

Comparing the Past with the Future
– Is it possible to have a gender equal construction
project?

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COMPARING THE PAST WITH THE FUTURE

- IS IT POSSIBLE TO HAVE A GENDER EQUAL CONSTRUCTION PROJECT?

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Gothenburg, Sweden 2004

Master's thesis 2005:15

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Abstract

Of the civil engineers graduating in Sweden today, about 30 per cent are women. However, women do not represent 30 per cent of the civil engineers employed by the construction sector. The aim of this study is to investigate what could be done to make the construction sector more attractive to women and if it is possible to have a gender equal construction project in the future. To do this, a case study of two tunnel projects in the Gothenburg region a comparison between the past and the future was made. Both qualitative and quantitative methods were used to complement each other. Initially, 17 interviews with representatives of the tunnel projects were conducted and these were followed by a questionnaire handed out to female civil engineering students at Chalmers University of Technology. A focus group seminar with interviewees and questionnaire respondents was also held. Seen from a women's point of view the interviewees identified some of the difficulties and disadvantages of the construction sector in terms of temporary offices, inflexible working hours, material discomfort and physical hindrances. These factors become issues mainly when women try to combine family and career. The outcome from the questionnaires did not indicate that these issues were important when choosing a job, however they did indicate that female students wanted to combine having a full-time job and sharing the responsibilities of children and housework with their partner. The main conclusion of this study is that when referring to the construction sector the majority will think only of the production side of the sector. There are a lot of prejudices about that male dominated part of the sector that make the whole sector less attractive to women. To attract women to the sector it is important to clarify that the construction sector does not equal the production side. Informing both the public and the students of what different tasks and employments that in fact are included in the sector is essential and will help to crush all false prejudices that exist.

Keywords: Construction sector, family and career, male domination, minority

Sammanfattning

Idag är cirka 30 procent av alla civilingenjörer som examineras med inriktning Väg och vattenbyggnad i Sverige kvinnor. Motsvarande andel kvinnliga civilingenjörer återfinns inte i byggbranschen. Detta har gett branschen rykte om sig att vara mansdominerad och skrifter som "Skärpning gubbar" som kom i slutet av 2002 bekräftar genom sin titel branschens rykte. Målet med studien är att undersöka hur branschen ska bli mer attraktiv för kvinnliga civilingenjörer. Syftet med studien är att undersöka förutsättningarna för ett jämställt byggprojekt i framtiden genom att jämföra Götatunneln, ett tunnelprojekt i konstruktionsfasen och Västlänken, ett framtida tunnelprojekt för Göteborg.

För att ta reda på förutsättningarna för jämställda projekt har en större allmän förståelse för nuvarande och framtida förhållanden så som de är beskrivna i litteraturen införskaffats. Denna genomgång följdes upp av 17 intervjuer med representanter för Götatunneln respektive Västlänken. Den bild som trädde fram av byggbranschen idag och förhoppningar om framtiden jämfördes sedan med svaren från en enkätstudie, denna studie genomfördes bland kvinnliga civilingenjörstudenter. Jämförelsens resultat testades i sin tur i en fokusgrupp.

Den teoretiska bakgrunden kretsar mycket kring att få in kvinnor på högre positioner, påvisa fördelarna med kvinnligt ledarskap och mixade grupper, betydelsen av kombination av familj och karriär, löner samt att diskutera kvinnors möjligheter att visa sig kompetenta. I intervjuerna tycktes mixade grupper vara en självklarhet. Egenskaper hos branschen som eventuellt kan ses som negativa ur ett kvinnligt perspektiv är främst kopplade till temporära arbetsplatser och materiell komfort. Pendling och konservativa arbetstider gör det även svårt för de kvinnor som vill kombinera karriär och familj. Det är också kvinnors fysik som kan vara en nackdel på en byggplats, men den fysiska faktorn elimineras i stort sett med tanke på att de framtida jobb som civilingenjörer får inte är de fysiskt krävande jobben. Enkäten visar på att studenterna vill ha både en familj och ett heltidsarbete. Föräldraledigheten vill de dela med sin partner. De faktorer som de intervjuade nämnde som förutsättningar för att kunna kombinera familj och karriär prioriterades inte särskilt högt av studenterna, vilket kan bero på att de inte är i denna fas i livet än.

Rapportens huvudsakliga slutsats diskuterades och utvecklades mest i fokusgruppen. Både de intervjuades och studenternas svar samt formuleringen av problemformuleringen antyder att den manliga dominansen och de största problemen i sektorn är kopplade till produktionssidan. Poängen här är att Byggbranschen är så mycket mer än bara entreprenörsföretag och detta är något branschen måste visa. Såväl civilingenjörer som allmänheten måste informeras om att det finns mycket fler möjliga jobb och uppgifter än de som direkt förknippas med en byggarbetsplats.

Preface

This Master Thesis was completed in December 2004 at the Department of Building Economics and Management at Chalmers University of Technology in co-operation with Banverket. When completing this Master Thesis we also complete our Master of Science degree of Civil Engineering at Chalmers University of Technology. We would therefore like to thank following people for helping us by sharing their knowledge and thoughts with us: our supervisor Göran Lindahl, for giving us valuable information, support and advice during this writing process and Gabriella Burel at Banverket for inspiring us to write this thesis.

Furthermore we would like to thank all interviewees in alphabetic order;

Conny Andersson (NCC), Mickael Andersson (Skanska), Stefan Andersson (SWECO), Linn Carlsson (Vägverket), Carl-Anton Holmgren (Vägverket), Per Lerjefors (Banverket), Hans Linderstad (Banverket), Sofia Persson (SWECO), Inger Ranheim (Banverket), Carl-Gunnar Ryberg (Vägverket), Björn Salomonson (WSP), Anna Samuelsson (WSP), Anders Sundberg (Exacon), Peter Svenningsson (Vägverket), Lennart Svensson (WSP), Helena Wiberg (Banverket) and Anna-Karin Wärn (Vägverket).

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Women in the sector today

Women represent about 30 per cent of the civil engineers graduating in Sweden every year (Statistiska Centralbyrån (SCB), 2002). However, women do not represent 30 per cent of the working civil engineers in the construction sector and according to Lind (2004) only four per cent of the leaders in the construction sector are women. This might not be a problem since a perspective is that women have other work tasks than men that suit them better (Wahl, 1992). Furthermore, Edin (1997) states that during the period 1968-1981 women's average salaries increased from 72 per cent to 82 per cent compared to the male's average salary, which can indicate that women are becoming more equal men.

The fact that women are becoming more equal men is illustrated in reality where the average percentage of women on the board of directors in all the companies listed on the Swedish stock-market is six per cent compared to 17 per cent in the four major Swedish construction companies (Ängshammar, 2004-06-12). This shows that the construction sector is doing quite well in the gender equality department. Still, there has been a lot of talk about the male domination in the construction sector and how women get discriminated. However, according to these statistics the current situation of women in the construction sector is good and it is improving fast. So, what is the problem?

A true story told by Arhén (1996) illustrates how people still have a hard time to decide who the manager is in a mixed group without having prejudices. The story is about a female construction manager who in her turn told the story of a man who was visiting a construction site. Every now and then he looked inside a building where two women with helmets were seated and every time he said to himself; "Nobody here". Eventually the female construction manager, who was one of the two women, asked the man who he was looking for. It was first then that the man realised that she was the person responsible at the construction site. He was very embarrassed and had probably not even noticed that he was saying "nobody here" out loud.

There is a problem!

Studies show that a mix of genders leads to a superior corporate performance. Men and women think differently resulting in diverse views and experiences; therefore it is important to gain both opinions (Rosener, 2003). Mixed groups concerning not only age but also gender give an advantage to the organisation when for example creativity is concerned (Knouse and Dansby, 1999). According to a study made by Catalyst (www.ledarna.se, 2004-03-19), a research and

advisory organisation working to advance women in business, the American companies with the most women on the board had a 35 per cent bigger turnover on the shareholders' capital. The study included 353 American companies that were on a list of the biggest companies in the USA between 1996 and 2000. However, during this study Catalyst could not prove that it was the participation of women on the board that resulted in the higher turnover.

It is no secret that there are few women in higher levels of organisations in the construction sector. According to Lind (2004) four per cent of the leaders in the construction sector; 19 per cent in the private sector and 55 per cent in the public sector are women. Does this mean that the women in management positions today are few? A trend can be seen throughout the whole construction sector where 99 per cent of the construction workers, 84 per cent of the engineers and technicians, 95 per cent of the construction craftsmen and 80 per cent of the Masters of Science and architects were men in the year 2002, according to the web page of SCB (www.scb.se). Considering these statistics there is a limited selection when it comes to possible female candidates for managing positions in the construction sector. To get more women at higher positions in the construction companies there have to be more women in the organisations.

But even if the companies were to attract more women in the construction sector, according to Bourdieu (2001), the masculine domination is so deeply integrated in peoples subconscious that individuals hardly understand all its' dimensions and how it affects them. In a study by Dainty et al (2000) it is mentioned that a male orientated and discriminatory culture is deeply rooted in the construction sector and it is unlikely that this is going to change in the short term. This means that the sector will remain hard for women to work in until the environment changes. This is, according to Dainty et al. (2000) why women find the sector unattractive.

According to Statens offentliga utredningar (SOU, 2002) the unequal gender distribution in the construction sector leads to the male dominated culture the sector is defined by and is known for. According to Lind (2004) there are both structural and sociological barriers in accepting women in leading positions and especially in the construction sector where a deeply rooted male dominated culture still exists. SOU (2002) refers to a report from Arbetsmarknadsstyrelsen (AMS) where the construction sector is being referred to as one of the sectors that is going to be the most affected by retirements. 38 per cent of the employees in the sector are going to be retired the year 2015, which results in 87 000 vacant jobs. Because of the increasing need for infrastructure constructions there will also be an increasing need for work force which combined with the number of retirements is going to result in the need of 176 000 new construction and installation workers in the year 2015 (AMS). In an article published 2002-05-15 by Ledarna (www.ledarna.se)

the future managers in Sweden are described. Ledarna and other operators agree on the fact that most of the managers today were born during the forties and are soon to be retired which will cause a switch of generations. However, among people born in the sixties, seventies and eighties the interest of becoming a manager is quite low. This is because the demands on managers have increased and a lot of young people think it is hard to find a balance between family life and career. This will lead to a lack of managers in a few years, especially since less people were born in the eighties than in the forties. The competition for competent managers will be tuff between companies, even if they will give women the opportunity to advance. Will this mean that the lack of women will no longer be an issue? be retired. ay was born during the 40'

A common opinion in the construction sector, according to Bergqvist (2004), is that the scepticism towards increased diversity in the sector is decreasing. He claims this statement is wrong. According to Byggbarometern it is people in the ages between 46 and 55 years old that are the most sceptical towards increased diversity. It is these people who are going to control the sector and recruit new people in the future according to Bergqvist (2004).

Diversity in a group means mixing individuals with different sex, ethnicity, sexual preferences, religion, class and age (Braaf, 2004). In a report presented by Braaf (2004) a perspective of recruitment in order to encourage ethnic diversity in a government organisation is studied. In Sweden the educational level of immigrants only marginally differs from the educational level of Swedes. Despite of this, immigrants with a higher education more often end up unemployed or with a lower salary than Swedes. There may be a lack of immigrants in the construction sector but this thesis is going to focus on another issue; the shortage of women in the sector.

Heterogeneous groups are an example of groups with members with diverse backgrounds. Figures from a questionnaire presented in Byggcheferna and presented by Bergqvist (2004) indicate that the statement that heterogeneous groups are preferable to homogeneous is not accepted throughout the construction sector. One out of four construction managers do not desire to increase diversity in the sector. Furthermore, one sixth thinks that the demands on competence are an obstacle for women who want to work in the sector. Bergqvist (2004) thinks that to change this in the construction sector women managers who often are good at communication and gain approval have to be recruited. With the future demand of recruitment in mind he thinks it would be stupid to limit the selection to half of the population. He believes that more women in the sector will contribute to a more dynamic work environment. To obtain gender equality construction companies need to have clear objectives of equality work, action plans and time tables. To

motivate managers to work towards equality Bergqvist (2004) suggests a bonus salary if the manager reaches the objectives. This suggestion is similar to the one given by Arhén in an article in the same newspaper 2002.

What can be learned and what will be done

Wahl has in a study made in 1992 investigated the career opportunities of women with a degree in economics or a Masters of Science as well as the reason for the lack of women in leading positions. In her study Wahl (1992) presents different perspectives of gender equality. One is that women have the same rights as men to do the same work. Another perspective is that it is in the interest of an organisation to broaden the selection of candidates to every position. Braaf (2004) also writes about diversity and she mentions fairness and benefit due to diversity as two different dimensions of diversity. Companies and thereby society is missing out on women's experiences, and influences, therefore it is important that the distribution of work between genders changes, so women's work will not be less valued (Wahl 1992).

To attract more women the companies must find out which factors that are important to women when choosing a job. In a study presented by Dagens Industri 2003-02-13 it was noted that factors such as interesting work tasks, clear feed-back and competent co-workers are higher ranked than a high salary when choosing a job (www.ledarna.se). The study was made by the recruitment company Alumni and included mostly economists and engineers. As mentioned earlier, approximately 30 per cent of the graduating civil engineers are women (www.scb.se). Despite of this less than 30 per cent of the civil engineers that are recruited in construction companies are women (www.scb.se). Many scientists argue the benefits of a heterogeneous group. Wahl (1992) is one of those that points out how groups with members of different sex, background, age etc are better working and more effective groups. Why should the construction sector be different and not benefit from having women in the sector?

When recruiting for the construction sector, it is important to know what women want. This is of interest to find out why so few women choose the construction companies in the construction sector. If this is a deliberate choice the lack of women will remain regardless of how many women that graduate. To find out if women are needed, experiences of a present project are compared to the visions of a future project. The aim of the study is to find out what the interests of the female students starting or graduating are at the moment. To narrow out the study Chalmers University of Technology and female students at the civil engineering program were chosen to be in the focus of this study. The gap between the present and the future, if there is a gap, will show the

need for companies in the construction sector to attract women and the interests of the female students will show how to attract women.

The purpose of this study is to investigate how companies in the construction sector could attract more women civil engineers. To get practical examples of how women are perceived in and attracted to projects in the construction sector this master thesis is made in cooperation with Banverket. It is an authority with overall responsibility for the railway system in Sweden. Banverket follows and promotes development throughout the railway sector. Their administrative units plan and procure construction projects related to the state railway system. The orders are placed internally from the production units or externally from contractors and consultants.

Banverket has begun planning for a new big project which is an underground train tunnel in Göteborg. At the same time the authority responsible for the road transportation system in Sweden is completing a road tunnel underneath Göteborg. If the road tunnel is the past and the train tunnel the future, is there a gap between these projects when gender equality is concerned? Is it possible to get a gender equal train tunnel project considering the present conditions? A vision is to be able to use the recommendations sprung from this master thesis to create gender equal projects in the construction industry. How can this be achieved?

The past and the future

Ledarna (Swedish Confederation of Executives and Managerial Staff) refers to an article published in DN-debatt 2004-04-08 (www.ledarna.se). It was written by Lars Bergqvist who is the chairman of Byggcheferna. He comments on a study that Byggcheferna did with the help of a questionnaire which managers in Swedish construction firms answered. In the ten biggest construction companies Sweden only eight per cent of the managers were women. He compares this to the whole private sector were 19 per cent are women and the whole public sector were 56 per cent are women. According to Bergqvist the two major public construction companies; Banverket Produktion and Vägverket Produktion that he studied in his master thesis had only seven per cent and five per cent respectively female managers.

The authority responsible for roads, the road transportation system in Sweden, is the Swedish National Road Administration, SNRA (Vägverket) (www.vv.se). The SNRA is responsible for deciding and applying road transport regulations as well as planning, constructing, operating and maintaining the state roads. Their main tasks are presented on their homepage which are involvement in representing the state at a national level concerning issues related to the environmental impact of the road transport system, road traffic safety, accessibility, level of

service, efficiency and contributions to regional balance. SNRA is also involved with issues related to intelligent transportation systems, vehicles, public transportation, modifications for the disabled, commerce, applied research and development and demonstration activities within the road transportation system.

The entire Götaleden development project comprises a three kilometre stretch of road, of which 1.5 kilometres will run through the Göta tunnel under central Gothenburg (www.vv.se). The Göta Tunnel comprises three sections; a rock tunnel in the middle with connecting concrete tunnels at each end. The principal contractors of the Göta tunnel are Skanska, SNRA Production, Lilla Bommen tunnel KB, NCC and Installation contractor ABB Building Systems. The estimated cost of the tunnel was SEK 2,97 billion. The entire Götaleden will be completed in year 2006.

The authority responsible for rail traffic in Sweden is Banverket. On their homepage they present their main tasks, which are to follow up and conduct development in the railway sector and assist the government with railway issues. They are also responsible for the operation and management of state track installations, the co-ordination of the local, regional and inter-regional railway services and for providing support for research and development in the rail sector. Furthermore, enriching multitude is stated as a personnel and work environment policy. It says that when different people's experience and point of view are observed, will creativity, efficiency and comfort increase. Therefore, the workplaces of Banverket should be characterised by diversity concerning age, gender, competence and ethnic belonging. At their home page data regarding personnel the year 2003 shows that 83 per cent of the personnel are men and only 17 per cent are women, all ages included. Nevertheless, most of the personnel are older than 45.

One of Banverkets new projects is Västlänken. It is an underground train tunnel in Gothenburg. The next step in the rail way inquiry for Banverket is to investigate four alternative rail constructions under the city. At their home page it says that Västlänken will give stations in the central parts of Gothenburg and this will improve and facilitate travelling in the western parts of Sweden. It is a way to meet the increasing travelling by rail demands in the Gothenburg area and it is an opportunity to improve the environment in Gothenburg and work towards a sustainable society.

Banverket has demands concerning equality and therefore the company has appointed a committee that will investigate how the objectives of equality can be achieved.

Methodology

In this study both quantitative and qualitative methods such as questionnaires and individual interviews have been used to gather information. There is a point in using both quantitative and qualitative methods because in this way they compensate each others weaknesses. A questionnaire has been used to find out what is common and representative for a specific group (Göransson, 1995). The qualitative method such as the interviews has been used to discover any deviation in how individuals perceive different phenomena (Göransson, 1995). The different methods have been used in the project process in the order that is shown in Figure 1.

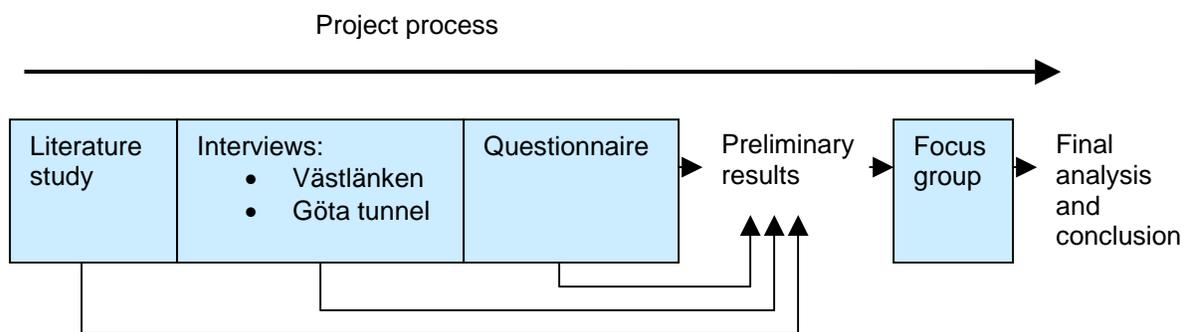


Figure1. The project process of this master thesis

Interviews were carried out with representatives of the working teams at the Västlänken project and from the Göta tunnel project to establish practical examples of advantages and disadvantages with heterogeneous groups. Why the Göta tunnel project was chosen as a comparison to the Västlänken project is because both projects have a state-owned company as a proprietor and private-owned companies as contractors. Questionnaires have also been handed out to women who study civil engineering at Chalmers University of Technology. What are their preferences? Do preferences change during their education? The main assumption has been to establish that heterogeneous groups concerning gender are more efficient and better working than homogeneous. If the main assumption proves to be correct the Göta tunnel project should be seen as an example of where the sector is today and the Västlänken project, with heterogeneous work groups should represent the future. Is there a gap between future and present, if this is the case, what needs to be done?

After analysing the findings from both the questionnaire and the interviews with the help of the theoretical framework, several preliminary results and recommendations were made. In order to test if these results and recommendations were applicable in practice, a focus group was

gathered to question the validity of the result. The focus group contained representatives from companies from both projects and some students from Chalmers University of Technology. The people who took part in this session had either been interviewed or had answered the questionnaire before. A focus group approach was chosen because it is a good opportunity to let people share their ideas and develop new ones that are going to help answering the main question of this master thesis.

Why interviews?

Gordon (1971) explains the difference between behavioural and non-behavioural ways to gather information and interpret it. They are actually two different philosophies where behaviour orientated researcher try to isolate a particular behaviour and observe reflections, they strive for a quantitative measure on the characteristic. They seek for a behavioural or physiological pattern that can be applied to the majority of the population. On the other hand non-behavioural scientists try to find out how the individual's own experiences look like (Gordon, 1971). This can only be done through an interview with the person in question. In this master thesis 17 interviews were carried out; seven of those were with representatives of the Göta tunnel project and the rest with representatives of companies involved in Västlänken project. Most of the interviews lasted for approximately one hour, one interview only lasted for half an hour and one interview lasted for almost two hours.

An interview, according to Gordon (1971), is an instrument used to gather information for a specific cause. The interview consists of information gathering and information analysis. When not asking questions to receive Yes or No answers, the best results are obtained when the interviewer is unconditional and does not expect any particular answers. However, this is not possible since scientific research is all about the interaction between theory-empirical findings. The interviewer uses theory in order to be able to formulate different hypotheses during the interview. In other words an interview is an instrument for testing a hypothesis's validity. In this study a qualitative way of analysing interview findings has been used. This means applying theory and tested empirical findings to interpret the information (Gordon, 1971).

Gordon (1971) states that interpretation of the interview findings must be done in stages in different levels. First, all information is gathered followed by an integration between findings and the theoretical framework. The interpersonal dynamics between the interviewee and the interviewer is important to consider when the findings are analysed. It is very easy for the interviewers own values to shine through and thereby influence the interviewee's answers. It is therefore important for the questions to be as open as possible so the interviewee can answer

spontaneously, but without leaving the subject. In other words, the questions have to be expressed in a way that it is easy for the interviewee to answer detailed and on his own natural way. However, it is important in some point of the interview to ask some leading questions so the interviewer can test the validity of the hypothesis (Gordon, 1971).

In order to receive detailed and spontaneous answers the interviewer has not only to have well-formulated questions but also follow up the hints that are hidden in the answers (Gordon, 1971). This can be done during the questions by asking relative questions or by summing up everything the interviewee has said and ask him to reflect upon that. Trost (1997) however, thinks that summarising during an interview would result in an awkward moment during the interview because the interviewer may not have the same interpretation as the interviewee. Also the interviewee may because of politeness not tell the interviewer that her/his summarise is not entirely correct. It is better to ask more questions in order to be sure of what the interviewee means. When an interpretation of all findings is done that explains all gathered information in a reasonable way and there are no alternative ways to interpret the information is the interview process over (Gordon, 1971).

According to Trost (1997) there are two kinds of interviews; qualitative and quantitative. A qualitative interview is characterised by the easy questions that are asked and the complex answers that are received. After having an interview like that the interviewer has gathered a lot of complex material which with a lot of work and analysis will result in many interesting patterns, opinions etc. Many believe that qualitative studies are pre-studies for the quantitative interviews (Trost, 1997). The quantitative method, on the other hand, provides an overall picture which gives increased understanding of the social processes and their context (Holme and Solvang, 1997). Quantitative studies are believed to be better because they are less speculative than the qualitative and therefore people can understand the outcome easier. In few words Trost (1997) thinks that with quantitative studies the outcome always is measured in quantities e.g. numbers and therefore are easier to understand. Furthermore, Trost (1997) philosophy is that if he is interested in exploring why different individuals think or act the same, or in some cases differently he would do a qualitative study. That is the case of this study and therefore qualitative interviews have been carried out. Trost (1997) uses interviews in order to see reality through the interviewee's eyes and then interpret it with the help of the theoretical framework and the given situation.

According to Ekholm and Fransson (1975) there are two ways to characterise information gathering; direct/non-direct and structured/unstructured. All gathered information that is a result of the observers own observations is called direct, while if all information is a result of others'

observations it is a non-direct information gathering. Interviews and all other methods that include questioning are examples of non-direct methods. Structured and unstructured information gathering has to do with how well the information gathering is planned and in what extent different situations can be controlled by the gatherer. Trost (1997) explains the difference between standardised and structured interviews. Standardised interviews are those where situation and all questions are the same for all interviewees. If something is standard it lacks variation. The majority of all qualitative studies use a highly standardised way of gathering information. Structuring on the other hand can be two things; when questionnaires and interviews have predefined answers or when an interview or questionnaire follows a structure. Thereby, Trost (1997) means that when the term “structured” is used it is important to identify if the term refers to the questions themselves or the whole study. Trost (1997) uses the term “structured” both when it comes to individual questions as well as for the whole study. Trost (1997) further points out the fact that qualitative interviews are characterised of being highly structured and never standardised.

Questions used in interviews can be either open or closed. Having open questions give the respondents the opportunity to answer as they prefer to unlike closed questions where the alternative answers are given and the respondents only can choose one of those. The open questions do not suggest how the respondent should answer, which words to use and is more similar to an ordinary conversation. It opens the possibility to new knowledge and values. Open questions thereby increase the validity of the results (Holme & Solvang, 1997). Five categories of questions were asked during the interviews. In all, there were 23 open questions; four included in the category career, four questions concerning heterogeneous versus homogeneous groups, six questions relating on how it is to be a women in the construction sector, six questions in the category named “women leadership in the construction sector” and then three general questions in the end (Appendix 1).

Ekholm and Fransson (1975) believe that interview methods are characterised by how controlled the questions and the answers are. There are two extreme methods; questionnaires (see chapter why a questionnaire, p11) and non-controlled interviews. Ekholm and Fransson (1975) believe that non-controlled interviews can be a good way to begin learning about a new subject. Its advantages lie in the possibility it offers for the interviewer to go in depth with some answers during the interview. Ekholm and Fransson (1975) believe that such interviews should be the first step in the information gathering process. With interviews it is easy for the interviewer to find where the problem is and gain an insight on others practical experience on the matter at hand.

There are, however, some disadvantages with interviews that the interviewer should be aware of (Trost, 1997). During the interview the interviewer has to be alert and identify the interviewee's immediate response and body language. Some times the true answer lies in the interviewees "wordless" response, which makes it difficult for the interviewer to identify. It is important for the interviewer to clarify what the purpose of the interview is so the interviewee does not feel reluctant to answering any questions truthfully. There are some other disadvantages when it comes to interviews that depend on: the interviewee, the interaction between interviewer and interviewee and on the interviewer. The interviewee sits in with important information, which the interviewer wants to find out. Some times though, because of the interviewer's weak memory, high level of stress, defend mechanism and the language barrier the interviewer has a hard time to receiving relevant information. Then, there are obstacles during the interaction of the individuals such as their individual ideal picture, their expectations, lack of communication and weak interest that can jeopardise the outcome and mould it into something that does not reflect reality. Furthermore, when the interviewer is going to report the interviewees answers there are several things that can alter what has been said. Some examples on where it can go wrong are: during the registration, the interviewers own experience and knowledge on the subject as well as norms and interpretation of the answers.

The registration method used during the interviews in this master thesis was taking notes. This might be risky since information could be lost and misinterpreted. However, this method does not disturb the interviewee and the interviewer can pay attention to both the questions and the received answers (Ekholm and Fransson, 1975). This was very crucial for this study since it focuses on the individuals' views and the interviewee feels uncomfortable being recorded, which eliminated this as an option (Trost, 1997). If extensive notes are taken during the interview the interview process could be disturbed and this is why one person asked all the questions and only wrote down main points while the other interviewer took more extensive notes.

Why a questionnaire?

According to Trost (1994), questionnaires have a lot in common with personal interviews. There is though one big difference between the techniques, which is that all questionnaires are characterised by the fact that it is the interviewee that note the answers to the questions and therefore there is no interviewer. There are two types of questionnaires, according to Trost (1994). One is sent to the interviewees and the other is given to them in person. The type that Trost (1994) focuses on is the one that is sent to people. The process of doing a questionnaire always starts with identifying the purpose of the study (Trost 1994). In this master thesis one of the aims is to find out what construction companies should do to attract more women civil

engineers. By using the questionnaire an identification of the preferences among female civil engineering students was done. There were students chosen that were in the beginning of their studies as well as some that were in the end of their studies, to find out if their preferences change during the education.

The second choice that has to be made is if the survey should be qualitative or quantitative. A quantitative study is when numbers or numerical words are used. Qualitative thinking means avoiding these kinds of comparisons. It is also common to use scales, spectrums and intervals (Troost, 1994). Qualitative and quantitative surveys are possible to combine. However, when the purpose of a study is to find out how many per cent of a selected group that thinks a certain thing, a quantitative study should be made according to Troost (1994). Since the purpose of the questionnaire in this master thesis is to find out how common different opinions and preferences are among female students, the major part of the questionnaire is quantitative. However, to find out what preferences and opinions exist, a qualitative survey has to be made.

The third thing that has to be considered when preparing a questionnaire is, according to Troost (1994), which population should be included. As mentioned above the questionnaire in this master thesis includes civil engineering students, some in the beginning and others in the end of their studies. If the whole population can not be included in the survey representative selection of interviewees has to be made to get a fair opinion of the preferences of the chosen population according to Troost (1994). How the selection should be made and how big it should be needs to be decided from the beginning. In this study it was decided to hand out the questionnaires to students to receive a high frequency of answers. Troost (1994) also comments that people can be affected by the questionnaire. One important point that is made is that it is not permitted to keep a record of people on a computer which makes it possible to identify them. According to Troost (1994) it is desirable to reach a high level of standardisation when most questionnaires are considered. This is because standardisation makes it possible to compare answers and make statements about the opinions of a whole population. A question could be described as structured which means that there are fixed alternative answers. The questionnaire itself could also be structured which would mean that it keeps to the subject and does not include questions outside the topic. The reliability and validity of a questionnaire should also be investigated (Troost, 1994).

There are different kinds of questions that could be included in a questionnaire. There are questions that concern actual facts such as age and gender as well as questions that concern attitudes or opinions (Troost, 1994). To get answers to these questions alternative answers such as always, often, rarely or never could be given. Another way to get an opinion could be to make a statement and then give alternatives such as fully agree, partly agree, do not know and

disagree. Other ways of answering could be in tables and yes or no questions. If the questions are non-structured or open they do not have given alternative answers. Trost (1994) stresses two negative aspects of open questions in a questionnaire and do not recommend them. The first aspect is that it takes time to interpret and categorise the answers and the second aspect is that interviewees that are insecure on how to answer a question often end up not giving any answers at all. To save time and avoid misinterpretations all the questions in the questionnaire included in the study of this master thesis will be structured.

Another important aspect of a questionnaire is according to Trost (1994) that a question only asks for one thing. Otherwise it is not possible to know which part of the question the interviewee answers. It is also important not to use a too complicated language and avoid negations and long formulations. The questionnaire should be consequent in layout and use of language, not to mix course of events with conditions and not use emotionally charged words (Trost, 1994). Some questions are sensitive and should therefore be carefully asked as well as all the questions have to come in an order that is consequent and attractive.

How was the questionnaire structured?

A questionnaire was handed out to and answered by female civil engineering students at Chalmers University of Technology in the beginning of November 2004. The Swedish original of the questionnaire along with the fixed alternatives and the frequency of answers in percentage are found in appendix 2. In total 63 answers were received. At the moment 250 female students (estimated value) attend the civil engineering education at Chalmers which means that 20 per cent of the students answered. The questionnaire used in this master thesis consists of five categories of questions. These are background, the choice of university & education, studies at Chalmers, home & family and future employment. To have categorises is a way to make the questionnaire easier to fill in and evaluate. In total the form includes 31 questions and all of these have fixed alternative answers. Similar questionnaires have been carried out by Bengtsson and Nilsagård (1989), Göransson (1995) and Wahl (1992). Therefore many of the questions have been inspired by these questionnaires. The questions that are similar to former questions will be easy to compare to the answers from the past studies.

Bengtsson and Nilsagård (1989) made a questionnaire with the purpose of investigating the work situation of students studying their Masters of Science, their view of their education at Chalmers University of Technology and what factors affect the stream of students to the Civil engineering (V) education. The questionnaire consisted of three parts; choice of University, work in the past and work at present combined with thoughts about the V-education. In the questionnaire there were a total of 54 questions included. In this master thesis a questionnaire has been handed out

to female V-students at the Chalmers University of Technology and serves almost the same purpose as the questionnaire used in Bengtsson and Nilsagård's (1989) study. Therefore especially the first part of the questionnaire is in large parts inspired by Bengtsson and Nilsagård's (1989) questionnaire. The questionnaire carried out by Göransson (1995) focused on students of technology at Chalmers University of Technology in a gender perspective. The form included 40 questions and was answered by students from three programs: Chemical engineering (K), Mechanical engineering (M) and Electrical engineering (E). Inspiration for this master thesis' questionnaire, regarding the gender perspective at the University could be found in Göransson's (1995) questionnaire. The questionnaire by Wahl included 155 questions structured according to seven categories; education & degree, background, home & family, present employment, self-employment, questions for: students, people working at home, are home with children & unemployed and, finally, line of life. The questionnaire made by Wahl (1992) concerned women with a Bachelor of Science in Economics or a Master of Science and the aim of the study was to study the development of their careers. Inspiration from Wahl's (1992) questionnaire as well as some questions from the categories: education & degree, background, home & family, present employment and line of life were also used in this master thesis's questionnaire.

Background

The first 12 questions are included in the category background. Questions number one to four ask about age, year of registration, grade and final direction. Question number one is included in all the three previous questionnaires and in this questionnaire it was formulated as Trost (1994) recommends on page 63. Question number two was influenced by the questionnaire of Bengtsson and Nilsagård (1989). Numbers five to eight ask about direction of studies at gymnasium, time off during studies between gymnasium and university, other academic studies and jobs before academic studies. Questions similar to number five could be found in all three former questionnaires. Question number six was inspired by the questionnaire of Göransson (1995). Questions number eight from the category concerning the students' choice of university was taken from the questionnaire of Bengtsson and Nilsagård (1989). Number nine aims at finding out if the respondents have had any time off their studies at Chalmers University of Technology and number ten if the respondents have been supported by their family during their years of studies. Question number nine was inspired by the questionnaire of Göransson (1995) and number ten in this master thesis' questionnaire is similar to questions found in the questionnaire by Göransson (1995) and Wahl (1992) but the alternative answers have been altered to better suit today's reality. Number 11 and 12 ask about the highest education of the student's mother and father. These two questions from the category background have sprung

from a similar question in the questionnaire of Wahl (1992) with the same alternative answers and are also similar to questions found in the questionnaire by Göransson (1995).

The choice of university & education

Questions number 13 to 17 are categorised as choice of university & education. Number 13 aims at finding out if civil engineering at Chalmers University of Technology was the first choice of the respondent. Number 14 asks for factors that affected the choice and number 15 if the male domination affected the choice. Number 16 concerns possible regrets and number 17 asks if they knew what subjects the education included when they made their choice. Questions similar to number 13, 14 and 16 in the master thesis' questionnaire are found in the first part of the questionnaire by Bengtsson and Nilsagård (1989). A question similar to 13 can also be found in the questionnaire of Göransson (1995) and a question similar to 14 can also be found in the questionnaire of Wahl (1992). In these two questionnaires there are similar questions to 16 as well. Questions number 17 from the category concerning the students' choice of university was taken from the questionnaire of Bengtsson and Nilsagård (1989).

Studies at Chalmers

The following five questions (18-22) are included in the category studies at Chalmers University of Technology. Number 18 asks if they like it at Chalmers, number 19 how they apprehend the total percentage of women in their grade at civil engineering and number 20 what they think of the number of female educators at the civil engineering faculty. Question number 18 was inspired by the questionnaire of Göransson (1995). Questions number 21 and 22 handle the topic women versus men and if this has affected their studies or literature. Question number 21 was from the questionnaires of Wahl (1992) and Göransson (1995) and number 22 from Göransson's (1995).

Home & family

Questions 23 – 26 are included in the home & family category. They consider civil status, kids, time spent on housework and how family life should be combined with a career. Questions number 23 and 28 in the master thesis' questionnaire are similar to questions found in the questionnaire by Göransson (1995). Three questions from the category home & family (number 23, 24 & 25) were inspired by the questionnaire of Wahl but the alternative answers had to be adjusted to suit the circumstances of today. In the study of Wahl (1992) most of the women were older and were married or living together with a partner and had children. In the questionnaire of this master thesis the alternative concerning the number of children has been increased since all the women included in this study are fairly young and studying which would make them less likely to have children. Question number 26 was collected from the questionnaire of Göransson (1995).

Future employment

Wahl's (1992) category "present employment" has influenced the remaining questions (27-31). However, in the questionnaire of this master thesis the category was renamed to "future employment" to suit the target group better. Future employment is the last category and it includes five questions. Number 27 asks what sector the respondent wishes to work in. Question number 28 considers factors that make the respondent content in her work. The three last questions (29-31) ask about their desire to get a management position, their future plans and their career goals.

Why a Focus Group?

In the initial face of the study the plan was to first conduct interviews, then distribute the questionnaire and after that have a brainstorming. According to Rich (2003), brainstorming is an activity people use to generate ideas in a relatively quick and organized way. A brainstorming is carried out to generate ideas and possible solutions, to find all possibilities and to stimulate creativity when addressing an issue or a problem. Everyone participating in a brainstorming session is given a chance to be creative for a specific purpose (Rich, 2003). Rich (2003) claims that there are no predefined rules for brainstorming. According to Barker (1997) Alex Osborn's four rules of brainstorming are: Criticism is ruled out, 'Freewheeling' is welcomed, Quantity is wanted, Combination and improvement are sought. This means that negative judgement of ideas must be withheld until later. Osborn thinks that the wilder the idea, the better because it is easier to tame down than to think up. Furthermore, the greater the number of ideas the more the likelihood of finding good ideas.

As the text above indicates, a brainstorming might be a process to start with. In this master thesis the purpose of the brainstorming was to test present ideas and results where quality and not quantity is wanted. Therefore, it was discovered that what this thesis actually needed was a focus group. According to Wibeck (2000) working in a focus group means gathering a group of people to talk about a specific topic during a given period of time. The group is lead by a moderator that introduces new perspectives on the theme, whenever needed. The moderator is no interviewer, because the aim of having a focus group is for the people to be able to talk freely about the topic at hand. The word focus indicates that the discussion is about a given theme. The theme is presented by either the moderator or on the material that is handed out. Focus groups were traditionally used during marketing research, but according to Wibeck (2000) are nowadays also used in the academic world. The focus group method is used as a method to study people's

ideas, attitudes and values about a specific subject. This method has also been used to develop questions used in questionnaires, however not in this master thesis.

In practice, having a focus group means gathering appropriate members for the group, write material and a question at issue to stimulate the members into a discussion, lead the group, record the discussion and then write it down and analyse the material (Wibeck, 2000). The group that was chosen in this study consisted of two representatives of the construction sector that had previously been interviewed, as well as two civil engineering students at Chalmers University of Technology that had answered the questionnaire. These people were chosen because they were already familiar, because of the interview or questionnaire, with the study and the main question at issue. In this way the members had already been forced into developing their own thoughts about the subject and could therefore contribute better during the discussion, because of their well formulated ideas. Some new ideas were generated during the session and a couple of old ideas were confirmed. The discussion was written down instead of recorded, because of the nature of the subject being very personal and taboo.

Apart from the research-work results, this method can also be of importance for the members that participate in a focus group (Wibeck, 2000). The members have the chance to gain awareness on the topic that is discussed, which in this way affects them both directly and indirectly. Many topics that are discussed in focus groups are things people have an opinion upon, but it is not until they participate in a focus group that they are forced into taking a side on the matter. Another advantage is that when the group members talk freely about a subject they will present aspects and thoughts that the researcher has not thought about before. Furthermore, the group members' experience affects the group, where he/she presents her/his ideas for the other participants and by explaining herself/himself new ideas may arise and new opinions can be made. It is often easier to explain an idea for a group during a discussion than during an individual interview (Wibeck, 2000).

Wibeck (2000) means that instead of just helping out when the discussion is not preceding, the moderator can become some kind of dictator that decides what should be discussed or not. Another disadvantage with the method is that the group members get influenced by the other group members. The members maybe do not feel at ease with presenting their point of view if there are dominant people that think differently. The group members can start thinking as one person and stop being creative. Furthermore, Wibeck (2000) points out that other difficulties concerning focus groups are, as with other methods, to choose the right people to be part of the discussion, that the people that partake are willing to present their ideas and which topics should be discussed. Another thing the moderator should do is to detect power and dominant behaviour

in the group and minimise it, so everyone can have the chance to speak their mind (Wibeck, 2000).

Earlier studies and theories

In this chapter results from the literature study are presented according to seven themes. These themes concern why heterogeneous groups are preferable to homogenous groups, differences between the two genders and if competence and skills that relay on the sex. The themes chosen are: Different salaries for different genders, Competence vs gender, Women are not men, Family and career, Increasing women in management positions, Women's leadership: advantages/disadvantages and Male domination. These themes were chosen because they are the most representative ones when it comes to why women traditionally do not choose to work in the construction sector, or why after entering the sector they eventually leave.

Different salaries for different genders

Löfström (1997) presents a historic outlook on the development of women's average salary in Sweden. Löfström (1997) emphasises that Sweden had a policy to equalise wages and the result was higher average salaries for women and less low-paid workers. Löfström (1997) thinks that the individualisation and market adjustment might result in an increased gap between female and male salaries. Edin (1997) presents figures showing that the differences between female and male average salaries increased during the period of 1981-1991. A reason for this is probably that salaries in sectors dominated by women like healthcare and teaching have decreased. Since 1974 higher education and experience has contributed to increased women's salaries.

During the spring of 2002 Ledarna (www.ledarna.se) did a review on gender equality on the labour market. As the chairman of Ledarna states in his article they defined two problems that concerned all workers in all levels. The first was that in the female dominated sectors the average salaries in all levels are lower than other sectors. The few men who work in these sectors receive a "Woman's salary". The second problem is the average difference in salary between men and women. When consideration has been made to the line of business, sector and employment, women receive an average salary that is 8-9 per cent lower than men just because they are women. In Chefsbarometern 2003 (www.ledarna.se) which is a yearly survey of the managers' situation in Sweden made by Ledarna, it was observed that the salary of women in leading positions has increased with eleven per cent. In spite of this, a gap of SEK 5.300 in monthly salary between the two sexes remains.

Competence vs gender

When individuals act according to societal beliefs and expectations on how men and women ought to be they are adopting their gender role. When an organisation distributes work to individuals according to their sex and therefore their assumed abilities and preferences, the organisation is gendered (Marongiu Ivarsson, 2000). According to Göransson (1995), this is a common phenomenon in male dominated organisations that assume that women because of their sex do not have the technical competence. In these cases women are judged as a group and not as individuals. However, Marongiu Ivarsson (2000) points out the difficulty to separate sex from gender because of their complicated relation and the fact that they are inevitably connected.

Billing and Alvesson (1989) have identified and labelled “four ways of looking at women and leadership”. They stress the importance of having equal opportunities for both men and women. In order to achieve this, the differences in all social institutions, family, education, work market etc have to reduce. It is believed that stereotyped thinking about women and their societal forced selections are suggested as barriers for women’s career development. The meritocratic perspective has to do with effective usage of human resources where organisations will profit from recruiting individuals with qualifications and personal merits rather than their gender, class, race or religion. However, because of different socialisation processes, men and women do differ when it comes to values, ways of behaving, traits and experiences. According to Matusak (2001) women are characterised by being gentle, emotional and compassionate while being aggressive, competitive and action-orientated is considered as male attribute. Traditionally, women are not suitable to become managers (Matusak, 2001). However, these gender differences in personality traits of leaders are differences that reflect socialised perceptions of the observer. People see what they are socialised to see. Yet, styles and characteristics of leadership is gender related and not gender specific (Matusak, 2001). Billing and Alvesson (1989) claim that under-representation of female managers could be derived from their lack of motivation to pursue such a career. This is a direct result of men and women having different values when it comes to family and making a career. What organisations have to do is take female skills and values into account and make organisations more “woman-friendly”. They have to understand that being different is a strength; not a weakness. Women should therefore discover their strengths and skills and not let organisation’s culture and norm mould them into “men”.

According to Nilsson (2002), during a recruiting process the competence of the applicant is going to determine whether she/he gets the job. The applicant is going to be judged by the recruiter’s own expectations on what is required. There are two kinds of competence; formal (educational

background) and informal (the individual's own experiences and characteristics). Intuition and emotions are what the recruiter use to be able to judge the informal competence of an individual. This means that because of the recruiters own social and cultural experiences is unable to identify the applicant's competence in some cases.

Braaf (2004) writes about an important aspect of recruitment which is competence. In her report five dimensions are distinguished, which makes it even more difficult for a recruiter to identify the applicants real competence. The first is professional competence. It includes knowledge that is needed to perform all work tasks in a professional technical way. The second competence relates to personality. The third is social competence and it is how a person works with and gets along with other people. The fourth competence is strategic and includes how a person surveys the internal and external environment. The fifth competence is functional competence, which in a few words is how a person put all the other competence to use.

One kind of competence that is easily detected is the actual achievements of individuals during their studies. In their book "Women in Science" Xie and Shauman (2003) study the math and science achievements of young students. The conclusion is that gender differences in average achievement in math and science are small in magnitude. Even though mean differences are relatively slight, the greater variability of achievement scores among men than among females. This results in an under-representation of women in the upper tail of the achievement distribution. The under-representation of women among the highest achievers during high school may be one explanation to the under-representation of women in higher educations. In other words the study showed that the most stupid woman is less stupid than the most stupid man as well as that the most clever man is more clever than the most clever woman.

Women are not men

According to Styrborn (2000), organising, planning and structuring are activities that attract women to become leaders. Women want to perform independently, make decisions and solve problems. Interpreting leadership and power as being the same thing is male related quality. In his study, Styrborn (2000) illustrates the distinct differences between male and female leadership. Men are more objective-orientated in their leadership than women and they are rougher and more efficient in negotiation situations. Furthermore, he argues that female managers compared to male managers have more stable and long lasting relationships with their co-workers, while men have a strategic way of thinking and relatively shallow relations to their colleagues. Another difference, according to Styrborn (2000), is that men need to compete in a greater extent than women. Women in leading positions are more willing to admit their weaknesses compared to men

in the same position. This is an advantage because women can identify difficulties and are able to rectify them before they become a problem (Styrborn, 2000). A final difference is that women in contradiction to men have difficulties in highlighting their advantages (Styrborn, 2000).

Another thing that men and women differ in is, according to the research performed by Göransson (1995), how they perceive technology. Women are more interested in the sociological impact of technology. While men are interested in the technique women think of society and people. A common opinion is that technology is not for women since it is perceived as boring, hard and cold. It is the context and approach of technology that is the cause for the lack of women in this field. Another conclusion was that solidarity among women increases as the number of woman decreases in the organisation. However, this turned out to be true only in theory. In reality women in male dominated organisations prefer groups consisting of men. Göransson (1995) interpreted the difference in answers between men and women as an expression of a superior /subordinate phenomenon. Women see themselves as different while men perceive both men and women as being more similar. This could be because women are subordinated in a male dominated organisation and have to relate to the superior men. The superior men however, relate to each other and are therefore unaware of women's policy-making and behaviour. According to Göransson (1995) women are also more thorough.

Furthermore, Ahrén and Zaar (1997) stress the difference between men and women when it comes to how they organise; men in general like hierarchical structures while women prefer flat structures and smaller groups. According to Af Jochnick (1999) the hierarchical structures are like pyramids with the strongest man in the top position. Women on the other hand want similarities within a group where all involved individuals are on the same level so a network can be created. The leader in this type of organisation is located in the middle of a circle and has to prove worthy of the position (Ahrén and Zaar, 1997). Women should stop worrying and giving themselves a mother role in the organisation only to become popular. A leader does not have to be popular with all the people in the organisation.

If all the above differences between the sexes are true, a group consisting of men and women is a heterogeneous group in more than one aspect. The less homogeneous a group is the more experiences are brought into the group which will support development and new ways of thinking (Ahrnborg 1997). Ahrnborg (1997) mentions one exception which is a group that is going to work with a specific project that demands certain knowledge. Then the project will benefit from a group consisting of people with, for example, the same experience or education. Ahrnborg (1997) also presents a profile of the typical manager's candidate the last decade in Figure 2.

Sex:	<i>Male</i>
Age:	<i>35-40 years</i>
Nationality:	<i>Swedish</i>
Education:	<i>Master in economics or Master of Science (preferably both)</i>
Qualities:	<i>Analytical capability, determination, planning capability, selling skills, power of impact, goal-oriented, result-oriented, stress strong etc</i>

Figure 2. Typical manager's candidate

In the 21st century qualities such as creativity, taking initiative, ability to communicate, flexibility and positive thinking are demanded. Ahrnborg (1997) also stresses that research show that women have the qualities that are wanted in the future. Those are for example intuition, simultaneous capability, cooperation capability, empathy and sense for service. Technology support women's possibilities of a career and heavy lifts and other physical obstacles will not restrict women in the future.

Family and career

According to Chodorow (1995), women traditionally have the primary responsibility in the homes and raising children. This phenomenon has its routes in history and is explained through biology and society. Much has changed throughout the years but even though women are now accepted in the business world they are also expected to juggle both a career and family. What has happened is that women's role and responsibilities have increased. Women have to have a full time job as a mother and a well paying job. A woman who places her children in day care centres in an early stage is seen as a bad mother. She is seen as greedy and unreasonable if she expects her husband to help equally in the household. If she is a single mother that wants a lot of allowance so she can be at home with her children she is thought to be lazy.

It is hard for women who want to pursue both a career and a family, even though it is a must according to society (Ahrén and Zaar, 1997). In Sweden having a housekeeper or a nanny is not accepted socially. Then, there is also the problem of price and because of all the taxes and other extra costs it gets too expensive for a young woman preceding her career to pay for such services. If a woman has not the support needed from her family she will not be able to handle both a full-time job and a household with children. Furthermore, Ahrén and Zaar (1997) point out how important the existence of more women is in the business world and by having more women in the organisations people as well as society will get more used to women in managing positions.

All of the interviewees in a book written by Arhén (1996) have combined the managers' role with family life. Their relationships are stable and they are equal to their men. They are supported by people that can take care of their children if something unforeseen happens. They do not care about old expectations of how a home should look and how they should be. They are able to identify with other roles than the one as a housewife.

Furthermore, Arhén (1996) discusses the point made by Wall Street Journal the 26 of July 1995: "Laws help mom, but they hurt her career". This statement applies to the current laws of Sweden and the case of a female project manager at Electrolux. Their main point is while the USA gives new mums a couple of weeks off, the Swedish legislation gives mothers the possibility to stay home with their children longer and work part time when the children are growing up. The article concludes that a Swedish mother who takes 18 months off and then works part time will lose 10 years of her career compared to her male colleagues. Psychologists confirm how hormones makes the women focus on their children after they have been born. To solve this problem Arhén (1996) stresses the point of women having an equal partner who takes responsibility for the housework and the upbringing of the children. A woman should also have a well functioning support system, which could be supporting parents or a nanny. Future parents should also plan their working patterns for the time after the children have been born, together with their company.

Lommerud (1997) writes about women's incentive to work and have a career. The economy must work as an incentive and it is important to bear in mind that even though for example housework and childcare creates a value for the family and society, women are not compensated. In these cases the incentive for women to get a gainful employment might be what is needed. Lommerud (1997) suggests increasing the turnover of education, increasing women salaries or giving the husband an increased incentive to do housework.

Because of the fact that women stay at home more with the children makes some men insecure. They feel they miss a big part of human relations when not being as active as women in the child's upbringing. This results in men having to show their inferiority to women in other social contexts such as the workplace. The gender based job distribution and women's responsibility for the children's upbringing are linked with and result in the male dominance in the workplace (Chodorow, 1995). However, why should all women want the same thing? Being a woman does not automatically mean that she wants to stay at home with her children, or that she wants to have children. So why should she be "punished" for being of the "wrong" gender (partly Arhén and Zaar, 1997).

Increasing women in management positions

Gunilla Arhén, the Manager Director (MD) of the directors' programme Ruter Dam, wrote a debate article in Göteborgs-Posten 2003-02-27 (www.ruterdam.se) that the debate about gender quotation has strayed off. She thinks that the debate climate in Sweden has made it hard for people to have a negative opinion on quotation. However, this does not stop old men that are not active or MD:s that are stuck in a stereotype gender thinking to speak out (Arhén, 2003). One of those is according to Arhén (2003) the former MD of Handelsbanken. He had experienced that better qualified men had to stand back for less competent women. Even though Arhén (2003) does not agree, she does not think that women benefit from gender quotation. She thinks there is a risk of one A and one B team building inside the organisation. Instead she thinks it is important for companies to make sure there always is one candidate of each gender to every position on the managers' board, to follow up all recruitments, to reward the managers they have found and to promote competent women. She also comments the fact that women seldom are seen in organisations and that many recruiters have poor knowledge of the existence of women's networks for their recruitments. She thinks companies should have a record of all employees with a higher education and follow their development. A positive effect of the gender quotation debate is that women are noticed and offered positions. It is also important that women accept when offered a position and not get discouraged by the hard climate. It is a fact that women with gender equal and positive managers often advance fast. Women have according to Arhén (2003) many advantages in their management; women are good with relations and communication, they are effective and result-focused and they are often well-read and have a holistic way of seeing things. In a board they often dare to ask sensitive questions and thereby prevent men from withholding information.

In a press release written in Stockholm 2002-10-16 and obtained from the web page of Ruter Dam, 93.4 per cent of the members of the organisation are against a law for gender quotation even though they wish to see more women managers and members of managers' boards. If there is a male and female candidate and they are equally competent and have an equal reputation they want the woman to be chosen. According to Göransson (1995) gender quota system in reality means that women get a job on the same conditions as men. Otherwise men are often hired by men because they understand men's competence. "The creation of the myth that women receive a job in favour of more qualified men is an example on men's successful power strategy". However, according to the press release, instead of a quotation law the Ruter Dam's members want companies to always have at least one man and one woman to every manager's position, to give managers a bonus when promoting a woman and to identify more competent women through social networks. The long-term objective should be to have 40 per cent women and 60 per cent men in a gender equal company.

Gunilla Arhén, the Manager Director (MD) of the directors' programme Ruter Dam, wrote a debate article in Dagens Nyheter 2002-11-29 how the number of women directors could be increased (www.ledarna.se). The first controversial suggestion is to give a bonus to managers who promote women. Today managers receive bonus for achieving goals concerning environmental issues, quality and profitability. Therefore, Gunilla (2002) thinks that a bonus should be received when achieving equality. Another suggestion by Ruter Dam is for companies to make sure there is a female and male candidate for all executive jobs and positions at the board. If the woman and the man are equally competent, the woman should get chosen in preference to the man until the proportion of women is for example 40 per cent. This suggestion has proved successful for both SEB and FöreningsSparbanken that have applied this principal.

Other suggestions that might increase the number of women in the board of directors are given by Signhild Hansen who is MD of Svenska Lantchips (www.ledarna.se). Signhild Hansen is also the vice-chairman of Svenskt Näringsliv and she is critical to the fact that only two of the 263 companies that are quoted on the exchange are led by women. In an article presented in Aftonbladet 2004-02-11 she presents four ideas that she thinks might increase the number of women managers. The first is to share the leadership. Signhild Hansen shares her responsibility with her husband and this makes it easier to combine a career with the family role. Other proposals are a more flexible career path, recruitment of more female middle managers so they can get more experience and new demands from the society.

In a master thesis by Granlund (1995) a group of female engineers who had graduated ten years earlier were on focus. The most important conclusion was that the best organisation for women to work in is the network organisation with a flat structure which is beneficial for women leadership and cooperation within a group. Furthermore, to achieve a more gender equal situation at work and at home, people must stop dividing women and men into two independent groups. To improve the situation of women she stresses that education will encourage crossing of boundaries, taking notice of women's interest and introducing new ways of thinking. Women should have access to reliable childcare and the companies should not hesitate to introduce a six hours working day for both women and men. This could, according to Granlund (1995), lead to a more gender equal situation at work and at home.

Women's leadership: advantages/disadvantages

According to Marongiu Ivarsson (2000) there are some field researchers that imply that women are able to provide what business today need. Organisations are changing and becoming more women-friendly. In order to have a competitive organisation in the future they are faced with

having to break down hierarchical structures, reward and recognise team performance, empower employees, actions that are easier performed by women because of their sociological experiences. Furthermore, in April 2002 Metro (www.ledarna.se) presented a survey made on work groups and organisations that are fairly gender equal. It showed that women managers are better at handling conflicts at work and the conflicts with the managers are less. It also showed that the working climate is perceived as nicer where there is a women manager and that women are better at giving appraisal.

Arhén (1996) asked her interviewees how a female manager should be and the answers concerned three main areas. A female manager should be businesslike, achieve the main objectives and show concrete results. She should also have good knowledge of the overall picture. Many of the interviewees also stressed having good relations with her co-workers as being an important attribute. When the interviewees were asked upon what their strengths were, 51 per cent thought they were good with relations and communication. Arhén (1996) thinks that since psychologists confirm that relationships are important to women it is not strange that more than half of the answers concerned this topic. In the second place of the strengths came efficiency and results, with 31 per cent. These are basic qualities and necessary for all managers. Only 18 per cent of the answers were about competence and a holistic way of seeing things, but these qualities are probably obvious to the interviewees. When asked about their weaknesses half of the interviewees mentioned efficiency while the other half answered insecurity. Göransson (1995) also addresses the topic "women's insecurity". She writes that men often interpret women's insecurity as a proof of their incompetence. However, according to her this is not the case. Women's insecurity originates from an underestimation of their competence.

Arhén (1996) addresses another issue that could restrain women from becoming managers, besides underestimation of their competence. This is the relationship between mother and daughter. It is easier to set boundaries in the mother-son relationship because of the difference in gender. The boys will eventually seek to become independent and take responsibility. In the mother-daughter relationship they could become too close and the daughter might not get the encouragement to grow up as a separate individual and seek independence. If this is the case, she is not likely to seek the responsibility as a manager. On the other hand, Chodorow (1995) points out that there are studies that show that when a woman is being supported by other women in her environment, has a meaningful job and robust personality her daughter is going to grow up with the same feeling of self-esteem. However, if this is not the case and the mother has no support, no job and is ambivalent close to her mother will her daughter will grow up with the same low self-esteem. This is something Ahrén and Zaar (1997) also mention, where many of the women in managing positions have a really close relationship with their mothers and

grandmothers who have been their role models and encouraged them through their independence and strength to believe in themselves and become what they are today; strong women with great careers.

Things are changing and women are becoming more independent. This can be seen in study by Xie and Shauman (2003) that presents women's educational attainment by level and year of degree from 1966 to 1996. The statistics show a steady and gradual increase of women's representation among recipients of degrees. As a consequence women's economic dependence on men during the same period declined. Another study presented by Xie and Shauman (2003) shows that during the time period 1967-1995 the percentage of women among recipients of S/E bachelor's degree in engineering increased from almost zero to 17 per cent.

If there is a trend of more women getting engineering degrees it should be visible in the construction sector as well as more women should start working there. In an article written for Byggindustrin 2004-06-12 (www.byggindustrin.com), Ångshammar starts off with the comment "There are few women in the construction sector". In the board of directors of Skanska, NCC, Peab and JM there is a total of 29 members, only five of those are women. According to one of his female interviewees, it is hard to find a woman with both the knowledge and branch experience that is acquired. When observing the four mentioned construction companies the typical board for these companies seems to consist of seven members, one of which is a woman. Compared to the rest companies of the Swedish business world women are better represented in the board of directors in the construction sector. In the companies list on the Swedish stock-market the average percentage is six per cent women, in the four construction companies the corresponding average is 17 per cent. On the other hand, in an article published on the web page of ledarna 2004-06-12 Bengtson presents the main conclusions of the final report of the building commission. The commission thinks the construction companies should recruit from the whole population. Today the army, the police and the fire department has more women than the construction sector. It is the same with immigrants. The companies need to take on the responsibility instead of leaving it up to the sector.

Do the companies anything to change the situation and strive towards more gender equality? Senior lecturer Anna Wahl has been (www.ledarna.se, 2003-03-12) commissioned by the Government to survey the representation of women in leading positions in the Swedish business world. The result indicates that male dominance at leading positions remains but the proportion of women on the managerial body has increased from six to 16 per cent. The number of organisations that pursue gender quality work has also increased.

Male domination

According to Marongiu Ivarsson (2000) some social scientists find that there is a distinction between sex and gender. Whereas sex is used to refer to biological characteristics such as chromosomal reproduction, gender is used to culturally determine behavioural and personality characteristics. These characteristics are associated with the biological sex but are not necessarily determined by it. In other words, being a woman does not mean being like a woman. Because of culture and social circumstances the individual can come to adopt a behavioural way that is recognised as belonging to the opposite sex. For example, a woman entering a male dominated culture may adopt a more masculine way of acting in order to be one with the existing culture. Wahl (1992) mentions that the meaning of the word gender is quite broad and has received critique for neutralising and concealing the subordination of women.

In the study conducted by Göransson (1995) it was discovered that women who had chosen a male dominated education did not think that male domination was a reason not to enter the education. However, women who had chosen not to study at a male dominated university gave the dominance as a reason for making the choice. One possible explanation for this is that the group that was interviewed are a selected group that had chosen to study at the male dominated educational centre. To be a woman among few women has its advantages such as not being anonymous, receiving positive attention, being appreciated, remembered and asked to participate in activities. In the study conducted by Wahl in 1992 women engineers and economists mentioned attention, receiving help, social benefits, promotion of achievements and women contribution as the advantages of being a woman in a male dominated education. These are almost the same as in Göransson's study. However, this attention that the women receive might not be an effective help that could be of use (Göransson, 1995). It might just be attention.

Women feel that they are aloud to be different, ask questions and not have to know everything because that is how men expect women to act (Göransson, 1995). These are some things men do not allow themselves to do. Women want to become appreciated for being women and there is a common opinion among the students at a male dominated university that women become more like men and loose their femininity to make it in the tuff environment. This opinion is supported by some of the disadvantages of being a woman in a male dominated education mentioned in the study by Wahl (1992). The disadvantages mentioned were; negative treatment from teachers and male course participants, exposure, feelings of not belonging, lack of role models and loneliness. Loneliness as a factor is also mentioned by Hanström (1996) who writes that women working in environments where there are no other women feel lonely. They feel they can not be heard during meetings because of the male domination. There can be a situation where the self-confident male and the interrogative and humble - traits that according to men are signs of weakness - woman

have difficulties in understanding each other and their needs. These difficulties could lead to women not getting the support they need because of their male colleagues and supervisors do not understand their needs.

But what defines male dominant environments? According to Göransson (1995) gender domination is defined with two parameters; quantitative and qualitative. Quantitative domination is achieved when the number of a gender considerably exceeds the number of the other gender. This situation is something everyone understands and individuals are unwilling to be part of the minority. The qualitative aspect has to do with women's and men's previous experiences, values, interests and policy-making. This aspect is not identified as easily as the quantitative aspect and is often therefore imperceptible, which makes this aspect really crucial. The male domination is seen as normal and therefore is not easily detected. This leads to women's values and competence not being acknowledged (Ahrén and Zaar, 1997, Göransson, 1995, Wahl, 1992).

Furthermore, Göransson (1995) refers to Hirdman who claims that the bigger the gap between the genders gets the more excepted will the male norm be and that it is through this gap – both ideological and physical – that the male norm gets legitimate. Gender segregation because of or expressed through work distribution between the two genders is an asymmetric relation depending on differences in the level of power. The problem is not the division itself but the relation between superior and subordinate. The norms are systematically different when it comes to women and men being superior/subordinate as the most important principle for the relation between them. Wahl (1992) writes that a positive description of being a woman in a male dominated education is a consequence of women being a minority. Women are subordinated men and the expectations on them are lower. As a result the expectation being lower women feel a pressure to prove that they are competent. If the expectations had been the same on men and women the pressure had been likely to be the same for both genders.

According to Göransson (1995) if the women would increase in number (quantitative) this would result in them identifying the qualitative norms that lead to male dominance and question or decrease it. If there are many women they stand better chances in detecting these qualitative aspects than if women are a minority. However, if women were to increase in number a possible scenario could be that men freeze them out in order to keep their managerial position. Hanström (1996) claims that there are two methods for women to survive a male dominated environment; resist and risk getting ignored or adapt and become a "man".

Furthermore, Göransson (1995) refers to Moss Kanter who writes that the fewer there is of a sort in a social group the more visible they get. There is a risk of the minority adapting the opinions of

the majority in order not to stand out socially and therefore they are in the risk of becoming isolated. A common solution is to integrate women into male dominated organisations to avoid isolation and increase the number of women mentors. Göransson (1995) comes to the conclusion that even though an increment of the number of women is a necessity it will not break the pattern. To succeed it is important to join forces and reduce the qualitative segregation and make women a natural part of the organisations. The men are expected to prefer working in gender equal organisation as well as women. According to Göransson (1995) men do not want to work only with men since they think it gives the work environment a boring and harsh tone.

Planning gender equality at a company

According to the Swedish Equal Opportunities Act (1§) all employers with at least 10 employees are obliged to establish a yearly plan of action for equality (Iseskog, 2000). According to JämO (Equal Opportunities Ombudsman, 1999) there are no given templates or solutions. The idea is that the plan should include local insufficiencies and problems and that the work should operate in the most efficient way based on the needs of the actual work site (JämO, 1999). The first part of the process is therefore to make a survey of the present conditions and the second part is to think of actions that should be taken and to set goals that are measurable (JämO, 1999).

The survey should according to Iseskog (2000) include seven areas; work conditions, possibilities to combine parenthood and work, the occurrence of sexual harassment, equal distribution in terms of gender at work, tendency to seek work and development, the recruitment process and a comparison of salaries among female and male employees. JämO (1999) suggests almost the same areas but divides work conditions into the physical work environment, statistics of occupational injury, work time distribution and repetitive / monotone work elements.

Gender equal work conditions are included in paragraph four in the Equal Opportunities Act (JämO, 1999). Work conditions are about work environment in a gender equality perspective (Iseskog, 2000). It concerns how technique, work contents and work organisation affect human beings both physically and psychologically as well as socially (Iseskog, 2000). According to Iseskog (2000) factors that complicate the combination of parenthood and work has to be included and their effects on the company activity should be investigated as it is stated in paragraph five in the Equal Opportunities Act. Sexual harassment is included in paragraph six in the Equal Opportunities Act (JämO, 1999). Sexual harassment is according to Iseskog (2000) an insulting special treatment of a sexual nature which is an unwelcome behaviour. The distribution of genders is included in paragraph seven in the Equal Opportunities Act (JämO, 1999). The distribution in terms of genders at work has to be surveyed by the employer (Iseskog, 2000). This

survey should not only include the distribution in total but also with respect to different trades, positions and other categories. The law states that an unequal distribution of genders is if it is less than 40/60 (Iseskog, 2000). According to Iseskog (2000) factors that affect the tendency to seek work and development amongst men and women should be investigated and discussed. The recruitment process is discussed in paragraph eight and nine in the Equal Opportunities Act (JämO, 1999). Aspects that are considered during the recruitment process should be thought of and if the gender aspect is included it is better to think of factors that attract the specific gender than to write in advertisements that applicants of this gender are welcome to apply (Iseskog, 2000). Gender equal work conditions are included in paragraph four in the Equal Opportunities Act (JämO, 1999). According to the law all employers have to survey and analyse the salary system to discover, take action against and prevent irrelative differences in salaries among female and male employees as it is stated in paragraph ten in the Equal Opportunities Act (Iseskog, 2000).

Based on the survey the company should formulate equality objectives, both long and short term (Iseskog, 2000). The equality work should also include measures that aim to improve equality. At last, according to Iseskog (2000), it is very important to do follow ups. These follow-ups should according to paragraph 11 in the Equal Opportunities Act be included in next year's plan of action for equality (JämO, 1999).

Findings during the study

During the study, interviews were conducted and a questionnaire was handed out as well as a focus group held. Whereas the interviews and the questionnaire were used to pin point the current situation, the focus group was used more to test the gathered information and discuss the future. The results from the interviews and the questionnaire are going to be presented in this chapter and complemented with a evaluation of the plans of action for equality that were submitted with the tenders for the Västlänken project.

Results of the interviews

As mentioned in the methodology chapter, 17 interviews were conducted in the early stages of this master thesis. Interviews were chosen as a method to create an overall picture of the present situation. This was a good method to find out the prerequisites for a future gender equal business sector.

In this chapter the main findings are going to be presented. In order to make it easier to follow the same titles as in the interview guide (appendix 1) are used.

Why choose the construction sector?

When asking people why they chose the construction sector to work in, there are no standard answers. It seems as though the choice of profession is made by chance. Many did not know what they wanted to study and chose between studying at Chalmers or Handels. Most of the interviewees say that it was a leap of chance whether they ended up studying civil engineering at Chalmers or not. Summer jobs at construction sites or a father that works in the sector, are critical factors when deciding a future career. Another important reason is that becoming a civil engineer means that you can work with many different things.

Heterogeneous verses homogeneous groups

The prejudice that it should be more difficult for a woman to work in a construction site are disappearing according to most answers. All interviewees comment on the fact that there is an age gap in the sector. Two of the interviewees stressed the fact that there should be more than one women working within each project. An interviewee described the sector as having a lot of heart but putting on a tough front. According to an interviewee the median age of those working in the sector is 48,5. The women working in the sector are few and in their 30is which explains why there are almost no female mentors. Another interviewee pointed out the fact that it is political incorrect to be against women entering the sector. There are those that are for women entering the sector as long as they do not work at a construction site. The women take the jobs from the less competed men, was another reflection from an interviewee. Yet another interviewee mentioned the fact that newcomers get assignments that no one else want.

There is lack of women in the higher positions in the construction sector and all of interviewees thought that it is preferable to have a mix concerning gender, age and background. Some think the shortage of women in higher positions it is because the women in the sector have yet not the experience needed. However, this is not considered as a problem by all the interviewees. A couple of the interviewees think that it is a question of which generation people belong in, if they like working with women or not. Many men born in the 40-ies do not want women working in the sector since they do not appreciate any changes in the jargon.

Some interviewees think that it is a matter of time for the problem to disappear. However, how long this process is going to take varies from interviewee to interviewee. One of the interviewees stressed the fact that many young people choose media based jobs and young girls in

particularly. In general the construction sector is an unattractive sector. It is not a sector that encourages creative thinking.

To be a women in the construction sector

There are many things someone in the construction sector could work with, according to all interviewees. This means that someone does not have to work at construction sites if he does not want to. However, it is really good to have people with that kind of experience in managerial positions. The majority of the interviewees think that the construction sector is unattractive for women because of temporary offices and their material comfort. This issue may concern the new generation, both women and men, who seem to demand more comfort. The majority of women prefer working within the public sector rather than in entrepreneur companies, according to an interviewee. They prefer working in an office environment to field work. Most women prefer to become consultants and one per cent like to work in the building sector. According to a couple of the interviewees it seems like the sector is unattractive to women considering the statistics. It is hard to be a woman and there are few female salaried employees' in the production part of the sector and even less women on production sites.

According to all interviewees women and men probably are attracted to different sectors out of tradition. Most women, but not all, are not attracted by the construction sector but the few who are make way for more women. Today it is not as unique as it used to be to have a woman at a work site and as an example of this one interviewee mentions a female “rock” engineer. She came to the building site and worked in a male dominated area and they were pleasantly surprised that she was very competent.

“The gender stereotypes that are created by media focus on women being pretty and sexy. It might be hard for girls growing up with a specific view of the female role to be able to combine these expectations with working in the mud.” (interviewee)

All interviewees thought that there are more women working in the private sector. However, the culture in the sector is quite similar on all work sites. It does not depend on private or public ownership, and it is starting to embrace women (interviewee). In the consultant companies there are more women, this may be because they have permanent offices to work in which is easier to combine with family life. In management it is the same no matter the public or private sector. However, it might be a bit harder to work for an entrepreneur but this is probably because in the public sector the pressure of earning money is not as big, which creates a more relaxed climate according to one interviewee. This statement was in a way conformed by another interviewee who said:

"It is probably easier for the public sector to say that they want more women". (interviewee)

One interviewee did not know the reason why women think of the construction sector as being a less attractive work place. Maybe women are afraid? Maybe it is because it tends to get dirty and muddy out on the field?

All interviewees thought that actions have to be taken by the sector itself. The general opinion among interviewees was that there is no policy to recruit men or women. It is the competence of the future employee that is of importance. There is no gender perspective when it comes to who is appropriate for a job. What is thought to be important is that the groups should be able to function well and still have a good mix of people. One male interviewee stated that there might be a barrier in the recruitment process that he does not see because of his own gender perspective.

Lately there have been a lot of discussion of moral and ethics and this is because everyone in society in general has something bad to say about the sector. There are mouldy houses, no gender equality, cartels and other things. Now it is in focus to secure competence. One of the interviewees has been active in a project called win-win and even if he thinks this sometimes might be of a laughing matter, *"Getting to know each other and respecting each other's roles are important in all projects"*, he said. He further says that it is especially important in this sector since all projects are new and unique.

To make the sector more attractive for both men and women a four days work week could be introduced according to a couple of interviewees. This would result in employees working longer days but having three days to spend at home with their family. This would make work at building sites more flexible and attractive. The ways of work should not be decided by top managers.

Another example that one of the interviewees talked about was of one female engineer that has been out in different schools (upper secondary schools, CTH, VARM, CHARM) to inform students of possible careers. Some interviewees think that giving female students an opportunity as a trainee is a way they can influence who are eventually employed in the sector. Companies have trainee programs and practical training to help young people to experience the construction sector. A couple of the interviewees have given lectures at Universities about their experience in the construction sector and think it is a good initiative for schools to get in contact with companies. *"If you get more information about a working field it is more likely that you would like to work there."* (interviewee)

There are some women that choose to work in the sector. *“What those who do not, need to understand is that they do not end up out in the forests with snuff-using old men. Show young women what it is really like!” (interviewee)*

Women leadership in the construction sector

A general thought that is not proven is that women want to work in teams in a flat organisation where everybody feels as “one big family”, according to all interviewees. Men would prefer to work where it is specifically defined who is in charge. A flat organisation suits women better because they feel they can do many things at once and they like solving problems together with others, according to one interviewee.

There are not many women with long enough experience to get the top positions, which is what the majority of the interviewees think. It is probably because of traditions, the sector has a reputation of being male dominated but it has gotten better since women were introduced, according to one interviewee.

“Both technique and attitudes have changed during the years, for example there used to be a lot of pictures of naked women everywhere and everyone smoked on meetings and in sheds.” (interviewee)

On the other hand there are the opposite sectors where there are almost only women (for example nursing and child care) and this has also had a negative effect of the work climate. The majority of the interviewees think that when women start working in the construction sector more women are going to follow their example. According to one interviewee, the lack of women in management positions might be because they are not embraced by their co-workers and not encouraged to be feminine. This interviewee thought that therefore women might not like the sector and some may leave it. Then not many that have experience enough to make it to the higher levels stay. If there is no base it might be hard to find competent women, according to another interviewee. If there were more women in the lower levels of the companies it would be more in management positions too.

According to a few interviewees, personnel, environmental issues, information and administration work attract women more than anything else. In sectors where the dominating gender is women the status of the jobs gets lower as does the salaries. Most men do not want to work in those jobs because they do not give them any status, according to a couple of interviewees. *“The construction sector is a good sector; you work in projects, have the chance to move from one*

place to another and work with different people all the time” (interviewee). Some of the interviewees could not understand why some choose to quit their jobs for a job in another sector. However, as an interviewee said, it can be a combination of many things that makes a woman want to quit her job; It can be the person itself, the managers, jokes (taken the wrong way or too many), etc. Another thing that someone else pointed at was that the working hours on the construction site are many times too hard for a woman with a family responsibility. You start very early at 06:00 compared to working in an office where you begin at 08:00.

To have female mentors for women to discuss ideas and problems with would help women in the sector, according to the female interviewees. Of the women who started at Chalmers at the same time as the majority of the interviewees there are few left in the construction sector and even less in the production part of the sector. But as someone stated; this could be because of the lack of jobs during some periods. A way to keep women in the business is to always work with personal development questions and for management to show that their goals and objectives include gender equality, according to a couple interviewees. Management also have to show that it is positive with more women. As many interviewees stated, most people agree on that it is more fun to work in mixed groups. This because they get more dynamic and thereby efficient; something that eventually will be profitable. However, these values have to be shown! In order to keep women in the construction sector the employer should make sure that they get different tasks after a period of time and not end up doing the same thing all the time, explained one interviewee. Moreover, women have to be taken seriously at all times.

“Something women should not forget is to keep their femininity, because that is what the sector lacks. The important thing is that people with different personalities enter the sector; it is not a question of different genders.” (interviewee)

It might be harder for women to become leaders in the construction sector, was the majority of the interviewees' reaction. As an interviewee said; women have to endure some testing from their employees but if they endure a short time they will pass. However, young men are also tested. Women who want to become managers have to be really strong, was an interviewees response. Those who make it as managers gain a lot of respect since there are not that many that make it. Maybe women are better at it since they have been through a lot until they can become managers. In the beginning it is hard for both young men and women to become a leader, but it works in different ways. As an interviewee stated, it is probably harder for women to become leaders but not because they are women and thereby would be less competent. It is because they have to show more. It is harder for women because of formal structures and body language and “language”.

“Educated men are expected to know everything by their employees. Women are treated in the opposite way; they are not expected to know anything.” (interviewee)

“Being treated as if you are stupid can be frustrating but if you show that you are competent in a humble way you will eventually be accepted and become everyone’s favourite.” (interviewee)

A mixture concerning age, gender, experience etc is to prefer in all situations, according to all interviewees. Almost all interviewees thought there probably is a difference between ways of leadership. This should be recognised and accepted. Most of the women entering the sector are an only child or a big sister, because they are used to taking responsibility (interviewee). However, many interviewees find the differences being personal related. One interviewee thought it is really good to take courses in management to develop your own management style, which has little to do with the gender and everything to do with your personality. *“Women are perceived as caring for the whole group, asking what their employees did on their vacation, how they like it at home and so on. Women treat people as individuals. Men often focus on the assignment and “when work starts they forget about the vacation”.* (interviewee) Maybe women do not have to prove their prestige and do not prove their status. Status can be formally given or informally won, according to one interviewee. There are more men that aim at gaining prestige. As one interviewee pointed out, young men want to work in groups where there are women as well. It has been more and more important to reach a consensus in a group and women tend to be better at that.

One of the interviewees had attended leadership courses where he has heard there is a difference between how men and women manage but he has not seen such a difference. This might be because the number of women in the sector is limited which might result in a certain profile being over represented, according to someone else.

The biggest problem for a female manager is to be herself and not try to be too tough just because she thinks that men talk about her and question what she says behind her back. She has to be cool and answer even the stupid questions without getting upset. She should be well read without being a know-it-all. Others think that the biggest problem is probably the gap of generations. The top positions are held by men in their fifties and they will not easily “let anyone in their club”. If they see a need of passing on experience to the new generation they will probably think it is easier to pick a young man. Furthermore, another interviewee means that the biggest threat against women becoming managers in the construction sector is that it is not a natural mix of genders in all levels. Many interviewees thought that the preliminary offices and work sites could be a

problem. However, as one of the interviewees pointed out this is not a problem for a big company where women can get a position that they are able to combine with family life. The overall conclusion from all the interviewees is that as a local manager you face a lot of problems, which women should not have any problems with confronting. There are a lot of money involved in the construction projects and along with that a lot of responsibility and demands from the suppliers. It is really stressful, but that is something you learn to cope with after a while.

Career, salary and family

The majority of the interviewees say that there is no difference when it comes to salary in the same positions. The process is described by one interviewee as:

“Those who are under 30 are going to get a raise and everybody knows everyone else’s salary so there will not be any injustices.” (interviewee)

At all the companies all engineers has the same salary when they start and the following years they get a raise within a recommended interval. Eventually, the salaries will be based on experience and personal development and then it will be specific for each individual. This means, according to three interviewees that there might be a difference in salaries but it is not typical and it is hard to prove. People have different career paths and therefore it is difficult to know if women are less valued. One interviewee said that in general you have the same salary regardless gender. However, it can be a difference of 2000-3000 depending on someone’s previous experiences and how well someone performs.

Some interviewees believe that most women are better in bargaining for their salary than men, but they should be aware of not being too aggressive when doing so. One interviewee in particular thought there is an American trend going on, where young women are offered high status positions with high salaries. However, this he said has turned out to be not such a good idea since the people they work with envy them for their salary and dislike them because they often lack experience for those kinds of jobs.

There are positions that do not seem to attract women in the same extent as men, but there is nothing that indicates that they could not do it as well as men, according to most of the interviewees. This is for example work sites “in the middle of nowhere” where there is a shortage of toilets and showers. However, an interviewee pointed out that sometimes even men can not cope with having to deal with many older men. However, it can be something that women fear in a greater extent compared to men.

“Elevating reinforced concrete or climbing on scaffolds is nothing a woman would prefer doing. Generally, women do not want to work physically compared to men. However, young guys maybe would not make it through a physical exercise lesson, but walking eight hours in a tunnel is nothing women would prefer doing.” (interviewee)

A few of the interviewees had observed that at the moment in many contraction companies, women are mostly found working with administration, environment, information and personnel. Another interviewee talked about a strange phenomenon; trades that use to have a high status are considered low status when too many women have entered the field. However as most of the interviewees pointed out, the construction sector is mostly about relationship between people, which should suit women as well as men and leave openings for women to enter the sector.

The general opinion amongst the interviewees is that men and women prioritise differently when career and family is concerned but it has changed during the years. Generally women prioritise family higher than men. According to one interviewee there are women that choose a carrier to family, which is becoming a problem for the society. Some women throw their children in day care because they “have” to produce. A couple of interviewees meant that until now not many men use their right to parent leave because they feel strong competition from their colleagues and can not leave their work for a large period of time. However, if more men took parent leave, it would be ok for everyone to do so.

“Staying home with children means loosing time at work but if a career is important it is always possible to solve the problems. The respect for employees who choose to stay at home with children has to be mutual.” (interviewee)

An interviewee thought that women probably take more responsibility of family, even though this is changing. It might be biological. He took six months off with each of his boys (3 and 5 years) but his wife took one year of with each of the children. They both pick up and leave children at day care, but she does a little more. They both cut down work hours when the children were born, but she works 80 per cent and he works 100 per cent. He further stated that at work sites there might be pressure from co-workers not to stay home with children if you are a man and some women do not want their husband to stay home.

“It is funny that people use salary as an argument for not staying at home with children when actually when tested people rank salary quite low.” (interviewee)

Facts of the plans of action for equality

When submitting a tender for the Västlänken project the companies had to include a plan of gender equality. This is not demanded by law but Banverket was interested in creating an awareness of gender equality in the construction sector and the vision of an equal distribution of genders in future projects such as Västlänken.

All the five companies who submitted a tender included a plan of action for equality. An overview of these plans showed that all companies had chosen to include work conditions, possibilities to combine parenthood and work, the occurrence of sexual harassment, tendency to seek work and development and a comparison of salaries among female and male employees in one way or another. One company had mentioned nothing of the recruitment process and another of the companies had mentioned one sentence of how female managers should be recruited. Another company had no figures or statistics of the distribution of genders or the total percentage of women at the company. Actions and responsibilities had been clearly stated in three plans. One of the companies had goals but they were not measurable and the last company only came up with one measurable goal but not any actions on how it should be achieved. One company included follow-ups of the figures and one of the other companies refers to former statistics.

Results of the questionnaire

Most of the respondents were in the ages 20-25 and approximately half of the answers were received from women that had started studying civil engineering at Chalmers University of Technology in 2003, most of them studying in the second grade. Respondents who had chosen or attended a direction were not big but the common answer was Civil Engineering and Architectural Management. 65.6 per cent of the respondents had studied natural science in upper secondary school.

Almost $\frac{3}{4}$ of the students had had a break in their studies between upper secondary school and Chalmers University of Technology and approximately half of the respondents had studied other courses than civil engineering after upper secondary school. Approximately 40 per cent answered that they had had a full time job in another sector than the construction sector before they started their civil engineering studies. A majority, that is almost 80 per cent, had had no break during their studies at Chalmers University of Technology. 77 per cent thought they had always been supported by their parents in their studies and no respondents answered that they seldom or never received their parents' support.

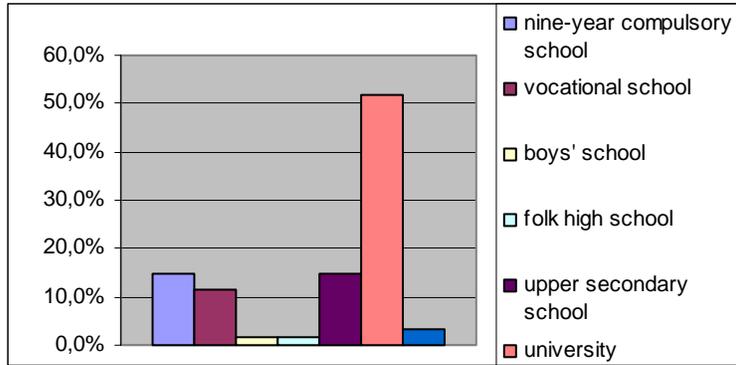


Figure 1. Fathers' education (Questionnaire)

A majority of the parents had higher education. However, the questionnaire showed that the mothers in average received 5 per cent more answers in the higher educations and less in the lower educations as Figure 3 and Figure 4 presents. This indicates a trend were mothers are slightly more well-educated than fathers.

The answers indicate that as many as $\frac{3}{4}$ of the female students at civil engineering are in fact studying at their first choice of education. 18 per cent of the respondents had chosen another education at Chalmers university of Technology as their first choice.

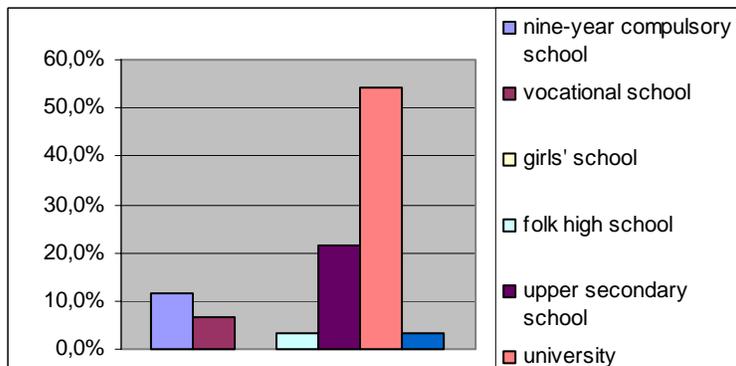


Figure 2. Mothers' education (questionnaire)

The factors that affected the women's choice of a higher education are ranked in Table 1. As seen below an interest in the subject, future work with interesting work tasks and wanting a job with the possibility to develop ones inner self was the three factors that were ranked the highest. The lowest ranked factors were good grades, influenced by brothers or sisters and influenced by school.

Rank	Per cent	Alternative
1	16,7	Future work with interesting work tasks
2	13,3	An interest in the subject
3	9,5	Wanted a job with the possibility to develop ones inner self
4	8,9	Wanted an education that gave the opportunity to get a good job
5	8,5	Wanted a job with a high salary
6	5,9	Wanted to be able to work abroad
7	5,3	Wanted to be able to influence society and the development of society
8	4,4	Wanted a degree with high status
9	3,8	Wanted an outgoing work
10	3,2	Wanted to be sure of getting a job
11	2,5	Did not know what to do otherwise
11	2,5	Wanted a job with responsibility of others, a management position
12	2,3	Influenced by father
13	2,1	Wanted a job with high status
13	2,1	Did not want a typical woman's job
14	1,9	Wanted to do something different
15	1,5	Thought more women were needed within the subject
16	1,3	Influenced by a relative or a friend
17	1,1	Influenced by another person, for example a role model
18	0,8	Influenced by mother
18	0,8	A coincidence
18	0,8	Other reasons
19	0,4	Good grades
19	0,4	Influenced by brothers or sisters
19	0,4	Influenced by school, for example teachers

Table 1. Factors that influenced the choice of education (Questionnaire)

A majority of the respondents answered that the male dominance at Chalmers did not affect their choice and the majority had never regretted their choice of education. To the question if the respondents new what subjects the education included when they started the answers were almost divided evenly between a positive and a negative answer.

Almost all the respondents liked it well or very well at Chalmers. Almost all students thought there were somewhere between 21 and 40 per cent women in their grade. A majority of the respondents thought that there were too few female teachers but that this did not affect the

climate of studies and the majority claimed that studying in a male dominated environment did not have any significance. Almost 20 per cent however, thought there were mostly advantages studying in a male dominated environment. The majority did not think that the design of literature suited one of the genders better than the other.

The majority of the respondents were single and almost none had children. Among the students living with a partner or being married the majority thought that they did pretty much the same amount of housework as their partner. The female students were asked to mark how they would like to combine family and career. They were able to choose as many of the alternatives as they wanted and the outcome of the question is shown in Figure 5. Two of the respondents answered they might not want children and maybe this should have been a sixth alternative.

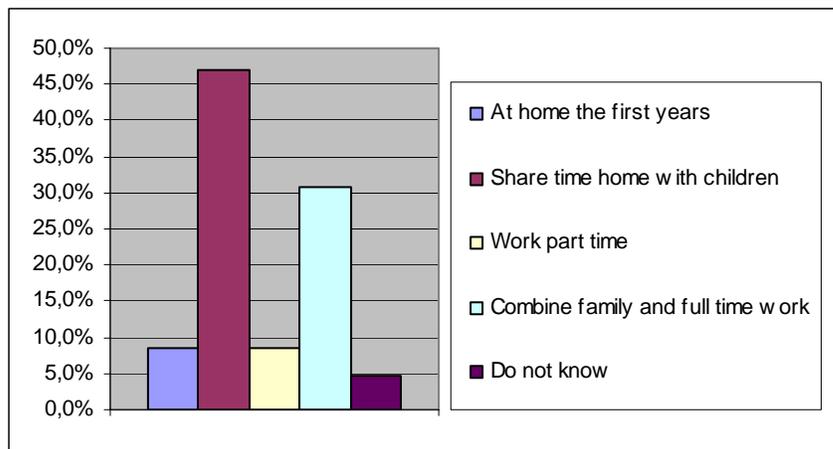


Figure 3. Desirable way of combining family and career (Questionnaire)

In choosing which sector the respondents would like to work in almost 83 per cent chose the private sector. Approximately 13 per cent chose the government sector and the rest wanted to work in municipality owned organisations. The respondents also chose factors that would make them happy with their work. They could choose a maximum of five alternatives. The votes were distributed as shown in Figure 6. The alternatives that were the most important were interesting work tasks, contact with co-workers and self-development. The lowest ranked were qualifying work, high status and other things.

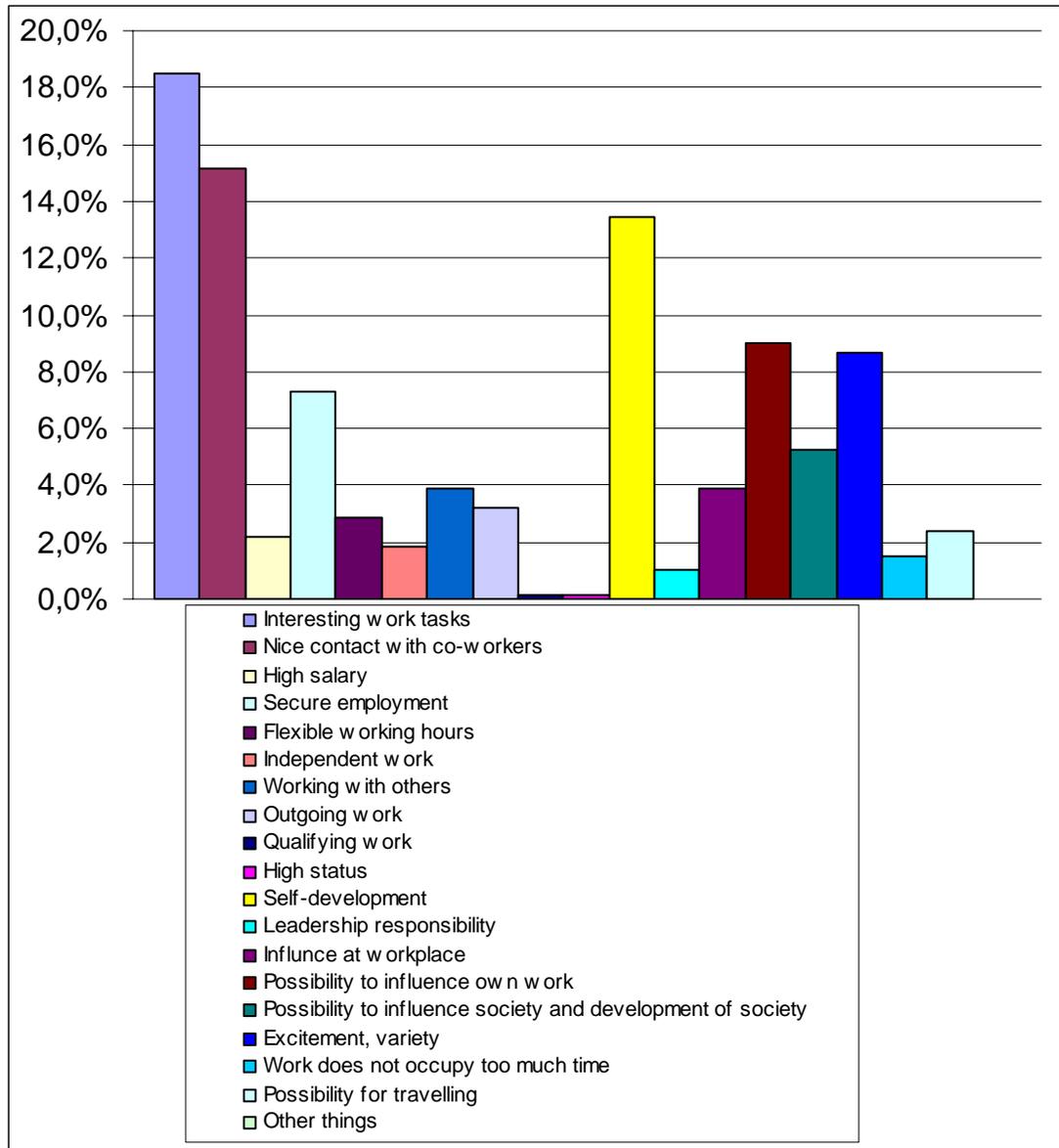


Figure 4. Factors that are important to like ones work (Questionnaire)

Even though leadership responsibility only received one per cent of the votes as is shown in Figure 6 as many as 76 per cent answered that they would like a managerial position. Most of the respondents seem to be quite set in their plans for the future. Almost 74 per cent of the respondents answered that they almost knew what they wanted to do the next five years and almost 70 per cent had career goals in some way.

As mentioned in the methodology chapter in this master the questionnaire was inspired by questionnaires that had been carried out by Bengtsson & Nilsagård (1989), Göransson (1995) and Wahl (1992). This is an advantage because questions that are similar to former questions

may be compared to the answers from the past studies. This comparison may either back up the new answers or suggest new trends. Five answers in the questionnaire by Bengtsson & Nilsagård (1989) correspond to questions in the new questionnaire. These results are presented in Table 2 below.

Question	Result from former study
5	77 % of the women had studied at the Natural science program at gymnasium.
13	66 % of the women had chosen their present education as a first choice.
14	The most common reasons was a broad education that made it possible to choose sector after graduating, working in the construction sector before, employment within the sector abroad was tempting or the choice was a coincidence.
16	Almost all of the respondents answered that they were happy with their choice.
17	72 % thought they knew what the education meant when they started.
28	The most important factors for changing a job were work tasks and personal development.

Table 2. Former answers to question 13, 14, 16, 17 and 28 (Bengtsson & Nilsagård, 1989)

In the beginning of the nineties Wahl conducted a similar study. The results that reflected the life of the female Masters of Science and correspond to questions in the new questionnaire are shown in Table 3. A comparison between the answers from the questionnaire of this master thesis and the answers of Wahl (1992) might indicate if the preferences of the female students today are different from those of the women included in her study.

Question	Result from former study
5	89 % of the Masters of Science had a background common to natural science.
10	The majority answered they had been supported by their parents during their studies. 14 % answered that they never or seldom had gotten it.
11	75 % of the female students' mothers had been working at home.
12	Among the fathers the most common higher education was university or college.
14	An interest of the subject was elected by 50 % of the Economics or Engineers. Receiving a job with interesting tasks got 62 % and good grades got 41%. Alternatives which were career-related as for example responsibility of others, high status or being able to affect the development society were quite unusual.
16	30 % of had regretted their choice of education at least one time.
21	Approximately half of the Masters of Science answered that being a women in a male dominated environment had not had any significance. One forth of the women thought there had been mostly advantages.
23	82 % of the women were married or living together with a partner.
24	81 % of the women had children, two children was most commonly.
25	74 % felt they worked more or a lot more than their partners with house work.
27	56 % of the masters of science were working in private organisations, almost 30 % in government organisations and 15 % in municipality owned organisations.
29	One fourth of the women answered they already had a managerial post and 35 % of the engineers answered that they did not want such a position.
31	67 % of the women had career goals.

Table 3. Answering question 5, 10-12, 14, 16, 21, 23-25, 27, 29 and 31 (Wahl, 1992)

In addition to the results of the questionnaires by Wahl (1992) and Bengtsson & Nilsagård (1989) the following results presented in Table 4 are collected from Göransson (1995).

Question	Result from former study
1	90 % of the participants in the study were 19 - 26 years old.
5	Half of the women had studied at the Natural science program at gymnasium and approximately 45 % of the women had studied at Technical program for three or four years.
6	It was confirmed that 56 % of the women had had a break between studies at gymnasium and university.
9	44 % of the women continued their studies without a break which were more than twice as many as the men.
10	Only 16 % of the women thought that they did not receive support and help in their studies.
11	36 % of the mothers of the students had an academic education and 14 % of the mothers of the female technologists had no vocational training.
12	Among the fathers of the female students 46 % had an academic education while 10 % had no vocational training.
13	A majority of the women were studying at the program that was their first choice.
16	Approximately 30 % of the women were not sure about their choice of education.
18	Almost all of the female students were very or fairly happy to study at the university.
21	Being a woman at a male dominated education could according to 58 % of the women be an advantage but according to 51 % of the women it could also have disadvantages.
22	A majority of the respondents thought that the literature suited both women and men.
23	Among the female students 56 % lived alone their first year of studies while 39 % lived alone their fourth year of studies. The first year 15 % lived with a partner and the fourth year the corresponding figure was 43 %.
26	69 % of the women could consider sharing the time home with children.
28	Almost all students stated that interesting work, nice workmates and personal development were important. A majority thought independent work and flexible work hours were important. Almost half of the respondents thought it were essential to contribute to a positive development of the society, receive a large salary, have career opportunity and that a lot of spare time was important.

Table 4. Answers to 1, 5, 6, 9-13, 16, 18, 21-23, 26 and 28 (Göransson, 1995)

Judging by the old questionnaires most of the answers from the new questionnaires pretty much follows old trends. One trend that was different in the newest questionnaire was the parents'

education. In the former questionnaire the fathers in average had a higher education than the mothers but in the new questionnaire it was the mothers that were well educated. Another difference was noticed in the factors that influenced the choice of education. The subject and possible work tasks were ranked high in the former questionnaires as well as the new one, however good grades got a lot more votes in the former questionnaires. In fact, in the new questionnaire good grades was one of the factors that came in last.

What's new?

In this chapter, the discussion that sprung from the interviews and the questionnaire will be presented. After having a focus group discussion with two representatives from the business world and two students, a lot of the preliminary conclusions were questioned and new ideas were presented, which have influenced this chapter.

Different salaries for different genders

Edin (1997) and Ledarna (2002) stressed the point of average salaries being lower in female dominated sectors. However, these two sources as well as Löffström (1997) and Chefsbarometern (2003) concluded that women in average receive a lower salary in all sectors just because they are women.

This trend was partly confirmed by the interviewees. They stressed the point of salaries being based on experience and personal development and therefore specific for each individual. The different career paths make it hard to prove if there is a difference in salaries between men and women. There might be a difference of 2000-3000 depending on someone's previous experiences and how well someone performs.

The importance of salaries was not prioritised by the respondents to the questionnaire. The result indicated that high salary was one of the lowest ranked factors for enjoying ones work and interesting work tasks the most important factor (See Figure 6).

Competence VS gender

Marongiu Ivarsson (2000) and Göransson (1995) state that many organisations when recruiting people, take under consideration the gender of the applicants and give them jobs according to

their gender attributions. Both Billing and Alvesson (1989) and Matusak (2001) believe in the differences between the biological sexes and therefore nourish a lot of stereotypes. However they have different approaches, because while Billing and Alvesson (1989) think that organisations should take advantage of these differences, Matusak (2001) use them as an excuse to why women do not fit into male dominated work place. Many interviewees stressed the fact that there is no policy that someone should recruit men or women. It is the competence as e.g a consultant that is interesting. There is no gender perspective when it comes to who is appropriate for the job. The groups should be able to function well and still have a good mix of people.

According to Braaf (2004) there are many different kinds of competence which can be seen in both men and women. However, Nilsson (2002) suggests that the recognised competence of the applicant is determined by the recruiters own expectations and experience. According to some interviewees there could be a barrier that the recruiter does not see which makes it difficult to see some competences. In fact Matusak's (2001) opinion about women being incompetent proved to be wrong. Xie and Shauman (2003) have made a study were they actually show that the most stupid man is more stupid than the most stupid woman.

Women are not men

Styrborn (2000) stresses that men and women have different leadership styles; for example men are rougher in negotiation situations and women have more stable relationships with co-workers. Men and women also have different ways of perceiving technology according to Göransson (1995). Almost all interviewees confirmed there is a difference between ways of leadership; however, these are personality related rather than gender related. When asked, some interviewees could identify general characteristics of female and male leadership. Women do not have to prove their prestige and do not prove their status. There are more men that aim at gaining prestige. Ahrnborg (1997) suggests that the female leadership qualities will be wanted in the future and that in the end, less homogeneous groups will increase experiences and benefit new ways of thinking. This goes in line with what one interviewee pointed out; young men want to work in groups where there are women as well. It has been more and more important to reach a consensus in a group and women tend to better at that.

Furthermore, Göransson (1995) concluded that women prefer working in groups consisting of men and suggests this is because women are subordinated in a male dominated organisation and have to relate to the superior men. Ahrén and Zaar (1997) and Af Jochnick (1999) discussed the difference between men and women when it comes to organizing. They conclude that women prefer working in networks and men prefer hierarchical structures. This is something not

confirmed by the interviewees that spontaneously thought that neither men nor women preferred a specific organisational structure. However, when given the time to think about it the general answer was that women want to work in teams in a flat organisation where everybody feels as “one big family”. Men would prefer to work where it is specifically defined who is in charge. A flat organisation suits women better because they feel they can do many things at once and they like solving problems together with others, according to one interviewee.

Family and career

Arhén (GP, 2003-02-27) comments the quotation debate and does not think that quotation will benefit women. However, she does mention having both female and male candidates for every management position is a good way of making sure women reach the top. Almost all the members of the female network Ruter Dam back her up in this opinion according to a press release of the web page of Ruter Dam (Stockholm 2002-10-16). Furthermore, Arhén (DN, 2002-11-29) suggests having a gender equality bonus. Göransson (1995) thinks gender quotation is good because it might prevent men from hiring men just because they understand male competence. Hansen (Aftonbladet, 2004-02-11) shares her management responsibilities with her husband and suggests this option to increase the opportunities of women who want to combine family and career. This proposal might be useful when combining family and career. The majority of the respondents to the questionnaire had not started a family yet, but when asked how they would like to combine family and career the majority wanted to share time home with children and combine full time work and family (Figure 5).

Chodorow (1995) and Arhén and Zaar (1997) stress the fact that women not only have the main responsibility in the homes but also has to have a career, according to society. Among the students who answered the questionnaire and were living with a partner the majority thought that they did pretty much the same amount of housework as their partner. Arhén (1996) states the importance in having help with the housework, in order to be able to pursue a career. The general opinion amongst the interviewees is that men and women prioritise differently when it comes to family and career. Even though these priorities have changed during the years women today generally prioritise family higher than men. According to one interviewee there are women that choose career over family, which is becoming a problem for the society. Some women put their children in day care early because they need to get back to work. In order for men to take more responsibility at home Lommerud (1997) suggests economical incentives. Some interviewees meant that until now many men do not use their right to stay home with children because they feel there is a strong competition between colleagues and they can not leave their work for a long time. However, as more men take parent leave, it will be ok for everyone to do so.

Granlund (1995) stresses in a thesis that women benefit from flat organisations and reliable childcare. One of the interviewees stresses that even though he took time off to be with his children and picks up his children at the day-care centre; it is mainly his wife who is responsibly for childcare and family.

Increasing women in management positions

According to Ivarsson (2000) the trend in the organisations is that they are becoming more women-friendly. In managing a team more female attributes are wanted (2002 Metro). A study made by Arhén (1996) showed that what was needed of a manager could be fulfilled by the female characteristics, but according to Göransson (1995) women are not as good as men when it comes to showing their competence. This could be a result of the daughter and mother syndrome, where daughters with close relationship to their mothers do not get motivated by their mothers to pursue a career (Arhén, 1996). Chodorow (1995) means that it depends on individual cases and the personality of the mother. Ahrén and Zaar (1997) point out the importance of having female role models which mothers often are to their daughters. As the majority of the interviewees stated, it is important to have female mentors for women to discuss ideas and problems with. This would help women in the sector to adjust to the environment in a better way. The majority of the interviewees think that when women start working in the construction sector more women are going to follow their example. According to all interviewees women and men probably are attracted to different sectors out of tradition. But if more women were to enter the sector, more would follow their example. The majority of the respondents of the questionnaire had set plans for the future. According to the questionnaire the majority of the respondents could consider a managerial position, even though leadership responsibility only received one per cent of the votes when asked what factors were important to enjoy one's work.

Women's leadership: advantages/disadvantages

A study made by Xie and Shauman (2003) show how more and more women are highly educated as the years pass. This can be the reason behind the fact that there are more women on the boards of the big construction companies, compared to other limited companies in other sectors (Ångshammar, 2004). The fact that more women are high educated today is indicated by the questionnaire result. It actually showed that the mothers of the respondents are slightly more well-educated than fathers, as showed in Figure 4 and Figure 3 (Questionnaire).

However, the lack of women in the construction sector is apparent to Bengtson (2004), compared to other male dominated sectors as army, the police and the fire department. One explanation to this, according to the interviews is that to a larger extent it is men that are educated within a technical field of knowledge. The notion that women would prefer another education is not confirmed by the questionnaires. In fact, $\frac{3}{4}$ of the female students at civil engineering are studying at their first choice of education and 18 per cent of the respondents had chosen another education at Chalmers university of Technology as their first choice. Anna Wahl (2003) thinks that the trend is positive and although there is a clear male dominance, the proportion of women in management positions is increasing.

Male domination

There is a difference between gender and sex where gender refers to socially adapted behaviour and sex is biological (Ivarsson, 2000 and Wahl, 1992). The characteristics of biological sex are not always the same as the corresponding gender. Studies by Göransson (1995) and Wahl (1992) indicate that women find it as an advantage to work or study in a male dominated environment. They receive a lot of positive attention, but Wahl (1992) recognises some disadvantages as well. One of them was loneliness and this disadvantage was also confirmed by Hanström (1996). Another disadvantage was that women need to prove themselves because they are expected less from. Two types of domination are discussed; qualitative and quantitative (Ahrén and Zaar, 1997, Göransson, 1995, Wahl, 1992). Quantitative is when the number of a gender considerably exceeds the number of the other and the qualitative concerns women's and men's previous experiences, values, interests and policy-making and is not easily identified. Göransson (1995) and Wahl (1992) stress the point of the male norm often being the dominating one if women are in minority. If the women increased in number they might be able to identify and change these norms (Göransson, 1995). Hanström (1996) expresses the risk of women adapting a male behaviour to survive in a male dominated world. Göransson (1995) agrees and writes that the minority often adapt the behaviour of the majority.

What Göransson (1995) said about the minority adapting behaviour to fit in, reflects what happens in reality when female managers are not themselves and try to be too tuff just because they think that men talk about them and question what they say behind their backs (interviewees). The behaviour of the majority does not have to be only a question of gender, it could be the typical behaviour of men born in the 40-ies; a generation gap. Furthermore, some interviewees thought that men born in the 40-ies in a higher extent do not want to work with women probably because they do not appreciate any changes in the jargon. As one interviewee said the biggest

threat against women becoming managers in the construction sector is that it is not a natural mix of genders in all levels.

In the consultant companies there are more women because of the stationary work places, according to interviewees. However, there is lack of women in the higher positions in the construction sector. Some interviewees think it is because the women in the sector are still young and do not have the experience needed. Something should be done about the situation since the majority of the people working in the sector, according to the interviewees, prefer working in a gender equal environment. This because they get more dynamic and thereby efficient; something that eventually will be profitable. However, these values are difficult to prove.

What did the plan of action for equality disclose?

All the companies who submitted a tender had a plan of action for equality which indicates that there is an awareness of the issue in the sector, even though it does not prove if the company works actively with these issues or if they have a plan because it is a politically correct and because as mentioned by Iseskog (2000) the Equal Opportunities Act (1§) demands it.

JämO (1999) concluded there were no given templates or solutions but in accordance to Iseskog (2000) seven areas were suggested; work conditions, possibilities to combine parenthood and work, the occurrence of sexual harassment, equal distribution in terms of gender at work, tendency to seek work and development, the recruitment process and a comparison of salaries among female and male employees. All reviewed plans of action for equality included the recommended areas with exception of the recruitment process and the survey of gender distribution at the company. Since there are no given templates this difference in content might be expected. However, it is remarkable that one of the companies had no statistics of the distribution of genders or the total percentage of women at the company.

Based on the survey Iseskog (2000) and JämO (1999) states that the company should formulate equality objectives and that it is important to do follow ups. These follow-ups should according to the Equal Opportunities Act be included in next year's plan of action for equality (JämO, 1999). JämO (1999) also stresses that the objectives that are set should be measurable. Actions and responsibilities had been clearly stated in three plans. One of the companies had goals but they were not measurable which makes it very difficult for the company to do a follow-up. The other company came up with one measurable goal and no actions might fall into the category that does the plan because the law demands it and not because it might improve work environment at the

company. Only one company presented the follow-ups that according to paragraph 11 should have been included.

Concluding the thesis

In this master thesis a literature study, interviews, questionnaires and a focus group discussion were used to answer the main question: Is there a gap between future and present in construction projects, if this is the case, what needs to be done?

The main assumption has been to establish that heterogeneous groups concerning gender are more efficient and better working than homogeneous. This assumption has been tested in cooperation with Banverket through a study of two projects; the Göta tunnel project and the Västlänken project.

The main question

The main question concerns if it is possible to have a gender equal project in the male dominated sector of construction. This question was discussed during the focus group and the main objection was the definition of the construction sector. The word construction sector has a very broad meaning and depending on personal association the word will have different meanings. However, when talking about the lack of women in the construction sector many automatically presume that it is the production side of the sector that is being referred to, since in the consultant companies the women are not absent. This means that the answers given are influenced by this notion. It is also possible that the reflection of the sector as male dominated is something that people are socialised to think, since the production side of the sector is the one projected in the media.

During the interviews many have discussed the fact that the majority of women want to combine work with family, which makes the working hours in the production side of the sector unattractive. Also the fact that there is no stationary working place and people working in the production must be able to commute longer distances. Is this situation unique for the construction sector? The students that answered the questionnaire did not prioritise flexible working hours. This could probably be because they are not in the family phase of their lives. This means that there should not be any problem in recruiting women in the sector, but rather keeping them. But, depending on which generation people belong to, they tend to think differently and prioritise in a different way than their peers. This may affect how attractive the sector is to the new generation, but the sector

could be affected by general trends in society. When there is a recession and there are only few new jobs generated in the sector, both women and men have to find jobs in other sectors. Is it really the sector that can not take the women in, or is it the women that actively do not choose the sector as a working place?

Attract and keep the students

Life is full of choices and the road towards a career as civil engineer starts early. In one way this road starts when students start upper secondary school and choose a direction of studies. However, an interest in natural science and technology probably has to start earlier. When choosing university an active choice of a technical education has to be made. Then, among all the technical educations, the student has to choose civil engineering. The questionnaire used in this study represents the thoughts of students who already have made all these choices. Since there are almost 30 per cent women studying the civil engineering program, the notion that the construction sector would be male dominated is not experienced in this stage. This means that the outcome of the questionnaire is somewhat questionable. It is maybe of bigger interest to influence young girls in the earlier stages of their education.

Students with a background of natural science at upper secondary school might be generalists and therefore choose to become a civil engineer because of the broad education. Studying civil engineering means a lot of possibilities when choosing a future sector of employment. Because of this it is important for the construction companies to show the opportunities within the sector. To do this the companies need to understand what students think of the sector and if this is not in line with the companies view, then they have an information problem. Interviewees and members of the focus group have pointed out the importance of female role models. To enhance the presence of such role models in the educational sphere, female networks should be created and alumnae could be invited to partake in events. During the education, representatives from all different parts of the sector should be present and involved. Another information channel is the school paper. Examples of different job opportunities should be listed in order for students to be motivated with their current studies. Even when some individuals start studying civil engineering it is not sure that they know all the possibilities with their education. A list of all the possible jobs, articles and lectures could increase awareness of this topic.

Family and career

Family structures are changing and both men and women are more career-focused than before. It is not pre determined that mothers should have the biggest responsibility when it comes to staying at home with children. In order to combine both a full time job and a family the working hours should be more flexible. This is however something that the students did not prioritise in the questionnaire, and could be because they are not in the family making phase of their lives.

Remarkable was the fact that according to the questionnaire the mothers of the students generally had a higher education level compared to their fathers.

During the interviews many of the interviewees expressed physical hindrance as what stands in women's way of making a career. However, this is not really a hindrance for civil engineers because their work tasks are generally not of a physical character. Maybe women use this argument because they do not want to work in the production.

The plan of action for equality

All the plans of action for equality which were submitted to the tenders for the Västlänken project included most of the seven areas were suggested by JämO (1999) and Ileskog (2000). Even though these were not obligatory it was remarkable that one of the companies had no statistics of the distribution of genders or the total percentage of women at the company. Since this is the base for most discussions concerning gender equality and figures that are easy for the company to get hold of it might be possible that the company forgot to include a document or that their plan had not been reviewed internally before admitting it to the tender.

Actions and responsibilities had been clearly stated in three plans and briefly included in the other two. Almost no companies presented the follow-ups that should have been included. These facts might indicate that the reason for presenting a plan of action for equality is mostly because the law demand it and not because the benefits and goals of the company itself have been thought of or discussed.

To sum up...

The comparison between the Göta tunnel project and the Västlänken project indicates there is a gap between the present situation and the future vision when gender equality is concerned.

People working in the sector today prefer working in heterogeneous groups for different reasons. There are no hindrances when it comes to women working in the sector. Not even in the production part where the physical strength seems to be of importance is in reality any issue at all. This means that based on present conditions it is possible to get a gender equal train tunnel in the future as long as there are women interested in working in the sector.

To achieve gender equal projects in the construction industry one recommendation is to recruit in early age stages. This is because gender characteristics can be socially forced on children according to the interviews, Ivarsson (2000) and Wahl (1992) and therefore a basic interest in science and construction starts in an early age.

Since the main hindrance towards women having a career in the construction sector mentioned in the interviews was physical, the conclusion made was that people working in the sector think that in general it is the production side that represents the sector as a whole. Gender-stereotypes are often considered in the recruitment process (Marongiu Ivarsson, 2000 & Göransson, 1995). Based on these facts it is recommended to inform that first of all, civil engineers (no men nor women) in general do not have physical demanding work tasks.

Another conclusion was that women chose not to work in the construction sector. According to the interviews this might be because of preliminary offices, conservative working hours in the production phase, lack of employments or slow development. However, when more women enter a sector they have the possibility to change norms that have been set by men (Göransson, 1995). Therefore it would be useful to increase awareness and information about these prejudices.

In the interviews and in the questionnaire it was indicated that the civil engineering education is an education that suits generalists. To attract these kinds of people to the construction sector companies could inform about all the possibilities through lists of jobs, alumni, school papers and participation in courses.

Even though family structures are changing women still prioritise family to a larger extent than men according to the interviews, Chodorow (1995) and Ahrén & Zaar (1997). The questionnaire however, indicates that the future woman civil engineer wants to combine full time work with family. No matter the case, it has to be accepted by employers and co-workers for men to stay home with children.

The last conclusion made in the thesis was that the plans of action for equality were inadequate. To be able to achieve gender equality and to increase the awareness of the issue; plans of action

for equality may be used. The standards set by Banverket have amplified awareness which might increase the use of these plans. That is the future!

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Appendix 1

Intervjuguide

- Karriär

- 1 Utbildning
- 2 Vad har du för arbetsuppgifter nu?
- 3 Vilka tidigare arbetsområden har du haft inom byggbranschen?
- 4 Varför valde du byggbranschen, vad fångade ditt intresse?

- Heterogena eller homogena grupper

- 5 Är heterogena (mixade) grupper att fördra framför homogena?
Tror du att detta är den allmänna åsikten inom branschen?

Om ja

- 6 Är avsaknaden av kvinnor ett problem? Är det för få kvinnor i branschen? På alla nivåer eller behövs det fler kvinnor inom vissa områden?
- 7 Är problemet på väg att "försvinna av sig självt"?
Tillräckligt fort?

Om nej 6,7

- 8 Tror du att MAN måste vidta åtgärder för att göra branschen mer attraktiv för kvinnor?
Vilka är "MAN", det vill säga vems ansvar är det?

- Hur det är att vara kvinna i byggbranschen

- 9 Är byggbranschen en oattraktiv bransch för kvinnor?
- 10 Tror du att män och kvinnor söker sig till olika branscher, om så är fallet varför tror du?
- 11 Finns det någon jämställdhetsplan i projektet? Om så är fallet, hur den uppfylls och hur den hjälper kvinnorna?
- 12 Ser du någon skillnad mellan privat och offentlig sektor?
- 13 Upplever du att kvinnor särbehandlas?
- 14 Har du några förslag som du tror skulle vara en attraktionskraft för att få fler kvinnor att söka sig till branschen?

- Kvinnligt ledarskap i byggbranschen

- 15 Föredrar kvinnor att vara ledare i någon särskild org.-form/särskild nivå i hierarkin?
- 16 Varför tror du det finns så få kvinnliga ledare i byggbranschen? Är det ett problem?

- 17 Har du några förslag som du tror skulle vara en drivkraft för kvinnor i branschen?
- 18 Är det svårare för en kvinna att bli ledare i byggsektorn?
- 19 Hur ser du på kvinnligt respektive manligt ledarskap? Finns det typiska manliga och kvinnliga ledarskapsstilar? T.ex. prestige mer eller mindre viktigt?
- 20 Vad ser du som det största problemet för en kvinna som vill bli ledare i byggsektorn?

- Övrigt

- 21 Är det någon löneskillnad mellan könen i samma position?
- 22 Tror du att det finns positioner inom byggbranschen som lämpar sig mer eller mindre för kvinnor?
- 23 Tror du att män och kvinnor prioriterar olika när det gäller karriär och familj?

Appendix 2

Enkät: Hur ska byggsektorn bli attraktivare för kvinnor?

Procentfördelningen för enkäten står till vänster om varje alternativ. Totalt svarade 63 studenter.

Bakgrund

1. Hur gammal är Du?

- | | | |
|------|--------------------------|----------|
| 0 | <input type="checkbox"/> | -19 år |
| 46,8 | <input type="checkbox"/> | 20-22 år |
| 41,9 | <input type="checkbox"/> | 23-25 år |
| 6,5 | <input type="checkbox"/> | 26-28 år |
| 4,8 | <input type="checkbox"/> | 29- år |

2. Vilket år skrevs du in på Väg- och Vatten på Chalmers?

- | | | |
|------|--------------------------|---------------------|
| 0 | <input type="checkbox"/> | 2004 |
| 50,0 | <input type="checkbox"/> | 2003 |
| 22,6 | <input type="checkbox"/> | 2002 |
| 17,7 | <input type="checkbox"/> | 2001 |
| 9,7 | <input type="checkbox"/> | 2000 |
| 0 | <input type="checkbox"/> | 1999 eller tidigare |

3. Vilken årskurs på Väg- och vatten går Du i?

- | | | |
|------|--------------------------|---------------|
| 0 | <input type="checkbox"/> | Åk 1 |
| 56,5 | <input type="checkbox"/> | Åk 2 |
| 28,2 | <input type="checkbox"/> | Åk 3 |
| 13,7 | <input type="checkbox"/> | Åk 4 |
| 0 | <input type="checkbox"/> | Vx |
| 2 | <input type="checkbox"/> | Examensarbete |
| 0 | <input type="checkbox"/> | Utexaminerad |

4. Du som examinerats från Väg- och Vatten på Chalmers, vilken inriktning hade Du ditt sista studieår?

Svaren bland de som gick årskurs fyra eller senare och de i årskurs tre som val inriktning fördelades enligt:

- | | | |
|------|--------------------------|--|
| 5,0 | <input type="checkbox"/> | Byggnaders tekniska funktion |
| 10,5 | <input type="checkbox"/> | Konstruktion och mekanik |
| 10,5 | <input type="checkbox"/> | Mark och anläggning |
| 36,8 | <input type="checkbox"/> | Management i byggsektorn |
| 5,3 | <input type="checkbox"/> | Miljö och samhällsbyggande |
| 0 | <input type="checkbox"/> | Applied Environmental Measurement Techniques |
| 15,8 | <input type="checkbox"/> | Structural Engineering |
| 0 | <input type="checkbox"/> | Sound and Vibration |
| 15,8 | <input type="checkbox"/> | Egen studieinriktning |

5. Vilken linje gick Du på gymnasiet?

- | | | |
|------|--------------------------|------------------------------|
| 0 | <input type="checkbox"/> | Byggprogrammet |
| 1,6 | <input type="checkbox"/> | Individuella programmet |
| 66,1 | <input type="checkbox"/> | Naturvetenskapsprogrammet |
| 9,7 | <input type="checkbox"/> | Samhällsvetenskapsprogrammet |
| 16,1 | <input type="checkbox"/> | Teknikprogrammet |

6,5 Övrig

6. Har Du gjort uppehåll mellan gymnasiet och studierna på Chalmers?

72,6 Ja
27,4 Nej

7. Har Du genomfört ytterligare studier än Dina Chalmersstudier?

52,5 Nej
24,6 Ja, fristående kurser på annat universitet eller högskola
3,3 Ja, jag har en högskoleexamen från annat universitet eller högskola
0 Ja, jag har en ingenjörsexamen från Chalmers
7,4 Ja, jag har tidigare studerat andra program/inriktningar på Chalmers
12,3 Ja, men dessa studier passar inte in i någon av ovan nämnda kategorier

8. Hade Du haft något heltidsjobb under en längre period (minst ett halvår) innan du började på Väg- och Vatten på Chalmers?

59,0 Nej
0 Ja, inom ett byggtreprenadföretag
0 Ja, inom ett byggkonsultföretag
41,0 Ja, inom annat område eller sektor

9. Har Du gjort studieuppehåll under Chalmerstiden?

79,0 Nej
0 Ja, p.g.a. studiemedelsproblem
5,6 Ja, för att resa
6,5 Ja, var studietrött
0 Ja, p.g.a. värnplikt
0 Ja, jag var osäker inför yrkesvalet
8,9 Ja, p.g.a. övrig orsak

10. Känner Du att Du fått stöd av Dina föräldrar under Dina studieår på högskolan?

75,8 Ja, alltid
16,1 Ja, oftast
8,1 Ja, ibland
0 Nej, sällan
0 Nej, aldrig

11. Vilken är Din mors högsta utbildning?

11,5 Folkhögskola/grundskola
6,6 Yrkesskola/fackskola
0 Flickskola
3,3 Folkhögskola
21,3 Realskola/ gymnasium (3-4 årigt)
54,1 Högskola/universitet eller motsvarande
3,3 Annan

12. Vilken är Din fars högsta utbildning?

15,0 Folkhögskola/grundskola
11,7 Yrkesskola/fackskola
1,7 Pojkskola
1,7 Folkhögskola
15,0 Realskola/ gymnasium (3-4 årigt)
51,7 Högskola/universitet eller motsvarande
3,3 Annan

Valet av högskola och utbildning

13. Var Väg & vattenbyggnad på Chalmers Ditt första alternativ när du sökte till högskolan?

- 75,8 Ja
17,7 Nej, det var en annan linje på Chalmers
3,2 Nej, det var en teknisk utbildning på annan högskola
0 Nej, det var studier i ekonomi
3,2 Nej, det var andra studier

14. Vad påverkade Dig i Ditt val av högskoleutbildning? Välj högst 5 alternativ!

- 13,3 Intresserad av ämnet teknik
0,4 Bra betyg
2,3 Påverkad av far
0,8 Påverkad av mor
0,4 Påverkad av syskon
1,3 Påverkad av släkting eller vän
0,4 Påverkad av skolan, t ex lärare eller syo-konsulent
1,1 Påverkad av en annan person, en förebild
1,9 Ville göra något annorlunda
5,3 Ville kunna påverka samhället och samhällsutvecklingen
1,5 Tyckte att det behövdes fler kvinnor inom ämnet
4,4 Ville ha en examen med en hög status
2,1 Ville ha ett jobb med en hög status
8,5 Ville ha ett jobb med hög lön
3,2 Ville vara säker på att få ett jobb
8,9 Ville ha en utbildning som gav möjlighet till en bra karriär
16,7 Ville få ett jobb med intressanta arbetsuppgifter
2,5 Ville få ett jobb med ansvar för andra, en chefbefattning
9,5 Ville få ett jobb med möjlighet till egen utveckling
3,8 Ville ha ett utåtriktat arbete
5,9 Ville kunna arbeta internationellt
2,5 Visste inte vad jag skulle göra annars
0,8 Slumpen
2,1 Ville inte typiskt kvinnojobb
0,8 Annat skäl

15. Påverkade den manliga dominansen på Chalmers Ditt val av utbildning?

- 83,6 Nej, inte alls
13,1 Ja, jag såg det som positivt
3,3 Ja, det verkade negativt

Om ja, på vilket sätt?

16. Har Du någon gång ångrat Ditt val av utbildning?

- 21,3 Ja
78,7 Nej

Om ja, på vilket sätt?

17. Med tanke på vad Du vet nu, visste Du vad Väg- och Vatten omfattade för ämnesområden när du började?

- 56,5 I stort sett ja
44,3 Nej, jag blev överraskad över en del

Studierna på Chalmers

18. Hur trivs/trivdes du med att studera på Chalmers?

- 44,3 Mycket bra
50,8 Ganska bra
4,9 Acceptabelt
0 Ganska dåligt
0 Mycket dåligt

19. Hur uppfattar/uppfattade Du andelen kvinnliga studenter i Din årskurs på Chalmers?

- 0 0-10 %
3,2 11- 20 %
38,7 21-30 %
53,2 31-40%
4,8 41-50%
0 51-100%

20. Vad anser/ansåg Du om antalet kvinnliga lärare/undervisare på Chalmers?

- 0 För många
4,8 Det är lagom många
77,4 Det få, men att ha kvinnliga lärare är inte viktigt för mig
17,7 Det är för få, vilket påverkar studieklimatet negativt

21. Tycker Du att det haft betydelse att Du som kvinna studerat /studerar i en manligt dominerad miljö?

- 2,1 Ja, det var en fördel att vara kvinna
19,4 Det var mest fördelar
66,7 Det hade ingen betydelse
3,2 Det var mest nackdelar
8,6 Ja, det var en nackdel att vara kvinna

22. Hur anser/ansåg Du att läromedlens utformning passar kvinnliga respektive manliga teknologer?

- 9,8 Passar manliga teknologer bättre
0 Passar kvinnliga teknologer bättre
72,1 Ingen skillnad
18,0 Vet inte

Hem och familj

23. Ditt nuvarande civilstånd?

- 3,2 Gift
24,2 Sammanboende med partner
72,6 Ensamstående

24. Har Du barn?

- 4,9 Ja
95,1 Nej

25. Om du är gift eller sammanboende, hur mycket tid ägnar Du åt hushållsarbete (och barnomsorg om Du har barn) i förhållande till Din man?

Ibland de som var gifta eller sammanboende var fördelningen:

- 0 Mycket mer
- 15,8 Mer
- 78,9 Lika mycket
- 0 Mindre
- 5,3 Mycket mindre

26. Önskar Du att kombinera yrkesliv med familjeliv? (sätt eventuellt flera kryss)

- 8,7 Vara hemma de första åren när barnen är små
- 47,1 Delad föräldraledighet
- 8,7 Arbeta deltid
- 30,8 Försöka kombinera heltidsarbete med familjeliv
- 4,8 Vet inte

Framtida anställning

27. Inom vilken sektor vill Du helst jobba?

- 12,4 Statlig
- 4,6 Kommunal
- 83,0 Privat

28. Vilka faktorer är viktigast för att Du ska trivas med Ditt arbete? Välj högst 5 alternativ!

- 18,5 Intressanta arbetsuppgifter
- 15,1 Bra kontakt med arbetskamrater
- 2,2 Hög lön
- 7,3 En trygg anställning
- 2,8 Flexibla arbetstider
- 1,8 Självständigt arbete
- 3,9 Att arbeta ihop med andra
- 3,2 Utåtriktat arbete
- 0,1 Att arbetet är meriterande
- 0,1 Hög status
- 13,4 Att man utvecklas själv
- 1,0 Arbetsledande ansvar
- 3,9 Inflytande på arbetsplatsen
- 9,0 Möjlighet att påverka det egna arbetet
- 5,2 Möjlighet att påverka samhället och samhällsutvecklingen
- 8,6 Spänning, omväxling
- 1,5 Att arbetet inte tar för mycket av min tid
- 2,4 Möjlighet till resor
- 0 Annat

29. Skulle du vilja ha en arbetsledande befattning/chefposition?

- 75,0 Ja
- 25,0 Nej

30. Hur ser Dina planer ut för framtiden?

- 11,3 Jag vet ganska bestämt vad jag vill göra de närmaste 5 åren
- 74,2 Jag vet ungefär vad jag vill göra de närmaste 5 åren
- 14,5 Jag vet inte alls vad jag kommer att göra de närmaste 5 åren

31. Har Du karriärmål i Ditt liv?

- 16,1 Ja, i hög grad
69,4 Ja, i viss mån
11,3 Nej, inte alls
3,2 Vet inte

Tack för Din medverkan!

Kommentarer:

Fråga 15:

Var orolig för chanser att kunna komma framåt i karriären

Positivt: lätt att samarbeta med män

Positivt: bättre stämning än kvinnlig dominans

Ville ha lite killkompisar också

Har svarat att det är positivt pga att "Man blir mer speciell som kvinna"

Kul att inte vara som alla andra

Fråga 16:

Tungt

Högt tempo

"Jag har en annan utbildning och vill eventuellt jobba inom det området (vill heller inte ha ett skrivbordsjobb)"

När det har varit jobbigt

Ev gått en annan linje på cth

Har haft funderingar på o gå en utbildning i Halmstad med som jag funderat på om jag skulle gått istället, när det gått dåligt.

Borde tagit reda på mer vad det innebar innan jag började.

Tycker utbildningen är svår

För att jag känt mig osäker på om det är vad jag vill jobba med

Andra intressen

Fråga 21:

Få, ja! Oftast finns de i typiskt kvinnliga ämnen som miljö, kemi. Inte i konstruktion direkt. Trist, men påverkar det studieklimatet?

Tror inte kvinnlig/manlig föreläsare påverkar studierna, men det är viktigt för jämlikheten (har svarat få, men ej viktigt)

Fråga 22:

Ekonomikursen är ett skräckexempel på att litteratur passar männen bättre!!!