	4,00	627,32
MiU	0,48	5,00	692,83
MdH	0,42	0,00	670,91
SH	0,65	0,00	660,32
SU	0,56	4,00	748,41
SLU	0,62	6,00	667,99
UmU	0,60	9,00	687,35
UU	0,66	6,00	732,05
ÖU	0,51	4,00	698,75

Appendix # 4	**Independent Data:**	**Sources:**
Factor 1: Practical values	Library personal/Total amount of students	http://www.hsv.se/download/18.27d86368130216405a680002479/1108R-universitet-hogskolor-arsrapport-2011.pdf
	The students own assessed values (from the main study)	Taken from the mail-study
	Percentage of total cost that is spent on facilities	http://www.hsv.se/download/18.27d86368130216405a680002479/1108R
	Amount of people that works outside of the education at the university/Total amount of employees at the university	http://www.hsv.se/download/18.27d86368130216405a680002479/1108R
	Availability of housing for students in the different cities where the universities are located	http://www.sfs.se/sites/default/files/sfs_bostadsrapport_2011.pdf
Factor 2: The quality of the students	Salary after graduation	http://hogskolekvalitet.se/Topplistor/
	Actual percentage of the students that have established themselves in employment	http://www.hsv.se/download/18.7dac986013389229f6e800011659/1116R-etableringen-arbetsmarknaden-2009.pdf
	Admission requirements (group BI & BII)	http://vhs.se/sv/Statistik1/
	Total amount of degrees/Total amount of students	http://www.hsv.se/download/18.27d86368130216405a680002479/1108R-universitet-hogskolor-arsrapport-2011.pdf
	Amount of applicants/Amount of admitted students	http://vhs.se/sv/Statistik1/
	Performance grade	http://www.hsv.se/statistik
	Total amount of students	http://vhs.se/sv/Statistik1/
Factor 3: Social values	Total amount of incoming students and all free-mover students	http://www.hsv.se/statistik/statistikomhogskolan/internationellmobilitet.4.6bae4a5a12693b209ca7ffe218.html

	Percentage of students that pay the student association membership fee	http://www.studentliv.se/nyhet/varannan-student-har-inte-g%C3%A5tt-med-i-k%C3%A5ren-4762
Factor 4: Educational qualities	Amount of full year students on every teacher, the number is inverted	http://www.hsv.se/download/18.27d86368130216405a680002479/1108R
	Amount of teaching hours	http://www.tco.se/FileOrganizer/TCOs%20webbplats/Publikationer/rapporter/TCO-granskar/2009/tco_l%C3%A4rarledd%20tid_med.pdf
Factor 5: The location of the education	PRO price comparison 2012, the number is inverted	http://www.pro.se/Konsumentmakt/Prisundersokning/Prisundersokning-2011/
	Percentage of the population that are students in the region	http://www.ssd.scb.se/databaser/makro/visavar.asp?yp=duwird&xu=c5587001&lang=1&langdb=1&Fromwhere=S&omradekod=AA&huvudtabell=IntGr8Kom1&innehall=Int1&prodid=AA0003&deltabell=K3&fromSok=&preskat=O
	Culture cost/citizens, amount of liquor licenses/citizens and sport clubs/citizens	A combination from three variables taken from SCB
	Total amount of students going on exchange/Total amount of students	http://www.hsv.se/statistik/statistikomhogskolan/internationellmobilitet.4.6bae4a5a12693b209ca7ffe218.html
Factor 6: Academic values	Percentage of personnel with PhD	http://www.hsv.se/download/18.27d86368130216405a680002479/1108R-universitet-hogskolor-arsrapport-2011.pdf
	Amount of programs the university are a part of together with IPK	http://www.programkontoret.se/Global/internationalisering/rapporter/Arsrapport_hogskola_IPK_2009.pdf
	Teacher salaries on average	http://www.hsv.se/download/18.27d86368130216405a680002479/1108R-universitet-hogskolor-arsrapport-2011.pdf

Apendix # 5: The pre-study

Hej,

Tack för att du väljer att delta i undersökningen!
Den handlar om valet av högskola eller universitet. Alla frågor är på en skala från 1 till 7 där 1 representerar ”inte alls viktigt” och 7 ”mycket viktigt”. För att förenkla har vi bara använt oss av ordet högskola då vi menar både universitet och högskola.

Från fokusgrupper och genomgång av forskning har vi funnit att följande 39 faktorer kan påverka valet av högskola. Nu är frågan vad som är viktigt för dig.

Så i valet av högskola, hur viktigt är det.

1. Inte alls viktigt - 7. Mycket viktigt

...att studenterna på högskolan har en hög motivationsgrad?
...att det finns en väl fungerande studentorganisation?
...att högskolan har höga antagningskrav?
...att en stor andel studenter tar examen från högskolan?
...att det är många studenter som går på högskolan?
...att du har bra möjlighet till en hög lön efter examen?
...att högskolan arbetar med jämställdhet?
...att högskolan har en alumniförening? Det vill säga en förening med före detta studenter.
...att en stor andel av högskolans studenter får jobb efter examen?
...att högskolan ger möjlighet till studiestipendier?
...att det är få studenter som går på högskolan?
...att det är många utländska studenter på högskolan?
...att högskolan har ett stort antal sökande i förhållande till antalet antagna?
...att högskolan gör det lätt att träffa rekryterare vid sidan av undervisningen?

Om du tänker på studieorten och högskolans lokaler, hur viktigt är det...

...att högskolan befinner sig i en stad med en stor andel studenter?
...att högskolan är belägen i samma ort som där du växte upp?
...att det är lätt att hitta boende i staden som högskolan är i?
...att det finns en god tillgång till grupp- och studierum?
...att det är billigt att leva i staden som högskolan är i?
...att högskolan befinner sig i en stad med goda möjligheter till stimulerande fritidsaktiviteter?
...att det finns en bra tillgång
...att det finns en bra tillgång till databaser och artiklar via högskolans bibliotek?
...att högskolan är belägen i en annan ort än där du växte upp?
...att högskolans lokaler håller hög standard?
...att högskolan har ett stort antal personer som arbetar med administration?

Om du tänker på högskolans lärare och undervisning, hur viktigt är det...
...att det finns ett stort utbud av mastersprogram?
...att utbildningen innehåller mycket lärarledd undervisning?
...att det finns ett stort utbud av valbara kurser?
...att viss del av utbildningen innehåller kontakt med externa aktörer? Till exempel praktik hos företag.
...att högskolan deltar i internationella nätverk såsom
till exempel CEMS?
...att lärarna är tillgängliga
vid sidan om undervisningen? Till exempel att de snabbt svarar på frågor över email.
...att högskolan erbjuder möjligheten att läsa en utbytestermin på en annan högskola?
...att undervisningen sker i små klasser?
...att professorer och doktorer står för en stor del av undervisningen?
...att lärarna är välavlönade?

Om du tänker på högskolans rykte, hur viktigt...

...är rekommendationer från dina vänner?
...är högskolans rykte såsom du uppfattar den hos allmänheten?
...är det att högskolan placerar sig högt på rankningar av svenska högskolor?
...är rekommendationer från dina familjemedlemmar?

Tack för dina svar!

Fyll i din emailadress nedan för att delta i utlottningen av presentkorten och klicka sedan på pilen för att skicka iväg dina svar.

Appendix # 6: The Main-Survey

Hej!
Tack för att du deltar i denna undersökning.
Undersökningen tar som sagt ungefär 5 minuter att besvara och som tack för dina svar är du med i utlottningen av helårsprenumerationer på tidningen Fokus (värde 975 kronor).
Vi använder oss för enkelhetens skull av ordet ”högskola” för såväl högskola som universitet.
För att frågorna ska vara relevanta för dig, så ber vi dig att välja din huvudsakliga ämnesinriktning inom dina studier.

Ämnesinriktning och högskola:

Vilken är din huvudsakliga ämnesinriktning?

Vilken högskola studerar du på?

Vilken huvudsaklig ämnesinriktning inom samhällsvetenskap, ekonomi, juridik, handel och administration har du?

Beroende variabler:

Rangordna fem av följande högskolor från 1 till 5 efter hur gärna du skulle vilja studera på dem, oavsett var du studerar idag. Nummer 1 är den högskola du allra helst skulle vilja studera på.

Nedan listas två slumpmässigt utvalda högskolor från föregående fråga tillsammans med den högskola du studerar på idag.

Hur gärna vill du studera på följande högskolor? (Vill absolut INTE studera här – Vill ABSOLUT studera här)

I vilken utsträckning har du hört talas om följande högskolor? (Inte hört talas om alls – Hört talas om väldigt mycket)

Vilken åsikt har du om följande högskolor? (Ingen åsikt alls - Mycket tydlig åsikt)

Vad tycker du om följande högskolor? (Inte alls tilltalande - Mycket tilltalande)

Vilken uppfattning har du om följande högskolor? (Mycket negativ - Mycket positiv)

Vad tycker du om följande högskolor? (Mycket dålig - Mycket bra)

Vad tycker du om kvalitén på följande högskolor? (Mycket låg kvalitet – Mycket hög kvalitet)

I vilken utsträckning vill du rekommendera följande högskolor till andra? (Vill ABSOLUT inte rekommendera - Vill ABSOLUT rekommendera)

Hur troligt är det att du skulle rekommendera följande högskolor till andra? (Inte troligt alls – Mycket troligt)

Hur sannolikt är det att du skulle tacka ja om du erbjöds en plats vid följande högskolor? (Skulle absolut INTE tack ja – skulle ABSOLUT tacka ja)

Nu kommer det två sidor med åtta frågor på vardera sidan. Därefter återstår enbart några få bakgrundsfrågor och sedan är du klar.

Vad är din uppfattning om förhållandena på följande högskolor? Det är alltså vad du TROR om högskolorna vi är ute efter, inte de faktiska förhållandena.

Oberoende variabler:

Det finns en bra tillgång till databaser och artiklar via högskolans bibliotek.

Det finns en god tillgång till grupp- och studierum.

Studenterna på högskolan har goda möjligheter till hög lön efter examen.

En stor andel av högskolans studenter får jobb efter examen.

Högskolan har en väl fungerande alumniförening, det vill säga en förening med före detta studenter.

Det är många internationella studenter på högskolan.

Det är troligt att någon i din familj skulle rekommendera denna högskola.

Det är troligt att någon av dina vänner skulle rekommendera denna högskola.

Mycket av undervisningen sker i små klasser.

Viss del av utbildning innehåller mycket kontakt med externa aktörer. Till exempel praktik hos företag.

Högskolan ligger långt bort från den ort du kommer ifrån.

Högskolan befinner sig i en stad med en stor andel studenter.

Professorer och doktorer står för en stor del av undervisningen.

Det finns ett stort utbud av mastersprogram.

Den här högskolan är bra på min ämnesinriktning.

Högskolan placerar sig högt upp på rankningar av högskolor.

Bakgrundsvariabler:

Vad är din ålder? Ange gärna din ålder i antal år.
Har du studerat på någon annan högskola än den du studerar på idag?
Hur många år har du studerat på högskolenivå?
Är du man eller kvinna?