CHALMERS

Managing foreign workers in the Swedish construction industry

Master of Science Thesis in the Master's Program Design and Construction Project Management

CHRISTOFFER BLOM
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ABSTRACT

During the last decade the construction industry in Sweden has seen costs for both materials and labor rise more than in other countries. In an effort to increase profits, construction companies are constantly seeking ways to save money during design and/or production. Contracting cheaper foreign labor is now becoming widespread and the latest expansions of the European Union have facilitated this labor migration into Sweden.

The *purpose of this study* is to examine in more depth how a construction site in Sweden functions when Swedish managers have a multi-cultural workforce. More specifically, how issues such as communication, supervision and quality control and safety are handled on a day-to-day basis by management personnel when language and cultural barriers may exist.

A *case study* design with two different construction projects was chosen for this study. Interviews were conducted at both sites with management personnel both Swedish and foreign; observations were carried out at the sites and a survey questionnaire answered by 49 of the foreign workers employed at both sites.

The *results of the case study* showed that communication between the Swedish managers and the foreign workers was the most difficult obstacle to handle. This is due to the low second language skills the workers have. The three main reasons for the workers seeking employment in Sweden are: the higher wages paid, better working conditions, and not enough jobs in the home country. In regards to safety, 98% of the workers say the safety regulations are easy to follow, yet the Swedish managers differ in opinion since the workers often break safety rules. The results also indicated increased supervision was necessary at the sites in order for the works performed to achieve the specified levels of quality.

This study concludes that language barriers can affect *communication* between Swedish managers and foreign workers. Therefore, face-to-face communication or through the use of a translator physically present at the site is recommended. Furthermore, ensuring that at least one worker in every work crew can speak a language which allows communication with the managers is recommended.

Increased *supervision* is necessary when employing foreign workers as management is never sure the workers have properly understood instructions. Integrating the workers into the construction team at the site by acquainting them with the organizational culture of the firm and the leadership style can improve their performance and decrease the need for supervision.

In regards to *safety*, both Swedish and foreign construction workers are engaged in unsafe practices and more research would be necessary in order to determine if there is a connection between nationality and unsafe behavior. The industry's "macho culture" may be a determining factor in taking risks at the work place rather than nationality. Implementing a no-tolerance to safety violations can help create a good safe-working culture. Establishing a penalty system with fines for breaking safety rules can also increase safety awareness levels among workers. Moreover, if the number of foreign workers at construction sites continues to increase, it ought to become the state authority's responsibility to implement a mandatory safety certification for all foreign workers.

Through this study we hope to raise awareness within the construction branch of the importance cultural differences can have in executing construction projects. Furthermore, we recommend further studies to determine if it is actually more economical to hire foreign workers instead of domestic and if there is any connection between nationality and safety behavior among construction workers.

Key words: Construction, Foreign workers, Labor migration, Swedish construction industry

Utländska arbetare i den svenska byggindustrin

Examensarbete inom Masterprogrammet Design and Construction Project Management

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SAMMANFATTNING

Under det senaste årtiondet har kostnader för material och arbete gått upp mer i den svenska byggindustrin än i andra länder. I ett försök att öka sin vinstmarginal söker byggföretagen konstant efter sätt att spara pengar under design- och/eller produktionsprocessen. Att anlita billig utländsk arbetskraft har blivit ett utbrett tillvägagångssätt och den senaste expansionen av den Europeiska Unionen (EU) har underlättat arbetskraftinvandringen in i Sverige.

Syftet med den här studien är att undersöka mer ingående hur en byggarbetsplats i Sverige fungerar när svenska chefer har en multikulturell arbetsstyrka. Mer exakt, hur ledningspersonal hanterar frågor som kommunikation, övervakning, kvalitetskontroll och säkerhet på en daglig basis när språkliga och kulturella barriärer finns.

En *fallstudie* design med två olika byggprojekt valdes för denna studie. Intervjuer med både svensk och utländsk ledningspersonal genomfördes vid de båda byggprojekten, observationer gjordes också på båda platserna och en enkät besvarades av 49 utländska arbetare som var anställda vid de båda byggarbetsplatserna.

Resultatet av fallstudien visade att det svåraste hindret att hantera var kommunikationen mellan svenska chefer och utländska arbetare. Detta beror på dåliga språkkunskaper, då majoriteten av arbetarna bara pratar sitt modersmål och inget andraspråk. De tre huvudsakliga anledningarna för arbetarna att söka anställning i Sverige är: högre löner, bättre arbetsvillkor och brist på arbete i deras hemländer. När det gäller säkerhet svarar 98% av arbetarna att säkerhetsföreskrifterna är enkla att följa, de svenska cheferna har dock en annan åsikt eftersom arbetarna ofta bryter säkerhetsreglerna. Resultaten indikerade också att ökad tillsyn var nödvändig på arbetsplatserna för att arbetet skulle uppnå de specifika kvalitetsnivåerna.

Denna studie drar slutsatsen att språkbarriärer påverkar *kommunikationen* mellan svenska chefer och utländska arbetare. Därför är muntlig kommunikation eller via en fysiskt närvarande översättare att föredra. Dessutom, att försäkra sig att åtminstone en av arbetarna i arbetslaget kan prata ett språk som tillåter kommunikation med cheferna är att rekommendera.

Tillsynsverksamheten behöver ökas när utländska arbetare anställs eftersom cheferna aldrig är säkra på om arbetarna har förstått instruktionerna. Att integrera arbetarna in i byggarbetslaget genom att göra dem bekanta med organisationskulturen av företaget och ledarskapsstilen kan förbättra deras prestationer och minska behovet för övervakning.

När det gäller *säkerhet* är både svenska och utländska byggarbetare involverade i osäkra metoder under arbetet och mer forskning skulle behövas för att kunna fastställa om det finns någon koppling mellan nationalitet och farligt beteende. Branschens

”machokultur” kan vara en avgörande faktor angående risktagande på arbetsplatsen. Genom att införa en nolltolerans mot säkerhetskränkningar kan en god säker arbetskultur skapas. Att införa ett straffsystem med böter för brott mot säkerhetsregler kan också öka säkerhetsmedvetandet bland arbetarna. Dessutom, om antalet utländska arbetare vid byggarbetsplatser fortsätter att öka borde det bli en statlig myndighets ansvar att införa en obligatorisk säkerhetscertifiering för alla utländsk arbetare.

Vi hoppas att denna studie ökar medvetenheten kring hur kulturella skillnader påverkar genomförandet av byggprojekt. Vi rekommenderar vidare studier för att kunna fastställa om det är mer ekonomiskt att anställa utländska arbetare än svenska arbetare och om det finns någon koppling mellan nationalitet och säkerhetsbeteende bland byggarbetare.

Nyckelord: Byggande, Utländska byggnadsarbetare, Arbetskraftsinvandring, Svensk byggindustri

Table of Contents

Table of Figures

1. Introduction

During the last decade the construction industry in Sweden has seen costs for both materials and labor rise more than in other countries (McKinsey Global Institute, 2006). In an effort to control costs and increase their profits, construction companies seek ways to save money during design and/or production. Purchasing raw materials and fixtures in other countries has become common practice for many contractors' and real estate developers. Likewise, contracting cheaper foreign labor is now becoming widespread and the latest expansions of the European Union (EU) have facilitated this labor migration.

The influx of migrant workers into Sweden follows a trend seen in the EU after the 2004 expansion in which ten Central and Eastern European countries (EU-10: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia) joined the EU. The trend intensified in 2007 with the addition of Romania and Bulgaria. The term migrant worker is used in this thesis to refer to an EU national staying and working temporarily in an EU country which is not their native country (European Agency Safety and Health at Work, 2007; Institution of Civil Engineering, 2007). This freedom of movement, coupled with today's relatively inexpensive means of transportation and immediate information access through the internet has made it possible for mobilization of laborers from their country of origin in search for better employment opportunities (Bust, et al., 2008). The majority of these workers originate from countries with low economic development and where jobs are scarce. Sweden, on the other hand, with its stable and currently strong economy is in the midst of a construction boom and in need of working hands. The last few years have seen a rise in the number of migrant workers attracted by higher wages and work opportunities (Olander and Tilly, 2008).

This multicultural mix of workers presents challenges to construction managers since direct communication with employees is not possible due to language differences. Communication between management and the foreign workers at construction sites is usually handled with the use of translators. Yet an estimated 40% of the information transferred through a translator can be distorted or lost, even when employing a professional translator (Loosemore and Lee, 2002). Furthermore, the use of interpreters or translators can significantly slow down the entire communication process, asides from being very costly (Weatherly, 2006). When workers do not understand the given instructions there is an increased risk of mistakes leading to re-work (Loosemore and Lee, 2002; Weatherly, 2006).

Yet language is not the only difficulty management must account for. Foreign workers have different perceptions of the environment, motives, and behavior (Ochieng and Price, 2010). Project managers can also encounter difficulties assessing the skills and competencies of these new workers, since educational standards can differ from one country to another as well as construction technology and skills (Weatherly, 2006; Chua et al., 2003). As a consequence of these afore mentioned factors labor productivity can be lower (Chua et al., 2003). All in all, cultural differences can be hard to manage by managers and organizations creating frustration and ineffectiveness (Low and Shi, 2001). However, diversity can increase problem solving capability and creativity and lead to a competitive advantage (Gilbert et al., 1999).

1.2 Aim of the study and research questions

This thesis aims to examine in more depth how a construction site in Sweden functions when Swedish managers have a multi-cultural workforce. More specifically, how issues such as communication, supervision and quality control and safety are handled on a day-to-day basis by management personnel when language and cultural barriers may exist. The following research questions have been formulated with the purpose of delineating this study:

1. How does communication work at a construction site when management and the workers employed do not speak the same language?
2. How do project and site managers secure the specified quality levels are reached when managing a multicultural workforce?
3. How do cultural differences affect the safety performance of the foreign workers at the workplace and how is safety information transmitted to these employees?

During our literature search we found there is a limited amount of literature on the subject of foreign workers in the Swedish construction sector. Currently, most literature available are either from abroad or handle a very specific case, the Vaxholm case from 2004 which was judged in the European Court of Justice (ECJ). In this case, the ECJ ruled that foreign construction workers could be paid less than the normal salaries set by the trade unions in Sweden.

1.3 Outline of the thesis

The thesis is divided into eight sections and following is a brief description of the content in each section:

1. *Introduction:* the study is presented with a brief outline, aim and problem description and the research questions stated.
2. *Background:* a brief background into the current situation in the Swedish construction industry; what construction managers do on a daily basis and what the conditions are regarding the employment of foreign construction workers.
3. *Methodology:* explains how the study for this thesis has been conducted. We began with a literature review of scientific journals in search for articles which could shed light on the subject of labor migration, specifically in the construction industry. A case study design was selected with two construction sites as the subjects for this study. Project, site and quality managers plus foremen were interviewed at these two work sites. A questionnaire survey was conducted among the foreign workers who could not speak English or Swedish. Observations at the two case study sites were performed to gather additional information.
4. *Theoretical framework:* this section presents a review of the literature found covering the most relevant areas in connection to this study. Cultural aspects such as national- and organizational culture as well as typical cultural features for the construction industry are explained. Relevant information in connection to communication in construction is introduced, such as "communicating safety information". In addition, the subject of construction team integration is presented.

5. *Results:* the findings from the interviews, survey questionnaires and observations are presented in this section. The results show that the Swedish managers and the foreign construction workers have different perceptions on several issues such as safety knowledge at the work site. Additionally, while the managers consider communication a key issue few of the foreign construction workers rarely speak a second language. These language skill shortages require the use of translators.
6. *Discussion:* the findings from the observations, interviews and questionnaire survey are analyzed and discussed with the help of the theoretical framework in order to find aspects to consider when presenting the conclusions.
7. *Conclusion:* this section presents the conclusions drawn from the analysis and discussion in the previous section. In addition, recommendations for improvements on how to successfully manage foreign construction workers are presented.
8. *Reflections on the research process:* the final section of this thesis presents an overview of the process from the inception of the idea for this study to the conclusion.

2. Background

This section presents an insight into the Swedish construction sector and the conditions within the labor market both local and regional which have made timely the employment of foreign workers.

2.1 The Swedish construction industry

The Swedish construction sector is large, labor-intensive and relatively low-performing (Byggkommissionen, 2002). Productivity developments in the industry are much lower than in the manufacturing industry. During the years 1965-1996 productivity rose on average 2.9% per year in manufacturing while construction only achieved a 1.7% yearly increase during the same period (Byggkostnadsdelegation, 2000). The industry is highly fragmented, where three large construction contractors and many small to medium sized firms are active together with a large number of self-employed construction workers. The need for workers fluctuates constantly since the industry is cyclical experiencing periods of high and low activity (Byggkommissionen, 2002).

During the latest world economic recession Sweden was affected and the Swedish GNP decreased by 5.1% in 2009 (Statistiska centralbyrån, 2011b). However, the economy has recovered strongly with clearly positive effects to the Swedish construction industry such as a notable increase in housing construction and subsequently an increase in employment. During 2010, employment within the industry increased by approximately 10,000 workers. Furthermore, personnel increases of 20,000-25,000 are expected for the coming years of 2011-2012 (Deremar and Isaksson, 2011).

Presently, there is a lack of experienced construction workers although graduates from vocational schools are in good supply *(See Figure 1)*. Yet in Sweden graduates from construction programs in vocational and technical schools are required 68,500 hours as apprentices under the supervision of a professional worker in the field the student has chosen. This training is part of their educational program, and without it they are not considered to be proficient enough in their fields to be eligible for employment.

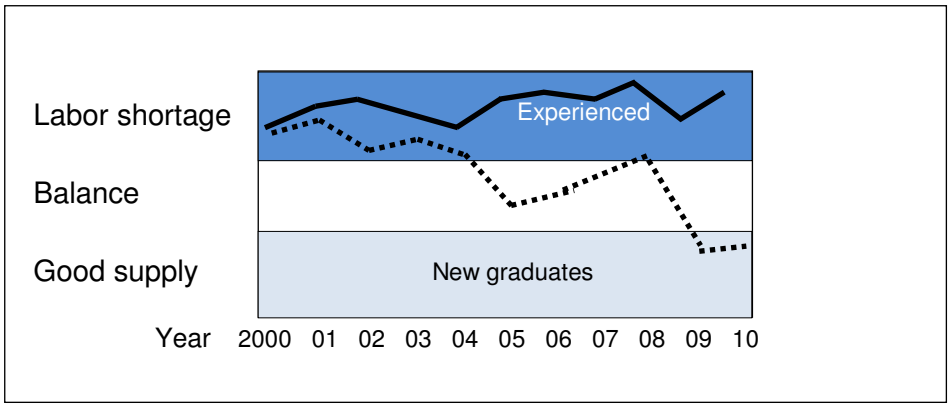


Figure 1 Construction worker demand situation 2000-2010. (Statistiska centralbyrån, 2011a)

2.1.1 Safety work in construction

The construction industry is recognized as a hazardous industry, where occupational health and safety risks are higher than in most other sectors (Institute of Civil Engineering, 2007; Hinze, 2008). Work-related accidents at construction sites can occur for any number of reasons: lack of knowledge or training, a lack of supervision, an error of judgment, carelessness, apathy or just plain unsafe behavior (Sawacha et al., 1999; Choudhry et al., 2008). Accidents are recorded and the following have been found to be the most common (Fryer, 2004; Choudry et al., 2008):

- falling accidents, such as from roofs, ladders and scaffolds
- being struck by excavators, lift trucks or dumpers
- injuries caused by machinery and tools
- being crushed by collapsing structures

The number of reported accidents and fatalities in the Swedish construction industry between 2000 and 2010 has fluctuated, not following a specific trend. During the latest economic recession 2007-2010 a considerable drop in these rates was recorded as expected due to the slow-down in activity during this period as shown in *Figure 2* and *Figure 3.* Accident rates started to increase in 2010 due to increased construction activity.

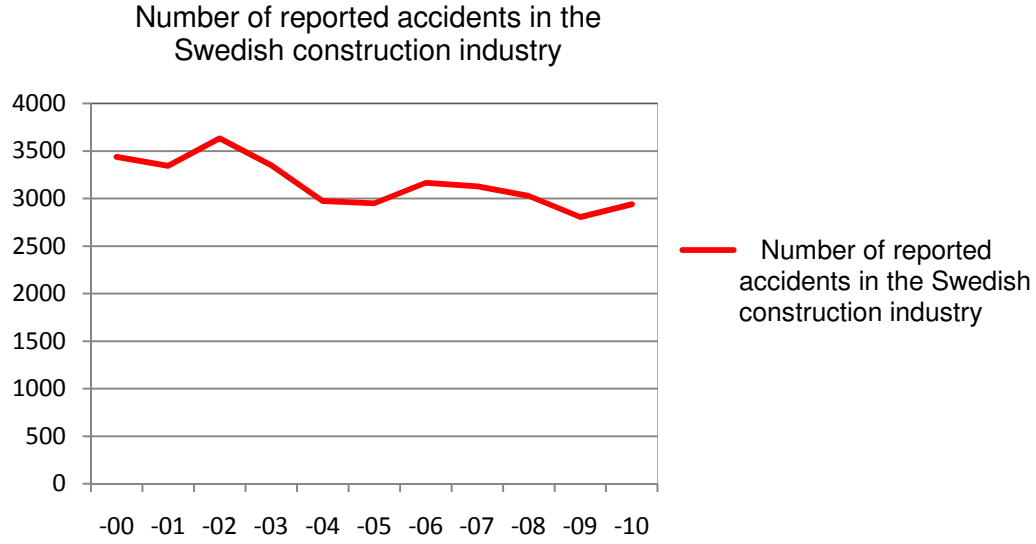


Figure 2 Number of reported accidents in the Swedish construction industry between the years 2000-2010. (Byggindustrins Centrala Arbetsmiljöråd, 2007; Arbetsmiljöverket, 2011)

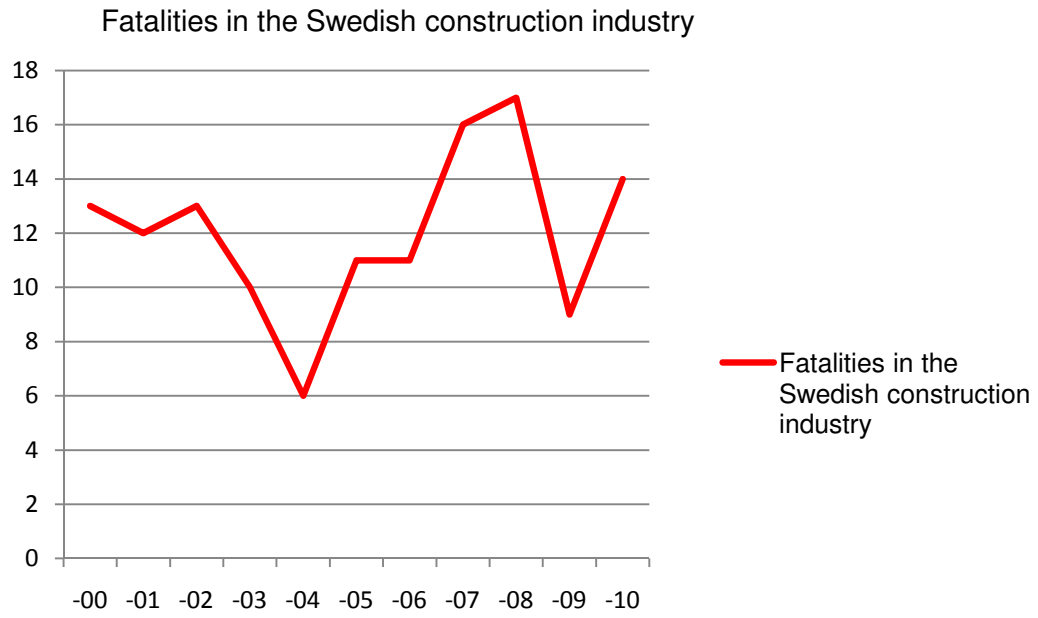


Figure 3 Number of reported fatalities in the Swedish construction industry between the years 2000-2010. (Byggindustrins Centrala Arbetsmiljöråd, 2007; Arbetsskador i byggverksamhet, 2011)

Safety orientation and training is management's responsibility and special considerations need to be adopted at worksites with foreign workers. Examples of ways in which safety information can be disseminated to multi-cultural workforces have been presented by researches and include: translation of safety signs, translation of equipment manuals and hazardous materials labeling and the use of signs with images rather than words (Trajkovski and Loosemore, 2006; Bust et al., 2008). Sawacha et al. (1999) found the most influential factor driving safety performance in the industry is the *"organization policy towards safety"*, where the top five most significant issues are:

- Management talk on safety
- Provision of safety booklets
- Provision of safety equipment
- Assuring a tidy site
- Appointing a trained safety representative on site

It is important to recognize that language barriers can influence the way information is distributed to the foreign workers in order to adopt strategies which can ensure safety at the worksite.

2.2 The task of construction management

Managers spend their time planning, organizing, directing, controlling and developing their staff. All these activities are a vital part of a construction manager's job, and a project's success depends on how well a manager counsels and supports their work crews; a good manager can therefore motivate a workforce to perform exceptionally, or, on the other hand, frustrate and stifle them (Fryer, 2004).

The task of management can be defined as:

> *"…the process of communicating, coordinating, and accomplishing action in the pursuit of organizational objectives while managing relationships with stakeholders, technologies, and other artifacts, both within as well as between organizations."* (Clegg et al., 2008)

According to Fryer (2004) in order to get the job done, managers must possess a certain combination of skills, all of which come in handy when engaged in different kinds of management work:

- **Interpersonal skills**- problem-solving, leadership, communication and the ability to motivate others
- **Decision-making skills**- short-term vs. long-term decision making, evaluating the consequences of each
- **Information handling skills-** sorting through all the in-and-out going information and effectively focusing on the important issues and filtering out the rest

Construction managers are responsible for ensuring work at the site is executed to the specified levels of quality. Winch (2002) defines quality control as "the part of quality management focusing on fulfilling quality requirements". To check if the requirements have been reached quality inspections are usually performed by others than the workers who have performed the work (Winch, 2002). In construction these persons are usually supervisors such as foremen and quality managers, performing sampling on areas where defects most likely appear (Arditi and Gunaydin, 1997). The quality checks are normally performed visually after each construction operation is completed (Harris and McCaffer, 2006).

According to Akanci et al. (2005) 54% of all defects in construction are related to human factors such as insufficient supervision or unskilled construction workers. Construction quality can accordingly be improved by well performed inspections. The inspections are critical when considering safety- as well as economic aspects, as defects can both cause safety hazards and cost money (Winch, 2002).

Based on literature we have chosen to focus on the managerial activities which can guarantee delivery of a successful project. Those activities are communication, supervision and quality control and safety work at the worksite.

2.3 Employing foreign labor in the Swedish construction industry

Labor mobility and migration within the EU is a highly controversial political and economic issue (Dobson, 2009). Of special interest to this study are the developments in labor migration after 2004 when the EU-10 became Member States and later in 2007 when Romania and Bulgaria followed. These countries were the least developed economically to date to join the EU and certain mobility restrictions were imposed by the existing member states, with the exception of Ireland, the United Kingdom and Sweden which allowed free movement for all new members (Dainty et al., 2007).

All EU citizens may:

- Seek work in another Member State
- Be employed in another Member State
- The right to reside there for that reason
- Equal treatment concerning access to employment and working conditions

This free movement of workers is protected under Article 45 TFEU which prohibits discrimination on the grounds of nationality, considered essential for the establishment of a common labor market in Europe (Eurofound, 2010).

In Sweden, there is a requirement for workers from other EU countries to apply for a Resident Permit if they stay longer than three months. The residency is granted by Migrationsverket (The Swedish Migration Board) and is normally valid for five years with the requirement that the foreigner must be employed or in some way able to finance their stay (Nordegran and Ahlén, 2010). In regards to tax obligations, migrant workers are obliged to pay taxes in the EU country they are working in. There are, however, exceptions to this rule and employments which last less than 12 months are not required to pay taxes. There are also exceptions to this rule as well, regarding workers from the EU-10 countries where a limit of six months is prescribed (Nordegran and Ahlén, 2010; EU- Links and Information on Social Security, 2011).

When considering educational background and skills it is up to the employer to make sure that the employee can perform their work tasks in accordance with Swedish legislations (Nordegran and Ahlén, 2010). Accordingly, there is no need for any certification to work in the Swedish construction industry. There is however an exception when it comes to construction of scaffolding higher than two meters, for which an education and a certificate are required (Arbetsmiljöverket, 1991). Some professions which require more theoretical knowledge such as electricians and plumbers are also required certification.

Migration had been foreseen as a consequence of the EU expansion which Dobson (2009) accredits to *push and pull factors*. There must be a *push factor* causing workers to leave their home country in combination with a *pull factor* with a country which is attractive, with job offers from employers and legal conditions allowing their stay. A similar insight into migration policies by Connell and Burgess (2009) identifies *push factors,* those which affect the supply of labour and *pull factors,* those affecting the demand for labour.

Certainly, if the conditions necessary to facilitate labor mobility are in place then the effects are perceived both in the home and the destination countries. These effects have positive and negative repercussions. Dobson (2009) points out the benefits the home countries will gain when all these foreign workers return with new language and business skills plus savings which will allow them to start businesses in their home countries. In addition, the majority of the workers do not have their families while abroad, instead they are supporting them by sending money, thereby infusing capital into the national economy (Dobson, 2009; Langford and Agapiou, 2005).

Repercussions can also be negative, and businesses in the EU-10 countries claim it is more difficult now to recruit and retain competent personal, since workers with higher educational levels are leaving the country in search for better jobs (Dobson, 2009). Additionally, labor migration alleviates labor and skills shortages in the country

receiving the workers. On the downside, it can cause a reduction in local salaries and employment standards in certain sectors, or shun out local or unemployed workers in favor of foreigners (Dobson, 2009). Furthermore, Langford and Agapiou (2005) argue that increasing reliance on foreign workers will diminish the image of the industry making it a less attractive career choice for young people.

3. Methodology

This section will cover the research design and strategy chosen for this thesis work and explain the research methods used.

3.1 Research design and research strategy

Although research design and research strategy can easily be thought to have the same meaning, there is a vast difference between the two. In research design, a framework for the collection and analysis of data is selected, while research strategy refers to the general orientation in conducting the research (Bryman and Bell, 2011).

Selecting both the research design and the research strategy requires careful consideration and needs to be done fairly early on in the study. Bryman and Bell (2011) present four different types of research design:

- Experimental design
- Cross-sectional design
- Longitudinal design(s)
- Case study design

After considering these different types we chose a *descriptive* case study design which aims to systematically identify and record a certain phenomenon or process instead of testing a theory or hypothesis (Fellows and Liu, 2003). Through this case study type one tries to gain more in-depth knowledge on a specific topic. Once the research design was chosen, the research strategy needed to be decided upon together with the research methods to be employed. There are two distinctive types of research strategy; the quantitative approach -which emphasizes quantification in collecting and analyzing data, and the qualitative approach -which is more oriented towards words and not concerned with quantification (Bryman and Bell, 2011). For the purpose of this thesis we have chosen to combine both approaches -qualitative and quantitative.

The case study consisted of two different construction sites. Interviews were conducted at both sites with management personnel who could speak Swedish or English. Site observations were also conducted on several occasions, as will be explained later in this section. Furthermore, in order to collect information from the foreign workers a questionnaire survey was developed and translated into the languages spoken by the workers.

The choice of research methods determines the scope and depth of this study as shown in *Figure 4* (Fellows and Liu, 2003).

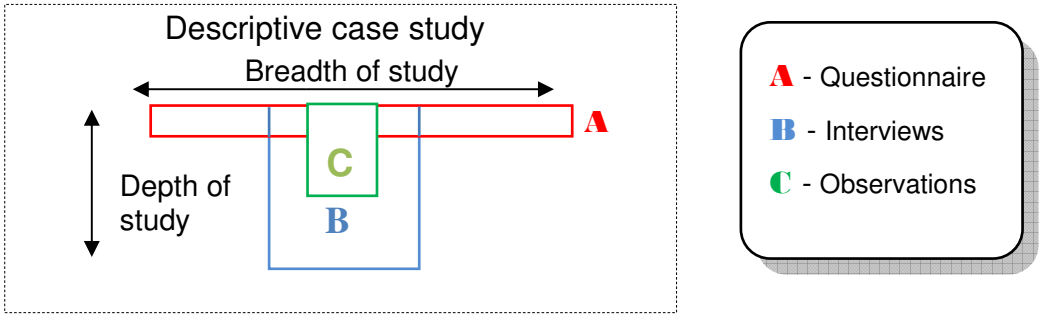


Figure 4 Breadth vs. depth in the case study. (Adapted from Fellows and Liu, 2003)

3.1.1 Ethical considerations

According to Kvale (1997) there are ethical principles which should be considered when conducting social research studies. The first, *informed consent* means that the researchers inform the interviewees on the purpose of the research and how it is to be conducted; furthermore, the research subjects can at any point decide not to participate any longer. At the start of each interview, we began by introducing ourselves, the educational program we were attending and the nature/purpose of our study. Following, we made it clear participation was voluntary and that the subject could refuse to answer any question they felt uncomfortable with, likewise, could they pose questions to us as well. Anonymity of the participant was also assured to the interviewee, and permission requested to record the interview session. We explained the recording was exclusively for our use. This follows the *confidentiality* guideline set by Kvale (1997) which states that private information which could identify a subject will not be diverged. Lastly, all interview subjects were informed of how the collected data would be used and that our intention was to help improve the situation for foreign construction workers in Sweden. This follows Kvale's (1997) beneficence principle –which states participants should be protected from harm.

3.2 Literature review

In order to understand more on the subject of migrant workers in the construction industry, a literature review was conducted at the beginning. This gave us a broader perspective on the topic not only in Sweden and the rest of the European continent, but also in other regions of the world were multi-cultural work forces are common. It showed that the United Kingdom (UK) has done extensive research on the subject of migrant workers in general, as well as specifically within the construction industry and the effects this has on the economy and the labor market. These reports have proven to be extremely helpful in the development of this thesis.

In addition, we have continuously searched databases available through the Chalmers library for articles, trends and discussions using combinations of search words such as: migrant workers, foreign labor, construction industry, construction sector, construction worksite, communication, posted workers, and so on. Google Scholar has also been a valuable tool in searching for a specific article or report. Local newspapers and publications from Swedish institutions and private federations active in the construction sector have supplied information on the industry's status.

3.3 Case study

This report is based on two different cases. The study objects were two construction sites in Gothenburg operated by two different companies. The first site will be referred to as Construction project 1 and the second as Construction project 2. The reason for having two cases was to increase the number of different kinds of interviewees since the foremen at Site 1 were Romanian while at Site 2 the foremen were Swedish. Additionally, survey questionnaires were used to collect information and by having two case sites we were able to increase the number of participants in the survey questionnaires. No direct comparisons will be made between the two case study sites.

The company responsible for Construction project 1 is a medium-sized Swedish firm active in the residential construction sector. This is representative of the majority of the construction firms in Sweden which are either small- or medium-sized.

Construction project 2 is managed by one of the three largest Swedish contractors, dominating and leading the market; they set new standards which are quickly followed in the industry. The companies are different in many ways but share several common aspects such as the composition of workers at both project sites, where most workers are foreign while management remains Swedish. Almost all subcontracting is done by Swedish firms at both sites which means Swedish and foreign workers need to cooperate with each other. These aspects make the two sites representative for the Swedish construction industry and suitable for our study as they have a mix of Swedes and foreigners which are interacting on a daily basis.

Case description Construction project 1

The company responsible for the Construction project 1 site is a contractor/housing company specialized in building rental apartments. They build and later administrate the apartments and own properties in Sweden's major cities such as Stockholm, Malmö, Linköping and Gothenburg. Site 1 consisted of five buildings with over 100 apartment units. The project is due for completion in September 2011; therefore it was not completely finished when this report was written. During the time when we first contacted and visited Site 1, all building structures were completed with the windows, doors and roof in place. Most of the interior work had started and was at different levels of progress in all of the buildings. One of the apartment buildings was finished during the time of our study and tenants moved in even though the construction work continued in the other buildings.

At this worksite approximately 75% of the workers were from Romania; additionally, there was a crew of Polish workers consisting of 14 men. A number of Swedish sub-contractors were also present contracted for jobs such as ground works, electrical works, HVAC, plumbing, roofing, etc.

When the Construction site 1 company hired foreign workers from Romania they advertised in Romanian newspapers as well as in Romanian work sites via internet. The workers were not required to present any certificates to prove their skills; therefore, upon first arrival they were hired on a probationary period. If the worker later proved to be skilled he would be contracted for a longer period of time. If, on the other hand, the worker lacked the necessary skills to perform the assigned tasks he would be dismissed and would have to return to Romania.

The Romanian foremen were required to have a university education, not necessarily in the construction branch; most importantly they needed to speak good English. The reason for the language requirement was so that the foremen could serve as translators and pass on information back and forth from management to the construction workers.

Case description Construction project 2

The company responsible for the Construction project 2 site is one of the largest contractors in Sweden, active in construction and infrastructure projects both in Sweden and in the global market. The Construction project 2 was a large scale infrastructure project containing among other things two bridges. This project had started years before our study and was due to be completed during 2011. We visited Site 2 two times during the writing of this report.

At this worksite approximately 90% of the workers were Polish. Likewise, there were a number of Swedish sub-contractors employed in charge of various works such as asphalting, welding, scaffolding, painting and bridge railings. A few Swedish workers

were also employed to support the work of the Poles. The management and foremen on site were all Swedish.

Construction project 2 hired the Polish workers through a Swedish employment agency; they needed to have a vocational certificate in order to qualify for employment. The length of time they were hired depended on the length of time they would be needed at the site. If a worker did not perform to the required standards the worker's contract with the employment agency would be revoked.

3.4 Interviews, observations and survey studies

Multiple sources of data were collected through the use of in-depth interviews, observations and a survey which allowed triangulation of the findings. Triangulation in this instance refers to the collection of data through a number of different methods in order to cross-check the findings (Bryman and Bell, 2011).

3.4.1 Interviews

Most of our visits at the Construction project 1 site were to the site office where management and the two Romanian foremen had their workstations. It was here we conducted our interviews. There was little privacy, since the office consisted of one large room (a 40 foot container), although the project manager did have a separate office and his interview was a bit more private. Nevertheless, since most of the staff was busy out on the site at the time of the interviews, these were conducted in what can be considered semi-privacy as staff members were engaged in other chores and busy coming in and out of the office.

The interviews were semi-structured with open questions, where interview questions have been used as a base, yet allowing for follow-up questions and reflections. Most interviews lasted between 20-35 minutes, with the exception of the interview held with the site manager; since this was our initial interview there were many questions about the construction project in general. All interviews were taped and later transcribed on the same day of the interview or the following day at the latest. An example of an interview guide used for the interviews is shown in *Appendix 5*.

Early on in the design of this study the decision was made to interview both foreign and Swedish foremen managing foreign workers. At the Construction project 1 site the Swedish foremen were all employed by sub-contractors and these only managed Swedish workers while the foreign workers were managed by foreign foremen. Therefore, a second construction site with Swedish foremen and foreign workers was selected as Construction project 2 and two interviews were conducted on-site with the foremen. All the interviews performed and the language they were conducted in appears in *Table 1* and *Table* 2.

Table 1. Interview subject's information and work environment, Construction project 1

Work type	***Personal information***	***Work environment***	***Language***
Project Manager	Age: 45 years, male, Swedish. 23 years' work experience including six as project manager	Co-owner, financially responsible for the project, ensures project runs to schedule and to budget	Swedish/English

Work type	*Personal information*	*Work environment*	*Language*
Site Manager	Age: 53 years, male, Swedish. 30 years' work experience, including 15 as site manager	In charge of all on-site operations, programming and planning the work, maintaining quality control procedures, managing sub-contractors and conducting site safety checks.	Swedish/English
Quality Manager/Safety Officer	Age: 60 years, male, Swedish. 38 years' work experience in the construction industry.	Maintains quality control procedures, visual inspections of work and conducts frequent on-site tours. Responsible for ensuring safety at the work site. Implements safety regulations; provides protective equipment for employees and visitors.	Swedish/English
On-site Purchaser	Age: 35 years, male, Romanian. Studied Automotive Mechanics in home country. 6 years working in construction, 2 in Greece, 4 in Sweden.	Daily runs from worksite to local retailers to purchase materials/tools and miscellaneous as required. Delivers direct to the work site.	English
Foreman	Age: 45 years, male, Romanian. 20 years' work experience. Studied Mechanical Engineering in home country. 4 years working in construction, first in Spain, the last 15 months in Sweden.	Ensures crews perform their tasks and work goes according to plan. Communicates with Site Manager for scheduling, work progress. Assigns tasks to supervised crews; oversees work quality and safety.	English
Foreman	Age: 34 years, male, Romanian. 12 years' work experience. 6 months working in the Swedish construction industry.	Ensures crews perform their tasks and work goes according to plan. Communicates with Site Manager for scheduling, work progress. Assigns tasks to supervised work crews; oversees work quality and safety.	English

Table 2. Interview subject's information and work environment, Construction project 2

Work type	***Personal information***	***Work environment***	***Language***
Foreman	Age: 61 years, male, Swedish. 41 years' work experience in construction. Refers progress reports and coordinates work with management.	Ensure crews perform their tasks and work goes as scheduled. Orders material; arranges deliveries. Communicates with Site Manager.	Swedish
Foreman	Age: 27 years, male, Swedish. 2 years' work experience as foreman. Refers progress reports and coordinates work with management.	Ensures crews perform their tasks and work goes as scheduled. Orders materials; arranges deliveries. Communicates with Site Manager.	Swedish/English

During our different visits at Construction Project 1's site office we were able to engage in more informal conversations with the management staff during breaks. Likewise, the Romanian foremen were also available at times for informal conversation, and it was interesting hearing their views on the project, the work, their daily routines and their general views on life here in Sweden. It was not possible to engage in conversation with any of the workmen we met, except one, a carpenter who spoke very good English. Communication with the workers was through hand gestures, when we attempted to speak directly to them, a few would say *"no English"* or *"no Svenska"*. In any case, they were friendly towards us and none appeared to resent our questions or presence.

The interview questions were modified over time as we learned more about the subject and some questions could be excluded while others were added. The interview questions were adjusted for the different interviewees. Examples of questions and question topics are found in the interview guide in *Appendix 5*. Overall the questions took into consideration:

- the construction projects' status
- communication issues such as language barriers
- safety considerations
- reasons for the workers coming to Sweden
- reasons for the employers hiring foreign workers

Once all interviews had been concluded and transcribed results were analyzed and later coded into concepts which kept re-appearing. This allowed the formation of the following categories (Bryman, 2008):

- Reasons for labor migration into Sweden
- Supervision and control
- Team integration and culture

- Language and communication
- Safety work at the worksite

The results from the interviews are presented in Section 5.3.

3.4.2 Observations

Observations were conducted with the purpose of interacting in a more informal way, creating opportunities where the subjects could volunteer information without following a questionnaire protocol. Repeated field visits at the Construction project 1 site also allowed collecting data though open conversations with several members of the management staff as well as with two of the Romanian foremen. The observations during these visits helped to clarify how the worksite functioned and the type(s) of interaction(s) between all the actors, from management down to the workers. It was possible to observe the workers while they performed their jobs, the relationships with other personnel both Swedish and foreign, the general morale of the different crews and the type and quality of the work they were engaged in at the moment.

Although we visited the Construction project 2 site a first time to perform the interviews and a second to collect the surveys, we did not have the opportunity to perform field observations.

3.4.3 Questionnaire survey

Aside from the two Romanian foremen, none of the remaining foreign workers at the Construction Project 1 site spoke Swedish or English (to our knowledge) making it impossible to interview them without a translator, which unfortunately we did not have. Considering that their input was essential to this study, we decided to conduct a survey instead, with mostly close-ended questions. A survey was designed following recommendations from Trust and Hultåker (2007), translated into Romanian and distributed among the workers at the Construction project 1 site. To reflect on various foreign workers' position, the same survey was again translated and distributed to the Polish workers at the Construction project 2 site. The survey questionnaire in English is found in *Appendix 1*, the translated version into Romanian in *Appendix 2* and the Polish version in *Appendix 3*.

The survey was constructed considering different topics, which were: *personal information*, *communication, safety* and *job satisfaction*. The *personal information* section in the survey contained basic questions about the participant's age, educational background, language skills and reasons for coming to work in Sweden. Questions under the topic *communication* considered how well the communication worked on site and if there were any wishes among the foreign workers to learn a language that would help them communicate better on site. Furthermore, a couple of the questions aimed at validating how well the communication channels functioned at the site. The topic *safety* considered how well the workers understood the safety regulations and if they considered them easy to follow. The last topic, *job satisfaction* investigated how well the foreign workers got along with their co-workers, if they liked their jobs and other issues regarding their stay in Sweden and at the workplace.

The survey questions were created as multiple choice questions, making them easy to answer and interpret. Opportunities for open text answers were also given at the end of the survey where space was given for thoughts and suggestions.

We were present during the time surveys were answered at the Construction project 1 site and we received them back immediately after they had been filled out. At the Construction project 2 site the surveys were handed over to one of the Swedish foremen who distributed them to the foreign workers on site. We returned to picked up the surveys a few days after we had left them. Response rate at the Construction project 1 site was 38 out of 48 and at the Construction project 2 site 11 out of 14. We do not consider that the two different forms of survey distribution have affected the way participants answered them as the answers seem truthful. All participants in the survey were anonymous and the answers were handled confidentially.

Data collected through the survey was analyzed with the help of Windows-compatible statistical software IBM SPSS Statistical 19 (originally named Statistical Package for the Social Sciences). Answers from the survey questions were input in the form of numbers or text in a spreadsheet which allowed versatility in statistical analysis, data management and the creation of graphs and tables, among other features.

3.5 Reliability, replication and validity

In research a series of relevant criteria are used in judging the quality of a research design. Bryman and Bell (2011) specify the three they consider of most importance: reliability, replication and validity.

Reliability: concerns whether or not it is possible to repeat a study and obtain the same results.

Replication: or replicability; sometimes researchers will attempt to replicate a study, in which case the original authors of the study need to have clearly and concisely documented how they went about with their research so that those replicating the study can follow the same steps and arrive at the same results.

Validity: considered to be the most important of the criteria, it is concerned with the integrity of the conclusions arrived upon from a study.

With these research criteria in mind, we chose to use both qualitative and quantitative studies which would then allow triangulation of the results by comparing the two strategies. The literature review has been used as a base for developing interview questions and the questionnaire survey and further analyzing the answers. Taping all interviews ensured the transcription process was conducted in the most accurate way possible, where we could both discuss and interpret the answers. In addition, we had the freedom to re-contact our interview subjects either by e-mail or personal visits at the work site to further discuss or clarify answers if necessary.

4. Theoretical framework

The theoretical framework consists of two categories of theory which after our literature review we considered of interest to our topic of research, foreign workers in the Swedish construction sector. Firstly, there is *culture*, which is important as it affects the behaviour of the foreign construction workers. Secondly, *communication,* which is necessary for interaction and the transfer of information. Furthermore, communication affects *team integration*, considered in the literature key to delivering successful projects.

4.1 Culture

The meaning of the word culture can be hard to define, as this wide concept refers to more than just the cultivation and improvement of plants or to something artistic such as classical music or theater (Barthorpe et al., 2000). Even if these ideas of culture are correct in some contexts, there is much more. According to Clegg, et al. (2008) culture can be defined as:

> "*…the totality of everyday knowledge that people use habitually to make sense of the world around them through patterns of shared meanings and understandings passed down through language, symbols and artifacts*".

Accordingly, culture can be considered as a shared way of being for a group created by the surroundings and through inherited habits.

4.1.1 National culture

According to Hofstede and Hofstede (2005) every person has a pattern of thinking, feeling and acting learnt throughout life, which is a kind of mental programming gathered from the social surroundings where one lives.

There are several different kinds of culture variables representing a stereotype way of being in for example a country or organization. Hofstede and Hofstede (2005) have created a measurement for national culture considering several parameters. These parameters are called Hofstede's four cultural dimensions, which consider*: power distance, uncertainty avoidance, individualism and masculinity*. The values of the cultural dimensions were calculated for a number of countries using computer programs to analyze the answers to questions posed to subjects of the same population. The formulas for the cultural dimensions differed and the possible maximum and minimum scores vary between the different dimensions. The calculated values are strictly for comparisons and represent values in a scale.

Hofstede and Hofstede (2005) identified four levels of culture, beginning with *power distance* which they defined as:

> *"The extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally"*.

The cultural differences between Sweden and Romania are noticeable when comparing respective power distances; Sweden has low power distance and people regardless of rank or status consider themselves fairly equal. In comparison, Romania has a larger power distance thus a more hierarchical society and members expect more supervision while working. The power distances of Sweden, Romania and Poland are shown in *Table 3*.

In addition to power distance, other cultural differences can be noted between the Eastern European countries and the Nordic countries, Sweden included. Hofstede and Hofsted (2005) in reference to the masculinity dimension expressed:

> *"A society is called masculine when emotional gender roles are clearly distinct: men are supposed to be assertive, tough and focused on material success, whereas women are supposed to be modest, tender and concerned with quality of life".*

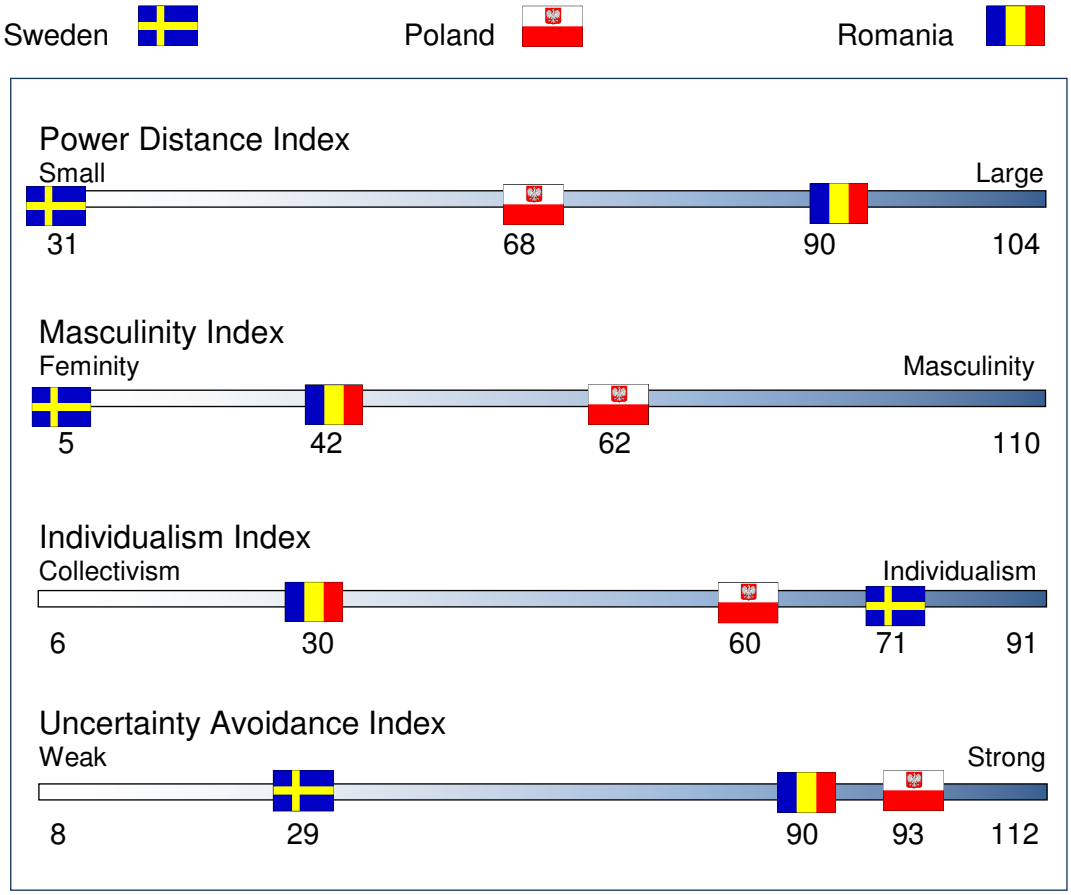
In comparison to a masculine oriented society, in a feminine oriented society the gender roles are overlapping and both sexes are supposed to be modest, tender and concerned with quality of life As shown in *Table 3,* Sweden scores very low in comparison to the other two countries (Poland and Romania), in fact the lowest in the world. Sweden is thus a more feminine oriented society in comparison to Romania and Poland which still are scoring rather moderately in comparison to the world index.

The third of Hofstede and Hofstede (2005) dimensions *individualism* refers to

> "*…societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. Collectivism, its opposite pertains to societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout one's lifetime continue to protect them in exchange for unquestioning loyalty".*

The individualism index for Sweden, Poland and Romania are shown in *Table 3* and clearly show Sweden is more individualistically oriented while Romania has a more collectivistic society. It should also be mentioned that Poland scores more closely to Sweden than Romania in this matter.

Table 3 Hofstede's cultural dimensions



Uncertainty avoidance is the fourth cultural dimension (Hofstede and Hofstede, 2005) which measures

> "*…the extent to which the members of a culture feel threatened by ambiguous or unknown situations*".

As shown in *Table 3* there is similarity between Poland and Romania while Sweden scores much lower on the Uncertainty Avoidance index scale. Swedes in general are more comfortable in unknown situations than for example Romanians and Polish.

4.1.2 Organizational culture

Individuals of the same organization such as a company, institution or business can be considered as members having an own culture. This organizational culture can be defined as "*…beliefs and basic assumptions that are shared by organizational members"* (Schein, 2004). Or, organizational culture can be understood in simpler terms to mean *"the way things happen around here"* (Barthorpe et al., 2000).

New members of an organization will sooner or later come to terms with how and what the organizational culture is through an informal socialization process (Sathe, 1983). If there, however, is no clear culture or if a new employee does not stay within the organization long enough, then that person may not come to sense with the culture.

4.1.3 The construction industry culture

Construction projects are executed by temporary organizations composed of many different firms working towards a common goal- the project mission (Winch, 2002). Since contractual work is quite common in the industry, most project coalitions encompass an assortment of privately-owned small and medium sized companies, with only a few large companies (Barthorpe et al., 2000). Developing a project culture is not easy, since each participating member tends to have an organizational culture of its own, which varies depending on the type of resource (Winch, 2002).

It has often been said that construction is a male-dominated industry, where both craftsmen and managers are predominantly men with a strong "macho" culture, where people are expected to act in a certain way (Dainty et al., 2006; Barthorpe et al., 2000; Gale, 1994). Furthermore, it is an industry perceived by the public as representative of crisis and conflict with an unattractive image where the work is judged to be dirty, dangerous, exposed to bad weather, insecure and underpaid with poor career prospects for educated people (Gale, 1994; Latham, 1994). The cultural profile of the industry affects the people it attracts, thus more men than women are typically interested of working within the industry (Dainty et al., 2006; Gale, 1994).

A research study by Choudhry et al. (2008) identified the following factors as influencing unsafe behavior at work:

- A lack of safety awareness
- Workers perform risky jobs to show they are tough guys
- Co-workers encourage the performance of risky tasks
- Workers avoid using protective equipment to avoid being teased by co-workers

Through research conducted at Australian construction sites, Loosemore and Lee (2002) introduced the concept of "cultural gatekeepers", which they defined as members of the ethnic minority who act as translators and enable communication with the foreign team. Instructions are then received through the use of this third party, since management in most instances cannot communicate with the workers

4.2 Communication

Communication among the personnel at a construction site is essential for project success. A project team is composed of members from different organizations, who participate sporadically depending on the nature of the tasks at hand (Winch, 2002). Project managers need to ensure good inter-communication between project teams so that the information and knowledge necessary to complete tasks can be shared among all members (Dainty et al., 2006; Ochieng and Price, 2010). Yet multi-cultural workforces can experience communication problems when members do not share a common language. Language, for the purpose of this thesis is defined as

> *"... a system of conventional spoken or written symbols used by people in a shared culture to communicate with each other.*"* [1]

[1] Encyclopedia Britannica

In a study conducted by the Institute of Civil Engineers (2007) in the UK employers ranked language barriers as the main disadvantage when hiring foreign workers.

Communication between individuals can take place verbally through the use of a common language or through a number of alternate channels (Dainty et al., 2006):

- *Speech/verbal* - any kind of spoken communication between people or groups, which allows for immediate feedback.
- *Non-verbal*- indirect communication, which can enforce or contradict the spoken word, may be conscious or unconscious. Some examples: eye movements, facial expressions, posture, body contact and touch, limb movements and distance.
- *Written communication* – although indirect in nature, written communication allows careful consideration of what is to be said and a permanent record. Communication with multiple parties is possible. Feedback is not immediate.
- *Audiovisual communication* - makes the transfer of ideas and information simpler by utilizing graphics or audio.
- *Electronic communication* –allows instant communication between individuals.

Foreign workers usually receive instructions from a source that speaks their language, and through this medium they communicate back and forth with management. Since the majority of foreign workers to a large extent cannot communicate *verbally* with Swedish co-workers or management staff, they attempt to grasp the mood, personality or messages of others by interpreting body language. Yet when analyzing body language several factors as described by Riggenbach (1986) need to be considered:

- Body language is learned and varies from country to country
- Business body language and Social body language can vary
- Gestures are dependent on the circumstances and the context and can have different meanings depending on the situation

Communication in most cases is intentional, as is the case between two or more individuals who speak the same language yet it can also be unintentional, such as the inferences another person may make about one's body language (Clegg et al., 2008). In that case, and considering the number of factors which affect an individual's correct perception of a message, relying solely on body language can become problematic (Dainty et al., 2006).

Dainty et al. (2006) define "noise" as any type of distortion or distraction which impairs the transmission between two parties: the sender and the receiver. In other words, a situation arises where the receiver might not properly understand the message. There are three different situations where "noise" can be encountered in construction sites (Dainty et al., 2006):

- Construction sites are physically noisy making verbal communication difficult.
- Long chains of communication which can distort the original message *(Chinese Whispers)*

Although good communication practices are an asset at work sites and managers recognize its importance the message often fails to reach the receiver as the sender has intended (Fryer, 2004). At worksites these misunderstandings can result in expensive and time-consuming instances of rework, as can be seen in *Figure 5.*

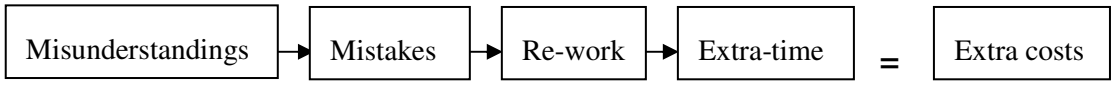


Figure 5 Misunderstandings can lead to additional costs for the project

Language is recognized as one of the crucial factors which can affect safety at work (Corvalan, et al., 1994; The European Agency for Safety and Health at Work, 2011). Management has a reduced capacity to convey health and safety messages to foreign workers who do not speak the same language. As globalization continues to make multi-cultural work environments more common, safety on construction sites becomes more difficult to handle. Thus, project managers need to devise new ways in which to convey safety training and information to this new mix of workers

Team integration at construction sites is considered by many researchers a key element for successful project completion (Strategic Forum for Construction, 2002; Baiden et al., 2006; Baiden and Price, 2011). Baiden et al. (2006) define project team integration as "*…the merging of different disciplines or organizations with different goals, needs and cultures into a cohesive and mutually supporting unit"*. Construction projects encompass a diverse collection of skills and knowledge, pooled together temporarily working towards a common goal, where teams are constantly shifting, replacing and overlapping each other. Communication and the sharing of information between individuals are essential to achieve a level of integration beneficial to the project (Baiden et al., 2006; Fryer, 2004). Yet the inability of minority groups to freely and accurately communicate with workers of other nationalities at the site can become an obstacle towards team integration.

4.3 Summary of the theoretical framework

Cultural differences exist between individuals from different nationalities which can affect every day work for construction managers. For example, people from different cultures used to different power distributions, which affects both own initiatives and obedience. Foreign workers might also be used to a more collectivistic or individualistic point of view than the people from the country they are working in affecting their ability to cooperate. Moreover, organizations have a culture of their own and members of the organization in time come to recognize it. The construction industry also has typical cultural aspects derived from being male-dominated such as the tough-guy macho image which affects the workers' view on safety and increases the risk for accidents.

Communication is essential for a construction project's success as all workers need to be informed by managers and foremen of the tasks they should perform. By hiring workers from different countries and with different cultural backgrounds there are often communication problems as the workers not always speak a common language as the management. In addition there can be differences in body language between people from different cultures creating misunderstandings. The lack of common

languages can require the use of translators and thereby create long communication chains from which information can easily be lost.

Team integration is a key aspect for project success as construction teams often consist of temporary constellation of workers unfamiliar with each other but who still need to cooperate and perform well together. Communication and the sharing of information are essential to achieve team integration; this becomes a major issue that needs consideration when trying to achieve an integrated workforce. Figure 6 summarizes the main concepts covered in this theoretical framework.

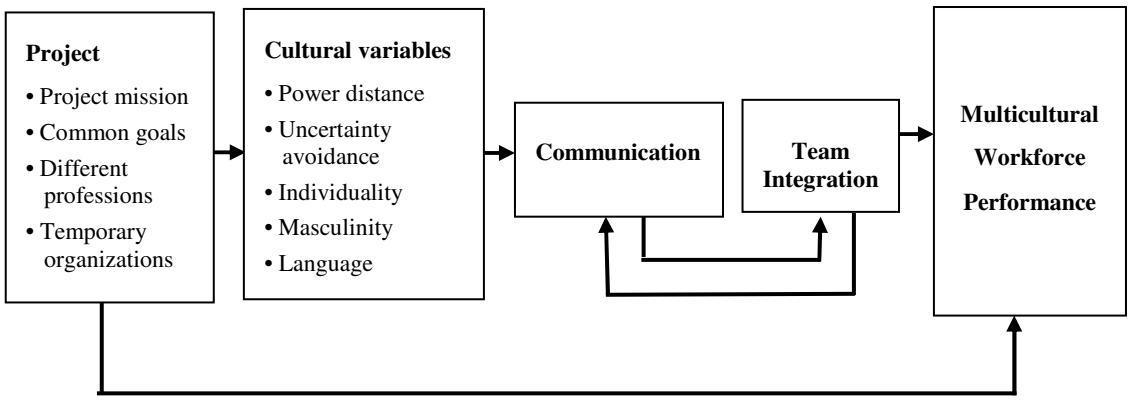


Figure 6 Analytical model of the theoretical framework

5. Results from case study with multiple cases

The following section will be divided into three parts: first, the results collected from the questionnaire survey distributed to the foreign workers, second the observations at both case study sites and third, the results from the interviews conducted at the worksites.

5.1 Observations

It was obvious from our very first visit to the Construction project 1 site that this was a culturally diverse workplace. Several languages could be heard and different ethnical groups were easily distinguishable. The managerial staff was Swedish, while a few of the foremen were Romanian and Polish. A number of subcontractors - ground works, HVAC, electrical, roofing- were domestic and communication between the different work teams required the assistance of a translator, usually a foreign foreman. We noticed immediately the respect the foreign workers showed the project and site managers. For example, when walking on the site together with the managers, every time we came across a group of foreign workers these would acknowledged their presence (the managers) with a nod, and quickly moved aside to allow them passage.

During one of our visits we were allowed free access to the entire site; this gave us an opportunity to observe the workers without the managerial staff present, which could have influenced their behavior. Our first impression was how clean and orderly the areas were kept throughout all the different floors, apartment units and hallways. The floor surfaces were cleared of construction debris, tools and equipment. Illumination was more than adequate, safety guards and rails were properly placed and construction material grouped and stored out of circulation ways.

The Romanian work crews were all engaged in some activity, some working together, others independently. For example, several workers were installing bathroom tiles in the different apartments at the rate of one man per bathroom. In the instances where several workers were performing a joint task, they conversed between themselves and some even had radios and listened to Romanian music (we assume it was Romanian). They all seemed to have a good rapport with the foreman when he happened to stop by on several occasions.

In one of the bathrooms we observed a worker engaged in chipping away a bathroom tile which was damaged and needed to be replaced. Nevertheless, he was working without the required safety goggles; the foreman instructed him to use them. The other workers in the crew seemed to tease him after he put on the goggles. The worker later explained he preferred to work without the goggles because they quickly became dirty and he could not see as well.

In another apartment, we saw one instance of rework. An exterior concrete wall had been poured without first installing the corresponding electrical wiring inside the wall. It had been necessary to chip open a channel in the reinforced concrete wall in order to install the wiring. This rework is a consequence of communication problems.

5.2 Questionnaire survey

This section will present the results from the survey distributed to the foreign workers at both Construction project sites. The survey questionnaire investigated why the foreign workers had chosen to come work in Sweden, how good their language skills

are, how well they thrive at the work site with their co-workers and finally if they understood the safety rules. The questions and the compiled answers are presented in *Appendix 4*.

5.2.1 Reasons for foreign workers coming to Sweden

The reason for the foreign workers to come to Sweden is of great interest to the background of this report and therefore we gave the respondents the opportunity to choose several options to this question, with a maximum of 3 choices. As seen in *Figure 7*, the option most commonly chosen by the respondents was *better pay* (92%). Other reasons chosen were: *better working conditions* (80%) and *not enough jobs in home country (*51%). Only 4% claimed to be *influenced by family and friends* when choosing to work in Sweden while none answered *political reasons.* 20% claimed they were here *to gain more experience* and 16% to have *a chance to travel*.

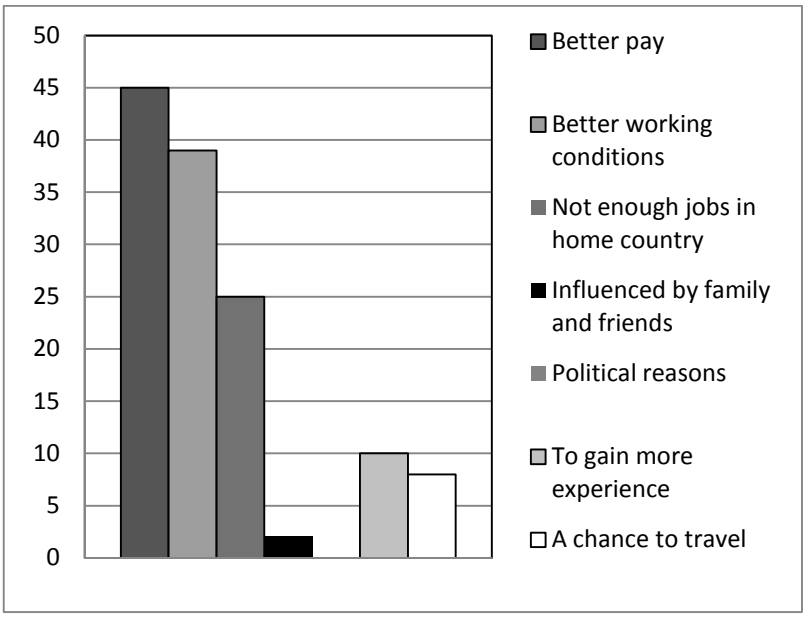


Figure 7 Reasons for foreign workers coming to Sweden

5.2.2 Language skills

The foreign language skills among the participants in the survey were limited and not one of the respondents answered they spoke good Swedish; over 90% of them claimed not to speak any Swedish at all. English was the language which most of the respondents said to understand best after their native language (23%). English skills were better among the younger respondents as can be seen in *Figure 8*. Overall, the participants only speak their native language; Romanian or Polish. The language skills of the respondents are shown in *Figure 9*. A few of the respondents also answered they spoke Spanish, French and Italian since they had previously been working in these countries.

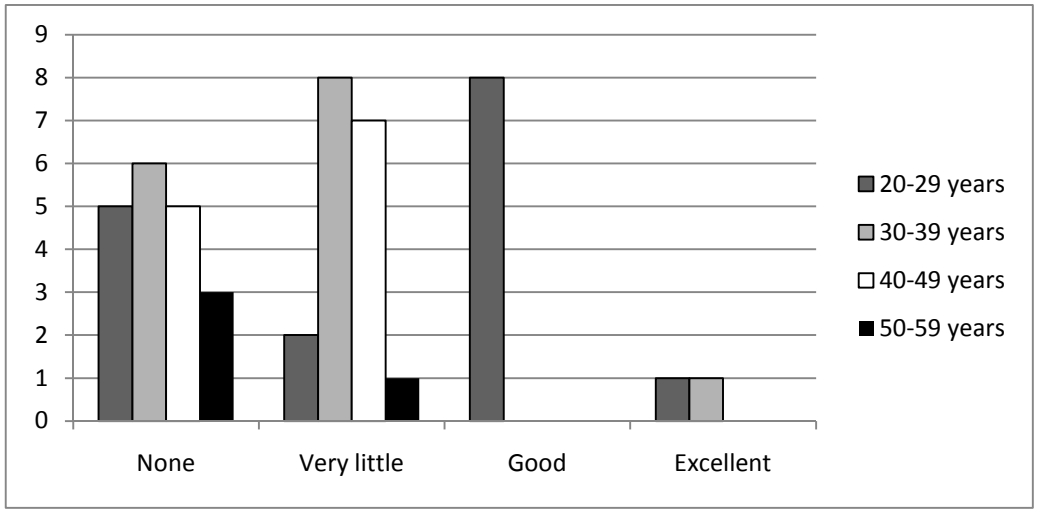


Figure 8 English language skills in relation to age groups

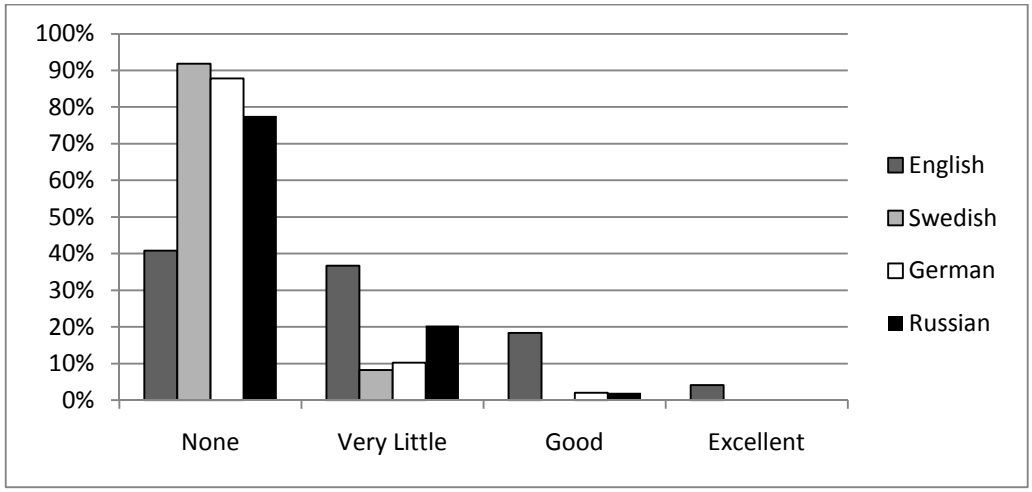


Figure 9 Language skills of the foreign workers

5.2.3 Communication

Communication is a key issue at a construction site and the lack of ability to communicate can lead to misunderstandings, mistakes and rework. With this in mind, the foreign workers were asked if they were frustrated when they could not communicate with Swedish supervisors. Over 75% answered that they agreed or strongly agreed, as shown in *Figure 10*. The respondents were also asked if they wanted to learn a language that would help them communicate and 92% answered they did, as seen in *Figure 11*.

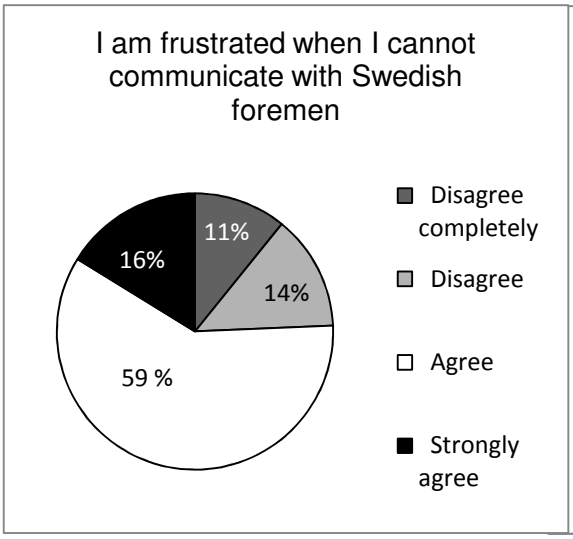


Figure 10 Frustration among foreign workers due to the inability to communicate with Swedish foremen

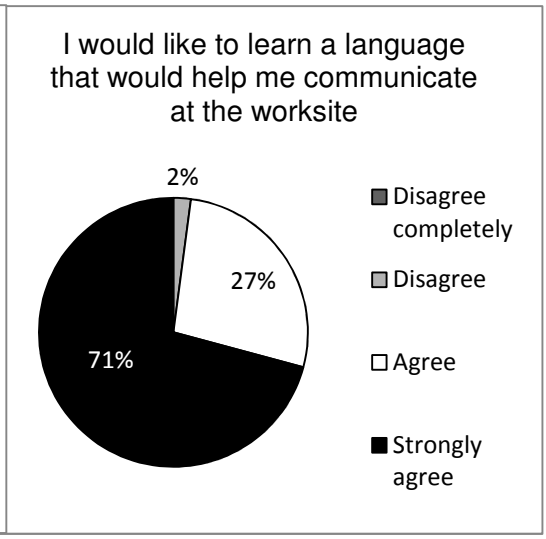


Figure 11 Will among the foreign workers to learn a language that would help them communicate at the worksite

5.2.4 Safety

The interviewees stated that the foreign workers often neglected safety measures. Therefore, we asked the respondents if they understood the safety regulations and found them easy to follow. Nearly everyone answered that they understood the safety regulations and that the safety regulations were easy to follow, as can be seen in *Figures 12* and *13*.

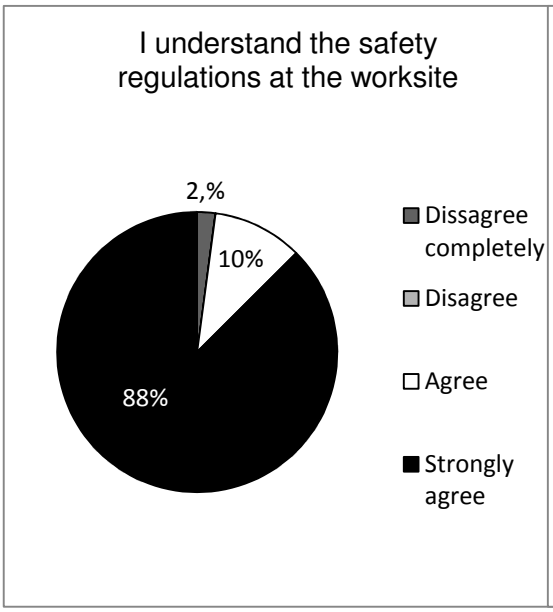


Figure 12 Knowledge of safety regulations among the foreign workers

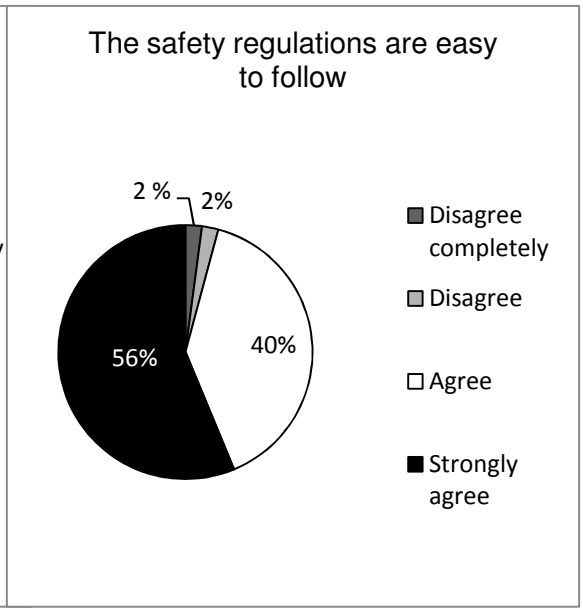


Figure 13 How easy the safety regulations are to follow according to the foreign workers

5.2.5 Job satisfaction

Economic reasons were according to our literature review the major reason for workers to seek employment in another country. When questioned if they consider themselves to be paid enough for the work nearly everyone, 90% said that they think they earn a fair amount. Only 10% said that they did not earn enough for the work they performed as shown in *Figure 14*.

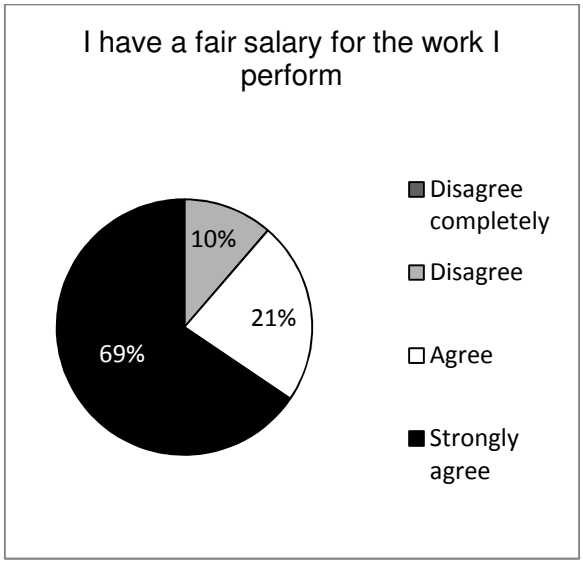


Figure 14 Level of satisfaction with paid salary in comparison to the work performed, according to the foreign workers

The construction workers' union ***Byggnads*** is very concerned with the wellbeing of construction workers in Sweden and they consider foreign workers to be more likely to be exploited by their employers (Olander and Tilly, 2008). With this in mind, questions regarding if they were satisfied with their job and if they liked their co-workers were asked, these aspects are covered in *Figures 15*, *16* and *17*. As can be seen in the figures the great majority are satisfied not only with their job, but with their Swedish co-workers and co-workers from their home country.

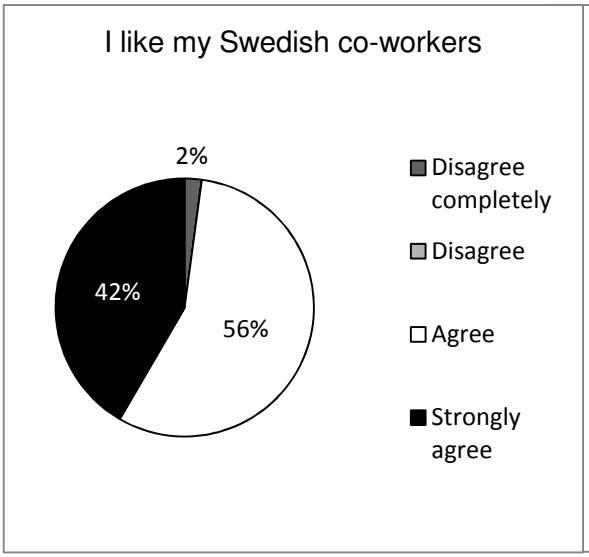


Figure 15 Foreign worker's relation towards Swedish co-workers.

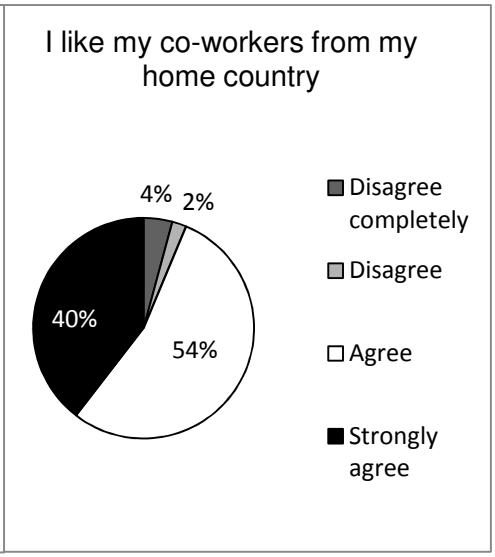


Figure 16 Foreign worker's relation towards same nationality co-workers.

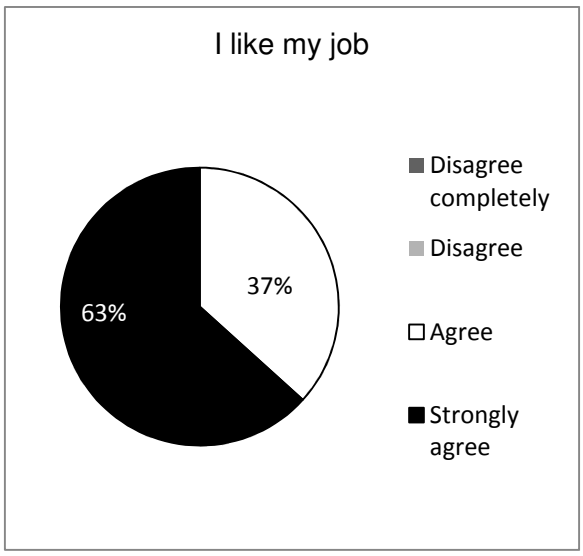


Figure 17 Foreign worker's job satisfaction level.

One question in the survey contemplates if the foreign workers would recommend their friends and family to come to Sweden and work, and nearly everyone said that they would (98%). Accordingly, this could possibly have an effect on the future migration of foreign workers into Sweden *(See Figure 18).*

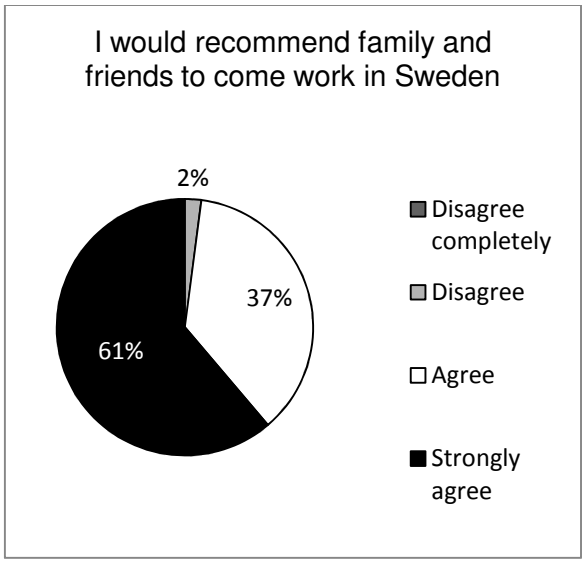


Figure 18 Would the foreign workers recommend family/ friends to come work in Sweden?

As there are language limitations among the foreign workers, a question regarding what they do if they run into problems was asked. Over half of the respondents answered that they went to a foreign supervisor (from their home country) and asked what to do. Three of the other response options: g*o to Swedish foreman, try to solve it himself* and *ask co-worker* received approximately the same amount of answers. As *Figure 19* shows 19% of the workers took own initiatives and tried to solve the problems themselves while 69% went to a superior before continuing working.

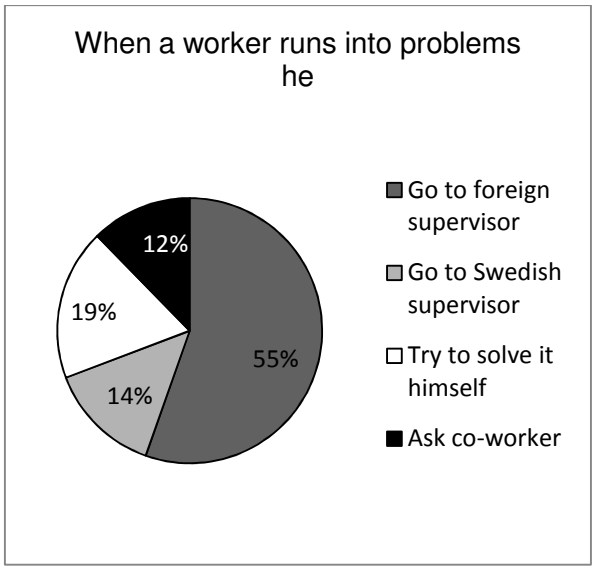


Figure 19 What a foreign construction worker does when he runs into problems

5.3 Interview results

In this section a compilation of the results from the interviews are presented. To simplify for the reader the results are divided under several subheadings, the subheadings are as follows:

- ***Reason for labor migration into Sweden***: what do managers and foremen think are the main reasons for the foreign workers to come and work in Sweden and what is the background to why foreign workers are hired and work here in Sweden
- ***Supervision and control:*** what skills are the foreign workers expected to have, how skilled are they and how do they perform?
- ***Team integration and culture***: how the different interviewees perceive differences in culture between the foreign workers and the Swedish workers.
- ***Language and communication*****:** how the interviewees perceive the communication works among the construction site participants.
- ***Safety work at the worksite:*** how differences in safety thinking among the workers at the construction sites are perceived among the interviewees.

5.3.1 Reasons for labor migration into Sweden

Answers compiled to this question show that *economics* was the main reason for foreign workers wanting to work in Sweden. The Romanian foremen also mentioned it was an opportunity for a fresh start and a better life. They added that the lack of jobs in Romania was also a strong cause for labor migration.

During the interviews two issues were brought up: why workers choose to come to Sweden and why Swedish companies choose to hire foreign workers. Both are related, since without demand there would be no supply, therefore, both questions were presented to the interviewees. Two answers were given by the interviewees: the first was the on-going construction boom and current personnel shortage and the second economy. As one foreman at Construction project 2 said:

It is impossible to make it through the different business cycles with our own work crews, when activity is low all employees must still have something to do even when there are no projects".

For this reason, he believed the most important benefit gained by hiring foreign workers is the flexibility it allows to follow the change in demand for workers throughout the project lifecycle.

5.3.2 Supervision and control

Overall, the interviewees stated that there are no marked differences between Swedish, Polish and Romanian workers when it comes to knowledge and skills. There are always good and bad workers. As the quality manager at the Construction project 1 explained, *"People are all different. Some are very professional and highly skilled in their craft and others are not".*

According to a Romanian foreman at the Construction project 1, Romanian workers are generally not specialized but know a little bit of everything, yet nothing perfect. The quality manager said that Romanian construction workers show resistance to perform jobs they are not familiar with, which hinders their development. In contrast, Swedish construction workers are generally more widely educated as they engage in different duties during their apprenticeship.

The project manager at the Construction project 1 site is aware different countries have different standards when it comes to construction. To avoid increased re-work, all foreign workers are taught upon arrival how to conduct the work to Swedish standards. Extra quality control personnel were needed to constantly oversee the work the foreigners performed. The interviewed personnel from both Construction projects 1 and 2 do not think they need to engage in more re-work than normal due to the foreign personnel. However, they pointed out that they have increased monitoring of the workers to make sure they understood the given instructions and to avoid misunderstandings. When discussing the subject of extra supervision, the quality manager at Construction project 1 explained: "…o*ne has to become somewhat of a vocational school teacher who tells them what to do*".

It was generally agreed by the interviewees at both companies that the longer the worker had been employed by them, the better their performance. The foremen at Construction project 2 pointed out that Polish workers were involved in repetitive tasks and learned from their mistakes. The same foreman also said that they most likely would have had more rework if the workers were exchanged after 6 months and replaced with new workers, unfamiliar with the project.

5.3.3 Team integration and culture

Although construction in different projects involves similar tasks and jobs, there are some differences to how these jobs are executed and completed. These differences can be noticeable from one organization to another, and even more from one country to the next. The site manager from Construction project 1 commented that the foreign workers can have different ways of working: *"sometimes you wonder why (the foreign workers) are they doing this first? Why don't they do so and so….?*

A frequent comment from the Swedish managers at Construction project 1 was that the foreign workers were not always aware of the work the Swedish sub-contractors were performing, especially in the instances when tasks needed to be integrated by

both teams. For example, when foreign workers were preparing a concrete casting form for exterior walls they had ignored the electrician's job, the installation inside the form of all necessary electrical wiring. Consequently, the form had to be dismantled and re-done. Management considered these types of interactions between crews a recurring problem, since the foreign workers only did their own thing, often forgetting the contribution of other laborers in a process or task. They believe that Swedish workers are more aware of the work colleagues from other branches need to perform. On the other hand, a Romanian foreman with the same company thought that the Romanian workers considered the work of others much more than Swedes.

According to the Swedish managers at Construction project 1 Swedish construction workers were more independent than both Romanian and Polish workers; they were able to make their own decisions and even start new tasks after finishing what they were instructed to do. In contrast, the foreign workers were thought to lack initiative and problem-solving abilities. A Swedish manager expressed it as:

> "*Swedish workers, you tell them what to do in the morning and you know it will be done. Romanian and Polish workers have to consult their foreman to make any kind of decisions."*

The quality manager at Construction project 1 had a good example of this lack of initiative from an earlier project he had worked on. He explained how the Romanian workers sat down doing nothing after finishing the tasks they had been assigned instead of approaching a foreman and asking for instructions to new tasks. A foreman at the Construction project 2 said that the Polish workers always did what they were told without questioning regardless if they considered it to be right or wrong. Swedish workers on the other hand are believed to question orders a bit more and be more outspoken.

Both companies have chosen to have separate lunch and changing rooms for the Swedish and foreign work crews. Since there is no common language between the crews they are unable to communicate with each other so sharing of the installations did not seem feasible.

5.3.4 Language and communication

> *"Communication is one of the most difficult issues in multi-cultural projects. It takes extra time to make sure that everyone understands what to do and to control the results".*
>
> - Swedish foreman at Construction project 2

Since the foreign workers at both construction sites did not speak the local language the transfer of information from one party to another needed to be re-routed with the use of an intermediary, a translator. These translators were sometimes part of the work crew, foremen or third parties employed for the sole purpose of translating.

At Construction project 1 the languages used were Swedish, English, Romanian and Polish. All members of the management staff spoke both Swedish and English. The worker mix on-site consisted of a few Polish while the greater majority was from Romania. The workers spoke only their native language while the foremen spoke English in addition to their native language and thus acted as translators for their staff. This situation created a limited link for information flows to and from management to the foreign workers and back. This also presented a problem when the foremen were not physically present at a specific location and management needed to give orders.

The foremen were then contacted via mobile phone to translate information to the foreign workers.

The Romanian workers avoid talking to the site- or quality manager when they run into problems or have questions; they prefer to talk directly to their foreman even when this may cause delays. Likewise, they prefer to receive all instructions from their foreman. The site manager mentioned that when he approaches a worker and explains what he will have, they often listen, but obviously do not understand because nothing happens. He needs to contact the foreman in order to achieve desired results. Although management usually goes through the foremen to communicate with the workers, the quality manager mentioned that when he sees something obviously wrong he takes it directly with the worker.

At Construction project 1 the work crews were homogenous. When communication between crew teams was necessary, one of the foreign foremen handled the translations. In contrast, Swedish and Polish workers worked together at Construction project 2.

Construction project 2 had a different set-up for handling communication between management and the foreign workers. The foreign workers spoke Polish while management, including all the foremen, was Swedish. Swedish, English and Polish were the languages used on site with English as the chosen language for general communication. Even though a few of the workers reside in Sweden and speak Swedish, English was generally preferred, since, as one of the foremen explained, the worker's Swedish skills were very limited. The foremen spoke only Polish and were learning Swedish, so when they could not understand instructions a member of their crew or another work crew would help out with the translations. All the foreign workers were hired through an employment agency, and the agency had a translator on-site to help out. This translator participated in weekly/bi-weekly meetings with all the foreign staff when planning and information exchange took place.

5.3.5 Safety work at the worksite

Safety is an example where it becomes necessary to implement new ways for communicating when working with a multi-cultural workforce. The two companies visited have handled this issue in quite similar ways and have not suffered to date any remarkable incidents. They began by distributing printed safety material translated into the foreign worker's language. All safety information distributed to the workers at Construction project 1 had been translated into their native language (Romanian or Polish) and all safety signage at the entire work site was likewise printed in the four languages used: Swedish, English, Romanian and Polish. Furthermore, the Romanian foremen had been informed by the Safety Officer at the site of all the safety procedures upon their arrival, same information which they later had the responsibility of passing on to all the Romanian workers. A similar situation was encountered at Construction project 2, where all the foreign workers had received the required safety information printed in their native language from the employment agency. In both cases, printed material was exactly the same domestic workers are given. In regards to all safety equipment, both companies supplied their foreign workers with the necessary equipment, albeit at Construction project 2 the employment agency was responsible for outfitting the workers with all the required safety gear.

Management at Construction project 1 decided to perform two safety rounds per week; this is more often than usual for a project of this type and size. However, according to the Swedish law there is no actual figure for how often safety rounds need to be performed. Arbetsmiljöverket (1991) only states that every workplace should be regularly inspected through safety rounds as often as deemed necessary depending on the nature of the activities, the size of the project and the magnitude of the risks involved.

When asked about safety measures within the industry in Romania, both Romanian foremen say the safety measures are quite similar, however, they think that in Sweden safety is considered more important and that the rules are actually followed. As one of the Romanian foreman said in reference to safety in Romania, *"there it was not so strict; here we have to better us"*.

One of the most common violations to the rules was "*forgetting*" to wear the necessary protective gear and disregarding safety routines when performing work at heights. Although management believed the Romanian workers understood the safety information, they admit these workers were more willing to take greater risks and disregard the rules more often than the Swedish workers. For example, the site manager mentioned how the foreign workers sometimes removed the safety railings from the upper floors because they wanted to increase mobility and later forgot to put them back, creating a dangerous situation for other workers. For this reason, management implemented a "penalty" system, whereby those caught breaking safety regulations would be fined. The system worked well as it was a great motivator to remind workers of safety at all times while at the site.

The two foremen interviewed at Construction project 2had inconsistent opinions regarding safety on site. The first foreman interviewed believed that foreign workers took bigger risks and needed constant reminding to wear the safety gear, while the second foreman we spoke with believed the foreign workers were more aware of safety measures than the domestic workers.

6. Discussion

Although at present it is not possible to say that Sweden is experiencing a labor shortage, construction companies are nevertheless employing foreign workers. Through our interviews we concluded this is most likely in an effort to lower production costs. Yet as presented in the introduction, employing foreign workers also entails additional costs for the employer such as lower productivity, extra work or rework caused by misunderstandings and expenses in hiring translators (Chua et al., 2003; Loosemore and Lee, 2002; Weatherly, 2006).

If construction firms employ foreign workers in order to lower production costs, foreign workers are attracted to Sweden by better paying jobs. This was ascertained from both our literature study and our survey *(see Figure 7, Section 5.2.1)* where 92% of the workers answered that *"better pay"* was the main reason for working in Sweden

When considering what the future holds for the domestic construction labor market, there will probably be a need for an increase in labor migration. The Swedish construction market is growing (Deremar and Isaksson, 2011) and there are many major construction projects planned for the future. Moreover, an increase in the residential market is not only expected but needed especially in Sweden's major cities (Deremar and Isaksson, 2011). We are however skeptical to whether labor migration is a sustainable solution to labor shortages as it is a way to move the problem elsewhere by draining other labor markets (in other countries) of qualified construction workers.

6.1 Communication in multicultural construction projects

Communication between the Swedish management personnel and the foreign workers was judged by all interviewees as the most difficult obstacle when managing multi-cultural projects. The foreign workers had little or no knowledge of a second language as shown by the survey (*Figure 9, Section 5.2.2*). Only 24% reported *"Good"* or *"Excellent"* knowledge of a second language. However, 98% answered they would like to learn a language which would help them to communicate at the site *(Figure 11, Section 5.2.3).*

The case study companies 1 and 2 have adopted different strategies for handling communication between management and the workers. In both cases we have seen that the transfer of information is working well; both projects are running according to schedule.

At Construction project 1 management gave instructions to the workers through the Romanian foremen and in this way communication was handled back and forth. In the cases when the foremen were not physically present, either the foremen or the on-site purchaser was contacted via mobile phone. The on-site purchaser became the project's "cultural gatekeeper" (Loosemore and Lee, 2002), a third party available at all times to serve as translator. Yet according to Loosemore and Lee (2002) up to 40% of a message's meaning can be lost even when using professional translators. Considering that the foreign workers are learning to work to Swedish standards plus the difficulty in explaining technical issues over a phone it is possible many misunderstandings can occur. We argue that these "cultural gatekeepers" have a key role for achieving successful communication; without their participation the scope of communication transmitted would be limited, causing confusion, misunderstandings

and aggravation amongst personnel and management. In addition to translating, they (cultural gatekeepers) should also have construction knowledge, since understanding activities and how these are performed and being familiar with the technical language would make it easier to transmit information back and forth between management and the foreign workers.

One of the Romanian foremen said management sometimes tried communicating with the workers using hand gestures. The same foreman pointed out that the workers could easily misunderstand the message. As Rigenbach (1986) points out, body language is culture-oriented and varies from country to country. Since construction work is complex and rich in detail, we do not think communicating information through hand gestures is fair to the workers. Furthermore, we argue that receiving information through a mobile phone or through hand gestures can easily lead to misunderstandings resulting in defects or rework. These mistakes are then not a reflection of the worker's skills but deficiencies in the communication methods employed.

At Construction project 2 the Swedish foremen gave instructions to the Polish construction team leaders in English. Team members would help with translations when the team leaders did not understand. In a last instance, the representative from the employment agency at the site office would be contacted via mobile phone and served as a translator. This third party became the "cultural gatekeeper" at this site. Yet the interviewed foremen mentioned they were never certain the workers had understood the message. As one of the foremen at the Case Study 2 site commented,

> *"Communication is one of the most difficult issues in multi-cultural projects. It takes extra time to make sure that everyone understands what to do and to control the results".*

At both Construction project sites we observed it was necessary to have a long chain of communication in order to transmit a message. Not only is this time-consuming, but as Dainty et al. (2006) point out, these long chains can easily distort the original message, a phenomenon known as *Chinese whispers.* This means that since the instructions for tasks need to pass through several sources before reaching the worker changes to the original message can occur.

We also found that most of the information is travelling downwards, from management to the workers. There are no opportunities for spontaneous conversations between management and the workers, as would normally be the case when managers are out on their rounds at the site. This means information the workers have which could help the managers perform their jobs more effectively goes unsaid; for example, if the workers foresee delays, problems with materials, activities, work schedules, etc.

6.2 Managing language barriers in supervision and quality control

The management personnel interviewed agreed that extra time and supervision was necessary for quality control when employing foreign workers. The language barrier between management and the workers is the main reason why both Construction project sites needed to increase supervisory activities; management was not sure the workers had understood the instructions properly. Furthermore, since the workers

come from different countries project managers have difficulty assessing their skills given educational standards are different from one country to the next and the way tasks are performed can differ (Weatherly, 2006; Chua et al., 2003). This increased supervision requires additional time which also means extra costs for the project.

In both our study cases, the longer the workers had been employed by the company, the better their performance. We argue this is a consequence of them learning the organizational culture the leadership style and simply *"the way things happen around here"* (Barthorpe et al., 2000). In other words, understanding the quality of the work they are expected to deliver. By learning the organizational cultural the foreign workers can more easily integrate into the work team at the construction site, which according to researchers is a key element for successful project completion (Strategic Forum for Construction, 2002; Baiden et al., 2006).

There was no need to engage in more re-work than normal in both our Construction project cases, this mainly due to the increased supervision. As the quality manager at Construction project 1 mentioned, "…o*ne has to become somewhat of a vocational school teacher who tells them what to do"*. This means that the managers have to take the time to explain tasks and activities to the foreign workers which these (the foreign workers) should already be knowledgeable of.

The interviewees agreed that foreign workers are more passive, and hesitate to solve problems themselves; instead they need to consult a foreman as was the case for 69% of the survey participants *(See Figure 19 in Section 5.2.5)*. This causes delays, since construction sites cover large physical areas and the foremen are not always available. Given that most of the activities in construction work are inter-dependent on each other this passive behavior can interfere with job scheduling, another reason for an increased need for supervision.

6.3 Cultural differences and safety performance

Language barriers are one of the crucial factors affecting safety at work (Corvalan et al., 1994). If the workers do not understand the language spoken, how does one transmit safety requirements and regulations to them? How does one teach them to use machinery and tools they are unfamiliar with while pointing out the dangers involved? It seems difficult to judge how much safety training the foreign workers have received either in Sweden or in their home country. With domestic workers, management is more aware of the safety information and training the workers have received since there are industry protocol and standards.

Construction project 1 has invested in a clear safety awareness culture by translating all safety manuals and signage into the different languages in use, as recommended by Trajkovski and Loosemore (2006) and Bust, et al., (2008). Furthermore, an *"organizational policy towards safety"* (Sawacha et al., 1999) has been implemented through the two weekly safety rounds and the fine system introduced for breaking safety regulations.

The site manager at this site thought foreign workers were willing to take greater risks than domestic workers; they took away guard rails, forgot to replace them and engaged in other unsafe practices. The quality manager at the same site said during our interview that *"They play Tarzan for each other"*. According to a number of researchers in the field (Dainty et al., 2006; Barthorpe et al., 2000; Gale, 1994) this type of macho behavior is native to construction culture. Nevertheless, 98% of the foreign workers surveyed answered they understood the safety regulations in Sweden

and that the safety regulations were easy to follow *(See Figures 12 and 13, Section 5.2.4).* We argue that there are different perceptions of what following the safety requirements means. The workers answered that they understood and followed the safety regulations while the managers had contradictive perceptions. One of the Romanian foremen mentioned regarding safety in Romania that:

"…There it was not so strict; here we have to better us".

Accordingly, the Romanians consider themselves to do better than they previously did in their home country when using safety equipment and taking safety in consideration. Even if the Romanians consider themselves to be improving, they still do not reach the standards required by the managers. However, the Romanian workers can be following old patterns and consciously or unconsciously breaking the safety regulations here in Sweden as they have done previously in their home country. Moreover, even if the foreign workers engage in unsafe behavior, domestic workers do so as well. This kind of behavior can be traced back to the macho culture within construction and does not necessarily have anything to do with nationality or national culture parameters (Barthorpe et al., 2000; Gale, 1994; Hofstede and Hofstede, 2005).

7. Conclusion

The high costs of production in the Swedish construction industry have prompted firms to search for ways to reduce their costs and increase their profits. Employing cheaper foreign labor has become an alternative for many companies and the most recent expansions of the European Union have facilitated this workforce migration. Likewise, workers from less economically developed EU countries seek employment in Sweden motivated by better pay and better working conditions.

The aim of this thesis was to examine in more depth how day-to-day managerial functions are handled at construction sites in regards to communication, supervision and quality control and safety when workers come from different countries and when language and cultural barriers may exist.

We formulated three research questions which we have analysed and discussed throughout this thesis and here we will present our conclusions.

1. How does communication work at a construction site when the workers employed and management do not speak the same language?

As we immersed in this study, it quickly became obvious that language barriers and the effect this has on communication at the worksite was one of the prime -if not the most- important obstacle to resolve. Communication between management and the workers needs to be routed through translators who can transmit messages back and forth. These translators were not always physically available at the site, in which case communication through hand gestures or mobile phones was used. Given the complexity and richness in detail inherent to construction work we argue that these communication channels easily can lead to misunderstandings and errors in performing the tasks at hand and that even the most skilled worker can easily make mistakes. Therefore, we argue face-to-face communication should be favored, through a person acting as a translator. This will in turn also shorten the communication chains. We recommend firms ought to have a designated translator physically available on the premises. The costs of a translator can be defrayed by the savings gained from avoiding defects and re-work. Another option for improving communication would be to ensure a certain percentage of workers that can speak English are employed so that each work crew contains at least one worker who can communicate with management.

It is interesting to point out that in our survey the foreign workers expressed an interest to learn a language to help them communicate at the worksite. We suggest that an elementary level English or Swedish course could be beneficial. For example, if the workers could learn the name of tools, numbers and the activities they perform communication could improve at a basic level.

2. How do project and site managers ensure the specified quality levels are reached when managing a multicultural workforce?

Supervision and quality control are also affected by language barriers and influenced by the cultural background of the workers. Projects employing foreign workers need to increase supervisory activities firstly, because management is not sure the workers have properly understood instructions, secondly, because there are differences in the way activities are executed from country to country. Lastly, a worker's perception of what is quality work has different interpretations and much to do with background, education and skills. We argue that integrating the foreign workers into the

construction team by acquainting them with the organizational culture of the firm can improve their performance and decrease the need for supervision.

3. How do cultural differences affect the safety performance of the foreign workers at the workplace and how is safety information transmitted to these employees?

Managers and foreign workers have different perceptions of how well the workers follow the safety regulations. Both Swedish and foreign construction workers engaged in unsafe practices when working and more research would be necessary in order to determine if there is a connection between nationality, unsafe behavior and risk taking. However, as construction is a male-dominated industry with a recognized "macho culture", the workers prove themselves as tough by taking risks and showing-off to each other. This was a recurring situation we found throughout our literature search regardless of the country the study originated from. It is likely that the behavior at the worksite, view on safety and use of protective gear among construction workers is based on routines. By implementing a no-tolerance to safety violations, a break-away from old bad routines can be made and a good safe working culture created. These new routines can take time to implement and might require integration into the organizational culture of the firm. Instating a penalty system with fines for breaking safety rules can also increase safety awareness among workers.

Through our interviews and survey we could ascertain that foreign workers receive the safety information translated into their native language, mostly printed material. Nevertheless, the same information available to the domestic workers should also be available to the foreign workers. In addition, by having all signage at the construction site translated into the languages used "*the organizational policy towards safety*" can be reinforced.

Additionally to the printed material, we recommend that safety videos in different languages can further aid in instructing workers on safety behavior and regulations at work sites (Audiovisual communication). Moreover, if the number of foreign workers at construction sites continues to increase, it ought to become the state authority's responsibility to implement a mandatory safety certification program for all foreign workers wishing to labor in the Swedish construction industry. In this way it will be easier for employers to evaluate the foreign worker's safety knowledge. A certification system guarantees a national standard level of knowledge and does not depend on the quality of safety education imparted by individual private companies.

To summarize these conclusions, labor migration is beneficial for both Swedish firms and the migrant employees. It allows companies to deliver their projects on time and with savings during the production process. Furthermore, it helps to cover personnel shortages and allows for flexibility in the workforce to follow supply and demand. Simultaneously, labor migration also allows workers from less prosperous nations to earn a decent living and forge a better future for themselves and their families. Nevertheless, different workers from different cultures bring new challenges to the project. Construction managers need to recognize that cultural differences exist if they are to successfully manage them.

Through this study we hope to raise awareness within the construction branch of the importance cultural differences can have in executing construction projects. Furthermore, we recommend further studies to determine if it is actually more economical to hire foreign workers instead of domestic and if there is any connection between nationality and safety behavior among construction workers.

8. Reflections on the research process

We arrived at the concept for this Master's thesis quite simply because a new residential development was under construction in our neighborhood. Since we passed this site on a daily basis, it soon became evident that the workers employed here were not Swedish. After closer observations, we noticed the workers were foreigners from two different countries, since there were two languages plus Swedish spoken at the site. It was then we became curious as to how a site manager *manages* the work site with the different aspects cultural issues can present, such as communication, safety training, task assignments, quality control and more.

The company in charge of this construction site which later became one of our case study sites (Construction project 1) was from the beginning very enthusiastic to participate in our study. We were granted interviews with the site and quality managers rather early on in our study. Nevertheless, our research questions were not fully developed at the time we began with our first interviews, therefore, many of the interview questions were of little use to us. By the time we conducted the survey, we had defined our aim and the information compiled was more in line with our study.

In addition, since our research questions were not completely developed at the beginning of this study, we collected theory though our literature search which we could not use.

Our suggestion for other students would be to determine the aim and research questions as early on in the study as possible. This will allow greater precision during the literature search. It is also advisable to continue the literature search throughout the entire writing process, not just at the beginning. Lastly, be critical of your own work.

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Appendix 1. Survey questionnaire in English

Appendix 1 presents the questions included in the survey which was distributed to the foreign workers at both Construction project 1 and 2

PERSONAL INFORMATION

How old are you? _____

What is your highest level of education?

None _____

6th Grade _____

9th Grade _____

12th Grade _____

Vocational _____

University _____ How many years?_____

Have you worked in the construction industry before?_____ Yes _____No

If yes, how long? _____

If no, what did you work in previously?_____

How many languages do you speak/understand and at what level?

	Excellent	Good	Very little	None
Rumanian	4	3	2	1
English	4	3	2	1
Swedish	4	3	2	1
German	4	3	2	1
Russian	4	3	2	1

Other_____

How long have you been in Sweden? _____

Is it your first time in Sweden? _____ Yes _____No

If no, how many times have you been here before? _____

Have you worked in another country besides Sweden and Rumania?

_____Yes _____No

If yes, where?_____

What is the main reason why you came to work in Sweden?

You can choose several options that apply ranking them in order:
1 *= most relevant* **2** *= second most relevant* **3** *= third most relevant*

Better pay _____
Better working conditions _____
Not enough jobs in Rumania _____
Influenced by friends or relatives _____
Political reasons _____
To gain more experience _____
A chance to travel _____

Other reasons_____

COMMUNICATION	Strongly agree	Agree	Disagree	Strongly disagree
The flow of information from the management to the workers is good.	☐	☐	☐	☐
I always understand the instructions given by the Swedish foremen.	☐	☐	☐	☐
I always understand the instructions given by the Romanian foremen.	☐	☐	☐	☐
When I do not understand Instructions I tell my supervisors.	☐	☐	☐	☐
I am frustrated when I cannot communicate with Swedish foremen.	☐	☐	☐	☐
I would like to learn a language that would help me communicate at the worksite.	☐	☐	☐	☐

SAFETY

I understand all the safety regulations at the worksite.	☐	☐	☐	☐
Safety regulations at the worksite in Sweden are the same as in Rumania.	☐	☐	☐	☐
The safety regulations are easy to follow.	☐	☐	☐	☐

JOB SATISFACTION	Strongly agree	Agree	Disagree	Strongly disagree
I have been well accepted by the Swedes at the work site.	☐	☐	☐	☐
I have a fair salary for the work I perform.	☐	☐	☐	☐
I earn enough to support my family in Romania and pay for my stay here in Sweden	☐	☐	☐	☐
I am a member of a worker's union in Rumania.	☐	☐	☐	☐
Swedish and Rumanians have the same relationship with their boss.	☐	☐	☐	☐
I am learning new skills working at this site.	☐	☐	☐	☐
I like my job.	☐	☐	☐	☐
I like my Rumanian co-workers.	☐	☐	☐	☐
I like my Swedish co-workers.	☐	☐	☐	☐
I enjoy learning new skills I can use when I return to Rumania.	☐	☐	☐	☐
I understand the bonus system which pays extra for work completed ahead of schedule.	☐	☐	☐	☐
I am satisfied with the accommodations provided.	☐	☐	☐	☐
I would recommend friends and family to come work in Sweden.	☐	☐	☐	☐

When I run into problems, I usually

_____ go to a Rumanian supervisor
_____ go to a Swedish supervisor
_____ try to solve it myself
_____ ask a co-worker
_____ wait
_____ continue with another task

I would like to return to work in Sweden again.

_____Yes _____No

The main differences between working in Sweden and Romania are:

_____

_____

If you have any further comments how to improve work on site please use the back of this sheet.

_____

_____

_____

Appendix 2. Survey questionnaire in Romanian

Appendix 2 presents the questions included in the survey which was distributed to the Romanian workers at the Construction project 1 site. The questions are in Romanian.

INFORMATII PERSONALE

Ce varsta aveti? _____

Care este nivelul dvs. de educatie?

Niciunul _____

Scoala Primara _____

10 clase _____

Liceul teoric _____

Scoala Profesionala_____

Liceu de specialitate_____ Pentru cati ani?_____

Ati lucrat in constructii inainte? _____ Da _____ Nu

Daca da, pentru cat timp?_____

Daca nu, ce ati muncit inainte?_____

Cate limbi straine vorbiti/intelegeti si la ce nivel?

	Excelent	Bine	Foarte putin	Deloc
Romana	4	3	2	1
Engleza	4	3	2	1
Suedeza	4	3	2	1
Germana	4	3	2	1
Rusa	4	3	2	1

Alta_____

De cand sunteti in Suedia? _____

E prima oara cand lucrati in Suedia? _____ Da _____Nu

Daca nu, de cate ori ati mai venit aici inainte? _____

Ati mai lucrat in alta tara inafara de Suedia si Romania? ___Da ___Nu

Daca da, unde?_____

Care este principalul motiv pentru care ati venit sa lucrati in Suedia?

Puteti alege maximum 3 motive care vi se potrivesc si ordinea importantei lor:

1 *=cel mai important* **2** *= al doilea ca importanta* **3** *= al treilea ca importanta*

Plata mai buna _____

Conditii mai bune de lucru _____

Lipsa locurilor de munca in Romania _____

Influentati de prieteni sau rude _____

Motive politice _____

Pentru a castiga experienta _____

O sansa de a calatori _____

Alte motive _____

COMUNICARE	Total de acord	De acord	Nu sunt de acord	Total contra
Fluxul de informatii de la conducere la lucratori este bun.	☐	☐	☐	☐
Inteleg intotdeauna instructiunile date de sefii de echipa suedezi.	☐	☐	☐	☐
Inteleg intotdeauna instructiunile date de sefii de echipa romani.	☐	☐	☐	☐
Cand nu inteleg instructiunile ma adresez sefului de santier.	☐	☐	☐	☐
Sunt deranjat cand nu pot comunica cu sefii de echipa suedezi.	☐	☐	☐	☐
As vrea sa invat o limba care m-ar ajuta sa comunic la locul de munca.	☐	☐	☐	☐
SIGURANTA				
Inteleg toate regulamentele de protectia muncii de la locul de munca.	☐	☐	☐	☐
Regulamentele de protectia Muncii din Suedia sunt la fel ca si in Romania.	☐	☐	☐	☐
Regulamentele de protectia muncii sunt usor de urmat.	☐	☐	☐	☐

SATISFACTIA MUNCII	Total de acord	De acord	Nu sunt de acord	Total contra
Am fost bine primit de catre suedezi la locul de munca.	☐	☐	☐	☐
Am un salariu corect pentru munca pe care o prestez.	☐	☐	☐	☐
Castig destul cat sa imi intretin familia din Romania si sa ma intretin aici, in Suedia.	☐	☐	☐	☐
Sunt membru al unui sindicat in Romania.	☐	☐	☐	☐
Suedezii si romanii au aceeasi relatie cu seful lor.	☐	☐	☐	☐
Invat lucruri noi in acest santier.	☐	☐	☐	☐
Imi place munca mea.	☐	☐	☐	☐
Imi plac colegii mei romani.	☐	☐	☐	☐
Imi plac colegii suedezi.	☐	☐	☐	☐
Ma bucur ca invat lucruri noi Imi sunt de folos cand ma voi intoarce in Romania.	☐	☐	☐	☐
Inteleg sistemul de premiere pentru lucrarile finalizate inainte de termen	☐	☐	☐	☐
Sunt multumit de cazarea oferita.	☐	☐	☐	☐
Voi recomanda prietenilor si familie sa vina sa lucreze in Suedia.	☐	☐	☐	☐

Cand am o problema, de obicei

_____ ma duc la un sef de echipa roman
_____ ma duca la un supraveghetor suedez.
_____ incerc sa o rezolv singur
_____ intreb un coleg
_____ astept
_____ continuati sa faceti altceva

Mi-ar placea sa ma intorc sa muncesc in Suedia din nou _____ Da _____Nu

Principalele diferente dintre munca in Suedia si cea din Romania sunt:

Daca aveti comentarii referitoare la imbunatatirea muncii pe santier,

scrieti va rugam pe verso.

Appendix 3. Survey questionnaire in Polish

Appendix 3 presents the questions included in the survey which was distributed to the Polish workers at the Construction project 2 stie. The questions are in Polish.

DANE OSOBOWE

Ile ma Pan lat? _____

Jaki jest najwyższy pozion edukacji jaki Pan posiada?

Brak _____

Podstawowe _____

Gimnazium _____

Liceum _____ Technikum_____ Zawodówka_____

Wyższe _____ Ile lat? _____

Czy pracował Pan na budowie wcześniej?_____ Tak _____Nie

Jeżeli tak, to jak długo? _____

Jeżeli nie, czym zajmował się Pan wcześniej?_____

Iloma językami się Pan posługuje/rozumie I na jakim poziomie?

	Płynny	Dobry	Słaby	Wogóle
Polski	4	3	2	1
Angielski	4	3	2	1
Szwedzki	4	3	2	1
Niemiecki	4	3	2	1
Rosyjski	4	3	2	1

Inny_____

Jak długo przebywa Pan w Szwecji? _____

Czy jest to pierwszy raz kiedy pracuje Pan w Szwecji? ___Tak ___Nie

Jeżeli nie, ile razy był (pracował) Pan w Szwecji wcześniej? _____

Czy pracował Pan w jakimś innym kraju niż Polska czy Szwecja?

___Tak ___Nie

Jeżeli tak, to w jakim kraju?_____

Jaki jest główny powód, że przyjechał Pan do pracy w Szwecji?

Może Pan wybrać maksymalnie 3 odpowiedzi i uszeregować je w odpowiedniej kolejnościn: **1** *= najważniejszy powód*
2 *= drugi najważniejszy powód* **3** *= trzeci najważniejszy powód*

Lepsza płaca _____

Lepsze warunki pracy _____

Brak pracy w Polsce _____

Wpływ znajomych lub rodziny _____

Przyczyny polityczne _____

Zdobycie doświadczenia _____

Możliwość podróżowania _____

Inne powody _____

KOMUNIKACJA	Zdecydowanie się zgadzam	Zgadzam się	Nie zgadzam się	Zdecydowanie się nie zgadzam
Przepływ informacji od kierownictwa do pracowników jest dobry.	☐	☐	☐	☐
Zawsze rozumiem polecenia Wydawane przez szwedzkeigo keirownika/majstra.	☐	☐	☐	☐
Zawsze rozumiem polecenia Wydawane przez polskiego keirownika/majstra.	☐	☐	☐	☐
Kiedy nie rozumiem Polecenia zgłaszam to mojemu przełożonemu.	☐	☐	☐	☐
Irytuje mnie kiedy nie mogę się Porozumieć ze szwedzkim kierownikiem/majstrem.	☐	☐	☐	☐
Chciałbym nauczyć się językażeby móc się porozumiewać na budowie.	☐	☐	☐	☐
BEZPIECZEŃSTWO				
Rozumiem wsyztskie zasady bezpieczeństwa na budowie.	☐	☐	☐	☐
Zasady bezpieczeństwa na budowie w Szwecji są akie same jak w Polsce.	☐	☐	☐	☐
Zasady bezpieczeństwa są łatwe do przestrzegania.	☐	☐	☐	☐

	Zdecydowanie się zgadzam	Zgadzam się	Nie zgadzam się	Zdecydowanie sie nie zgadzam
SATYSFAKCJA Z PRACY				
Zostałem dobrze Zaakceptowany na budownie przez szwedów.	☐	☐	☐	☐
Otrzymuje sprawieliwą zapłate za wykonywaną pracę.	☐	☐	☐	☐
Zarabiam wystarczająco aby utrzymać moją rodzinę w Polsce oraz pokryć koszty utrzmania w Szwecji.	☐	☐	☐	☐
Jestem członkiem związków zawodowych w Polsce.	☐	☐	☐	☐
Pracownicy szwedzcy i polscy mają taki sam kontakt/układy ze swoim kierownikiem.	☐	☐	☐	☐
Uczę się nowych rzeczy na tej budowie.	☐	☐	☐	☐
Lubię swoją pracę.	☐	☐	☐	☐
Lubię swoich polskich współpracowników.	☐	☐	☐	☐
Lubię swoich szwedzkich współpracowników.	☐	☐	☐	☐
Uczę się nowych umiejętności które jak wrócę do Polski.	☐	☐	☐	☐
Jestem zadowolony z obiektów socjalnych na budowie (szatnie, miejsce spożywania posiłków itd.)	☐	☐	☐	☐
Polecił bym znajomym I rodzinie aby przyjechali do pracy w Szwecji.	☐	☐	☐	☐

Kiedy mam jakiś kłopot, przeważnie

_____ zwracam się do polskiego przełożonego

_____ zwracam się do szwedzkeigo przełożonego

_____ próbuje rozwiązać problem samemu

_____ pytam kolegę/współpracownika

_____ czekam

_____ przechodze do następnego zadania

Chaiałbym przyjechać do pracy w Szwecji jeszcze raz.

_____Tak _____Nie

Głównymi różnicami między pracą w Szwecji a w Polsce są:

Jeżeli ma Pan jakieś dodatkowe uwagi jak można by ulepszyć pracę na budowie proszę o odpowiedź na drugiej stronie:

Appendix 4. Survey questionnaire with answers

Appendix 4 presents the answers to the questions in the survey questionnaire.

PERSONAL INFORMATION

How old are you? _____

What is your highest level of education?

None	0	
Primary school	0	
Secondary school	8	
Vocational	28	
Post secondary	13	How many years?_____

Have you worked in the construction industry before? **47 Yes 2 No**

If yes, how long? **1 - 38 years**

If no, what did you work in previously?_____

How many languages do you speak/understand and at what level?

	Excellent	Good	Very little	None
Mother tongue	49	0	0	0
English	2	9	18	20
Swedish	0	0	4	45
German	0	1	5	43
Russian	0	1	10	38

Other answers: 4 x French, 1 x Gypsy, 1 x Hebrew, 2 x Italian, 1 x Slovakian, 4 x Spanish

How long have you been in Sweden? **3 - 48 months**

Is it your first time in Sweden? **37 Yes 12 No**

If no, how many times have you been here before? _____

Have you worked in another country besides Sweden and Rumania/Poland?

33 Yes 16 No

If yes, where?

Answers: Austria, Belgium, Czech Republic, England, Finland, France, Germany, Iceland, Iraq, Ireland, Israel, Italy, Jordania, Norway, Russia, Spain

What is the main reason why you came to work in Sweden?

You can choose several options that apply ranking them in order:
1 *= most relevant* **2** *= second most relevant* **3** *= third most relevant*

Better pay	45
Better working conditions	39
Not enough jobs in Rumania	25
Influenced by friends or relatives	2
Political reasons	0
To gain more experience	10
A chance to travel	8

Other reasons: To finance studies

COMMUNICATION	Strongly agree	Agree	Disagree	Strongly disagree	Missing	Total
The flow of information From the management to the workers is good.	23	23	0	1	2	49
I always understand the Instructions given by the Swedish foremen.	13	28	4	2	2	49
I always understand the Instructions given by the Romanian/Polish foremen.	32	13	1	1	2	49
When I do not understand Instructions I tell my supervisors.	19	24	1	1	4	49
I am frustrated when I cannot communicate with Swedish foremen.	6	22	5	4	12	49
I would like to learn a language that would help me communicate at the worksite.	34	13	1	0	14	9
SAFETY						
I understand all the safety regulations at the worksite.	42	5	0	1	1	49
Safety regulations at the worksite In Sweden are the same as in Romania/Poland	15	26	3	3	2	49
The safety regulations are easy to follow.	27	19	1	1	1	49

JOB SATISFACTION	Strongly agree	Agree	Disagree	Strongly disagree	Missing	Total
I have been well accepted by the Swedes at the work site.	29	19	0	1	0	49
I have a fair salary for the work I perform.	29	13	7	0	0	49
I earn enough to support my family in Romania/Poland and pay for my stay here in Sweden.	24	20	5	0	0	49
I am a member of a worker's union in Romania/Poland.	3	3	11	22	10	49
Swedish and Romanians/Polish Have the same relationship with their boss.	18	19	5	3	4	49
I am learning new skills working at this site.	20	25	1	1	2	49
I like my job.	31	18	0	0	0	49
I like my Romanian co-workers.	19	26	1	2	1	49
I like my Swedish co-workers.	20	27	0	1	1	49
I enjoy learning new skills I CaN use when I return to Rumania/Poland.	26	21	1	0	1	49
I understand the bonus system which pays extra for work completed ahead of schedule.	16	13	1	0	19	49
I am satisfied with the accommodations provided.	33	16	0	0	0	49
I would recommend friends and family to come work in Sweden.	30	18	1	0	0	49

When I run into problems, I usually

45	go to a Rumanian supervisor
39	go to a Swedish supervisor
25	try to solve it myself
2	ask a co-worker
0	wait
0	continue with another task

I would like to return to work in Sweden again. **48 Yes 1 No**

The main differences between working in Sweden and Romania/Poland are:

- None
- In Sweden work is more relaxed and technical
- Quality
- They are the same
- Better communication
- More serious
- Good salary in Sweden
- The working conditions is better in Sweden
- Rights
- Family
- Totally different
- Good communication between bosses and subordinate, how to execute
- Organization
- Better protection at work in Sweden
- Beneficial
- Honesty from the bosses (owners)
- Working system
- Tools
- Materials
- Mentality
- It is hard to say, the conditions in Poland will be the same as in Sweden in 20 years time
- Security/safety
- Lack of jobs in Poland
- Much better jobs and social services in Sweden
- Friendly attitude towards foreigners in Sweden
- Private wages and fewer cheaters in Sweden
- Better social conditions in Sweden

If you have any further comments how to improve work on site please use the back of this sheet.

- To try harder
- Organizing bringing materials on time
- Everybody to pay more attention at the work
- Correct and fair selection of people working at this site
- Be responsible for the work they perform
- Everybody to give their interest in work that provides

Appendix 5. Interview guide

Appendix 5 presents the interview guide used when interviewing Swedish and Romanian foremen and managers.

Personal background

What is your job title?

How long have you been working for your present company? How long have you worked in the construction industry?

Where have you been working before, nationally and internationally?

Have you been working with foreign labor before?

How many languages do you speak?

The project

How many workers are there on site? How many different construction teams?

Which work has been done by subcontractors?

What are the working hours? Are they different among different nationalities?

Work structure

Can you describe how you work on site?

Do the foreign workers work with the Swedes?

Do they share locker rooms or break rooms?

How was the foreign workers employed?

How often do you have meetings? Who attends?

Utförande av arbete

Culture

Are there differences in morale, acting or hierarchy when comparing Swedish and foreign workers?

Language

How does the communication work between workers, foremen and managers?

Education and skill level

Are there differences in educational- and knowledge level between nationalities?

Is there a lack of specialists in Sweden? Are the foreign workers better than the Swedish?

Are there differences in ways of working? Do the foreign workers need to learn new ways of working?

Safety work

How is the safety information distributed, orally or written?

Are there different views on safety among the different nationalities?

Quality

Are there different views on quality among the different nationalities?