Safety motivation system

A qualitative study regarding what creates safety motivation in a company that operates in a hazardous business

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In this study, we investigate the creation of safety motivation through a safety motivation system applied in a hazardous business. This system forms upon six factors and two underlying, but equally important aspects that combined create safety motivation. The research was conducted on SSAB, a steel manufacturing company with high safety concerns on all levels within the organization. Despite a great safety focus, SSAB shows a dissatisfying safety performance in relation to the competitors.

Safety motivation is created on both an organizational and an individual level. The problem lies in how the organization, through the managers, provides safety motivation for employees at all levels in order to attain the organization’s safety goals. The employees must be encouraged by the organization to participate in the safety work and comply with the safety goals, standards and procedures due to the positive effects safety participation and safety compliance has on safety motivation. Employees are the organization’s last barrier against risks and accidents and their behavior is critical for avoiding personal harm and material damage.

In accordance to our safety motivation system of what creates safety motivation, all of the overlying individual and organizational factors that create safety motivation will affect the aspects of safety participation and safety compliance. If one or both of these aspects are low, the safety motivation will be poor. These two aspects combined create a synergy effect that increases safety motivation. Safety participation can to some extent be controlled by rules and regulation but never safety compliance; which was demonstrated at our case company SSAB.
We want to show our gratitude by thanking our supervisor Olga Yttermyr, our interview respondents Peder Sundbom, Lotta Jakobsson and the employees from the continuous casting that participated in the focus group. We truly appreciate your help and support when conducting this study!

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1 INTRODUCTION

The first chapter will introduce this master thesis, starting with the background for this study and a discussion regarding our research problem. This will lead on to the study's objective and further on, the research questions.

1.1 BACKGROUND

A common concern across hazardous businesses is how to maintain a high level of safety motivation among employees at all levels (EHS Today, 2000). However, the motivation system in most manufacturing firms today aims to increase the productivity and efficiency among the employees (Merchant & Van der Stede, 2012). Whilst focusing the motivation system towards high efficiency and productivity, the management provides indirect incentives for a larger emphasis on the production leaving the safety for employees disregarded (Maslen & Hopkins, 2014). Maslen & Hopkins (2014) mean that just as you motivate for factors such as productivity, safety should be no exception.

The repercussions of safety motivation breaches are well documented in the dramatic case of the BP oil spill in the Mexican gulf in 2010. The analysts found, among other things, that the safety objectives included in the firm were poor or conflicting with other objectives within the firm (Baker et al., 2007). The BP oil spill resulted in huge disastrous effects on human lives, the environment and further on, costly lawsuits (The Guardian, 2010; The Guardian, 2015a; The Guardian, 2015b). Needless to say, safety in the workplace is not only about financial repercussions, it is much more than that; it is a part of the fundamental concern about human value which forms the principles of a modern society. The consequences for the employee working in an unsafe work environment might lead to an early withdrawal from work or the whole business (Nilsson, 2005) together with health problems or even an impaired quality of life (Rose & Orenius, 2006).

Earlier research state that motivation derives from a variety of aspects on both an individual and organizational level, including financial incentives but also job satisfaction, recognition and appreciation from coworkers and managers (Hedlund et al., 2016). To ensure employee engagement and commitment towards fulfilling the firm's objectives, the managers must motivate the employees and create a will for them to work towards the right direction (Björklund, 2001; Latham & Locke, 2002).
This is in line with Clarke (2006) who states that it is crucial for the management to create consciousness and awareness, regarding the firm’s safety objectives, through routines and procedures in order to attain a safe work environment.

In this study, we investigate the creation of safety motivation through a safety motivation system applied in a hazardous business. The system that we have developed is based on new research regarding safety motivation. This system forms upon six factors and two underlying, but equally important aspects that combined create safety motivation with the purpose of improving the safety performance. The research was conducted on SSAB, a steel manufacturing company with high safety concerns on all levels within the organization. Despite a great safety focus, SSAB show a dissatisfying safety performance compared to the competitors. However, SSAB was merely used as an instrument to investigate, through our system, their safety motivation work in the organization. Hence, SSAB is not in the center of the research’ purpose but rather a tool to get a deeper understanding of safety motivation in a hazardous business.

To facilitate further reading, we have chosen to define a hazardous business. By hazardous business we mean all businesses that require a large focus on safety due to hazardous risks. A hazardous business is where the safety concern is crucial for the employees and the surroundings.

1.2 RESEARCH PROBLEM

According to Arbetarskydd (2013), the work environment in Sweden was once the safest in the world but has now fallen behind. The number of accidents in the heavy industry which caused sick leave for more than 30 days, has increased with 38 % between 2009-2011 (ibid.) and the total number of accidents with sick leave were over 30 000 annually in the years of 2011-2013 (Swedish Work Environment Authority, 2014). Even the number of accidents that caused death had increased in the year of 2014, after a decrease since 2000 (Arbetet, 2014). The risks for bad accidents are largest in hazardous businesses such as steel manufacturing and construction (ibid.). SSAB has the very ambitious safety goal of becoming the safest steel manufacturing company in the world (Annual reports, 2016; the service manager) but statistics show another reality. SSAB is overrepresented in accident related statistics compared to other companies in the same business (the service manager). Only in the last five years SSAB Luleå is the victim of five work related accidents that led to death (NSD, 2016).
This case study was conducted on SSAB, a large, international, Swedish-based steel manufacturing firm. This company was chosen since it has a strong focus on safety due to that the manufacturing process includes high risks for the employees and the surrounding environment.

The main risks for the employees are liquid steel, extremely high temperatures and explosive and poisonous gas. It is foremost the assembly line workers that are exposed to these risks even though the risks affect the whole organization. The assembly line workers are the first ones affected if an incident occurs and they will have a large impact of the consequences from an accident regarding their own health, the environment and negative financial aspects for the company. SSAB emphasize a considerable focus on safety by having various safety measures stated in the their annual reports, including the goals of zero LTI (lost time injury) accidents per year and being the safest steel manufacturing company in the world (SSAB Annual report, 2014; Årsstämma, 2010). Furthermore, due to the high safety standards, SSAB have incorporated different rules and regulations; the usage of correct working gear, the providing of internal training, etc. However, accidents still occur every year.

The theoretical standpoint in this study proceeds from six central factors that together create safety motivation. The safety motivation and safety related issues derive from two levels; from an individual level and from an organizational level. Safety motivation from an individual level is affected by three factors; the individual’s perception of safety behavior, intrinsic safety behavior and the perception of goal setting on both a personal level and organizational level (Hedlund et al., 2016). The goals within the organization, leadership and safety climate affect the employee’s safety motivation from an organizational level (Hedlund et al., 2010). In this study, safety climate refers to the procedures, practices and the perception of policies at the workplace. Safety participation and safety compliance are highly related to the individual’s own safety motivation (Hedlund et al., 2010; Hedlund et al., 2016). This implies that the managers must involve the employees in the precautionary safety work to ensure a safe workplace. Safety work regards everything the managers and employees do in order to create a safe workplace.

According to both Andriessen (1978) and Hedlund et al. (2010; 2016) one of the most important factors for creating safety motivation is leadership; the importance of the managers’ role and the great impact they have on developing a safe work environment through risk management. Risk management is an activity that aims to identify and quantify the various risks in order to take the appropriate measures to reduce or eliminate them (Nationalencyklopedin, 2016b).
The management faces the problem of establishing an open and effective line of communication with the workforce in order to create a good safety climate (Baker et al., 2007). Further, the managers must have empowering attitudes and create engagement among the employees, since two key factors for safety motivation at an individual level are safety compliance and safety participation (Hedlund et al., 2016).

One leadership tactic to motivate employees in a certain direction is to use incentives (Locke, 1968; Merchant & Van der Stede, 2012; Anthony et al., 2014; Maslen & Hopkins, 2014) but when it comes to motivating towards safety incentives can also cause problems, due to the contradictory goals of safety and productivity. Financial incentives can be problematic when trying to motivate towards safety; smaller accidents might be ignored and not reported by the employees in order not to lose their financial bonus. If smaller mishaps and accidents are not reported and brought up to light, the precautions safety work is aggravated. This means that financial incentives are not always the best way to motivate employees. Hence, it is beneficial to understand that different types of goals are best achieved by using different kinds of motivation systems.

To clarify, the creation of safety motivation lies in six different factors. Three of them are on an individual level: the individual’s perception of safety behavior, intrinsic safety behavior and the perception of goal setting (Hedlund et al., 2016). The other three factors that create safety motivation derive from an organizational level: safety climate, leadership and the goals within the organization (ibid.). The underlying aspects that are affected by the six factors above, strongly relates to an individual’s motivation towards safety. These aspects are safety participation and safety compliance, which implies that the employees must not only understand and be aware of the safety goals and the routines but also to comply with them to enable a safe work environment (Hedlund et al., 2016). The safety motivation system is formed by these six factors with its additional two aspects and will therefore function as a base when conducting the study. The theories by Hedlund et al. (2010; 2016) were chosen since it is new research, it covers a large amount of aspects and heavily relates to this study’s research questions.

Since SSAB has trouble achieving their safety goals, questions can be enlighten regarding why these goals have been unreachable for the company so far. This problem is not specific for SSAB, according to Arbetarskydd (2013) Sweden has fallen behind when it comes to work related accidents, both injuries and deaths have increased in the latest years. Creating a safe workplace can prevent accidents but that is not enough, the human factor is an essential part of the organization’s safety performance (Donald & Young, 1996).
By motivating towards safety, can a company in a hazardous business improve their employees’ safety motivation and thus the safety performance?

Safety motivation is created through a safety motivation system that derives from both an organizational and an individual level. The problem lies in how the organization, through the managers, provides safety motivation for employees in order to attain the organization's safety goals. The employees must be encouraged by the organization to participate in the safety work and comply with the safety goals, standards and procedures due to the positive effects safety participation and safety compliance has on safety motivation. Employees are the organization’s last barrier against risks and accidents and their behavior is critical for avoiding personal harm and material damage (Hofmann & Stetzer, 1996; Eiff, 1999).

1.3 Objective

The objective of this master thesis is to get an understanding for the safety motivation system in a company that operates in a hazardous business.

1.4 Research Questions

The research questions purpose is to enable an answer to the objective of this master thesis.

RQ 1. How does a company that operates in a hazardous business incorporate their safety goals in their safety motivation system for the assembly line workers?

RQ 2. How does the safety climate at a company that operates in a hazardous business affect the assembly line workers safety motivation?

RQ 3. How do the leadership affect safety motivation among the assembly line workers at a company that operates in a hazardous business?

RQ 4. How do the assembly line workers at a company that operates in a hazardous business participate in and comply with the safety motivation system?
1.5 Contribution

By using SSAB as a tool to get a deeper understanding of the safety motivation system in a company that operates in a hazardous business, we can contribute to science by providing new insight to this research area. The focus in this study is not SSAB in particular but rather in how a company can motivate their employees towards safety. The uniqueness with this study lies within the combination of the theoretical frame of references and the empirical findings by developing and applying a safety motivation system on a firm that operates in a hazardous business. This will be carried through by analyzing SSAB and its safety motivation system through a case study, with the base in a theoretical safety motivation system consisting of both individual and organizational factors.

We have differentiated our study from previous research by developing a safety motivation system and gathering empirical findings from different levels within the company, including a focus group with assembly line workers. The age of the articles was an important aspect when doing the research. We wanted to use new research to ensure that the articles was up to date, since science is always continuing with new theories and models being developed. Additionally, we searched for older articles that are well cited to use in combination with newer research to increase the credibility and trustworthiness of the study.

We argue that the study will be generalizable for firms in the steel business but also other hazardous businesses where the safety concern is crucial. We are aware of that other steel-manufacturing firms outside the SSAB group can be different due to a variety of aspects. Safety concerns can for example be affected by factors depending on safety standards, the operating country's laws and regulations, climate etc. This study contributes to a deeper understanding of which factors affect safety motivation the most and by stressing the importance of safety participation and safety compliance.
1.6 LIMITATIONS

Due to time constraints and limited resources the authors have chosen to limit the empirical findings to one company, SSAB. Even though we have used historical data to study how the safety motivation work has evolved over time, this is by no means a longitudinal study but a cross-sectional study carried out during a period of five months.

The study was conducted at SSAB Luleå, which is representative for the corporate group located in Sweden and Finland due to the same safety motivation work and similar production facilities. Further, this study was based on one department at the company due to the time constraint. We chose to limit this study to one department in order to get a deep understanding of their safety motivation work and the respondents’ perception of safety motivation. This will provide a depth in the study and a comprehensive understanding of the problem.
1.7 Disposition

The disposition of this thesis is displayed by the figure beneath. It is an overview of all the steps and choices we made to create this thesis.

![Diagram]

Figure 1. The disposition of this master thesis is as shown above.
2 Methodology

This chapter describes the research method and scientific perspective used when writing this master thesis. It also clarifies the procedure of conducting this research. Further, the chapter discusses important aspects such as criticism and ethics.

2.1 Method for Research

The method used for this study is mainly based upon the method literature written by Bryman & Bell (2007), Justesen & Mik-Meyer (2011) and Bryman (2012). These books provide a well-reputed reference frame of how to write a qualitative study with a deductive approach.

2.1.1 Scientific Perspective

The scientific perspective compiles the ontological and epistemology presumptions and interests that create a base for research (Justesen & Mik-Meyer, 2011). In social science there are several philosophical approaches. One that is often associated with qualitative research method is realism, which is based on an objective view of the world that is independent of the researchers who is planning to investigate aspects of this world (ibid.). For the researcher, the goal with this perspective is to describe and explain the phenomenon and relationships as objective and neutral as possible (ibid.).

However, since the purpose and the design of this research implies that the phenomenon is studied through the interpretations and subjective thoughts of the respondents, in our case the management and assembly line of SSAB, we no longer fall within the pure concept of objectivity. Therefore, a realistic perspective is not suitable for our study. Interpretivism on the other hand, is a position that advocates that the researcher and the social world impact on each other, the facts and values are not distinct and therefore the findings are inevitably influenced by the researcher’s perspective and values (Ritchie & Lewis, 2003). The unattainability of conducting objective and value free research does not mean that we as authors cannot can declare and be transparent about our assumptions (ibid.), which we are. This aspect of the findings being influenced by the researcher’s perspective and values can also affect the generalizability of the study, a discussion we deeper probe in to in 2.3 and 2.8.1. The gathering of data through the respondents’ perceptions and interpretation fits well into the scientific perspective of interpretivism, and hence is the reason why we chose to proceed from this scientific perspective.
2.1.2 RESEARCH STRATEGY

Bryman & Bell (2007) point out two main research strategies; quantitative and qualitative. A research strategy is the general orientation to the conduct of business research. The distinction between quantitative and qualitative research is rather ambiguous, with some regarding that there are fundamental differences and other claiming the contrast are no longer useful (ibid). Bryman & Bell (2007) employ a great deal in the distinction of the two strategies. The most common and central difference is that quantitative research method states that the social reality is objective and builds upon gathering numeric data. The qualitative strategy on the other hand strives for an in-depth understanding of the social reality as well as the underlying affecting aspects, which we made by studying and investigating the participants’ comprehension of the reality. The qualitative research strategy enables a depth in the study by interpreting and understanding the phenomenon (ibid.).

The phenomenon in our case study is how safety motivation is created for the employees. Since the objective of this master thesis is to get an understanding for the safety motivation system within a company that operates in a hazardous business, with a depth analysis based on the empirical findings from the social reality, we found it appropriate to use a qualitative research method through a deductive approach.

2.1.3 SCIENTIFIC APPROACH

The nature of the relationship between theory and research is primarily divided into two approaches, the deductive and inductive theory (Bryman & Bell, 2007). The deductive theory is the most common one of the two theories. This scientific approach means that the researchers deduce a hypothesis based on theory, which then must be subjected to empirical scrutiny (ibid.). In other words, deductive approach is concerned with deducting conclusions from premises or propositions (Goddard & Melville, 2014). The inductive approach on the other hand, is the right opposite, meaning that the observations are the starting point of the research and the theories being formulated towards the end and as a result of observations (ibid.). The sequence of our empirical data and theory is in line with the deductive approach. This is due to the fact that we used the theory regarding safety motivation as the base for the empirical findings and not the other way around. The purpose of this study is not to create new theories, but to compare and put the empirical findings in relation to the existing theories.
By proceeding from a deductive approach, the first step was to collect secondary data. The data gathered was chosen to enable broad background knowledge about both the case company and at the same time relevant theories about safety motivation. The next step was to gather primary data at the case company. The empirical findings were then compared and put in relation to each other, the interviews and the focus group, and lastly to the theory to enable analysis and conclusions.

The very first step when conducting this master thesis was to figure out what research problem we wanted to address. Motivation, repetitive work tasks, hazardous firms and safety were key words from the beginning. The phenomenon of safety motivation within a hazardous manufacturing firm was to be investigated. The chosen case company was SSAB since it fulfilled all our requirement of 1) being Swedish, 2) operating in a hazardous business (steel manufacturing), 3) having high safety standards and 4) accidents do occur.

The first requirement was set because of geographical reasons and that Sweden has multiple laws and regulations about work related safety. The second requirement was set since the study’s objective is to receive an understanding for how a manufacturing company motivate towards safety, in a business where safety concern is crucial for the employees to not get hurt or killed at their work. The reason for choosing a steel manufacturing company was that Arbetet (2014) states that this area of business is one of the most affected by bad accidents. A hazardous work environment puts a large emphasis on safety motivation for the company and the managers, which was beneficial when investigating how safety motivation is created. The third requirement relates to the second one; if the company operates in a hazardous business, it should have high safety standards of moral, ethical and even to some extent financial reasons. The last requirement was set because we searched for a case company that have high safety standards and safety objectives but has not succeeded to meet these goals. This means that the company, even though it is striving to motivate their employees towards a safe behavior, is not doing a sufficient job and there is room for improvements.

The next step was to build a solid theoretical knowledge base and knowledge about the case company. Linköping University’s database UniSearch was used when gathering scientific articles to ensure credibility and information about the case company was gathered foremost through their annual reports. The theoretical standpoint in the beginning was work motivation but since SSAB put a large emphasis on safety in their reports, this study took a new direction into motivation towards safety. Theories about what effects work environment safety and how to create safety motivation is hence the base for the theoretical reference frame.
2.2 Research Design

The aim with this study is to get an understanding for safety motivation system within a company that operates in a hazardous business. To enlighten the problem of how to motivate to a certain goal, e.g. a safe work behavior, the data should contain hard facts such as goals and statistics but also managers and employees’ perspectives. The empirical data must be detailed, intensive and thorough (Bryman & Bell, 2007). Thus, we found that a case study is an appropriate method for this study because it allows the researcher to probe deep into the problem and the organization (Justesen & Mik-Meyer, 2011). Further, the combination of case study and a qualitative approach is supported by Bryman & Bell (2007) for the same reason, that the combination is practical when generating intensive and detailed data.

By studying the problem through multiple sources on different hierarchical levels, as we have done, we are not only extracting intense and detailed information as argued by Bryman & Bell (2007), but also taking into consideration that safety motivation concerns all levels within the organization (Hedlund et al., 2010; Hedlund et al., 2016). These aspects of getting complex and unique data through multiple sources within the case company are exactly the attributes that Stake (1995) and Easton (2007) argue a case study provides. However, if the information is not detailed enough, it is hard to appreciate the significance of the case study (Bryman, 2012). We have taken this aspect in consideration by interviewing two managers on different hierarchical levels and conducting a focus group with the assembly line workers to get a broad and detailed picture regarding the safety work throughout the whole company.

Nonetheless, even if succeeded in the challenge of extracting thorough and deep data, there are still negative aspects of case study regarding external validity (Bryman & Bell, 2007). The problem lies in the fact that it’s hard to make a single case study generalizable so it can be applied to another case (Bryman, 2012; Justesen & Mik-Meyer, 2011). Flyvbjerg (2006) argues that it’s possible to make generalizations from single case studies since concrete knowledge that is context-dependent, as in case studies, "is more valuable than the vain search for predictive theories and universals". He continues to argue with base in the falsification argument, that if there is one observation that does not fit, the study is considered not to be valid. Hence, Flyvbjerg (2006) states the value of dependent knowledge, the "forces of examples" and thereby that case studies are truly generalizable as long as the study is dense enough.
If we apply these arguments by Flyvbjerg (2006) on our research method, we found that if our study is dense enough, the fact that SSAB operates in the steel industry, which is a rather unique business, doesn’t mean that there are no aspects that can be generalizable. It can for example be generalized by aspects such the same safety concerns, similar business or other industries with high risks for the employees in the manufacturing process.

2.3 DATA COLLECTION

The first step of our data collection was to ensure that this study was based on theories that provide deep and broad knowledge; therefore we began with collecting the secondary data. This was made to support the study's objective, create a base for the theoretical frame of references and further enable that the research questions can be answered. We reviewed SSAB’s annual reports to get an overview of the company followed by doing research in relevant social science articles. The articles used were chosen based on our findings from the case company’s annual reports. These articles provide the central perspectives of what creates motivation towards safety, which are emphasized in the research problem. The articles are foremost gathered through Linköping’s University’s library database, UniSearch, to ensure validity and reliability.

The second step was to gather deeper and more detailed information about the case company, which were done through carefully reading and investigating their annual reports and other official documents. The reason annual reports were used was to complement the theoretical findings, to see how SSAB work with safety precautions and safety motivation. Hence, the reports were important for the study since it provide a detailed picture of the organization with its goals and objectives. It also facilitated further theoretical research by showing what types of goals and motivational factors SSAB uses in order to motivate their employees towards safety.

Considering the study's deductive approach, the theory worked as a starting point of the data collection and would thereafter be supported empirically. Therefore, the third and last step of the data collection was the gathering of empirical findings, which will be brought forward through interviews and a focus group. This mix of secondary and primary data was to provide a reliable base of background knowledge, empirically as well as theoretically, to enable the creation of a valid master thesis. To enable answering the research questions, and thus the objective of this study, the interviews and focus group questionnaires were based on the theoretical frame of references and the documents from the case company. This was in order to keep a continuous line of argument throughout this master thesis in order to facilitate our analysis and create a consentient study.
As earlier mentioned, the theoretical frame of references is mainly based on Hedlund et al. (2010; 2016) perspectives of what creates safety motivation. The factors that creates safety motivation are leadership, goals and the safety climate within the organization, continued on an individual level with the perception of safety behavior, intrinsic safety motivation and the perception of goal setting. These six factors have been the base when developing our safety motivation system that explains how safety motivation is created for the individual. The safety motivation system has been the base for the interviews and focus group questionnaires and thereafter for the analysis. This is made to ensure a clear line throughout the study, from the theoretical frame of references followed by the empirical findings and finished off with the analysis. Our safety motivation system is explained in detail in the compilation of the theoretical frame of references, 3.1.

**Figure 2.** Depicts the process of our research. Starting out with building the theoretical frame of references with support from documents from the case company and altering between these two to ensure a relevant theoretical reference frame. Thereafter collecting empirical data from the case company and simultaneously working on the reference frame to ensure a correct direction of this study.

### 2.4 SECONDARY DATA

The secondary data concerns specific data that has been gathered by other researchers for a different purpose than this particular study (Bryman & Bell, 2007). The theoretical sampling is made to generate a theoretical understanding (ibid.). The theoretical sampling in this case was first to get an understanding for SSAB and an insight in the organization. The purpose was to clarify what type of goals SSAB have, how they emphasize safety concerns and how they encourage a safe behavior. This was made by carefully reading the annual reports from the case company and what is stated on their webpage. Further steps in the theoretical sampling were to build a knowledge base from relevant scientific theories. The specific theories are chosen because of the findings in SSAB’s annual reports, for example how they address safety concerns.
When doing research for this study we had to alter between looking into the annual reports, SSAB’s webpage and other official documents to ensure that we have covered all relevant areas, such as goals, leadership standards, etc. At the same time we chose to work parallel with the theoretical frame of references to ensure that we kept the intended direction for the study, i.e. safety motivation. We had to alter between doing research for relevant articles and reading the annual reports not only to ensure the intended direction of the study was followed but also to ensure the use of relevant keywords and a coherent study.

The empirical findings has been allowed to have the largest emphasis in this chapter due to the fact that this study’s objective is based mainly on the empirical findings. The objective was to investigate and analyze how SSAB create motivation towards safety for their assembly line workers through the managers and hence a great focus is on the empirics. By no means were the theories of no importance. In line with the deductive approach, it provides the background and relevant knowledge and therefore functioned as the base for the study. However, the empirical findings were crucial when answering the research question and have therefore been given more attention in this chapter.

2.4.1 Annual Reports

The annual reports from the case company contain a generous amount of key information about the case company. The reports have been used when gathering background data about the company to create an understanding for the organization regarding aspects such as production, leadership standards, statistics and company structure. Further, the annual reports contains goals and objectives of the organization, such as safety goals, which were important for this study.

Since the annual reports contain a great substance of information it facilitated doing further theoretical research. It clearly states what types of goals and motivational factors SSAB uses in order to motivate their employees, thus functioning as a starting point for the data collection. The annual reports provided us with keywords that were used in the further theoretical research, as well as main issues that we found interesting to address. These key words and main issues were used as a guide when searching for articles, books and other theoretical references in order to write this study in the intended direction and in a coherent way.
When searching for information about the case company, it was important to use as new documents as possible. This is because goals, statistics and other information will be updated on annual basis and older reports might therefore no longer be up to date and the information will not be valid. Hence, the annual reports from SSAB are maximum two years old (issued at latest 2014) to ensure that the information is valid and accurate.

2.4.2 ARTICLES AND BOOKS
The secondary data was besides the annual reports primarily based on relevant articles and books that are scientifically approved to ensure credibility. Therefore they are gathered through Linköping’s University’s database, UniSearch, which only publish articles that are reviewed and recited. The books regarding the scientific method are foremost previous course literature but also non-course literature. All books regarding theories were found at Linköping’s University’s library, the validity is ensured by having reliable authors from adequate scientific areas. The primary purpose of using scientific articles was develop knowledge about the subject of safety motivation. The articles also provided the theoretical frame of references, which functioned as the base for further research, the empirical research and the analysis.

The key words when searching for relevant articles were based on the information from the annual reports. The keywords used were: safety, safety motivation, motivation, hazardous industry, assembly line, motivation + goal, motivation + leadership and motivation + culture + safety climate. As stated above, conducting research from scientific articles was altered with doing research from the annual reports as the study evolved into its final objective. The keywords changed from motivation into the direction of safety motivation after carefully considering the information gathered from the annual reports as well as having the thought of creating a unique, interesting study that can contribute to the current scientific research.

Another aspect when searching for articles was the age of the articles. We wanted to use new research to ensure articles that was up to date, since science is always ongoing and new theories and models are developed. Additionally, we searched for older articles that are well cited to use in combination with newer research to increase the credibility and trustworthiness. When defining keywords, we used multiple authors or sources, also in order to increase the trustworthiness.
2.4.3 Remaining Secondary Sources

In order to write a background and a problem discussion that is interesting and yet connected not only to the prevailing situation at SSAB but also other hazardous industries as well as current news and recent accidents, we found it necessary to look beyond documents sprung from the case company and theories. Therefore we searched for news articles that addressed problems with safety motivation and what the lack of such motivation could result in. We also searched for statistics that could present facts about work environment related accidents, if and how it had changed over the years and how an unsafe environment can affect the workers.

To ensure the validity and reliability we used governmental authorities and well-reputed news channels. The key words when searching for relevant news articles and statistics were primarily the same as when searching for scientific articles; safety, safety motivation, motivation, hazardous industry and assembly line, with exceptions for adding the key word work accident. The search was conducted in both Swedish and English and thereafter translated into English.

2.5 Primary Data

Primary data is data collected by the researchers specifically for the intended study (Bryman & Bell, 2007). The primary data collected for this study was gathered through interviews and a focus group to get the perks of two perspectives. Two interviews to get a deep understanding from the manager's perspective and a focus groups to be able to hear many interpretations and opinions from the employees’ perspective. Leadership, safety climate and the goals within the organization all affect the individual's motivation towards safety (Andriessen, 1978; Hedlund et al., 2010; Hedlund et al., 2016) and it is therefore interesting to hear the views and opinions of the assembly line workers, the production manager and service manager.

2.5.1 Interview

The sampling method, interview, is chosen since it is very suitable for case studies because it probe deep into the issue (Denscombe, 2009). The empirical findings are based on the theoretical frame of references and aims to provide a deep understanding of the underlying aspects of what affects safety motivation. Interviews provide a large content of information that is beneficial when conducting a depth study (ibid.). The interviews will serve as an empirical source of information that is needed in order to fulfill the purpose of the case study. Interviews are an excellent method when gathering information regarding interpretations and opinions, since it is subjective and individual. Additionally, face-to-face interviews provides the ability for the moderator to ask follow up questions, which results in a deeper understanding of the respondents answer and thereby the issue.
A negative side of interviewing is that the respondent might not be completely honest with their answer and instead answer what is most appropriate or expected by their position (Bryman & Bell, 2007). Further, there is always a possibility that the answer will be affected by bias from the moderator. This can be reduced by offering the respondents anonymity and by the moderator being as objective and neutral as possible (ibid.). When conducting the interviews, we tried to handle these issues by promising the respondents that the answers will be used only for this study. Only our own interpretations of what they have said will be used and published. The respondents will also have the opportunity to resubmit by reading the transliterations of their answers. This will also reduce the risk of errors since the respondents have the opportunity to correct themselves if they said anything wrong.

The interview questionnaire relied on the compilation of the theoretical frame of references (see point 3.1 Compilation of theoretical frame of references) to ensure that the questions are relevant to the study and supporting when connecting the empirical findings theoretically. Since motivation for safety taps on different levels in the organization, it was therefore of high importance to get the perspective from different levels. To assure this, one interview was conducted with the service manager to get the views of top managers and one interview was held with the production manager to get the perspective of a manager close to the assembly line workers.

By the reasons stated above, we found it important to interview the right persons at SSAB. We chose first to contact the information desk at SSAB Luleå to explain the aim with this study. They recommended us to talk to the service manager since he would have the best knowledge about how SSAB motivate their assembly line staff towards safety. After being in contact with him he was very positive of cooperating in our research and he further recommended us to talk to the production unit manager and helped us contact personnel for the focus group.

The service manager and production unit manager were recommended as respondents by SSAB themselves due to the fact that they possess the information that we were looking for regarding the safety work. The recommendation by SSAB displayed an underlying trust and interest of our study. This overall trust and belief is one of many reasons why it is important to follow the ethical principles of interviewing (Bryman & Bell, 2007). Furthermore, to ensure that the respondent felt secure and safe when participating in the study we carefully pointed out to the respondent’s information regarding the purpose of the study and tried to answer any possible question they had about the interview.
The use of structured interviews has the perk of reduction of errors that depends on interviewer variability. Meaning that the variation of the respondent’s answer depends on “true” variations and not the context of the interview (Bryman & Bell, 2007). In a structured interview, an interview guide has been prepared that in detail gives both the questions and their sequence. A semi-structured interview implicates a less controlling roll for the interviewer with the opportunity to both ask follow-up questions and change the sequence (ibid.). The benefits with this type of interview are that the moderators have the ability to add questions based on the respondent’s answer but also the respondent’s capability to bring up interesting and relevant subjects that a structured interview guide wouldn’t allow. Since we used semi-structured interviews, we had the ability to choose orders between the questions.

During the interview sessions, we chose to change the order of the questions because the respondents answered very detailed and wide-ranging and thus began to address upcoming issues. It then felt more natural to change the order of the questions to facilitate a flow in the interview and the feeling of a more natural conversation, in order to encourage a relaxed atmosphere.

As we stressed earlier, the purpose of the research along with the chosen scientific perspective implies that the phenomenon was studied through the interpretations and subjective thoughts of the respondents. By conducting semi-structured interviews, instead of unstructured, we were encouraging a deeper discussion regarding safety motivation with the opportunity of stepping in if the interview is carried away. A structured interview would not have been adequate for similar reasons, we may have stayed within the relevant subject but in same time lose much of the information that exists between the lines of the interview guide.

To further ensure that any important information would not be lost during the process of the interview and to facilitate any follow up questions based on the respondent’s answer; we chose to have two moderates present during both interviews. Multiple moderators have the perks of being able to listen more carefully and at the same time take notes, since the tasks can be divided between the two (Bryman & Bell, 2007). Having two moderators can have its downsides as well. As with all human interaction, there are chances of misunderstanding and disputes erupting, not only with the respondents but between the moderators as well. This can in return have a negative effect on the outcome of the interviews and consequently the whole study. To avoid and prevent this from happening we made early preparations and practice in order to take on discussions and settle any possible disputes in time. An additional risk for misunderstandings is due to the interviews were conducted in Swedish and thereafter translated into English.
To reduce the risk for errors, we recorded the interviews so that we both could listen to the answers multiple times while doing the translations. Hence, we put a lot of effort in reducing misunderstanding and misinterpretations that depends on the translation.

2.5.2 Focus group
As previously stated, safety motivation is influenced by all hierarchical levels within an organization. Thus, it is important to cover the perspective of the assembly line workers who are the closest to the manufacturing process and exposed to most of the risks. The focus group was held with employees from the assembly line at the same department as the production unit manager to make the study more credible and the findings more relevant. The focus group guide relied on the compilation of the theoretical framework, see 3.7, to ensure that the questionnaire is relevant for the study and supports the connection between the empirical and theoretical findings. The questions were open to facilitate discussion and different point of views from the respondents to enable divergent perspectives.

Focus groups are not suitable when the goal is to get a deep insight in the respondent's view but rather to focus on the dialogue and the interaction between the contestants (Justesen & Mik-Meyer, 2011). Hedlund et al. (2010; 2016) argue that safety motivation derives for example from the safety climate and the perception of safety behavior. It is therefore interesting to investigate how the respondents act as a group and react on each other’s opinions.

A negative aspect with focus groups is the peer pressure that can affect the respondents into not being truly honest about how they feel or why they act in a certain behavior. Unofficial leaders, which most often occur in groups, can affect others to not have the courage to speak up. Further, there is a risk that the respondents are not willing to talk condescending about the organization or the managers. One way we tried to handle this issue was to offer anonymity and assure that the respondent’s answers will not be published. However, the risk with peer pressure will still remain. The alternative is to conduct an individual interview with the assembly line workers. This would however be inappropriate due to the time constraint of the study but it would also fail to bring out the discussion we were aiming for. During the focus group session, every one of the respondents spoke their opinion regarding both positive and negative aspects, which might imply open attitudes and honest answers.

The focus group helped to get an understanding of the perspective of the employees and how they interpret that the managers motivate towards safety. The focus group session was recorded and there were two moderators present in each session, to ensure no information went missing and to facilitate for asking follow up questions.
The moderators were planned to function as a guide for the sessions and provide an unstructured setting to enable a free discussion to bring out different views and perspectives (Bryman & Bell, 2007). The chosen respondents had all worked there for a long time to ensure a deep knowledge of the subject that comes with experience.

Additionally, we thought that more experienced workers are less exposed to the possibility of peer pressure and they do not fear speaking their thoughts compared to a young or new worker. The numbers of respondents in the focus group were six persons, which is in the span of the recommended number of individuals in a focus group according to Bryman & Bell (2007). The focus group was held in one of the employees’ lunchroom located in the production site hoping of creating a safe and positive ambience inside the room.

For the same reasons as in the interviews, to ensure that any important information would not be lost during the focus group session and to facilitate follow up questions based on the respondent’s answer, we chose to have two moderates present. Additional risk for misunderstandings is that the focus group were conducted in Swedish and thereby translated into English. To reduce the risk for errors, we recorded the whole focus group session so that we both could listen to the answers and the discussion multiple times while doing the translation. Hence, we put a lot of effort and time in reducing misunderstanding and misinterpretations that depends on the translation

2.6 Analysis

Yin (2012) presents a method for analyzing qualitative data in case studies called pattern matching. This method starts off with key assumptions when formulating research questions and planning an analytical strategy for the analysis. During the data collection, adjustments were to be made regarding the composition and the direction of the study (ibid.). The pattern matching method is used to facilitate the comparison between the empirical data and the theory in order to get an understanding the safety motivation system (ibid.).

Bryman & Bell (2007) present two other general strategies when analyzing qualitative data; analytic induction and grounded theory. Analytic induction seeks a universal explanation of the phenomenon until no cases are inconsistent with the hypothetical explanation (ibid.). This approach starts out by formulating a broad definition of a research questions and later the hypothetical explanations are formed before the collection of the data (ibid.). Grounded theory is a “theory that was derived from data, systematically gathered and analyzed through the research process. In this method, data collection, analysis and eventual theory stand in close relationship to each other” (Strauss & Corbin, 1998).
The two central aspects is that the data is used to develop theory and that the used approach is interactive, meaning that the data collection and the analysis is proceeded in parallel and referring to each other (Bryman & Bell, 2007).

Our intention when conducting the analysis were not to formulate hypotheses, our research questions were used as a guideline when collecting data and the deviations in the empirical findings would not be used for defining or redefining an hypothesis and thus analytic induction was not a suitable approach.

**ANALYSIS IN THIS THESIS**

The analytic method used for this study is pattern matching, which is the most desirable method when analyzing case studies according to Yin (2012). We chose this approach since it fitted our strategy of analysis. We started out with key assumption of what creates safety motivation, through the six key factors by Hedlund et al. (2010; 2016). These factors were the base when formulating our research questions. The research questions and the data collection were analyzed in relation to the theoretical references. Thus, the pattern method is suitable when conducting the analysis of our qualitative data. Additionally, we used the pattern matching method when alternating between the annual reports and theories. To clarify the method of pattern matching in our study, the following steps were taken. First, the theory functioned as the base for formulating the research questions. The research questions were then used when gathering the empirical findings. The empirical findings were then compared with the theoretical references to enable an analysis of the findings.

The analysis is the last step in the method, which is to connect the empirical findings with the theoretical frame of references, hence analyze the findings and formulate conclusions. A qualitative analysis will be conducted based on the collected primary and secondary data through a deductive approach. The purpose of the analysis is to put the primary and secondary data in relation to each other in order to fulfill the objective of the study, and thereby provide the answers to the research questions. Further, the analysis presents how the empirical findings correspond with the theory and what the similarities as well as dissimilarities depend on.

Because of the study's deductive approach, the compiled theoretical references stated in 3.7 Compilation of theoretical frame of references, which builds on the six central factors stated in the research problem, will work as the base of the analysis. The empirical findings will be compared with the annual reports to get an understanding of how SSAB's safety goals, leadership, motivation system, etc., corresponds with the compilation of the theoretical reference frame.
We used triangulation in order to create a more reliable analysis and being able to formulate conclusions and recommendations. This was made by analyzing our findings from three perspectives; from the managers’ perspective, the employees’ perception and the theory that pervades the analysis as a whole.

We were also using multiple sources to investigate the same subject; interviews, a focus group and secondary data from the case company. A triangulated approach has the advantage of canceling out the limitations of one method by using another, and thereby crosschecking the findings (Bryman & Bell, 2007). The reason for using both managers and assembly line workers for the empirical findings was to investigate if the employees at different hierarchical levels within the company have the same perspective of safety motivation.

Qualitative data often results in a great collection of data, meaning that it is difficult to find an analytic path that will result in significance for the business or to show a true analysis (Bryman & Bell, 2007). To avoid this, the analysis was based on the compilation of the theoretical frame of references. This would help distinguish the important empirical findings that are to be compared with the theory and thereby develop a coherent analysis.

Figure 3. Scheme depicting how the analysis for this study was conducted.
2.7 Validity & Reliability

The concepts of validity and reliability origin from the field of quantitative research but are now considered to be of equal importance for qualitative studies to ensure a satisfactory quality of a study (Denscombe, 2009). They are regarded as the foundation for social research designs because of their great importance and relevance in establishing and assessing the quality of research (Ritchie & Lewis, 2003; Bryman & Bell, 2007; Denscombe, 2009). In practical terms, this means that when conducting a scientific study, it is important that the sources of information are reliable, precise and sufficiently detailed in order to ensure the study's validity and reliability.

Validity concerns the quality of the data (Denscombe, 2009) and it's often referred to the precision and correctness of a research reading (Ritchie & Lewis, 2003). Validity is generally explained as a concept with two distinct dimensions, internal and external validity (Ritchie & Lewis, 2003; Bryman & Bell, 2007).

Internal validity concerns whether or not there is a good match between the researchers observations and the development of the theoretical ideas (Ritchie & Lewis, 2003). In other words, it concerns whether you are “investigating what you claim to be investigating” (Arksey & Knight, 1999). External validity on the other hand refers to the degree to which the findings can be generalized across the social settings (Ritchie & Lewis, 2003). This criterion is problematic to qualitative research because of their tendency to emphasize case studies and small samples (ibid.).

Reliability is generally perceived as the concern of the replicability of the research findings and whether or not they would be repeated if similar or same method were used (Ritchie & Lewis, 2003; Bryman & Bell, 2007; Denscombe, 2009). Generally this involves an evaluation of the techniques and methods used to collect the data. The importance of reliability lies in the fact that researchers want the results to show difference in the thing being measured, and not due to inconsistency in the research process (Denscombe, 2009).
VALIDITY AND RELIABILITY OF THIS THESIS

We have in point 2.3 discussed the problematic of external validity and the difficulties of making a single case study generalizable. There we came to the conclusion that, in accordance with the arguments of Flyvbjerg (2006), there can be aspects that are generalizable from our single case study. If the study is heavily impacted by personal viewpoint and bias, the study is not generalizable which can be the case with interpretive studies. As we mentioned before, interpretivism implies that the primary data is inevitably influenced by the researcher's perspective and values. However, we have enhanced transparency by sending back the transliterations to the interview respondents as we found it of great importance to be unbiased when generating the primary data to enable generalizability. Concerning internal validity, our theoretical frame of references was based on scientific articles and function as the fundament for our empirical research. This means that the observation is relatable to the theory and thus we argue that we indeed have investigated what we intended to investigate and thus created a credible study.

To enhance reliability, the first step was to gather information about the adequate methods that can be used for this study. This information was gathered through instructional books written by reliable authors such as Denscombe (2009) and Bryman & Bell (2007) regarding business research methods. The different combination of approaches that makes up the method, were then selected and analyzed in relation to each other to ensure the quality of the research. The data collection were mostly conducted through the database from Linköping's University, UniSearch, to confirm that the data is accurate and recorded correctly. Regarding the secondary data about SSAB, we used accurate and reliable sources of information to enable a credible study.

To further strengthen the credibility of the study, the same interview guides were used on all participants. The questions were altered to fit into the respondent's position within the company but the question similarities encourage the study's credibility. The interviews and the focus group were conducted live to decrease the risk of misunderstandings and also recorded to ensure no information got lost. The choice of respondents was a crucial step when conducting a reliable study, hence we ensured that their knowledge was adequate and that all respondent had enough experience within the company to be sure that we received trustworthy and credible answers.
2.8 Research Ethics

A social research expects to be conducted in an ethical manner based on moral principles (Denscombe, 2009). A ground rule is that the researcher needs to protect the interest of the participants (ibid.). This means that the researcher should provide the participants with adequate information such as why and how the study is conducted. Ethics cannot be ignored, as it relates directly to the integrity of the research and the involved disciplines (Bryman & Bell, 2007).

Vetenskapsrådet (2002) have four ethical requirements for research. First, the respondents must be informed of the objective of the interview, their voluntarily participation and that everything they say will only be used for scientific reasons (ibid.). Second, the respondent must give his or her approval for being interviewed and also be informed that they can end the cooperation whenever they want (ibid.) The third ethical requirement is met when the respondent personal record is held anonymous and that the sensitive data is kept so that the person will remain anonymous (ibid.). The last ethical requirement is met when the collected data is only used for scientific reasons and not commercial means (ibid.).

Research Ethics of this Thesis

We used the ethical principles stated above as a framework of the requirements that has to be accomplished in order to ensure that the research was conducted in an ethical manner. Therefore we strived to follow all requirements stated in the paragraph above. This implies that our research is transparent, meaning that all participants were informed of the methods used, the purpose of the study and the need for their approval of their responses.

When contacting the respondents, we informed all of them that they were participating out of free will and that they could withdraw at any time. Before the interviews and the focus group, we asked for permission to record the sessions. The respondents were also offered to be anonymous, which the respondents from the focus group are. None of their answers, neither the focus group nor the interviews, will be published.

Another ethical aspect regards the secondary sources we used when creating the background and the theoretical frame of references. We have been clear with referring to the original author not to take credit for what is not ours. Likewise, we have used quotation marks and italics when using quotes in the text to clearly state what are not our own words.
2.9 Method Criticism

Critique to our chosen method is that there is always the possibility for moderators to be influenced by bias when conducting the interviews and focus group session. This might be reflected in how the questions are asked and how the answers are interpreted, and thus affect the objectiveness and credibility of the study. The moderators changed the order of the questions to enhance the flow in the conversation, accordingly to the semi-structured method, which could result in a question being missed. The interviews and focus group were conducted in Swedish and thereafter translated into English, which result in an enlarged risk for misunderstandings and misinterpretations.

The empirical findings were only gathered from one department at SSAB, the continuous casting, and from one production plant in Sweden; Luleå. If the number of respondents, departments and production plants had increased, the credibility of the study would also increase.

For example, interviewing the focus group closest manager, the supervisor, would have been favorable for the study. It would also be interesting to hear the views from other work shifts than the one we interviewed, due to that perceptions might lie within a group and not just on an individual level. The subjective opinions of the respondents

The scientific perspective and the design of this research implies that the phenomenon is studied through the interpretations and subjective thoughts of the respondents. The method of interview and focus group in combination with the scientific perspective of interpretivism implies that the findings are inevitably influenced by the researcher’s interpretations and values (Ritchie & Lewis, 2003). This can affect the generalizability and the credibility of the study.
3 FRAME OF REFERENCES

This chapter presents the theoretical standpoint for this master thesis that serves as the foundation for the gathering of the empirical findings as well as forming the analysis. The disposition of this chapter begins with a compilation of the theoretical frame of references to address the theoretical key factors of what creates safety motivation and to enhance an understanding of the following theories. The theoretical frame of references explains all the factors and aspects in the safety motivation system.

3.1 Compilation of the Frame of References

The theoretical standpoint in this study proceeds from the six central factors that together create motivation towards safety according to Hedlund et al. (2010; 2016). Other researchers have further supported these six factors, which enhances our systems' credibility. The safety motivation system is a remake of a similar model created by Hedlund et al., (2016) in an attempt of developing a more distinct and understandable one, as we found the original model by Hedlund et al., (2016) of being too complicated by consisting of too many elements. We have compiled the elements into larger key words in order to create an understandable safety motivation system. Our safety motivation system has safety motivation as a result from the aspects of safety participation and safety compliance, which is in opposite comparing to Hedlund et al. (2016) model. This is due to safety motivation is the desired end with a safety motivation system. Our system aims to facilitate the understanding of what creates safety motivation for the individual and explain how these six factors affect safety participation and safety compliance that increase safety motivation. The compilation is placed in the beginning of this chapter to enlighten the key factors that later will be explained in detail.

As mentioned, safety motivation is created by the six factors in the safety motivation system. Three of them are on an individual level; the individual's perception of safety behavior, intrinsic safety behavior and the perception of goal setting. The other three factors that creates safety motivation derives from an organizational level; the goals within the organization, leadership tactics and safety climate. The underlying aspects that are affected by the six factors above, strongly relates to an individual's motivation towards safety. These aspects are safety participation and safety compliance, which implies that the employees must understand the safety goals and be aware about the routines to enable a safe work environment.
Leadership can be seen as the starting point for safety motivation. The management are responsible for setting up goals, securing a safe workplace, motivate the employees and creating an effective line of communication throughout the organization. Additionally the management is liable for setting a good example regarding safety and thereby enables a favorable safety climate. This implies that the managers lead by example, to ensure all employees know about safety regulations and that they are followed. It also includes implementing a safety concern as a constant factor in the everyday work. The management is responsible for setting up clear and hard but achievable safety goals for the organization.

From the employees' perspective, a favorable safety climate implies that everyone has to take own responsibility of working in a safe manner and also help each other to perform the work tasks in a safe way. In other words, the term safety climate refers to procedures, practices and the perception of policies at the workplace. This strongly relates to the three factors that affect safety motivation on an individual level. For example, the factor that connects goals with safety motivation is the individuals' perception of goal setting.
The employees must feel that the goals are relevant and reasonable and that the organization is striving to fulfill them in order to affect their personal motivation. Further, the requirements for improvement are important for the perception of goal setting if the employees are to be motivated.

Safety motivation derives partly from the factors of perception of safety behavior and intrinsic safety motivation. The perception of safety behavior includes the individual’s perception of their participation and compliance in combination with the leadership when improving the workplace. It is important to ensure the employee’s participation in the safety work as it affects safety motivation considerably. The perception of safety behavior is largely affected by how the management communicates safety concerns and attitudes, which again stresses the importance of leadership for creating safety motivation. The intrinsic safety motivation is enhanced by self-preservation, meaning that the individuals are participating in safety improvements and take own initiative towards a safer behavior.

In summary, safety motivation starts on both an individual level and on an organizational level according to the safety motivation system. The perception of safety behavior, the intrinsic safety motivation and the perception of goal setting affect safety motivation on an individual level. From an organization level, safety climate, leadership tactics and the safety goals affects the motivation towards safety. All of these six factors affect the aspects of individual safety compliance and safety participation, which ultimately creates safety motivation among the individuals in a workforce.

3.2 Motivation

Motivation is a psychological term for the factors that evoke, shapes and direct the individual behavior towards various goals (Nationalencyklopedin, 2016a). Usually, a distinction is made between primary and secondary motivation. The first being biologically induced and the latter being formed through social and cultural learning (ibid.). Another, yet unanimous, definition of motivation is “the set of psychological processes that cause the initiation, direction, intensity, and persistence of behavior” (Fey, 2005).
3.2.1 WORK MOTIVATION

To motivate people in the workforce, a positive reinforcement is often used to create a positive consequence and thus increase the frequency of the desired behavior (Dipboye et al., 1994). Positive reinforcement will have the best effects when dispensed at an irregular basis so the workforce will not be able to know when to expect the incentive, therefore they will be more alert the whole time (ibid.). Negative reinforcement involves the removal of a negative consequence, such as critique, also in order to increase the frequency of the desired behavior (ibid.). Other ways to motivate employees to do what is desired is to use punishment when they are not behaving in a satisfying way (ibid.).

To encourage people in the work force, external motivational factors is often used. That is necessary for some employees to strain themselves to work hard and do a satisfying job, while for other employees it is crucial for them to overcome their aversion to do a difficult or tedious work task (Merchant & Van der Stede, 2012). Extrinsic and intrinsic motivations are distinguished based on the different goals or reasons that evokes the action, e.g. the motivation (Ryan & Deci, 2000).

3.2.2 INTRINSIC MOTIVATION

Intrinsic motivation is defined as "doing an activity for its inherent satisfaction rather than for some separable consequence" (Ryan & Deci, 2000). If an employee is internally motivated for a task, he will do the task because of the fun or the challenge entailed and not because of external pressure or an incentive (ibid.). Intrinsic motivation is often a base for education since it results in high-quality creativity and training. Therefore, it is crucial to know what factors that causes, or undermine it (ibid.). Behaviors that are intrinsically motivated are performed out of the person's own interest and is therefore the prototype of self-determined behavior (ibid.).

Intrinsic incentives derives from the satisfaction of completing an assignment and reaching a goal, whereas the motivation comes internally, meaning that nothing is given to the employee (Anthony et al., 2014). Intrinsic incentives are for example the sense of accomplishing a goal or achieving the desired result (Merchant & Van der Stede, 2012).
3.2.3 EXTRINSIC MOTIVATION

Extrinsic motivation is defined as “a construct that pertains whenever an activity is done in order to attain some separable outcome” (Ryan & Deci, 2000). Hence, extrinsic motivation is the opposite of intrinsic motivation where the motivation lies within the task itself. Extrinsic motivation occurs only when the individual expects an incentive or experience external pressure and control that are not represented of one’s self. The execution of the task is made because of an externally separable consequence (ibid.).

Extrinsic incentives state the employee gets his or her motivation externally, for example by financial incentives for completing an assignment (Anthony et al., 2014). Merchant & Van der Stede (2012) argue that extrinsic incentives are used when linking the results an employee can affect with an incentive, financial or nonfinancial, to influence the employee to act in a certain way.

3.2.4 INCENTIVE SYSTEMS AND ITS PURPOSE

Incentives are a performance-dependent reward in an attempt to align the employees’ self-interest with the organization’s goals and objectives (Merchant & Van der Stede, 2012). The incentives provide three benefits according to management control, these benefits are 1) informational for the employee to know what behavior that is desirable and important, 2) motivational and effort inducing for the employee and 3) attraction and retention of personnel (ibid.). This is in line with Maslen & Hopkins (2014), who argue that incentives influence priorities and behavior, which in addition taps on a variety of human motives, such as the need for approval and the need of being recognized. This means that incentives can be used as a motivational strategy for safety and accident prevention (Maslen & Hopkins, 2014)

Incentive systems are made to encourage and motivate employees to achieve and reach a predefined goal; it could for example be based on quality, productivity or profit for the company (Svensson, 1997). The purpose of the incentive is to create a more effective and better organization. The staffs are to be motivated to perform work tasks better and be rewarded when results are met. Therefore the incentive system must be designed so the employees are able to affect and improve their work units’ results (ibid.).

There are several different types of external motivations, here incentives, divided into the groups of financial and non-financial incentives. The financial incentives are mainly fixed pay, bonus and stock options. The non-financial incentives are on the other hand based on work satisfaction, such as attractive working conditions, flexible working hours and generous amounts of leisure time etc.
However, adopting only one type of incentives could cause considerable dysfunctional effects. For example, if you rely solely on financial incentives you may encourage short-term actions that are not in the long-term interest of the company. This often plays out when managers choose not to undertake promising long-term investments that will hurt short-term financial results (Anthony et al., 2014).

Group incentives are positive for creating a strong culture among employees and enable culture control for managers (Merchant & Van der Stede, 2012). The employee might be affected positively, and by peer pressure promote cooperation and start monitor each other in an attempt to sanction imperfect actions and behavior (ibid.). Additionally, the employees might also feel more included and engaged in the organization, which can affect the productivity positively.

On the other hand, group incentives can be less useful since they are not as effective as individual incentives regarding the effects (Merchant & Van der Stede, 2012). They are not as direct or strong as an individual incentive, since the employees who are receiving the incentive might not feel that they can influence results, of which the incentive are based on (ibid.). Group incentives will provide a diluted motivational effect when based on the performance of a large group, for example the whole organization, since no individual can affect the outcome (ibid.). Merchant & Van der Stede (2012) argue that group incentives also might increase the risk of free riders and slack. Another risk with this kind of incentive plan is that lower-level employees chance of receiving the incentive are much more uncertain and volatile and their motivation are not affected in a positive way (ibid.). Individual incentives might encourage competition and a will to enlighten their individual accomplishments instead of pointing out the organizations achievements (Merchant & Van der Stede, 2012). Competition can be very effective for effectiveness and efficiency (ibid.).

3.3 Motivation towards safety

Safety motivation is defined by Neal & Griffin (2006) as “an individual’s willingness to exert effort to enact safety behaviors and the valence associated with those behavior”. This definition states a relationship between safety motivation and safe behavior; the stronger the safety motivation are, the more willing employees are to practice safe behavior. Consequently, safety motivation is crucial for a safe workplace (ibid.).

As stated in the background, incentives can have a negative effect on process safety, which was the case in the BP oil spill where the safety focus was primarily on personal safety (Maslen & Hopkins, 2014).
Incentives are usually used as a strategic motivation tool to increase financial and business performance, consequently neglecting safety or minimizing its role to personal safety for the employees. Therefore, just as you motivate in order to reach corporate goals it can also be important to include an indicator in the incentive system that targets and supports safety (ibid.). Motivation towards a certain goal can only be achieved through learning and involvement; hence, the managers must actively involve the personnel in the work of developing procedures and provide knowledge about safety for it to be obtained (Hedlund et al., 2010). Additionally, the managers must provide a clear standpoint and an open communication with the employees to influence them to improve their work climate (ibid.). Hedlund et al. (2010) argue that safety motivation starts with good leadership tactics and distinct goals that will affect the work climate and further, safety motivation, see figure below.

The term safety climate refers to the procedures, practices and the perception of policies at the workplace (Hedlund et al., 2010). Clarke (2006) defines safety climate in correspondence with the frame of references of the behavior and attitudes of individuals and groups of employees, and she further argues that the safety climate will affect the employee's accident involvement. Safety participation and safety compliance are voluntarily behavior carried out by the employees, and is based on safety motivation. The leadership has a crucial role when it comes to promoting safety, for example, safety participation leads to higher safety motivation on an individual level, since participation are rewarded and encouraged and not just following procedures (Hedlund et al., 2010). Safety participation, which is important for a safe behavior, is positively affected by participation motivation and safety knowledge (Clarke, 2006). This put even more focus on the management and their capability to promote safety (ibid.).

There is a significant relationship between safety participation and safety motivation since the engagement in safety activities will increase the safety motivation (Clarke, 2006). Clarke (2006) argues that safety participation will result in organizational rewards, which further increase the motivation, this positive effect might influence other work related attitudes and thus contribute to enhancing the safety climate. Safety compliance will reduce the risk for accidents associated with unsafe practices and violations of rules (ibid.). Safety participation and safety compliance are important factors for motivation towards safety, and thus the likelihood of occupational injuries and individual accidents involvements will decrease (ibid.).

Safety participation is a direct source of motivation for the workers to comply with safety standards, hence a direct relationship with safety participation and safety compliance exist (Fernández-Muñiz et al., 2014).
This is due to the employees’ active participation in improving the work conditions will positively affect the safety compliance to safety standards and procedures (ibid.). Additionally, safety participation has a direct positive effect on the employee satisfaction. Fernández-Muñiz et al. (2014) therefore argues that the more involved an employee is and the more actively he or she participate in the safety work, the greater his job satisfaction will be.

3.4 GOALS

Goal setting is a way to motivate workers, to reach a predefined destination (Locke, 1968). This means that goals can be seen as the objective or aim of an action (Locke, 1991). Goals can also be divided in an internal and external aspect. The internal aspect refers to goals as an idea and a desired end. Externally, they refer to the object or condition sought, for example a certain performance level (ibid.).

There is a strong relationship between task performances, the intentional behavior and reaching a conscious goal. Locke (1968) states that the harder a goal is, the better the outcome will be. This is based on three findings; 1) difficult goals result in higher level of outcome than easy goals, 2) specific difficult goals result in higher level of outcome than ambiguous goals, and 3) choice behavior are regulated by behavioral intentions. Locke (1968) argues that setting goals, that are hard and specific, are crucial for the work outcome.

Svensson (1997) opines that a goal has to be both meaningful and describe an essential result for the organization to be considered as good. The purpose with the goal is to give meaning to the organization and direct both the organization and all employees towards achieving the long-term goal through the short-term goals (ibid.). A satisfying goal should be a challenge and encourage organizational as well as personal development (ibid.). Svensson (1997) argues that there should be a connection with the desired outcome, the goal, the resources and production to enable measuring the effectiveness of the company.
3.5 SAFETY MOTIVATION THROUGH LEADERSHIP

A strong leadership and the safety standard conducted by the leader is shown by studies to have a large impact on safety motivation (Andriessen, 1978; Clarke, 2006; Baker, 2007; Hedlund et al., 2010; Hedlund et al., 2016). The leaders play a significant role when promoting safety at work (Andriessen, 1978). Andriessen (1978) refers to a study on the relationship between style of leadership and safety. The conclusion to this study showed that accidents occurred relatively more when: “1) the leader behaved autocratically; 2) the communication between leader and group members was poor; 3) the leader did not give clear directives; 4) the leader was considered to be less capable” (ibid.).

A second study regarding the safety of work behavior itself, found that work will be done more safely when the following points apply simultaneously: “1) safety is important to the supervisor; 2) the supervisor gets along well with his men; i.e., can prevent conflicts in the group and is really involved with his men; 3) the supervisor is a good organizer; 4) the supervisor can influence his superiors” (Andriessen, 1978). The last item in particular stresses the significance of the policy among the top management, which will affect the behavior of supervisors and workers (ibid.).

As earlier mentioned, the safety climate can affect the number of accidents the employees are involved in (Clarke, 2006). A key element when creating a positive safety climate is related to the employees’ perception of the management values and their commitment to safety (ibid.). Thus, the safety climate will encourage safe behavior and safety participation through the employees’ perception of their managers’ safety values (ibid.). This puts a large focus on the behavior and attitudes of the managers. Clarke (2006) argues that the safety climate within an organization has a significant, but lagged, effect on the safety participation but not on safety compliance. This means that the safety climate has an important role when influencing the adherence and the devotion to procedures (safety compliance) but a crucial role when influencing the employee commitment and involvement in safety work (safety participation) (ibid.).

Clarke & Ward (2006) argues that a supportive and influential leadership style affect the employees attitudes and behavior. These influence tactics can be used to gain support for safety policies and to motivate the employees to implement them (ibid.). Safety compliance can be controlled and influenced by the managers in a formal way but safety participation on the other hand is a voluntarily activity and is therefore influenced by leadership tactics to a large extent (ibid.). There is a strong relationship between the leadership style and the employee taking safety initiatives, which stresses the importance of it (ibid.).
This theory is in line with Andriessen's (1978) study regarding leadership style and safety; the managers can strongly influence the employee’s behavior. This emphasize the importance of the leadership even more since Donald & Young (1996) stress that the human factor is an essential part of the organizations performance. This means that the leadership is a critical factor for safety motivation and thus, the safety performance.

### 3.6 Risk Management through Leadership

Risk management is an important leadership tactic when creating a safe work environment. Risk management is defined as an activity that aims to locate, identify and quantify the various risks that the company faces and takes appropriate measures to reduce or eliminate them to the extent deemed adequate (Nationalencyklopedin, 2016b).

An unsafe behavior is often the results of underlying defects in the organization and management systems that predispose workers to act unsafely (Kawka & Kirchsteiger, 1999). Safety participation and safety compliance directly depends on the level of development of the risk management, since this management consists of practices that focus in the improvement of workers’ motivation, awareness, knowledge and skills. A proactive risk management does not alone have to lead to a reduction in accidents or injuries; it can however motivate the employees to safety participation and safety compliance with the safety rules by lowering the accident rate. This can in return lead to a source of motivation for the workers to comply with the safety standards, since employee’s active participation in the improvement of work conditions and in safety decisions show to positively affect the compliance with safety standards and procedures (Fernández-Muñiz et al., 2014).

The leadership style and leadership tactics directly affects a proactive risk management. The leadership style should reflect the management’s commitment to workplace safety by allocating both human and financial resources in order to make the implementation of proactive risk management possible (Fernández-Muñiz et al., 2014). The leadership style of being a role model, being supportive and show commitment is of great importance regarding improving safety motivation since it has a direct, positive effect on safety participation and safety compliance (ibid.). The leadership tactics can also influence the employee satisfaction by transmitting that the management is truly concerned about their health and well being at work (ibid.). According to Fernández-Muñiz et al. (2014), an inspirational and committed leadership style will affect the safety behavior via the risk management and the safety outcomes via safety compliance, and thus the safety motivation among the employees.
3.7 FACTORS EXPLAINING SAFETY MOTIVATION

There are three factors that explain why, and how, safety motivation occurs according to Hedlund et al. (2010). These are the perception of safety behavior, intrinsic safety motivation and the perception of safety goal setting (ibid.).

PERCEPTION OF SAFETY BEHAVIOR

Perception of safety behavior includes the individual’s perception of their participation and compliance in combination with the leadership when improving the workplace (Hedlund et al., 2010). It also includes the perception of participation and responsibilities for the employee, the co-workers and the management (ibid.). The management affects the employee's perception by communicating safety concerns, knowledge and empowering attitudes (Hedlund et al., 2016).

The perception of safety behavior is additionally stressed by Clarke (2006). She states that the employees’ perception of the safety behavior among the managers will largely affect the safety climate and further the employees' safety motivation, through their perception of the managers’ safety values (ibid.).

INTRINSIC SAFETY MOTIVATION

Intrinsic safety motivations derive from the individual perception of the workplace's need for improvements and the individual's degree of participation (Hedlund et al., 2010). Further, the intrinsic motivation for safety includes the perception of participation in safety improvements as well as the significance of consultation and initiative from the individual (ibid.).

PERCEPTION OF SAFETY GOAL SETTING

This factor involves the perception of how the firm sets goals for safety and works systematically towards them (Hedlund et al., 2010). Intrinsic safety behavior derives from the individual perception of the firm's presence and fulfillment of goals, the requirement of performance, appreciation from managers and workplace improvements (ibid.).

These three factors (perception of safety behavior, intrinsic safety motivation and perception of safety goal setting) has been the base when creating the model seen below (Hedlund et al., 2016). Safety knowledge has been incorporated as well as safety training, which influences the safety behavior and safety motivation. The aspects of extrinsic motivation and intrinsic motivation are added to illustrate how it affects safety behavior and finally, safety motivation. The figure below is a remake of Hedlund’s et al. (2016) model of how safety motivation is created.
Figure 5. A path diagram depicting the factors that creates safety motivation. Thereafter leading to a safe workplace through safety participation and safety compliance. (Andersson & Paqarizi, 2016).

To summarize this theory, the perception of safety behavior, intrinsic safety motivation and perception of safety goal setting are highly influenced by the individual's perceptions and participation. If the employee is having a high degree of participation, it is likely that he will have an increased motivation for safety (Hedlund et al., 2016). Additionally, the managers affect the employee to a great extent by their behavior, goal setting, and enabling employee participation and provide knowledge (ibid.).

Baker et al. (2007) argue that a positive safety climate is important for safety in the workplace. The recommendations for a good process safety climate stated by Baker et al. (2007) regarding factors such as leadership, employee empowerment, incorporation of process safety into management decision-making, are much in line with the above mentioned factors by Hedlund et al. (2010; 2016).
4 THE CASE COMPANY SSAB

This chapter will present the case company, SSAB, the production process and production risks. The chapter additionally handles the safety goals within the company and the proactive safety work.

4.1 WHY IS SSAB AN ADEQUATE CASE COMPANY?

SSAB was chosen since it operates in a hazardous business with a manufacturing process that includes high risks on a daily basis for the employees and the surrounding environment. The company deals with both process- and personal safety issues. SSAB fulfilled all our requirement of 1) being Swedish, 2) operates in a hazardous business (steel manufacturing), 3) having high safety standards and 4) accidents do occur. This makes it an adequate company to conduct a study on regarding safety motivation.

4.2 PRESENTATION OF SSAB

SSAB is a global Swedish steel firm with ancestry from 1878, with headquarters located in Stockholm. They are a leading producer of high-strength steel with main productions plants in Sweden, Finland and the US and has approximately 16 000 employees in 50 countries. They strive for global leadership in value-added high-strength steel, being the most innovative firm, building long-term customer relations and being a globally recognized brand. SSAB’s vision is to create a stronger, lighter and more sustainable world. SSAB is listed on the NASDAQ Stockholm and had net sales of 60 billion SEK in 2014. (SSAB in brief, 2016)

Figure 6. Illustrates where SSAB production sites are located as well as sales coverage, the production sites in Sweden are in Borlänge, Oxelösund and Luleå.
4.3 SSAB ONE

SSAB One is a shared management philosophy with the objective to live up to SSAB’s vision of building a stronger, lighter and more sustainable world (About SSAB, 2016). SSAB One encircles SSAB in order to verify that the company’s values and principles are sculptured and conducted in the same way everywhere in the organization (ibid.).

“SSAB ONE enhances the company’s approach to improvement work by presenting a fresh mindset, a mindset that is built on eliminating barriers as a function or hierarchy and cultivating a highly involving and cooperative climate where all employees get to have an impact on the future of SSAB” (About SSAB, 2016).

SSAB One is a new way of controlling the company with its base in the concept of lean (the service manager). It is a new way of motivating employees towards being more engaged with the company and with the job of improvements for both safety and for productivity and efficiency (ibid.). When working in accordance to SSAB One, there are criteria for the employees to live up by. These are; being a good role model, creating results, contribute in the work for improvements and generating energy as well as being a team player with the ability to have self-perception (ibid.).
4.4 STEEL PRODUCTION

The production sites in Sweden use iron-ore and are blast furnace based. The blast furnace is filled with iron ore, coke and coal that is heated and reduced so liquid metal can be recovered. Next step is sending the hot liquid metal to the desulfurization and throughout the manufacturing chain to the BOF converter where alloys are added to the steel. The steel are poured into a large container that holds approximately 140 000 kg liquid steel at 1500° C and then sent to the CAS-OB for a last adjustment and rectification with alloys before it is sent to the last step in the chain, the continuous casting. The continuous casting department produces a long continuous piece of steel. It is cogged into more manageable pieces called slabs and laid to cool off before they are sent to the customers.

![Diagram of steel production line from iron ore to steel.]

*Figure 7. Illustrating the steel production line from iron ore to steel.*

THE MANUFACTURING PROCESS – CONTINOUS CASTING

This section explains the manufacturing process in the continuous casting, since this is the department where the employees from the focus group and the production unit manager work. When the steel in the ladle reaches the continuous casting it has passed all the other stations, from the melting in the blast furnace to the CAS-OB where alloys have been added to give the steel the specific characteristics of this particular charge. A crane then lifts the ladle up into the casting tower so that the steel can be drained into the molding box, where temperature and quality controls are made. From the molding bow, the steel flows into the chill and further down in the machine where the steel cools down and is formed into a long string, this process is called continuous casting. When the steel comes out of the machine, the string of steel has cooled down enough so it can be cut into smaller and more manageable pieces called slabs. The slabs are ready to be sent to the customer as soon as they have cooled completely.
4.5 Production Risks

The personal risks mostly involve extremely high temperature due to the process of melting ore. The temperature on liquid steel are between 1200°-1500° C. Besides the risk of burns, the employees are exposed to poisonous gases such as benzene and carbon hydroxide, therefore there is a requirement for gas mask and gas detector attached to your work wear. There is a broad spectrum of personal risks that is linked with the different work duties. However, due to that this research is based on the last step of the production, the continuous casting, the focus will be on the main personal risks that are evident there.

Due to the manufacturing process, SSAB has the risk of causing larger emissions of carbon dioxide than what is permitted. An additional hazardous risk is the possibility of sulfur dioxide or benzene emission, which would be very harmful for the environment. The use of hydrogen and oxygen, among other gases, can cause explosions if not handled correctly. The production causes decay products, for example tar, that are both highly flammable and poisonous. This places a high demand for safety.

4.6 Safety Goals

SSAB strives to be the safest steel company in the world and the goal concerning safety is zero accidents per year and zero work related diseases or injuries (SSAB Annual report, 2015). Their highest priority is to ensure a safe and secure environment for all employees, entrepreneurs and visitors (ibid.). To obtain this goal of zero accidents, SSAB has multiple safety regulations aside from following the Swedish work environment health laws. SSAB have a risk management department that assesses all risks within the company (ibid.).
SAFETY PRECAUTIONS

At SSAB, all employees have a personal responsibility of working in a safe manner every day. This is a fundamental requirement in order to work for SSAB (SSAB Annual report, 2015). Safety for the workforce is an important part of the operation and it’s largely implemented throughout the management and organization (ibid.). To achieve the goal of zero accidents per year, SSAB has stated the following points:

- Ensure that security is considered in all activities and decisions throughout the whole firm.
- Cooperate to prevent accidents and work related diseases by identifying, assessing and eliminating the risks.
- Systematically identify and eliminate the underlying causes of the occurred accidents and events, in purpose of preventing them from happening again.
- Ensure so that the management are responsible for the workplace environment. This implies that the managers must stop the work tasks to instruct the colleagues or the suppliers if the work is not conducted in a safe manner. All work that is not carried through in a safe manner will be stopped.
- Ensure that all managers lead by example. They are responsible for the working environment and must therefore be a good role model.
- Fulfill or exceed all the implemented rules and requirements stated by SSAB.
- Set clear goals and carry through with regular monitoring to ensure that the goals are met.

Further steps towards the goal of zero accidents per year is a safety unit that was formed in the last couple of years, that is supposed to work on a local basis to support the everyday safety work (SSAB Annual report, 2014). Every SSAB manufacturing unit has their own firefighter department and emergency number to reduce the impact if an accident occurs.

Due to the manufacturing process risks, special work gears are mandatory for the employees. The work gear includes flameproof clothes, from the underwear, shirts, socks to trousers and jacket. All employees must wear helmets all the time as well as boots with steel toecap. In certain parts of the production chain there is also a mandatory requirement for gas detectors and safety goggles.
5 Empirical Findings

The empirical findings are based on two interviews with managers; the service manager and the production unit manager, and one focus group with employees from the continuous casting, all employed at SSAB Luleå. The disposition is of descending hierarchical order, starting with the service manager Peder Sundbom, followed by the production unit manager Lotta Jakobsson and last, the focus group with assembly line workers from the continuous casting. The interview questionnaire is based on the safety motivation system to connect the empirical findings with the study's objective and research questions.

5.1 Interview - The Service Manager

Peder Sundbom is the service manager at SSAB Luleå. He has worked at this position since October 1st, 2015. His previous occupation was at business service, SSAB Borlänge, and he has previously worked at Plannja, within the SSAB Group, for 25 years. Sundbom has gradually worked his way up from the beginning as a truck driver, to being union representative and so on. His current occupation as service manager has in this spring included multiple negotiations with the metal union due to the cutbacks SSAB are facing because of low profitability. Regular job assignments for Sundbom, as a service manager, includes human resource management, staff planning and human capacity building. The following empirical findings are based on the interview conducted with Peder Sundbom, the service manager at SSAB Luleå.

5.1.1 Work Motivation

Initially, the service manager points out that SSAB sees safety as their main priority even at times when the company is facing financial problems. He stated that there is always a large focus on safety and that all managers motivate towards a safe behavior. For example, the managers hold a daily meeting where they go through mishaps, accidents and safety related goals. For SSAB, safety is not only about accidents but also about taking care of the workers out on the assembly line and ensure that they both physically and mentally feel good every day; before, during and after work. This is not only in purpose of motivating the employees to work, but also due the fact that a person that feels good is most likely to perform a safe and satisfying job.

Besides personal health, there are other motivational benefits of working at SSAB. One of these is the internal mobility, i.e. the possibility that within SSAB change job position if desired, to develop and educate the workers further. Much of the work at the assembly line is based on knowledge and therefore one of the goals for SSAB is to have a low employee turnover.
The internal mobility is a way for SSAB to keep the employees and the knowledge within the company.

When it comes to safety motivation through financial incentives, the service manager argued that such a system would be counter-productive in regards of safety. He based this argument on the fact that the workers, in order to achieve a particular safety goal and thus get the reward, would choose not to report accidents. The decrease in reported mishaps and smaller accidents would consequently have implications on the safety work. There are no financial incentives for production either, because the dynamics and the relationship between the assembly line workers would be harmed because all employees can’t contribute equally to the production. The service manager argued further that productivity bonus systems and other external financial incentives are withdrawn, since SSAB does not have the necessary financial resources to apply these systems in times of poor profitability. In order to motivate the employees despite the lack of a financial incentive system, SSAB has incorporated the idea that every employee has two jobs parallel to each other; first the regular everyday job and second, the job with workplace improvements. This aims to encourage the employees’ engagement and participation in improvements and ideas.

Moreover, SSAB tries to motivate the employees by SSAB One, which is a business control tool with its base in the lean concept. During the times of lower profitability it is harder to motivate the employees and because of that SSAB lose a lot of competence.

5.1.2 SAFETY GOALS
The aim with SSAB’s safety goals is to reduce the ill health number in general; the ill health numbers include both larger accidents that cause LTI (Lost Time Injury) and smaller accidents such as crushing- and slipping injuries and smaller burns. The safety objectives varies from short-term goals that span over one year and long-term goals that are set high but realistic; the goal of becoming the safest steel-manufacturing firm in the world. Other safety related goals are meant to reduce the ill health numbers in general, reduce the number of accidents, make the employee feel safe and secure in the workplace and provide rehabilitation when needed. The goal with the rehabilitation process is meant primarily for the employee to get his health back and be able to return to his job duties. If this is not possible, the employee is provided with another temporary job until they can get back to their original occupation or they will be offered a new permanent job. Vacancies are first and foremost to be filled from the company’s rehabilitation list before the option of external recruitment is taken into consideration. These rehabilitation steps are meant to keep the employees within the company, but also to develop personnel between the work units.
The service manager explained further that the more you know about the production chain the more valuable for the firm you become, but it will also increase the enjoyment for the employee to work.

It is common to have a conflict between safety and production goals, for SSAB this conflict of goals has however been reduced today compared to a couple of years ago. This is due to the strong signals and directions from the owners of SSAB and the management to actively strive to perform a work task only when it’s safe. The main reason for this safety devotion is the fact that when SSAB is compared with others from the same branch, they are statistically not as good as they want to be.

The safety goals are followed up every year with various safety measures being reviewed and action plans being developed. He added that despite the fact that the managers have conveyed the safety objectives through the regular chains of communication, through managers to the workers, the workplace meetings, the safety committee and the metal union, not all employees’ are aware of these goals.

5.1.3 RISK MANAGEMENT

Every day at SSAB the production unit manager, the technicians and the supervisor hold a meeting with safety briefing where earlier day's events are discussed as well as other current safety issues, such as evacuation, LTI, mishaps, incidents etc. The risk management is foremost based on mapping out when and where incidents and mishaps occur in purpose of preventing these risks so the possibility of these happening in the future is reduced or diminished. To facilitate this job, it is required by the all workers, from managers to assembly line workers, to report all accidents and incidents in the computer-based system for managing accidents; MIA. If an accident has led to sick leave it is also required that the supervisor intervenes and provide the upper level management with information regarding the events, why it happened and what can possible be done about it. Every accident and mishap is supposed to be reported in MIA, no matter how small it is. The service manager meant that the increase in incidents being reported in MIA, implies that they have succeeded in implementing a strong safety focus within SSAB.

He believed that many accidents, especially the smaller ones, happen because the workers are doing the job in the most comfortable way, for example not bothering to walk around an obstacle on the ground and instead stepping over it and therefore fall. Another reason may also be that the employee wants to do a good job and work quickly and thus are more likely to cause an accident. This is the opposite from the directions the management has given to the workers; “safety should always be prioritized before productivity”.
To promote safety, there are explicit directives from the management to be followed by the employees. There is for example the 30 seconds rule where the employee stops and thinks through all risk factors before making a dangerous job. Even if the directives are followed at all time, the safety concerns should always be incorporated in the employee's mindset. However, the directives are sometimes not pursued due factors such as stress, pressure to reach a certain productivity objective etc.

5.1.4 Leadership

SSAB one is a new leadership philosophy where the management shifted the role from being hierarchical to a more flat, supportive and coaching one. Unfortunately, this has not been greeted as something positive among the employees. They think that SSAB One has only brought more paper work, which differs a lot from how the management wanted the shift to be perceived. SSAB want to promote a better work climate through SSAB One by implementing employee criteria of being a good role model, creating results in the production, have self-awareness, contribute in the improvement work, be a team player as well as generate energy.

The service manager explained that the ability to be sensitive and responsive is a very important quality for managers. This means that the leadership should enable a two-way communication that is open and transparent. He added that every employee should dare to speak up to the managers, even if it involves criticism or just questioning something. Being curious and questioning is not seen as negative attribute of a worker, it rather reflects engagement and taking interest in the work, which is something that SSAB wants to promote more. The service manager further argued that as a manager, we always have to motivate the employees towards commitment. This can be done by trying to make the employees enjoy work even more than they do. Further, a forgiving attitude is important according to the service manager, because everyone does wrong at some time, especially as a newly employed.

The current topic at SSAB Luleå is of gender characteristics. The topic handles how we are treated and how we want to be treated at work. SSAB has promoted gender equality by campaigns trying to attract more women into applying for jobs in their organization, with to the goal of hiring 50 % women. Additionally, SSAB is working with attitudes and jargon among the managers and employees to address how they behave towards each other in order to enhance a positive work climate.
5.1.5 SAFETY CLIMATE

The prevailing climate at SSAB is investigated through surveys taken by both employees and substitute workers. These surveys are made to enlighten topics such as sexism, equality, racism, bias and other issues. It has come to the management knowledge that some people have been badly treated, which is rare but never acceptable at SSAB. In general, these surveys show that the assembly line workers at SSAB thrive alongside their co-workers and managers. Besides the gender and genus education the management takes, there is no further plan in how to strengthen the climate at SSAB. However, the service manager believed that the employees need more motivation and encouragement after this spring in connection to the latest staff-cutbacks within SSAB.

The general climate at SSAB can be perceived as hard and masculine which is true to a certain extent. This means that following safety regulations is sometimes seen as less manly, for example ignoring to put on safety goggles etc. The service manager said that thoughts such as “why should a manager come and decide what I should wear” exist among some of the employees. The macho-culture is however diminishing due to the recruitment of more women. The recruitment part is an effective way to get a more tolerable and tolerant climate. A way to recruit women in this male dominated business is during the summer, SSAB has the goal of hiring 50 % women during the vacation period. SSAB has set up this campaign in order to attract more women and it has been very successful. The service manager argued that the hiring of more women has been met positively among the employees but he is also aware that there are men who feel excluded and not as welcomed as women to apply for a summer employment at SSAB.
5.2 Interview - The Production Unit Manager

Lotta Jakobsson has been employed for SSAB since 2001. In February 2012 she got promoted to the position of production unit manager for the continuous casting. The production unit manager spends much of her time in the office with administrative tasks such as goal strategic initiatives, safety issues, facility-specific issues at the CAS-OB and continuous casting, and quality monitoring. Jakobsson also participates in the daily management of the production where she goes to a daily meeting with the supervisor and the technicians. These meetings focus primarily on the quality- and production issues. The following empirical findings are based on the interview conducted with Lotta Jakobsson, the production unit manager at the continuous casting, SSAB Luleå.

5.2.1 Work Motivation

On the question of how the management at SSAB motivates their employees, the production unit manager responded with; "if it only were for the salary, I do not know how many would still be here". By this she meant that there is much more than just the salary that makes people come here to work. The production unit manager believed that the professionalism, pride of SSAB, and a good atmosphere at work are the biggest factors of what influence the employees’ motivation. The possibility for an employee to influence the organization is very important for one’s motivation, as well as the ability to make decisions, be responsible and take responsibility. The production unit manager also states that the varying workload, depending on the overall situation and economic cycle, affects the work motivation positively for the assembly line workers.

The production unit manager perceived no larger difference in the employees’ motivation after the old incentive system was removed. That system meant that the employees could submit their suggestions for improvements, which SSAB then valued and depending on how good the suggestions were they paid out a sum of money to the employee. However, there is an ongoing discussion on how improvement work should be conducted and how motivation is created when the employees do not receive financial incentives for it. In the same time, the production unit manager thought that financial incentives do not work in motivating employees to come up with suggestions for improvement or improvement work overall. She believed that recognition and acknowledgement in the sense of being seen and praised is more important. The workers are still stuck in the past of receiving money as an incentive for their improvements, which complicates the work motivation now when the incentive is only through appraisal. There is an ongoing struggle of maintaining a functioning feedback.
Safety motivation is not affected by financial incentives in the same way as motivation towards improvements. She believes that the shift teams and their colleagues create safety motivation internally because they want to improve their own working environment and create a safe workplace.

At present, a new payroll system is under development for the assembly line workers at SSAB. This system is not intended to serve as an extra incentive, but rather to help the managers to reward and encourage desirable behavior; it becomes a motive for the extra money and thus creates motivation. This payroll system is an extension of the current "block system", which has shifted the focus from what you do, to how you do it. This system is not controlled by what tasks you are able to do. The extra salary is based on SSAB's own employee criteria and how you perform the work you do, meaning that the safety aspect is included as a major part of it. The SSAB employee criteria is that you should be a good role model, creating results in the production, have self-awareness, contribute in the improvement work, be a team player as well as generate energy (the service manager). The production unit manager argued that because this salary add-on is a brand new concept, the guidelines and directives must be clear. The idea is that the supervisor nominates who should receive the additional wage and why. There is still an ongoing process of what the precise criteria for receiving this salary add-on and how it should be paid out. The production unit manager felt that this new salary-concept has received good response among the employees in the production.

### 5.2.2 SAFETY GOALS

The main safety-related objective for the assembly line workers is zero LTI, which means zero accidents that results in loss of working hours (the production unit manager). Furthermore, one objective is that each worker must complete at least one safety inspection, and being present in at least one risk assessment- and risk management session. There's always a discussion of how to make the safety work function even better and the question of how we make this work in practice at the assembly line level.

The management conveys the goals to the assembly line workers once a year. However, most of the safety goals are standardized and very comprehensive which leads to that many of the workers are aware of them. A follow-up of the goals takes place through an informative board that serves as a link between the assembly line workers and managers. There are supervisor's committees, management groups and safety inspection meetings that handle everything related to safety such as safety goals and safety ratios. In more intractable goals, action plans are prepared in addition to the regular work.
The production unit manager explained that there might be conflicting goals between productivity and safety because of the general big focus SSAB has on productivity and quality. However, this has been improved over the years and now the greatest focus lies strictly on safety. Even quality should be prioritized over productivity, a high quality is more important than keeping the production going just for the sake of it. This safety mentality has been really difficult to implement in the assembly line workers mindset, as it is often perceived as being wasteful and time consuming to stop the production. The workers strive to constantly keep the production going, and they usually do everything they can to avoid stopping it. “We explain to the workers that they must stop production not only when it comes to one’s safety but also when the quality is lacking”. Routines and clear directives facilitate the assessment of when the continuous casting and other production should be stopped. Looking at the bigger picture, the production unit manager added that there is good balance between productivity and security related goals, and seen in relation to the workload there is a large focus on safety.

5.2.3 Risk management

From the management side, there are clear directives on safety regulations regarding work gear, such as helmet, eye protection, proper shoes and fireproof clothing (the production unit manager). She stated that it works pretty well, except for the usage of eye protection, i.e. safety goggles. The adaption to these requirements takes time, as some of the directives are relatively new. Earlier, the workers had to use the safety goggles at certain dangerous moments and not at all times like it is today. Safety goggles can also be a problem for the workers that have a visual defect. This problem is handled by raising the issue of safety goggles and other protective equipment in complement to the overall focus on safety.

When the assembly line workers do not follow the safety regulations, there are certain procedures for the management to follow. The production unit manager perceived that the management is often too nice; “when someone does not have the right protective equipment on and thereby not following the safety regulations, they will be reprimanded and if they still do not follow the directives they will be reprimanded again and so on”. The service manager argued that these issues should be checked harder and that the safety oversteps should lead to real consequences so that hopefully these employees will start to follow the safety regulations. Furthermore, the service manager meant that if it’s allowed to overstep the safety regulations, it is practically like removing safety concerns all together.

The reason for neglecting the usage of certain safety regulations is believed by the production unit manager to be due to that employees over time have developed a sort of over confidence in the way of thinking: "I’ve worked here for 30 years and it has always gone well".
Another reason is that you are copying the behavior of others, both consciously and unconsciously. It also happens that others are endangered because of the ignorance regarding the safety regulations, which is absolutely unacceptable.

The production unit manager explained that the most common accidents in the continuous casting are to get something in the eye and slipping- and tripping accidents. Considering that there is liquid steel in the workplace, burns are perceived as the most hazardous risk. However, steel related accidents are very rare. These risks are managed by the requirement that every employee should be aware of the risks involved in the job, and the precautions that needs to be taken. Furthermore, it is important to report every incident in MIA to keep statistics in order to see where the risks are and fix them before any accident take place. There has been a notable increase in the reporting of incidents in connection with the increased focus on safety.

5.2.4 LEADERSHIP

The leadership aspect is very important for safety. It is good to remind and to be reminded if one happens to forget any aspect regarding safety. This can however lead to only chasing the problems instead of focusing on what is actually good (the production unit manager). It is important that everyone takes responsibility and reminds each other of the safety regulations, regardless of who it is, in order for us to create an even safer workplace.

The production unit manager stated that the communication must be improved, for example through the sign-lists that ensures that all parties have access to the information put forward. In this way it is possible to keep track of what the information tells us, from who it is and who will be affected. This further facilitates verifying if the information has been received, it is also makes it easier for the concerned parties to submit comments regarding the new information. Moreover, the production unit manager said that there should be improvements of “seeing the needs”, in addition to improving communication.

The supervisors are immensely important seen from a safety perspective because they are always there if an accident happen. They have the responsibility to take care of any injured, call the ambulance, etc. It is imperative that the supervisor understands the importance of safety because of the responsibility they have. They also need to be a good role model as they are always in the limelight. When there is a discussion of why certain rules exist the supervisor must be well informed about the underlying causes in order to communicate these in a credible manner. The production unit manager indicated that there is never a problem of getting through with the new safety directives, as the supervisors often request it themselves and they usually appreciate the directives given.
5.2.5 SAFETY CLIMATE

The production unit manager explained that the management at SSAB now has recognized that problems related to jargon, prejudices and attitudes exist. There is an ongoing discussion to draw attention to these problems and how they should be handled. An important part of this work is the survey that all summer employees fill in at the end of each summer. This is due the fact that these opinions are very sensitive and therefore it is difficult for managers to be reached by this type of information; “it would be impossible to just walk into a control room and ask how people think about these things” (the production unit manager). It is important to have open communication so that if problems arise, and the employee feel that they cannot talk to their supervisor, they should feel comfortable enough to contact any manager or the corporate health service.

A further step in this work with attitudes and climate within the organization is the meetings and lectures SSAB have on gender and equality issues. This is because it is easy to get stuck in old ways of thinking with the prejudices and bias that might exist. The purpose is to recognize that gender issues is both an organizational problem but also an opportunity. Gender work is totally new for SSAB and it is the first time it has been addressed in this way. The work will be preceded with more lectures with the aim of increasing the understanding of how it affects the organization. Although attitudes and gender equality have not previously been highlighted as clearly as it is today, there is still a big difference on how the organization is functioning today seen from these aspects (the production unit manager). There is no division of male jobs and female jobs and there is an overall accepting attitude in the organization.

SSAB works hard to get a more equal organization, especially during the summer employee recruitment where the target is 50% of female employees in the workforce. The production unit manager believed that this has been met very positively both internally and externally. Most of the regular staff are looking forward to the summer employees and welcomes the fact that it brings a lot of new blood into the organization. Another important advantage of this is that the summer employees see things with fresh eyes, which help highlight problems in the organization as they get the opportunity to raise questions and influence the organization (the production unit manager).

The organizational climate is something that is built up over many years and the work is usually done in a certain way; "because you have always done it this way" (the production unit manager). A large share of the regular workers are men, which can lead to a macho attitude; “it gets a little more manly to cut corners or take a shortcut” (ibid.). This behavior can increase during the summer period when the workforce consists of men of all ages and women 20-25 years old.
This makes the men in certain situations act even more macho. The production unit manager does not feel that there are differences in the safety related work between different teams or workgroups.

The climate in the organization depends largely on peer pressure, says the production unit manager; "you want to fit in with the team, whether or not it is good or bad behavior". Therefore it is important that you get a good start at the company and step directly into a favorable behavior. This also puts a greater pressure on the regular employees during the summer period where a lot of new employees are hired. One problem with peer pressure and group behavior is the desire to fit in, when the regular supervisor is gone and thus the supervisor roll gets delegated to one of the regular worker. This implicates aspects regarding work attitude because you don't know if he is "a manager or one in the team", says the production unit manager.
5.3 Focus Group - The Assembly Line Workers

The six assembly line workers who participated in the focus group were all men and employed by SSAB for many years. They work as production operators with mixed duties at the continuous casting. They all have good insight in the production and the safety work. The participants’ average number of years employed in the organization SSAB is 27.8 years and the average number of years at the continuous casting is 16.2 years. The following empirical findings are based on the focus group session conducted with the employees from the assembly line workers at the continuous casting, SSAB Luleå.

5.3.1 Work Motivation

All workers agreed that their main motivation stems from internal motivation. They work for each other and they enjoy the company of their colleagues, which contributes to a good atmosphere that seems to have a positive impact on the overall motivation. There is a general idea that the outcome has to be good because the customers must be satisfied, which ultimately affects the demand and their employment at SSAB. All are aware that SSAB must retain a good reputation and be able to produce a satisfactory result. It appears however that there is some dissatisfaction regarding the motivation when one of the workers says; "there are no carrots left". Before, there were some incentives but now we get nothing. Another agreed with the comment by telling that; "they have even brought in the cakes at meetings and that wouldn’t even entail any real cost". A third fills in; "the incentives doesn’t have to be anything big or lavish, just something that shows that the managers actually appreciate us" Despite this discontent, the focus group still talked about the importance of quality, that the customers must be satisfied and they all want it to go well for SSAB because in the end they want the company and this plant to stay in this region, stating that; "it’s quite alright to work here".

During the discussion it became clear that the old system, where they could get a financial incentive for improvement proposals, are missed. They believed that SSAB receive considerably fewer proposals now when the system with proposal work is embodied in the regular work. Furthermore, the focus group suggested that an extra shift team party, dinner or just something as simple as pizza for the team that presented the best improvement would serve as a good motivational tool to actually take on the challenge of figuring out good improvement proposals. All argued that a small incentive is enough to make them feel appreciated and enhance their motivation. The element of competition also makes it more fun. SSAB One is brought up in this discussion; "SSAB One is just a question of finding all the errors, never to create improvements". Many experienced SSAB One to only involve documentation and administration work.
Regarding safety motivation, it’s nothing that needs to be motivated externally. All agreed that they want a safe workplace and that they should feel good when arriving to work as well as when they leave for home. It also appears that everyone feels secure in their workplace but that they have to respect the production as it involves many risks. All felt that the focus on safety has been growing over the years, which is evident in many ways, everything from the increased pressure to report incidents to the requirements for wearing safety clothing to a safer and more manageable working gear. These changes have taken place not only due to the directives put forward by the management but also because the staff themselves has requested changes. No one in the focus group believed that motivation to come up with safety proposals could be encouraged through financial incentives; “one wants to participate in safety improvements to influence positively to the workplace, both for your own sake but also for your fellow colleagues”.

The new proposal for the salary add-on based on how you perform your job is not greeted positively by the focus group. They all are concerned about the problems of subjectivity that comes along with it, who will assess the criteria and if it is possible to design the criteria in a fair manner so that an objective assessment of the workers can be done. The fact that the supervisors should be the one that nominates the worker or workers were met with mixed thoughts. Positive opinions such as; "yes, the production manager is the only one who knows how you actually work" were mixed with more doubtful comments such as; "when you see the manager you will suddenly put on the goggles and go out and sweep" and; "if you take the Friday off, the salary-add on will be gone". All agreed that it would require very clear guidelines so everyone knows what is valid and what should be achieved. Everything is up to their supervisor, which is partly perceived natural since he or she is the only one with an eye on how they are working. They also think that the supervisor will get a lot of power in connection to the salary-add on. No one considered that this salary-add on would be motivational, not for the productivity, nor for quality or safety aspects.

5.3.2 SAFETY GOALS

The employees in the focus group were all aware of the safety objective of zero accidents but experienced that goals are not the highest priority to be communicated to them. They all thought that it is a good goal to have even if it might be hard to obtain. Additionally the focus group had knowledge about SSAB’s objective of becoming the world’s safest steel manufacturing company.

The safety regulations have been well communicated so everyone knows what rules apply to them; when to wear the safety gear, how to act in a safe way etc. The managers have been clear that safety is always priority number one, before productivity and quality.
They perceived that the manager would always be supportive in their decision to stop the production if safety was at stake. Ten years ago, they did not feel that SSAB had the same safety focus and to always prioritize safety first. Nowadays, none in the focus group would feel questioned or imposed guilt upon from the managers if they decided to stop the production or do anything else to put safety before productivity.

5.3.3 RISK MANAGEMENT

To report every incident and accident in MIA is an important step in risk management however the focus group said that smaller incidents and accidents are not always reported in. The reason is that they feel it takes too much time to report in MIA and it is easy to think that you will do it later, but then you forget about it.

If safety regulations are not followed, nothing will happen according to the focus group; “the manager will let you know that you are doing wrong, but nothing more and no repercussions”. The reasons for not following safety regulations are because of laziness, out of habit, it is inconvenient and it is hard to learn to put on something new. For example the new directive of always using safety goggles and it can be very warm to use all safety gears during the summer. The focus group stated that there is not much to do regarding the regulations that are not followed. If they were to do a more dangerous job that includes more risks, they would use all the required working gear and follow all the regulations. No one would put a co-worker in danger or do anything that could harm another person, everyone take care of each other. They were aware that they might be seen as bad role models for new co-workers and substitute workers during the summer. As one said; “they (i.e. the substitute workers) are doing as we are doing, not as we tell them to do”.

The employees in the focus group argued that they at most times feel safe at work. Due to that everyone know what to do and when to do it, they believe that they all are very skilled and experienced. The risks increase during the summer since half of the ordinary staff are on vacation and is replaced with new inexperienced substitute workers. The focus group stated that the substitute workers are more likely to be at risk of an accident than them. The focus group experienced that the largest risks are during the change of segments and the change of tundish and steel ladle. The risks include burns, falls and slips. They explained that it is important to have respect for the job they are performing since it always includes risks, yet they do not feel unsafe at work.
5.3.4 Leadership

“The top managers are quite inaccessible and we don’t see them very often which makes the communication and feedback very poor”, said one of the respondents. Everyone in the focus group agreed and one continued with; “it seems as if nobody cares, the only chance for feedback is at the workplace meetings and only then”. They perceived that the communication has never been as poor and deficient as it is now; “I once brought up a problem I experienced and I only got redirected to a higher level in the organization, in the end nothing really happened. It’s getting worse and worse. We rarely see the production manager and still they talk about feedback and communication, but it’s not working, there’s not even a functioning one-way communication”. In general, the assembly line workers were not satisfied with the communication within the company and felt a lack of recognition. The focus group argued that the managers are not good at listening to them and their opinions, except for the supervisor.

When it comes to attitudes and how workers behave, in the past the managers could turn a blind eye or even be the ones who were the worst at following safety directives. Today it’s different, now the managers are showing a good example on how to behave and it has doubtlessly affected us in the assembly line in a positive way.

5.3.5 Safety Climate

As the focus group stated earlier, they are aware of them being bad examples for new co-workers and substitute workers. They state the importance of learning to behave correctly immediately since it is hard to learn to do something in a new or different way. Despite this fact, they do not change their behavior during the summer but they instruct all new employees of how to act, what to wear and how to follow all safety regulations.

The focus group did not perceive the climate at their workplace to be hard and masculine, nor did they think there is a macho attitude. In general, they felt that the safety climate is well incorporated within the company and that the climate is open, friendly and enjoyable. As one stated; “the climate is sometimes very hard but always warm and hearty”. He explains that sometimes someone can pick on a co-worker for being too safety orientated or as they say “a chicken” but it is never serious. They all feel that the overall work climate change during the summer when the ratio of women in the workforce grows to approximately 50 %, all agree that it affects the work positively into a warmer, friendlier and more fun work ambiance.
6 ANALYSIS

The analysis that follows is based on the theoretical frame of references as well as the empirical findings from the two interviews conducted with managers at SSAB Luleå and the focus group with employees from the assembly line at the continuous casting, also at SSAB Luleå. The disposition is in line with the empirical findings in chapter 5, to make a coherent study. Thus the analysis begins with safety motivation followed by the remaining key concepts. In order to provide a comprehensive picture, the chapter will conclude with an analysis of the safety motivation system.

6.1 SAFETY MOTIVATION

A common way to encourage people to work is to use a positive reinforcement, an incentive, to motivate them in a certain direction (Dipboye et al., 1994). The service manager does not believe in financial incentives when it comes to safety motivation. He argued that a financial incentive gives the employees the encouragement to not report accidents in order to claim the safety bonus. An accident, small or big, can if reported prevent serious accidents in the future and therefore be of long-term interest (ibid.). This is additionally stressed by Anthony et al. (2014) who argue that if the employees are motivated only by financial incentives, the short-term actions can be enhanced more than the long-term focus. The focus group agrees with the service manager about the importance of reporting in accidents and incidents in MIA. This behavior can be explained by Neil & Griffins (2006) thesis that there is a strong relationship between a safe behavior and safety motivation; the employees want to be safe at work and therefore enable the safety work. The service manager moreover means that motivation towards safety needs other sources of motivation than financial ones, for example internal motivation such as the will to work in a safe manner. However, according to Merchant & Van der Stede (2012) external motivation is necessary for some employees to strain themselves to work hard and to do a satisfying job, while for other employees it is crucial to overcome their aversion to do a difficult or tedious work task. This is in line with Baker et al. (2007) who emphasize that just as you give incentives for production, safety should be of no exception.

The production unit manager’s opinions regarding safety motivation are much in line with the service manager opinions. The production unit manager does not believe financial incentive is needed for safety motivation, however she thinks it can be needed for motivating the work for improvements. The employees create the motivation for safety, and safety related improvements, internally and together with the co-workers because you want to improve your workplace and strive for a safer work environment, says the production unit manager.
Since the employee's safety motivation derives internally, it is important to know what factors that causes or undermine the motivation (Ryan & Deci, 2000). The service manager and the production unit manager view of what creates safety motivation is contrary to Hedlund's et al. (2010; 2016) and Andriessen's (1978) theories that safety motivation starts with good leadership.

6.1.1 INTRINSIC SAFETY MOTIVATION

Intrinsic motivation is defined by Ryan & Deci (2000) as “doing an activity for its inherent satisfaction rather than for some separable consequence”. It means that the employee will do the task because of the fun or the challenge entailed and not because of external pressure or an incentive (ibid.). This thesis is strongly supported by the empirical findings from the focus group, they all agree that there is no need for external safety incentives; they all want a safe workplace and to be able to come home safely every day and therefore participating in the proactive safety work. Hence, their safety motivation derives internally. This is also in line with Neal & Griffin's (2006) definition of safety motivation; “an individual's willingness to exert effort to enact safety behaviors and the valence associated with those behavior”, which implies the relationship between safety motivation and safe behavior. It also relates to Hedlund’s et al. (2010; 2016) factor for safety motivation; intrinsic safety motivation.

The intrinsic motivation is beneficial since it can be used as a base for education; if a person is internally motivated for a task, it is more likely that he or she will do a high-quality job (Ryan & Deci, 2000). To be able to take advantage of the internal motivation, the management must be aware of what causes the motivation to arise (ibid.). This is in line with Hedlund’s et al. (2010; 2016) theories that state that individual safety compliance and safety participation is crucial when creating safety motivation. One person in the focus group said “you want to be a part of the safety work and the work for improvements to affect the workplace in a positive direction, for your own sake but also for your co-worker”. This means that this employee is considered to have motivation for safety when applying Hedlund’s et al. (2010; 2016) theory about intrinsic safety motivation and the perception of safety behavior; the individual's perception is that he is participating and compiling with the leadership and the safety work.
6.1.2 Work motivation

The service manager argues that SSAB tries to externally motivate the assembly line workers by striving to provide a physical and psychological well-being before, during, and after work. A healthy and well-being worker is besides being overall more motivated is also more likely to work in a safe manner (ibid.). This is conforms to Ryan & Deci (2000) who argue that external motivation occur when the individual experience external pressure and control that is not represented of one's self. The service manager further emphasize the work SSAB does to give the employees opportunities of education to eventually, if desired, climb up the hierarchical ladder (ibid.). Regarding external motivation expressed in bonuses or other financial group incentives, the service manager meant that it would have a negative effect on the relations between the employees and the group dynamic. This can happen for example when an employee thinks that some of the co-workers are slacking and thus demands more of them, maybe more than what is reasonable, in order to claim the incentive (ibid.). This is in accordance to Merchant & Van der Stede (2012) that group incentives can lead to a monitoring of each other in an attempt to sanction imperfect actions and behavior.

The production unit manager argues that the employees are motivated internally to a large extent, by vocational pride and an enjoyable work climate together with their co-workers. She states; “if it were only for the payroll, I don’t know how many that would still be here”. By that quote she meant that there is much more besides financial incentives to motivate the employees, for example the ability to affect and influence SSAB (ibid.). This is supported by Hedlund et al. (2016) who state that motivation come from many different factors besides extrinsic motivation, such as job satisfaction, safety compliance etc.

The focus group respondents have contrary beliefs regarding motivation and they experience a lack of external motivation from the management. One in the focus group says; “it doesn't have to be a big or expensive thing, just something that shows that the managers and SSAB appreciate us”. Their motivation is mostly derived internally and from their co-workers, from a will to do a good job and delivering satisfying results (ibid.). They find it important to do a satisfying job since they want SSAB to appear good towards the customers and perform well as a company.
6.2 SAFETY GOALS

Goal setting is a way to motivate employees in order to reach a predefined destination (Locke, 1968). Goals can also be divided in an internal and external aspect. The internal aspect refers to goals as an idea, a desired end. Externally they refer to the object or condition sought, for example a certain performance level (ibid.). For SSAB, the safety goals build on the endeavor of minimizing all incidents and accidents, this includes amongst other things LTI (lost time injuries) and small accidents such as slips, etc. says the service manager. The service manager further states that one of the safety related goals is that all employees’ should feel good and healthy before, during and after work. This is in line with Fernández-Muñiz et al. (2014) theory about leadership tactics; the employee satisfaction can be improved by transmitting that the management are truly concerned about the employees’ health and well-being. The accomplishment of this goal is reflected by the focus group; meaning that they are mostly satisfied at work.

The service manager speaks of a yearly follow up of the goals and conducting daily meetings regarding proactive safety work in order to reach these goals, which is in accordance to Svensson’s (1997) argument that there should be a connection with the desired outcome, the goal, the resources and production to enable measuring the effectiveness of the company.

There is a strong relationship between task performance and desired behavior when there is a goal, the harder the goal is the better will the outcome be (Locke, 1968). Therefore it is important that SSAB has high safety standards and the aim for zero accidents. The goal of zero accidents is meaningful and will lead to essential results for the organization, these are two important aspects of goal setting according to Svensson (1997). The service manager claims that the overall safety goals of SSAB are not impossible but rather realistic. According to Locke (1968) the high safety objective should result in a high outcome, e.g. a low frequency of accidents. However, this is not the case at SSAB. The success of reaching a goal depends on three things; how difficult the goal is, how specific the goal is and by behavioral intentions (ibid.). Since SSAB’s goals are both ambitious and clear, the failure of reaching the goal might depend on the behavior among the employees when analyzed by Locke’s (1968) goal thesis. This relates to Svensson’s (1997) thesis, arguing that the purpose with a goal is to give meaning to the organization and direct both the organization and the employees towards achieving long-term goals through the short-term goals. Svensson (1997) states that a good goal should be both meaningful and describe an essential result. The safety related goals at SSAB fulfill both of these criterions and can therefore be considered as good.
The service manager is aware of the conflict between safety and productivity goals. The conflict is nowadays not as strong as a couple of years ago, since SSAB has requirements from the owners and the corporate group to only operate in a safe manner and doing safe work tasks (ibid.). A large reason for the enhanced emphasis on safety goals is due to a comparison with other companies in the same business that present a better results regarding accidents. Statistically SSAB are not in a good position (ibid.). All of the employees know that safety is always prioritized before productivity and the production must be stopped before an accident happen, says the focus group. Routines and clear directives are important steps when prioritizing safety before production, because it facilitates for the assembly line workers to know when to stop the production (the production unit manager).

There are goals that indirectly correlate to the safety work, it is the goal of making the employees feel secure and appreciated. This involves providing the workers with rehabilitation help if an injury hinders the workers from conducting a safe work at SSAB, the service manager explains. This also implies that the employees can be relocated or given a new work task if needed instead of SSAB hiring employees externally (ibid.). By trying to give the employees the feeling of being appreciative of their work, the service manager means that in return this will encourage them to follow the safety standards. This is due to the fact that if you feel acknowledged and appreciated you’re less inclined of trying to stand out or act in a way that can be unsafe (ibid.). The argumentation of being motivated through recognition and appreciation is in accordance with Hedlund et al. (2016).

6.2.1 Perception of Goal Setting

The employees from the focus group are aware of the goal of zero accidents but have less knowledge about other safety related goals. They all agree that it is a good goal, “no other goal than zero accidents would be acceptable” and since the possibility of an accident is always there, high safety standards are a must (ibid.). The focus group is also aware of the goal of being the safest steel manufacturing company in the world. They know about the most important organizational safety goals and comply with the work implied. The discussion about safety goals showed that the employees from the focus group have a clear perception of safety goal setting, according to Hedlund’s et al. (2010) theory. The employees' knowledge of the goals and their perception of them as ambitious and relevant are important aspects for intrinsic safety motivation (ibid.).
6.3 Risk Management

SSAB works in multiple ways with risk management in an attempt to eliminate or decrease the risk for accidents. For example by the 30-sec rule (i.e. if there is a work task included with a risk, the employee should stop and think for 30 seconds before acting), the demand for correct working gear and that everyone at the company must have adequate knowledge (the production unit manager). The demand for correct working gear is because the workplace contains hot liquid steel and other harmful objects. The production unit manager states the importance of using the correct gear but also that the assembly line workers are not always as good at following the safety regulations as much as the management hopes for. She believes that the reason is that many of the workers have been at SSAB for a very long time, which has led to ignorance to the risks. Possibly by the thought of "it has always worked well before" (ibid.). These arguments are strengthened by the focus group that agree that they are not always wearing the correct working gear because it is hard to learn and remember new regulations and it is very hot in the production site. The service manager is also aware of this problem and believes that SSAB from the management perspective is too kind. He feels there might be a need for repercussions if someone doesn't wear correct working gear repeatedly. This is supported by Dipboye et al., (1994), which explain the use of punishment in order to encourage the right behavior. Additionally, the service manager argument of repercussions to enhance safety is in line with Fernández-Muñiz et al. (2014) thesis; to encourage a committed leadership style and that the management truly demonstrate that they are concerned of the employees’ health, which in return can increase the safety motivation.

SSAB put a lot of emphasis on handling risks. The production managers, the technicians and the supervisors hold a meeting every morning where they discuss current safety related issues such as previous accidents and mishaps, the need for action plans, etc. (the service manager). The allocation of human and financial resources is supported in order to reflect the management's commitment to workplace safety and the implementation of a proactive risk management (Fernández-Muñiz et al., 2014). A proactive risk management can motivate the employees to participate and comply with the safety rules by lowering the accident rate. This can in return become a source of motivation for the workers to comply with the safety standards and thus increasing the safety motivation (ibid).
A large part of the risk management at SSAB is to map out the frequency and location of the mishaps and accidents in order prevent them from happening (the service manager). There is a requirement to report every single accident and mishap in the MIA (the production unit manager; the service manager). Every employee must know about this and know how to report in MIA.

The latest year there has been an increase in the number of reported mishap and accidents, the service manager argues that it does not necessarily mean that there has been an upswing of accidents and mishaps but rather that the employees are getting better at reporting them. He means that this is a result of the safety work that has been emphasized within SSAB in the latest years. Involving the assembly line workers in the safety work goes well with the theory by Hedlund et al. (2010) and Andriessen (1978) that state that employee involvement are an important step when creating safety motivation. It can be seen as a leadership tactic to encourage the individual's safety compliance and participation, and thus increase safety motivation.

6.4 LEADERSHIP

Safety motivation begins with a good leadership and distinct safety goals (Hedlund et al., 2010), the importance of leadership within an organization is additionally emphasized by Andriessen (1978). Both of these authors stress that leadership is an important cornerstone when creating safety motivation. The service manager and the production unit manager view of what creates safety motivation, with the largest emphasis on internal motivation and peer pressure, is contrary to Andriessen's (1978), Clarke's (2006) and Hedlund's et al. (2010; 2016) theories that safety motivation starts with good leadership. According to Hedlund et al., (2010) and Clarke (2006) leadership plays a crucial role when promoting safety, this is largely due to the increase and encouragement of safety participation that good leadership can raise, which in return enhances safety motivation. A supportive and influential leadership style can affect the employees' attitudes and behavior, for example to gain support for safety policies and to motivate the employees to follow them (Clark & Ward, 2006). As the service manager explains, the management philosophy of SSAB One implies a supportive and coaching leadership style, which is in line with Clark & Ward's (2006) theory of leadership tactics. A management style that is influential and supportive is strongly related to the employees' ability of taking safety initiatives (Clark & Ward, 2006). The link of safety participation and safety motivation is connected because safety participation enhances safety compliance that further affects safety motivation (Fernández-Muñiz et al., 2014).
A current topic within SSAB is gender issues, all managers attend in courses to enlighten that there might exist prejudice and bias towards a certain gender, race, background etc. The lectures and courses are meant to further develop an open and friendly climate within the organization as a whole (the service manager). As the service manager stated earlier; an employee that is happy, feel good and is satisfied with the work environment will perform a better job and remain in the organization.

The production unit manager stresses the importance of leadership when it comes to safety motivation since it is the managers’ responsibility to encourage safe behavior and to remind others when safety regulations are not followed. An issue that might arise is a larger focus on chasing after the problems instead of actually acknowledging and encouraging the things that are good.

Everyone in the focus group experience a larger emphasis on safety from the management in the later years. This is shown by a less focus on productivity and that safety is always of highest priority. If the managers are going to be able to work with safety precautions, it is important that he or she is aware of all the safety regulations and why they exist in order to mediate safety regulations in a trustworthy way (the production unit manager). The importance of promoting safety through leadership and also increase the safety compliance and safety participation at an individual level is stressed by Hedlund et al. (2010) and is much in line with the production unit manager discussion. Further, the managers’ role in communicating safe behavior strongly affects the employees’ perception of safety behavior, which is important for safety motivation, by providing knowledge and empowering attitudes (Hedlund et al., 2016). The latter is also much in accordance with the production unit manager’s view of how leadership affects safety motivation.

6.4.1 Communication

When discussing the role of leadership, both the production unit manager and the service manager stressed the importance of a well-functioning two-way communication. It is important to have an open and transparent climate so the employees feel that they can talk to the managers and being able to question and criticize (the service manager). This discussion is additionally brought up by Hedlund et al., (2010) who emphasize the importance of managers providing a clear standpoint and an open communication when influencing the employees towards improving the work climate. The service manager further stresses that there should be no accusing or imposing of guilt upon the employee who bring up issues, since it is a sign of engagement and involvement. The focus group was however not satisfied with the communication.
They felt that besides their supervisor, the management is invisible, hard to reach and they perceive a lack of (positive) feedback from them. According to a study made by Andriessen (1978), accidents occur more often when the communication between the manager and the employee is poor.

The service manager stresses the importance of the managers being responsive and sensitive to the employee and their opinions. This line of arguments relates to Andriessen’s (1978) study about leadership and safety; accidents occur less often when the leader is capable, gives clear directions, is not behaving autocratically and provides a good line of communication with his or her employees. The focus group meant that there is a large focus on the communication but they perceive it as malfunctioning. This might have a negative impact on their safety motivation since crucial factors for creating safety motivation are leadership tactics, communication and the perception of safety behavior, which is strongly affected by the leadership (Hedlund et al., 2016).

Clarke (2006) argues that one key element for a good safety climate within an organization is the leadership style. The leadership style and the leadership tactics will affect both the safety participation and the safety compliance among the employees and further the safety motivation (ibid.). A favorable leadership tactic is to be supportive, influential and coaching (ibid.). This is in line with the intended management style implemented in SSAB One (the service manager), however the focus group (2016) does not perceive it as such.

6.4.2 Perception of safety behavior

The perception of the managers’ safety behavior strongly affects the employees’ safety motivation (Hedlund et al., 2010; Clarke, 2006). The production unit manager and the service manager state that the managers are communicating safety concerns to the employees and providing them with safety knowledge, which is in line with Hedlund’s et al. (2010) theory. The focus group perceptions of the managers’ safety behavior is that they always behave correctly and that they communicate safety concerns, this is something that has been improved during the later years. A good perception of the managers’ safety behavior might affect the employees’ safety participation and safety compliance, and hence the safety motivation.

Clarke (2006) further stresses that the employees’ perception of the managers’ safety behavior will affect the organization’s safety climate. According to the empirical findings, the organizational safety climate is overall good and SSAB has succeeded in implementing a large safety focus on all levels within the organization (the focus group; the production unit manager; the service manager). This can further affect the employees’ safety participation and safety compliance in a positive way.
6.5 Safety Climate

"The safety comes first" principle is an aspect that SSAB tries to permeate throughout the whole company, especially in the production area where all the safety concerns originates from (the service manager). According to Hedlund et al. (2016) promoting a strong safety climate lies foremost in the leadership by forming safety procedures, practices and policies in the organization. For SSAB this means that the workers should never hesitate to stop production when safety is at stake or be accounted in a negative way for stopping production for safety reasons (the service manager). The safety climate is heavily affected by leadership tactics, which puts a large emphasis on how the managers act (Clarke, 2006). This is something SSAB has improved during the later years; the managers are nowadays always prioritizing safety before anything else (the service manager).

Moreover, since SSAB operate in a male-dominated business there are influences of macho-culture, which directly can have implications on safety. Macho-culture implications on safety are often demonstrated by the idea of taking safety measures on an individual level as an act of weakness (the service manager; the production unit manager). Men can for example choose not to take their safety goggles on and so forth.

Problems of attitudes such as sexism, racism, equality and other related issues that can exist amongst the workforce are recognized and actively managed by SSAB. This is done by holding meetings, lectures and other gatherings in purpose of enlightening these problems (the service manager; the production unit manager). Addressing gender related issues is relatively new for SSAB, but is now considered to be very important. There is for example an ongoing campaign that seeks to bring more women into the organization, with the purpose of both leveling out the male-dominated workforce but also to prevent and eliminate the macho-culture (the production unit manager). The focus group appreciates the employment of women as it brings new, fun and good dynamics in the different shift teams. In regards to the overall attitudes of the workers, the production unit manager thinks that it is largely affected by the peer pressure that humans tend to fall for, "you want to fit in, no matter if it's a good or bad behavior".
6.6 SAFETY PARTICIPATION & SAFETY COMPLIANCE

As one of the respondents in the focus group said; “you want to take part in the work with safety improvements in order to create a safer workplace”. This demonstrates safety participation at an individual level and a compliance with the safety concerns. According to Hedlund et al. (2010; 2016) these are two important aspects when creating safety motivation. Regarding the safety goals, all of the respondents from the focus group understood the safety goals and perceived them as important and adequate, which implies safety compliance. The individual safety participation and safety compliance is further shown in the increasing number of reported accidents and incidents in the MIA.

One aspect showing low safety compliance is the fact the focus group stated that they are not always following the safety regulations. They said that they only follow the regulations they perceive as most important and when doing more dangerous jobs. The reason for not following the regulations is because they sometimes perceive them as not important, or that it is uncomfortable to use correct working gear etc. This implies a deficient safety compliance, which results in breaches in the safety participation, and consequently safety motivation.

Fernández-Muñiz et al. (2014) argue that safety participation has a direct positive effect on the employees’ job satisfaction. The focus group states that they are involved in the proactive safety work, i.e. safety participation, and that they are satisfied with their work environment to a large extent. This argumentation corresponds very well with Fernández-Muñiz et al. (2014) theory about the direct relationship between safety participation and employee satisfaction.

Regarding the safety compliance, Clarke (2006) states that the safety climate has an important role when influencing the adherence and the devotion to procedures but the safety climate has an even larger role when influencing the employee commitment and involvement in safety work. This is in agreement with the empirical findings; both of the managers (the service manager; the production unit manager) argue that the organizational safety climate is strong and that safety is always priority number one, which is in consent with the focus group’s perceptions of the emphasis the management place on safety. This strong safety climate has resulted in safety participation among the employees; they are involved in the precautions safety work. However, the safety compliance is not always as good as the safety participation. The focus group respondents admit of not always following the safety regulations, which both the production unit manager and the service manager are aware of.
6.7 ANALYSIS OF THE SAFETY MOTIVATION SYSTEM

SSAB tries to incorporate their safety goals in the organization through different methods. For example, by stating clear and reasonable goals, using a risk management system such as the MIA, using leadership to communicate the safety goals to all employees and stress that safety must be prioritized at all times. The focus group state that they are aware of the general safety goal of zero accidents but admit to have less knowledge about the remaining safety goals. They perceive the safety goal setting as adequate. The focus group argues that the safety focus and safety goals have been improved during the later years and that safety is always of highest priority. This is reflected by a low degree of goal conflicts between safety and productivity; the employees know to always prioritize safety first. Putting this in relation to Hedlund et al. (2010) the focus group's perception of the goal setting can be considered as good.

The safety climate at SSAB is profound and established throughout the whole organization. The safety climate affects the workers considerably and has a direct impact on the overall safety motivation, due to the signals it sends to the employees; that safety is highly prioritized and the organization care of the employee's well-being (Clarke, 2006).

At an individual level the safety motivation is not always sufficient due to the lack of safety compliance and safety participation. The focus group respondents admit that they do not always follow all of the safety regulations but still perceive their safety behavior of being satisfying. The focus group speaks of a tendency of making an individual evaluation of the importance of the safety regulations and when they should be followed. The reasons are of the inconvenience to use correct working gear, time consuming procedures and the thought of “nothing will happen because this has always worked out well before”. When applying Hedlund's et al. (2016) and Clarke's (2006) definitions to these arguments it implies a low degree of safety participation due to low safety compliance and low intrinsic safety motivation. This impairs the safety motivation, since there is a direct relationship between safety participation and safety compliance that leads to safety motivation (Fernández-Muñiz et al., 2014). This will further implicate the safety work and the establishment of a good safety climate.

A further discussion can be held regarding the reasons for why safety regulations are sometimes ignored. Everyone from the empirical studies admitted that there exists a macho-culture to some extent, even though it has declined over time. The macho-culture promotes a hard work environment, which generates a work ethic that allows an acceptance for ignoring safety regulations and unsafe behavior. SSAB has made an attempt to decrease the macho-culture by hiring more women to create a mix in the workforce but also by acknowledging the problem by providing gender courses and lecturing for the employees.
Safety motivation is affected by the safety climate that lies at an organizational level meaning that the work SSAB is doing can be an effective way to enhance safety motivation.

There are general misunderstandings and different perceptions of various aspects between the management and the assembly line workers. For example, the communication that in the eyes of the management is well developed and functioning is in clear contrast to the focus group that perceives the communication as being very poor. The same goes with the degree of macho-culture in the organization where the managers perceive it as extensive and the focus group as hardly existing. Having widespread misunderstandings can implicate and even impair the safety motivation work. It is important to have a congruent perception of the problems within the company to facilitate the work of solving them. This can and often will affect safety compliance and safety participation of the employees, because a worker that is not in agreement with the management regarding a problem will most likely not take the necessary actions to solve it.

The service manager and the production unit manager state that safety motivation primarily derives internally from the employee's own will to have a safe work environment for his own sake and for the co-workers. This is contrary to Hedlund’s et al. (2010; 2016) and Andriessen’s (1978) theories that safety motivation begins with a good leadership. The two researchers clearly argue that leadership is one of the most important factors when promoting safety motivation. In order to make the employee comply with safety goals and standards, the employee must be aware of the risk, understand the significance of the risk and the meaning of the goal and standard. To make the employee aware of these aspects the management must be able to provide sufficient knowledge and communicate correct information to build trustworthiness. This further enhances both safety participation and safety compliance, which in return increase safety motivation.

The management and the managers play a large role when promoting safety among the assembly line workers. The focus group explains that if the managers don’t follow safety regulations it would undermine the importance and trustworthiness of safety regulations. Additionally, it lies within the manager's role to communicate safety goals, standards and procedures and being able to communicate them in a credible way for the employees to understand and comply with them. The problem of perceiving that safety motivation is primarily created internally and not by the leadership, together with the problem of a dissatisfying communication, further implicates the safety motivation work.
There are no financial incentives for the assembly line workers, neither for production nor for the proactive safety work. The service manager states that financial incentives for safety motivation can be counterproductive due to a decrease in reported accidents and incidents, which thereby impair the proactive safety work.

This argument is contradictory to Baker et al. (2007) arguing that incentive for safety is just as important as incentive for productivity. However, the focus group agrees with the service manager; they do not feel a need for external incentives for safety, which shows upon an intrinsic safety motivation.

The focus group spoke of the importance of providing external incentives in order to motivate the employees to participate to a larger extent in the work for improvements. This argument is strengthened by Baker et al. (2007) who argue that incentives for safety are just as important as incentives for productivity. If the management would provide external incentives for safety improvements the safety participation can increase. If the managers enhance the communication as well, the trust for the management would also increase. This would result in an increase in safety compliance. Safety participation will in return increase safety compliance and thus the safety motivation will be stronger (Clarke, 2006; Fernández-Muñiz et al., 2014). However, a risk with safety incentives is that it encourages short-term actions that can be harmful for the long-term interest of the company (Anthony et al., 2014). This thesis supports the service manager’s argument of why financial incentives are not implemented in the safety motivation system.

As previously stated, there is a lack of safety participation and safety compliance among the employees. The reasons for this can be explained by a dysfunctional communication due to a leadership that doesn’t acknowledge the communication problem. Communicational problems within a company can lead to misunderstandings and misconceptions regarding risks and safety regulations. Hence, safety participation and safety compliance can be impaired due to the harm the lack of communication has on the leadership’s trustworthiness (Clarke, 2006; Hedlund et al., 2010). Thus, both safety participation and safety compliance are strongly affected by the leadership. According to the safety motivation system, a lack of these two aspects will have a negative effect on safety motivation.
7 CONCLUSIONS

The chapter consists of a conclusion with a revised safety motivation system followed by our recommendations on how the case company can improve the safety motivation for their employees. Lastly we present a proposition for further research regarding safety motivation.

7.1 CONCLUSION

The safety motivation system is meant to increase the safety motivation among the employees with the purpose of improving the safety performance. In accordance to the theoretical starting point and the safety motivation system, all of the individual and organizational factors will eventually affect the aspects of safety participation and safety compliance. If one or both of these aspects are low, the safety motivation will be poor. Safety participation can to some extent be controlled by rules and regulation but never safety compliance; which was shown at our case company.

However, we found that two factors are of larger significance than the others and therefore we have developed a remake of the safety motivation system in order to provide a deeper explanation of how safety motivation is created. These two factors are safety climate and leadership due to the great influence they have on safety participation among the employees. Safety participation is crucial when enhancing safety compliance. These two aspects combined creates a synergy effect that increase safety motivation. The synergy effect is generated when safety participation enhance safety compliance which in return further increases safety participation. The safety motivation system relies heavily on the factors of safety climate and leadership since they are fundamental when creating safety motivation.
Figure 8. According to the safety motivation system, safety motivation relies heavily on the factors of safety climate and leadership. These two factors significantly affect the individual safety participation and subsequently the individual safety compliance. A synergetic effect is created when safety participation and safety compliance enhances each other and thus safety motivation increases. (Andersson & Paqarizi, 2016)

To clarify, individual safety participation and safety compliance is largely created from an organizational level through the factors of safety climate and leadership. Hence, safety climate and leadership are fundamental factors of the safety motivation system and therefore has to function correctly to enhance safety motivation.

Insufficient safety compliance among the assembly line workers can be traced back to a low degree of safety participation in the proactive safety work. The leadership and the safety climate within the organization also directly affect the safety compliance. However, no matter how ambitious and extensive the safety work is, if the employees do not comply with it the safety motivation decreases. This is clearly shown in our empirical findings; the safety climate at SSAB is profound and established throughout the whole organization, yet the employees do not comply and participate with all the safety regulations, procedures and standards that comes with a highly developed safety climate. Hence, a firm can provide a large focus on safety but still show bad results as the employees’ safety motivation relies upon safety participation and safety compliance. If these are lacking, the effort that the company and the managers put into the safety work becomes inefficient.
Since the safety compliance is harder for the managers to affect, it is more effective to target the safety participation in order to increase the safety motivation among the employees. If the managers are able to increase the safety participation by an incentive, the safety compliance will also increase. This will additionally increase the safety participation in a synergetic effect that leads to an overall increase in the safety motivation.

7.2 RECOMMENDATIONS

A clear leadership that function as a role model and provide trustworthy safety regulations and standards can enhance safety compliance. The safety goals must be well motivated and communicated clearly to the employees and all of the employees must understand the meaning and the significance of the safety goal and the underlying risk. This implies the need for a well-functioning and open two-way communication within the organization. Additionally, safety participation strongly affects safety compliance. If the employee participates in the safety work, the safety compliance will in return be affected in a positive way that further will increase the safety motivation.

Therefore, our recommendation for SSAB is to enhance the communication between managers and employees. There is a need for a well-functioning two-way communication where the employees feel that that they have the ability to talk to all of the managers, not only their supervisor, and that the managers listen to them. We further recommend external motivation to increase the employees’ participation in work improvements including the proactive safety work. This recommendation is due to the employees’ low safety compliance, which can be improved by increasing safety participation. The external motivation does not necessarily have to be in the form of financial incentives but rather through encouragement, appraisal and acknowledgement.

Encouragement and positive feedback could provide enough incentives for the employees to participate in the proactive safety work and thus the safety participation would be increased. This will lead to an increase in safety compliance, which further strengthen the safety motivation. According to our empirical findings, SSAB puts a large focus on safety and has developed a strong safety climate. SSAB’s weakness lies within the leadership and the communication, which can be improved in order to increase the safety participation and the safety compliance among the employees. These two aspects are crucial for safety motivation as the employees are the last barrier against the risk for accidents and thus critical when creating a safe work environment.
7.3 Proposition for Further Research

Due to the significance of safety participation and safety compliance, further research in how to enhance these aspects would be interesting and useful for most firms in hazardous businesses. Safety participation and safety compliance are two key factors for safety motivation and thus necessary. The problem with these aspects is that they lies at an individual level and can therefore be hard for the managers to influence. Research in how to influence these aspects in a positive way would be an important step when conducting further research on safety motivation and safety motivation systems.
LIST OF REFERENCES

All of our used references are listed below, according to the Harvard-system. The printed references are presented first, followed by the electronic references and the oral references. The figures are listed last.

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The service manager, SSAB Luleå (2016). Sundbom, Peder (2016). Interview conducted; 2016-04-06

FIGURES

Figure 1. (Page 8). The disposition of this master thesis is as shown above.

Figure 2. (Page 14). Depicts the process of our research. Starting out with building the theoretical frame of references with support from documents from the case company and altering between these two to ensure a relevant theoretical reference frame. Thereafter collecting empirical data from the case company and simultaneously working on the reference frame to ensure a correct direction of this study.

Figure 3. (Page 23). Scheme depicting how the analysis for this study will be conducted.

Figure 4. (Page 30). Depicts the safety motivation system. Safety motivation starts on two levels; individual and organizational. These two levels consist of three factors each that affect safety motivation. Safety motivation is additionally strongly affected by the individual's safety compliance and safety participation. (Andersson & Paqarizi, 2016).

Figure 5. (Page 40). A path diagram depicting the factors that creates safety motivation. Thereafter leading to a safe workplace through safety participation and safety compliance. (Andersson & Paqarizi, 2016).

Figure 6. (Page 41). Illustrates where SSAB production sites are located as well as sales coverage, the production sites in Sweden are in Borlänge, Oxelösund and Luleå.

Figure 7. (Page 43). Illustrating the steel production line from iron ore to steel.

Figure 8. (Page 78). The safety motivation system begins with the factors of safety climate and leadership. These two factors significantly affect the individual safety participation and subsequently the individual safety compliance. A synergy effect is created when safety participation and safety compliance enhances each other and thus safety motivation increases. (Andersson & Paqarizi, 2016)
APPENDIX 1

Appendix 1 consists of the interview guides that were used when conducting the interviews. The interview guides were similar for all respondents, but slightly altered to fit the respondents work assignments. The interview guides were first written in Swedish, as the interviews was held in Swedish, and thereafter translated into English to fit into this study.

INTERVIEW GUIDE 1

Respondent: Peder Sundbom, service manager, SSAB Luleå

Introduction
1. Describe your main work task at SSAB
   a. On what do you put most of your work time at?
2. For how long have you been employed at SSAB?
   a. At your current position?

Motivation
3. How do you motivate your assembly line workers?
   a. What do you motivate towards?
4. How are you, from the management perspective motivating the employees towards safety?
   a. Are there clear directives, restrictions, etc.?

Goals
5. What are the safety related goals within SSAB?
6. Do you consider these goals to be ambitious and of high standard or easy to reach?
7. How is the goals communicated to the employees in the assembly line?
8. How do you do to engage the employees in the safety directives?
9. How are you providing feedback and how do you follow up these goals?

Risk management
10. Where are the largest, most hazardous risks for the employees?
11. What is your standpoint regarding safety?
    a. Use of working gear, following restrictions etc.

Leadership
12. What is of highest priority? Safety, productivity, quality...?
    a. Balance between these two goals?
    b. Are these goals conflicting?

Safety culture
13. How are the managers and supervisors attitudes about safety affecting the employees?
14. Do you consider the employees to work in a safe way?
    a. Group vs. individually?
    b. Why does the safety motivation differ between people?
15. Is there something you would like to add that we haven’t covered?
INTERVIEW GUIDE 2

Respondent: Lotta Jakobsson, production manager, continuous casting, SSAB Luleå

Introduction

1. Describe your main work task at SSAB
   a. On what do you put most of your work time at?
2. For how long have you been employed at SSAB?
   a. At your current position?

Motivation

3. How do you motivate your assembly line workers?
   a. What do you motivate towards?
4. How are you, from the management perspective motivating the employees towards safety?
   a. Are there clear directives, restrictions, etc.?

Goals

5. What are the safety related goals within SSAB?
6. Do you consider these goals to be ambitious and of high standard or easy to reach?
7. How is the goals communicated to the employees in the assembly line?
8. How do you do to engage the employees in the safety directives?
9. How are you providing feedback and how do you follow up these goals?

Risk management

10. Where are the largest, most hazardous risks for the employees?
11. What is your standpoint regarding safety?
   a. Use of working gear, following restrictions etc.

Leadership

12. What is of highest priority? Safety, productivity, quality...?
   a. Balance between these two goals?
   b. Are these goals conflicting?

Safety culture

13. How are the managers and supervisors attitudes about safety affecting the employees?
14. Do you consider the employees to work in a safe way?
   a. Group vs. individually?
   b. Why does the safety motivation differ between people?

15. Is there something you would like to add that we haven’t covered?
INTERVIEW GUIDE 3

Respondents: Employees from the continuous casting, SSAB Luleå

Introduction

1. For how long have you been employed at SSAB?
   a. At your current position?

Motivation

2. How do you feel you are motivated at work?
   a. What do you feel you are motivated towards?
3. How do you feel you are motivated towards safety?
   a. Are there clear directives, restrictions, etc.?

Goals

4. Do you know about the safety related goals within SSAB?
5. Do you consider these goals to be ambitious and of high standard or easy to reach?
6. How is the goals communicated to the employees in the assembly line?
7. Do you feel engaged in the safety directives?
8. How are feedback provided and are the goals followed up?

Risk management

9. Where are the largest/most hazardous risks for you?
10. What is your standpoint regarding safety?
    a. Use of working gear, following restrictions etc.

Leadership

11. What is of highest priority? Safety, productivity, quality...?
    a. Clear standpoints from the management?
    b. Balance between these two goals?
    c. Are these goals conflicting?

Safety culture

12. How are the managers and supervisors attitudes about safety affecting you?
13. Do you consider that you are working in a safe way?
    a. Group vs. individually?
    b. Why does the safety motivation differ between people?

14. Is there something you would like to add that we haven’t covered?