Facilitating promotive voice

for contributing to sustainable innovation

M. J. Sneller

TU Delft

Facilitating promotive voice

for contributing to sustainable innovation

by

M. J. Sneller

to obtain the degree of Master of Science

at the Delft University of Technology,

to be defended publicly on Monday June 14, 2017 at 14:00 PM.

Student number:	4085965	
Project duration:	June 1, 2016 – June 14, 2017	
Thesis committee:	Drs. C. Wehrmann,	TU Delft
	Dr. M. C. A. van der Sanden,	TU Delft
	Prof. dr. M. J. de Vries,	TU Delft
	Dr. G. de Vries,	TU Delft
	Drs. B. Gehlen,	Van Houtum B.V.

An electronic version of this thesis is available at `http://repository.tudelft.nl/`.

TU Delft

Preface

This thesis reports my graduation research for the master Science Communication at Delft University of Technology. Since I was given the complete freedom to research any topic within this broad field of study, the first step was to identify my topics of interest. To topics came to mind: sustainability and proactive behavior.

My interest in sustainability is relatively young, though intense. To safeguard the continuity of our world-wide society, I have come to believe we are in high need of a thorough transformation. Whilst it might be attractive to approach this vision from an ideological perspective, I have more faith in a commercial version of sustainability where organizations take care of their people, profit and the planet simultaneously. I consider it my mission to contribute to this transition to a new economy, of which this thesis is a part.

This drive for sustainability is represented in this thesis by studying sustainable motives within a company. I examined how strong the motive for sustainability is for employees, inspiring them to share their sustainable ideas, thereby contributing to sustainable innovation.

The second topic that rivets me is proactive behavior. I consider myself a proactive person and I value that in others. In my side-job as a teacher at Stichting Studiebegeleiding Leiden, proactive behavior was stimulated and strongly appreciated. Later, my internship for Science Communication took place in an environment where my suggestions were not always welcome. I was astonished.

Since then, I catch myself evaluating whether my idea would be appreciated, before speaking up. In other words, a barrier has arisen. That makes me understand why others would keep their ideas and suggestions to themselves, even when they have a proactive nature. Though, I think it's too bad when good ideas do not surface. Hence, I was eager to find out how people can be given the space to behave proactively.

Integrating these topics, I decided to study idea sharing as a way to contribute to sustainable innovation. With much pleasure, I present to you the results of this study.

Enjoy reading!

M. J. Sneller
Delft, 14 June 2017

Acknowledgments

Since this research project would not have been possible with the help of many people, this page is committed to expressing my gratitude to them.

First of all, I want to thank my supervisors. Thank you Caroline, thank you for accompanying and supporting me on this adventure. You were the safety-net which I could always count on. Gerdien, I very much appreciated your fresh perspective on my research and how you opened my eyes towards different ways of doing research. To Maarten I owe a thanks for his critical, conceptual and methodological perspective on my research; always refreshing.

Thankful I am also to Jan Rotmans for introducing me to Van Houtum. At Van Houtum, plenty of people made this project possible. Firstly, I am grateful to Bas for trusting me to perform this research at Van Houtum. I strongly appreciate Karel for always being full of enthusiasm, and for our smooth collaboration. My special gratitude goes to all Van Houtum employees who participated in this research, among whom Hans van Houts, team leaders Erik Kersten, Wim Paulissen, John Kool, Eric Hobus and Hans Niessen, and the 31 operators who took part for cooperating in my endless questionnaires, interviews and 'games'. Without you, this research would not have existed. In addition, I felt supported by Albert Mey and Nicole van Diepen for their interest in my project. I offer a special thanks to the secretaries and receptionists for being so flexible, for example when I requested 6 meetings with different people on one day.

I devote special gratitude to my parents, Claar en Bertjan, for always believing in me and sharing your wisdom about any topic I can think of. I am very proud of my sister Tessa and brother Bauke, for growing up as such amazing people. What I value most in our relationships is the respect we have for each other in following our own paths. As a family, you provide a safe haven on which I can always rely.

I felt supported by my fellow students in the graduation room. Above all, I am very thankful to have Eline as such a dear friend throughout my entire study career. Other friends, among whom Aafke, Pascalle, Mariëtte, Dorien, provided me with inspiration, distraction and a listening ear, if necessary. Housemates supported me by creating a place in which I felt free to go my own way. Natasja, thank your for putting this project into perspective again and again. I am grateful to Tineke for her advice about many choices in my educational career. My appreciation is warm towards Peter and Margot for accomodating me so hospitably in Swalmen.

Thank you all for making this project successful!

Marlien

Summary

Sustainable innovation is essential for companies to stay in competition (Rangus and Slavec, 2017; Waite and Sheehan, 2013). The first phase of sustainable innovation is idea generation (Perry-Smith and Mannucci, 2017). Ideas for improvement can come from all employees (Teza et al., 2016), among whom employees that operate machines (Axtell et al., 2000).

The problem is that companies that strive for sustainable innovation often do not use the potential of their operators' ideas for improvement (Axtell et al., 2000). Therefore, this research aims to gain insight in how companies that strive for sustainable innovation can facilitate operators to display promotive voice. When operators share their ideas for improvement, this is called *promotive voice*. This leads to the research question and sub-questions:

> **How can changes in the organizational context increase the probability that operators display promotive voice in companies that strive for sustainable innovation?**

1. What stimulates and limits promotive voice, according to literature?
2. To what extent do operators, team leaders and management at Van Houtum B.V. find sustainability an important motive for improvement?
3. To what extent do operators at Van Houtum B.V. perceive barriers and stimulants to display promotive voice?
4. How can Van Houtum B.V. increase the likelihood that operators display promotive voice by changing the organizational context?

This research question will not be answered in its totality, but only for one case company. A design-based research is performed at this case study. A theoretical framework is constructed and applied to this case study. An intervention aims to change an element of the organizational context[1]. The effect of this intervention is used to reflect on the theoretical framework.

According to the theoretical framework, companies that strive for sustainable innovation can increase the likelihood that operators display promotive voice by influencing a set of individual

[1] The organizational context entails the physical, social and organizational elements of the employees' work environment.

and contextual constructs, or by influencing how important their employees value different motives for an idea[2].

At the case company, eight motives for an idea were identified; to make work processes safer, more sustainable, cheaper, cleaner, easier, faster, give more production, or produce products with better quality. According to importance, respondents ranked the motive *more sustainable* on the third place, out of eight. Besides, operators appeared to experience many barriers and stimulants for promotive voice, of which the greatest barrier was *the feeling that their ideas are not heard*.

An intervention that aimed to reduce this barrier indeed resulted in an increased likelihood that operators display promotive voice, but this effect was limited. According to team leaders, the likelihood that operators display promotive voice had slightly increased, because operators felt more heard. Yet, operators did not notice this change.

In conclusion: In theory, there are many starting points for companies to increase the likelihood that operators display promotive voice, but in practice it is not easy to effectively change the organizational context in favor of promotive voice.

The revised theoretical framework replaced individual and contextual constructs by critical variables for promotive voice. By validating 'being heard' as a critical variable and identifying more critical variables, further research can develop a model that describes the decision of individuals to display promotive voice.

[2] A *motive for an idea* is how important the individual assesses the envisioned outcome of the idea

Contents

List of definitions

Innovation The multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace *page 2*

Sustainable innovation Any new or significant improvement of products, services, technological or organizational processes, commercialized or internally implemented, that not only provide economic benefits but also generate positive social and environmental impacts *page 2*

Organizational context Circumstances by which employees are surrounded at work *page 6*

Employee voice The communication by an employee of ideas, suggestions, concerns or opinions, even when it upsets the status quo, with the intent of bringing about constructive change to affect the work context *page 16*

Promotive voice The proactive expression of ways to improve existing work practices and procedures to benefit the organization *page 21*

Idea for improvement New or modified cognitive structures which, compared to existing routines, provide individuals with (more) adequate solutions for dealing with problems they encounter in [an operators'] work context *page 21*

Utility calculus The subjective estimate that individuals make of the positive and negative consequences of voice *page 16*

Likelihood that operators display promotive voice The chance that, in a latent voice opportunity, the individual decides to display promotive voice *page 23*

Perceived safety The individual's judgment about the risks or potential negative outcomes associated with speaking up *page 18*

Perceived efficacy The individual's judgment about whether speaking up is likely to be effective *page 18*

Motive for an idea How important the individual assesses the envisioned outcome of the idea *page 17*

Mechanism In this research, perceived safety, perceived efficacy and the motive for an idea are called mechanisms *page 17*

Construct A mental abstraction used to express ideas, people, organizations, events and/or objects/things (Constructs in Quantitative Research, 2012)

Variable Variables are used to operationalize (i.e. measure) constructs (Constructs in Quantitative Research, 2012). In this research, variables can inhibit or stimulate promotive voice as a barrier or stimulant, respectively

Barrier A variable that influences the circumstances in a way that makes promotive voice less likely *page 51*

Stimulant A variable that influences the circumstances in a way that makes promotive voice more likely *page 51*

Being heard The feeling of the operator that his idea for improvement is taken seriously by the target of voice *page 61*

Feedback Closing the loop through feeding back 'that what has been discussed about the idea' to the employee who shared the idea *page 66*

1

Introduction

Do you remember these moments at work when all of a sudden you have a brilliant idea? It solves a recurring problem, improves a current work process or inspires a new product or service. But, when you share your idea, colleagues respond sceptically. What a disappointment! Now, your motivation for the idea has been erased and it will disappear from your mind.

This does not only happen to you. It happens to many people that their ideas are ignored and forgotten. Yet, ideas from employees can make a huge difference. For example, Google-employee Paul Buchheit had an idea:

> *If you wanted to check your email, you'd have to go back to your dorm room. I thought, "That's so stupid. I should be able to just check it anywhere." So I wanted to make some kind of web-based email.*

The first version of Gmail was built in one day (Livingston, 2007). Nowadays, we can no longer imagine a society without web-based email services such as Gmail.

This anecdote illustrates the enormous potential that ideas for improvement from employees can have. In the situation that machine operators have an idea for improvement, this research studies their decision; *To share, or not to share?*.

1.1. Sustainable innovation and promotive voice

This chapter describes the scientific context within this research is positioned. It introduces sustainable innovation and explains how promotive voice can stimulate this within companies. Meanwhile, it leads to the problem statement that will be addressed.

Many companies strive for sustainable innovation

A generally acknowledged essential for organizations is innovation; "the multi-stage process whereby organizations transform ideas into new or improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace" (Baregheh et al., 2009). Its benefits are numerous; achieving competitive advantage (Rangus and Slavec, 2017; Salomo et al., 2007; Björk et al., 2010), driving industrial growth, adapting to changing environments (str, 2011) and enhance firm performance on the long term (Waite and Sheehan, 2013).

Innovation with both financial and environmental benefits is called eco-innovation (Calik and Bardudeen, 2016). Bossle et al. (2016) performed a systematic review to identify internal and external *drivers* for organizations to practice eco-innovation. They propose that regulatory pressures, market demand, the relevance of cooperation with other organizations and the development of technology form the main external drivers. The strongest internal drivers are efficiency (e.g. cost savings), environmental capability, environmental managerial concerns, the environmental strategy and culture they create and the quality of human resources (including sustainability programs). Along this line, De Medeiros et al. (2014) identified knowledge of the market, law and regulation, inter-functional collaboration, innovation-oriented learning and R&D investments as the main success factors of innovation.

Yet, *sustainable innovation* is more than *eco-innovation*, as it also includes the social value they generate (Calik and Bardudeen, 2016)[1]. I adopt the definition of sustainable innovation by Calik and Bardudeen (2016): "any new or significant improvement of products, services, technological or organizational processes, commercialized or internally implemented, that not only provide economic benefits but also generate positive social and environmental impacts".

There are multiple reasons why companies strive for sustainable innovation. Up to now, industry has been the largest player of global economy, thus having a responsibility in the transition towards sustainable industry (Fussler and James, 1996) (cited by Dewberry and de Barros (2009)). From the perspective of companies themselves, sustainable innovation is beneficial as well. Synergy between economic growth and the environment creates business opportunities (e.g. technology advance and customer demand) and sustainable innovation supports the adoption of Corporate Social Responsibility (CSR) (Tello and Yoon, 2008).

[1] This view coincides with the triple bottom line; "the ability of a company to generate economic, environmental and social benefits" (Barrett, 2010), which was introduced in 1998 by (Elkington, 1998). Often, three pillars of the triple bottom line are explicitly mentioned definitions of sustainable innovation.

Employee ideas contribute to sustainable innovation

Innovation processes consist of multiple phases; idea generation, idea elaboration, idea championing, and idea implementation (Teza et al., 2016; Perry-Smith and Mannucci, 2017). A critical first activity of the innovation process is the *idea for innovation* (Teza et al., 2016).

Ideas for innovation get the innovation process going. These ideas can come from all employees (Teza et al., 2016; O'Connor, 2006), not only from the R&D department (Rangus and Slavec, 2017; Van de Vrande et al., 2009). One type of employees is the operator; the work floor employee who operate the machines in a factory. Axtell et al. (2000) note that the potential of these employees to innovate is essential to the success of companies. By sharing and borrowing ideas across departments, new innovations can emerge (O'Connor, 2006) and be implemented with the involvement of employees (Nijhof et al., 2002; Van de Vrande et al., 2009).

Besides innovation, employees especially play a role in *sustainable* innovation. Ideas are, once a policy has been set, the start of the idea finding phase (Hallenga-Brink and Brezet, 2005). Regarding the broader eco-innovation, Ramus and Steger (2000) and Raineri et al. (2016) agree that innovation strongly depends on the input of employees in the form of innovative, creative ideas and solutions for environmental improvement. Ideas emerge from discretionary behavior of employees, but can have large impact on the innovation process (Raineri et al., 2016).

Before ideas for improvement are useful, employees need to share their them

To contribute to sustainable innovation, an employee must first share his idea for improvement such that his suggested can be exploited. This is called promotive voice (Liang et al., 2012). Since promotive voice has not been studied extensively, I also draw on literature about employee voice (speaking up with ideas, concerns, suggestions and complaints), of which promotive voice is a specific type (Chamberlin et al., 2016).

In organizations striving for sustainable innovation, voice is especially crucial, because it is a way to collect new ideas (Nemeth, 1997). By sharing information, experiences, skills and ideas, employees create opportunities for others to use this knowledge, but also for enhancing overall innovation performance of the company (Svetlik et al., 2007). When ideas are shared, more ideas develop, because cognitive processes are activated about problem-relevant knowledge (Nijstad et al., 2002; Teza et al., 2016; Nijstad and Stroebe, 2006).

Sharing his idea is also beneficial for the employee himself. Speaking up (through employee voice in general) is a way to show involvement with their work (Chamberlin et al., 2016), a way to exert control and a way to express themselves. When employees feel they are heard and their input is valued, they are more likely to be committed and stay in the firm (Kwon et al., 2016). Promotive voice, contrary to prohibitive voice (identify problems to prevent negative consequences), has a positive impact on job performance (Chamberlin et al., 2016; Thompson, 2005). Employees who engage in voice can also advance their career (Chamberlin et al., 2016; Dutton and Ashford, 1993), whereas a lack of voice opportunities can cause employees to quit their job (Withey and Cooper, 1989).

Employees who find *sustainability* important are more likely to share sustainable ideas for improvement

When an employee has a strong motive, he will put more effort into achieving the associated innovative performance (Sauermann and Cohen, 2010). This implies that employees who find it very important to make their work processes more sustainable will most likely put more effort into realizing the idea, than their colleagues who do not care about sustainability. I assume that trying to realize the idea includes putting an effort to share it. Hence, it is interesting to examine how important operators find sustainability, because the more important they find it, the more effort they are expected to put into sustainable ideas.

From a communication perspective, Van Osch and Van Doorn (2006) found that when the vision of a company is better communicated through all layers of the hierarchy, employees are stimulated to contribute to improving the organization along this line. Indeed, communicating CSR policies to employees is integral to its success, since employees are expected to execute these policies in their daily work (Brunton et al., 2015). For these reasons, it would be relevant to not only ask operators, but also team leaders and the management about the importance of sustainability.

There are multiple reasons why employees might find sustainability important. Motivators for pro-environmental behavior are the shared belief that non-economic value will benefit the society and to the firm is a perceived motivator for identifying environmental opportunities (Hostager et al., 1998), environmental passion and workplace spirituality (Afsar et al., 2016) and self-enhancement motivation, organizational harmony motivation and relationship-enhancement motivation (Yatsuzuka et al., 2009). Individuals differ in the specific factors which they perceive as motivating, so facilitating employees to speak up with their ideas can be done by respecting each of the different motives that a person might have (Hostager et al., 1998).

However, employees often keep their ideas silent

In practice, however, employees often choose to stay silent about their ideas. This can be an individual decision, or a result of a climate of silence; “a lack of upward communication regarding concerns, ideas, or opinions relating to the improvement of organizational functioning” (Van Dyne et al., 2003; Morrison, 2014). Since organizations benefit from employee ideas, their challenge is to nurture and support employee efforts (Raineri et al., 2016).

A whole stream of research on organizational behavior has been dedicated to study which antecedents influence employee voice behavior. Contextual antecedents influence the decision whether employees speak up or stay silent, while individual antecedents also play a role (Morrison, 2011; Ashford et al., 1998; Premeaux and Bedeian, 2003; de Vries et al., 2012). These antecedents appear to influence two mechanisms: the estimate that speaking up is likely to be effective, and the estimate that the risks of speaking up are lower than the benefits (Morrison, 2011; Milliken et al., 2003; Detert and Burris, 2007; Klaas et al., 2011). These two mechanisms can be inhibited or stimulated by many variables; *barriers* and *stimulants*. A third mechanism that plays a role is what the employee wants to achieve by speaking up (Morrison, 2011).

Context description

Sustainable innovation is essential for companies to stay in competition (Rangus and Slavec, 2017; Waite and Sheehan, 2013). The first phase of sustainable innovation is idea generation (Perry-Smith and Mannucci, 2017). Ideas for improvement can come from all employees (Teza et al., 2016), such as from employees who operate machines (Axtell et al., 2000). Yet, companies often do not use the potential of their operators' ideas for improvement (Axtell et al., 2000). When operators share their ideas for improvement, this is called *promotive voice*.

1.2. Problem and aim

This context description leads to the formulation of the research problem and a corresponding research aim. They are formulated here.

1.2.1. Problem

As described above, promotive voice by employees is desired by companies, because it can contribute to sustainable innovation. If we focus on operators; employees who operate machines in the factory, it proves that they do not always share their sustainable ideas for improvement, companies can not benefit from their ideas (Axtell et al., 2000).

Problem

Companies that strive for sustainable innovation do not always use the potential of their operators' ideas for improvement.

1.2.2. Research aim

To move into this direction, companies need to know what they can do to facilitate operators in sharing their ideas for improvement. Only then, they can take action to better use the potential of operators' ideas. This leads to the following research aim that contributes to solving the problem.

Research aim

This research aims to gain insight in how companies that strive for sustainable innovation can facilitate operators to display promotive voice.

1.3. Research questions

The following research question will be answered in this research.

Main research question

How can changes in the organizational context increase the probability that operators display promotive voice in companies that strive for sustainable innovation?

This research question is too broad to answer in its totality. Therefore, the case company Van Houtum B.V. is selected in chapter 3 for which the research question can be answered.

Three remarks further clarify this question. Firstly, the type of companies that I study are those that strive for sustainable innovation. Within these companies, ideas about sustainability are especially welcome, when compared to ideas about other topics. This will be taken into account by studying the different *motives* that operators have; what they want to achieve with their idea.

The desired situation is one with an *increased probability* that operators display promotive voice. Chapter 2 will explain that a utility calculus takes place in his mind, weighing the positive and negative consequences of speaking up (Morrison, 2011). This determines the decision to speak up or stay silent. By influencing the perceived positive and negative consequences of speaking up, this utility calculus can be influenced. Thus, the probability that operators display promotive voice can be increased.

Lastly, the research aim to *facilitate* operators implies that the company does not strive for behavior change of operators. Rather, they want to create a setting in which the natural behavior of the operator, with regard to sharing his ideas, is enforced. In other words, the operator should feel free or even feel stimulated to speak up at work. Since the organizational context impact the employee decision to speak up or stay silent (Morrison and Milliken, 2000), companies can facilitate promotive voice by changing the organizational context.

Definition of organizational context

The organizational context is the circumstance by which employees are surrounded at work (Context, nd; Environment, nd)

In answering this research question, multiple steps are taken. These are represented by the following sub-questions, which together constitute an answer to the main research question:

Four sub-questions

1. What stimulates and limits promotive voice, according to literature?
2. To what extent do operators, team leaders and management at Van Houtum B.V. find sustainability an important motive for improvement?
3. To what extent do operators at Van Houtum B.V. perceive barriers and stimulants to display promotive voice?
4. How can Van Houtum B.V. increase the probability that operators display promotive voice by changing the organizational context?

Notice that the main research question is posed from the perspective of (the management of) the company, while the studied behavior is *promotive voice by operators*, which is investigated from the operators' perspective. This study finds out which variables impact operators' decisions to engage in promotive voice or stay silent. Some of these variables will be personal, while others depend on the organizational context. Variables in the last category are more likely to be influenced by the company.

The sub-question are coherent in the following way. The first sub-question provides a theoretical basis about the decision that individuals make to display promotive voice or to stay silent. This theory is applied to a case company in sub-questions 2 and 3. This knowledge inspires an intervention that is designed and performed as an answer to sub-question 4.

These answers to the sub-questions together provide an answer to the main question. This answer is valid only for the case company. Chapter 8 discusses the implications of the results for other companies, leading to multiple hypotheses for further research.

1.4. Research methodology

An overarching research methodology is selected, as well as a set of methods that together constitute this methodology.

1.4.1. Design-based research

This interaction between theory and practice is typical for Design-Based Research (DBR); the selected research strategy. Design-based research is a relatively new research strategy that emerged within educational research (Anderson and Shattuck, 2012). The approach uses a real-world context to develop theoretical insights (Wang and Hannafin, 2005). Basically, theoretical input is applied in practice, which inspires the designing and enacting of a practical solution. Reflection on this solution enhances theoretical insights (Wang and Hannafin, 2005). DBR differs from action research, because it aims for theoretical development instead of improving practice (Bakker and van Eerde, 2015).

The reason to select DBR as a research strategy is two-fold. First of all, the main research question is a design question: "How . . . ?". By designing a solution in practice, DBR helps to answer this question. Besides, DBR studies representative complex settings as a whole, rather than simplifying them (Wang and Hannafin, 2005). This holistic approach is suitable for this research, because many antecedents simultaneously impact the decision of operators to engage in voice (Morrison and Milliken, 2000).

To perform the practical part of this study, a case study is needed. Since the research question is focused on companies that strives for sustainable innovation, a company will be selected in section 3.1.1 as a case study.

Research methodology

Design-based research is selected as a research strategy, because it integrates theory with practice and takes a holistic approach by studying phenomena in a real-world setting.

1.4.2. Methods

Here I sketch which methods will be used to answer these questions. Meanwhile, this section clearly illustrates how the sub-questions build on top of each other. Figure 1.1 provides an overview of the methods and shows how they relate to each other.

A literature research is performed to collect data for a theoretical framework that answers sub-question 1. From a theoretical perspective, I investigate which mechanisms determine whether an individual displays promotive voice and which constructs influence those mechanisms. This framework includes a list of constructs. Many of these constructs can be influenced by companies to create an organizational context in which operators are more likely to display voice. Meanwhile, the framework displays that the importance of motives impact this decision. For example, when sustainability as a motive would be assessed as unimportant by operators, they would be less likely to speak up about sustainable ideas. Companies might want to influence which motives operators assess as important.

Next, the theoretical framework is applied to a case study, by providing a set of topics for the first round of qualitative interviews with operators. The sample selection for these interviews results from the selection of a case company and a quantitative questionnaire among the operators.

The qualitative interviews are used in three ways. To start with, a list of motives is extracted. Compared to this set of motives, the importance of sustainability as a motive is measured quantitatively among members of the management, the team leaders and operators to answer sub-question 2.

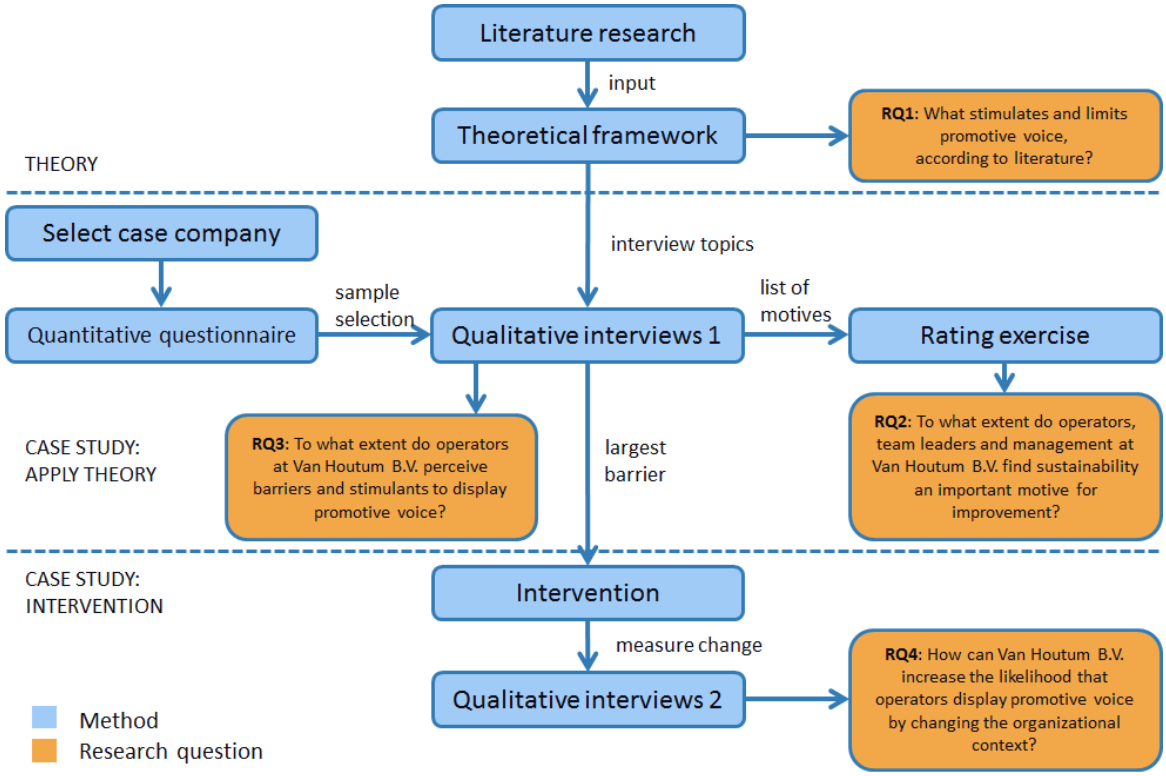


Figure 1.1: The coherence between the methods used in this research. Three phases can be distinguished: (1) theory, (2) applying theory to a case company to identify barriers and stimulants and (3) performing an intervention.

As a second outcome of the qualitative interviews, respondents identify what they perceive[2] as barriers and stimulants with regard to promotive voice. Based on this data, the interviews identify a more focused set of opportunities to increase promotive voice behavior that are specific for this case. This is an answer to sub-question 3.

Thirdly, data from the interviews will identify multiple barriers. An intervention attempts to increase the probability that operators display promotive voice by reducing one of these barrier. The second round of qualitative interviews investigates the barriers and stimulants that operators perceive again. Differences with the first round of interviews are identified to find out what the effects of this specific intervention have been. This answers sub-question 4.

Altogether, this research investigates which aspects of the organizational context companies can address to increase promotive voice behavior. For one case company, I examine how important they assess sustainability as a motive for improvement and which barriers and stimulants operators experience for speaking up. By mapping the effect of a custom-made intervention, I study the effect of a possible way for this company to increase promotive voice among operators.

[2]Ideally, I would study all barriers and stimulants that influence the operators' decision to display promotive voice. However, for this research it is only possible to study the barriers and stimulants they perceive.

1.5. Relevance of the research

1.5.1. Scientific relevance

This research contributes to the literature in multiple ways. In the basis, it adds to the study of promotive voice by creating an overarching descriptive model of antecedents for an individual's decision to display promotive voice. Since promotive voice was only introduced in 2012, such a framework has not yet been developed. The study of promotive voice (or even employee voice in general) in the context of sustainable innovation is new.

The construction of such a model adds to the acknowledgment that promotive voice is a specific form of employee voice, that can be modeled separately.

What is also new, is the application of design-based research in the field of organizational behavior. By applying the theoretical framework to a case study, I have made the first step towards improving and validating the model. This approach complements conventional research on employee or promotive voice, because most studies perform a quantitative study of a small set of constructs.

1.5.2. Societal relevance

An increasing amount of companies strives for sustainable innovation. Sustainable innovation is required for the transition towards a sustainable society, in which the earth is preserved and climate change stays limited. These companies often do not use the potential of their operators' ideas for improvement. To overcome this problem, companies need to know three things; *what* influences promotive voice, *which* opportunities there are for improvement and *how* they can use these opportunities.

This research has added value for each of these steps. The theoretical framework provides relevant insights in aspects of the organizational context which stimulate and limit promotive voice behavior. Besides, my method for examining barriers and stimulants that operators perceive (see section 5.1) can be used by companies. The same holds for the list of motives for ideas that is presented in section 4.1.2. Thirdly, the intervention in section 6.1.1 shows a possible approach for a company to change the organizational context, in order to increase the probability of promotive voice.

1.6. Structure of the report

Eight chapters together constitute this research, as shown in figure 1.2. Chapter 2 presents the theoretical background of this research, resulting in a theoretical framework that serves as the basis for the consecutive sub-questions. Next, the case company is introduced, and a sample is selected in chapter 3. Together, these three chapters constitute the foundation on which the following chapters are built.

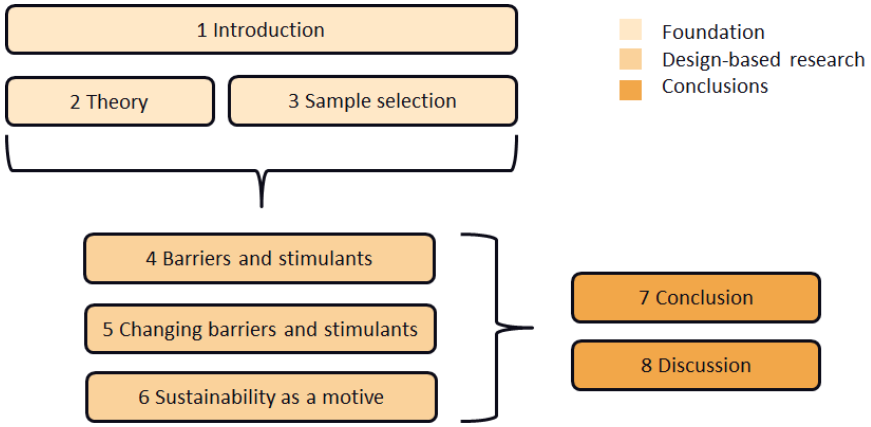


Figure 1.2: A schematic visualization of how the chapters of this thesis relate to each other

Chapters 4, 5 and 6 together present the research performed to answer sub-questions 2, 3 and 4, respectively. Each chapter describes the used methodology, the obtained results and how these results are interpreted. It concludes with an answer to the sub-question.

Once all sub-questions have been answered, chapter 7 concludes by answering the main research question and makes recommendations. Finally, the discussion in chapter 8 puts this research into broader perspective, identifies its limitations and suggests topics for future research.

Important parts in the text are repeated in a box. Definitions are presented in orange boxes, and on page xi. Short summaries are provided in blue boxes.

2

Theory

This study aims to know how companies that strive for sustainable innovation can increase the probability that operators display promotive voice by changing the organizational context. The first step is identifying which elements of the organizational context impact the decision of an operator to display promotive voice. This chapter develops a theoretical framework that describes the decision for an operator to display promotive voice, in the situation where he has an explicit idea for improvement, as an answer to sub-question 1:

What stimulates and limits promotive voice, according to literature?

Section 2.1 explains the methodology for the literature review, in which both *promotive voice* and the overarching concept *employee voice* are researched. Its results are presented in section 2.2. Together, this knowledge is the input for a *theoretical framework* for the decision to display promotive voice in section 2.3. To conclude, section 2.4 answers sub-question 1.

2.1. Methods

Literature research is a method to survey the state of knowledge (Baumeister and Leary, 1997) for two purposes: to define the core concepts and to compose a theoretical framework (Verhoeven, 2007).

This Theoretical Framework (TF) describes the decision that an individual makes whether or not to engage in employee voice, in the situation where he has an idea for improvement. The focus of the TF is to identify constructs which consciously influence this decision. Once constructed, this TF serves as the basis for the interview protocols in sections 5.1 and 6.2.1, aiming to identify barriers and stimulants that employees perceive for engaging in promotive voice.

Two concepts were selected for the literature research: *employee voice* and *promotive voice*. More concisely, the goal was to extract information about the mechanisms and constructs that influence employee voice and promotive voice.

Two fields of study were selected in which employee voice is studied: **Organizational Behavior (OB)** and Human Resource Management (HRM) (Kaufman, 2015). OB studies individual and group behavior within organizational context (O'Reilly III, 1991). This suits my research, because I study what companies can change in the work environment (i.e. organizational context) of operators to facilitate certain behavior. The aim is to change the work environment of the operators in a way that his natural tendency to display promotive voice leads to behavior, rather than being suppressed. This implies that the aim is *not* to realize a behavioral change for operators.

The field of HRM studies employee voice from a system perspective, taking into account rules, regulations and the behavior of the employer (Kaufman, 2015). This stream of literature broadens the results, because it approaches voice more from a system perspective. Since the focus of study is the individual, psychological decision to speak up, OB literature is more strongly represented in the results.

The method is as follows: I used online search engines to find peer-reviewed articles and books about the two concepts. The search strategy consisted of the search engines Web of Science, Scopus and Science Direct. Google Scholar has been used to find articles of which these engines only presented the abstract. Boolean combinations of the following keywords were used: employee voice, promotive voice, challenging voice, factor, determinant, antecedent and motive (which can be found in appendix A). When searching for promotive voice, no extra keywords were added, because only a few articles were found. Articles were retrieved between June 2016 and Jan 2017.

Search results were selected on being written in English and their content. Articles were used that discuss factors, determinants, antecedents and motives for deciding to engage in voice, either or not in the form of a model. The country or year of publication was not restricted.

Articles were selected as follows. In the first iteration, I looked for review papers and papers presenting conceptual models. References of relevant (parts of) articles led to more literature. Later, the focus was on constructs and motives that influence the decision to engage in voice. A point of saturation was reached when reading more articles no longer added new constructs nor motives. In this last iteration, the keywords "factor" AND "voice" AND "<construct>" were inserted in a title-only search in Scopus, to look for articles that focus on this specific construct.

From the collected articles, input for the theoretical framework was selected. Mechanisms were used when they impact the decision to voice, and when many authors used this mechanism. Constructs were selected under the condition that were also relevant for promotive voice.

Method: Literature research

A literature research aims to collect existing knowledge about the decision to engage in promotive voice. Results will be presented in section 2.2 and used to construct a theoretical framework in section 2.3.

2.2. Results

Results of the literature review are presented here, both about employee voice and promotive voice.

2.2.1. Employee voice

Currently, only little research is available about promotive voice. Promotive voice is one of the many behaviors under the name of *employee voice*; "the expression of constructive opinions, concerns, or ideas about work-related issues" (Van Dyne et al., 2003). Employee voice is about expressing multiple types of messages, of which one is the expression of *ideas*.

Relationship between concepts

Promotive voice is a form of employee voice.

Since employee voice has been studied more extensively, the concept is included in the literature review. After defining the concept, this section presents three aspects of *employee voice*; the *decision* to engage in voice or to stay silent; three *mechanisms* which influence this decision; and individual and contextual *constructs* that impact these mechanisms.

Definition

In this research I study voice as an individual, psychological decision within a system, with a focus on improving the work situation. Inspired on multiple definitions from the field of OB of employee voice, I composed the following definition. In Dutch it is called 'inspraak'. This definition includes many types of voice, among which promotive voice (Liang et al., 2012; Van Dyne and LePine, 1998), on which page 21 presents more details. Below, several elements are discussed that recurred in many articles and might be helpful to describe promotive voice.

Definition of employee voice

Employee voice is defined as the communication by an employee of ideas, suggestions, concerns or opinions, with the intent of bringing about constructive change to improve the work context, even when it upsets the status quo (Morrison, 2014; Raub, 2008; Van Dyne and LePine, 1998; Detert and Burris, 2007; Chamberlin et al., 2016).

Decision to engage in voice

This research studies latent voice opportunities; situations in which the employee has an idea for improvement that he could potentially share (Morrison, 2014). When a latent voice opportunity occurs, this opportunity is not necessarily taken.

Contemporary models studying the antecedents of employee voice behavior recognize that the individual *decides* whether or not to engage in voice, before displaying or withholding the behavior (Morrison, 2014). This decision is the result of subjective estimates as introduced below.

In 1964, Vroom (1964) introduced a *theory of motivation* which recognizes that decision-making involves risk. According to this theory, individual´s behavior is a function of the valence (i.e. the preference of an individual towards a particular outcome) and the expectancy (i.e. "the momentary belief concerning the likelihood that a particular act will be followed by a particular outcome") of the behavior (Vroom, 1964).

Throughout the development of voice literature, scholars have built upon this theory and each other's work. Papers published afterwards include the subjective estimate that individuals make of the positive and negative consequences of voice; the so-called *utility calculus* (Withey and Cooper, 1989; Ashford et al., 1998; Morrison and Phelps, 1999; Milliken et al., 2003; Detert and Burris, 2007; Morrison, 2011; Pauksztat et al., 2011).

This consideration is influenced by three mechanisms: the motive for the idea and the perceived safety and the perceived efficacy of speaking up (Detert and Burris, 2007; Li et al., 2014; Milliken et al., 2003; Morrison, 2011; Klaas et al., 2011; Morrison, 2014). [1] Generally, there is a positive initial motivation for sharing the idea (Detert and Burris, 2007), but "even when there are motivating forces, the employee can decide to engage in employee silence" (Morrison, 2014), because the individual considers both the potential benefits and risks of voice (Morrison, 2011). The positive consequences include implementing the idea and receiving rewards (Detert and Burris, 2007). Negative consequences can for example be the loss of image, social order and relationships (Detert and Burris, 2007; Li et al., 2014). The sum of these positive and negative contributions determines what the decision will be; whether the employee engages in voice. These mechanisms are discussed in more detail in the section 2.2.1.

[1] Note that in her model of 2014, Morrison (Morrison, 2014) includes a fourth mechanism: non-calculative automatic processes, taking into account that the decision to voice is not purely rational, but involves many unconscious processes are taking place in the mind. Although I acknowledge the role of these unconscious processes by operators, I do not include them, because I study the barriers and stimulants that operators *perceive*. By definition, an individual can not mention unconscious processes as a barrier or stimulant for his behavior.

Mechanisms

Three mechanisms will be explained in more detail: the motive for an idea, and the perceived safety and the perceived efficacy of speaking up. A more theoretical description of motives for an idea can be found in appendix E.

Motive for an idea

A **motive** is one part of a person's motivation to act; an individual's motivation to perform an activity depends upon the expected benefits from engaging in that activity (e.g., contingent pay) as well as upon the intensity of her preferences for these benefits (e.g., how much does she care about money) (Sauermann and Cohen, 2010). By the word *motive*, the author designates how strong the preference is for the expected benefit of an activity.

Several models describing employee voice include a mechanism called the *motive for voice* (Van Dyne et al., 2003; Morrison, 2011; Grant and Ashford, 2008; Morrison, 2014). The motive for voice answers the question *why* an individual engages in employee voice; the initial reason why an individual wants to engage in voice and can be seen as the driving force for this behavior (Morrison, 2011). The stronger the motive for voice, the larger the probability of voice (Morrison, 2014).

The motive depends on the activity, which in this case is *sharing an idea*. So, the **motive for an idea** is defined as follows.

Definition of the motive for an idea

The motive for an idea is how important the individual assesses the envisioned outcome of the idea.

By definition of employee voice (on page 16), speaking up intends to bring about constructive change. Therefore, a motive is always a stimulating force. The only option for this mechanism to inhibit promotive voice, is when a motive is lacking. For example, when the idea would have a negative influence on the all stakeholders, there is no motive for the idea.

Perceived safety

The last two mechanisms of the utility calculus are (1) the perceived costs versus safety of voice and (2) the perceived efficacy versus futility of voice. **Perceived safety** is defined as "the individual's judgment about the risks or potential negative outcomes associated with speaking up" (Morrison, 2011: p. 382). It entails uncertainty (Dutton et al., 1997), fear of image losses (Milliken et al., 2003; Ashford et al., 1998), fear of damaging social relationships (Milliken et al., 2003; Detert and Burris, 2007) and fear of punishment (Milliken et al., 2003). Milliken et al. (2003) confirm that being perceived negatively would have consequences for trust, credibility and likelihood for career opportunities, and can cause weakened social ties.

Definition of perceived safety

Perceived safety is the individual's judgment about the risks or potential negative outcomes associated with speaking up (Morrison, 2011: p. 382).

Perceived efficacy

On the other hand, **perceived efficacy** "is the individual's judgment about whether speaking up is likely to be effective" (Morrison, 2011: p. 382). Perceived efficacy is high when the individual experiences support from the environment (Klaas et al., 2011), when the estimated chances of implementation is high (Milliken et al., 2003) and there is a chance for (informal) rewards to be earned (Detert and Burris, 2007). It is low when employees feel speaking would be futile (Milliken et al., 2003).

Definition of perceived efficacy

Perceived efficacy is the individual's judgment about whether speaking up is likely to be effective (Morrison, 2011: p. 382).

These three mechanisms are weighed in the utility calculus, to estimate the expected consequences of employee voice. High perceived efficacy and high perceived safety both stimulate the person to share his idea (Morrison, 2011). (A) strong motive(s) for the idea also makes voice more likely.

Individual and contextual constructs

Perceived efficacy and perceived safety influence the utility calculus for deciding whether or not to voice an idea. But what determines how an employees estimates the perceived efficacy and perceived safety of speaking up?

According to employee voice literature, multiple individual and contextual constructs account for why speaking up behavior differs per occasion by influencing perceived efficacy and perceived safety (Morrison, 2011; Morrison, 2014). A lot of empirical research has been done on such constructs (Ashford et al., 1998; Morrison and Milliken, 2000; Pinder and Harlos, 2001; Milliken et al., 2003; Morrison, 2011; Klaas et al., 2011; Morrison, 2014; Kaufman, 2015).

The constructs that I selected from the literature are listed in table 2.1, distinguishing between individual and contextual constructs. I follow this distinction by Morrison (2011); Ashford et al. (1998) and Premeaux and Bedeian (2003), because individual constructs can strongly differ between employees, whereas contextual constructs (for operators who work in the factory) are much more aligned. All constructs are defined in a broad sense. Multiple constructs correlate to each other and some even overlap. Brief literature reviews for all constructs can be found in appendix B.

Table 2.1: The individual and contextual constructs that influence employees' decisions to engage in promotive voice, according to literature

Individual constructs	**Definition**
Individual disposition	Demographics and personality of an individual
Emotions, beliefs and schemas	Emotions, such as fear and anger (Morrison, 2014), implicit beliefs of voice (Detert and Edmondson, 2011) and schemas; cognitive structures for processing information efficiently (Markus, 1977)
Psychological safety	"Shared belief held by members of a team that the team is safe for interpersonal risk taking" (Edmondson, 1999)
Experience & tenure	The amount of work experience and the work status (full-time or part-time) of an employee
Position & status	Position is "social or official rank or status" (Position, nd: Def. 5b) or 'a place in the hierarchy' (Morrison, 2011). Status is "position or rank in relation to others" (Status, nd: Def. 1a).
Job and organizational attitude and perceptions	How employees feel about their work (Morrison, 2011), including employee commitment, job satisfaction and personal control (Meyer et al., 2004; Tangirala and Ramanujam, 2008a; Morrison, 2014)
Performance	How well the employee does his job
Contextual constructs	**Definition**
Organizational structure	The way in which an organization is designed in an effort to insure consistency and coherence in achieving its objectives (Jennings and Seaman, 1990)
Work group size & structure	Size and structure of the work team
Formal voice mechanisms	Formal upward feedback channels (Morrison, 2011)
Collective level beliefs	Shared implicit beliefs within a group about what is and is not appropriate behavior in a hierarchical setting (Morrison, 2011; Morrison, 2014)
Supervisor and leader behavior	The behavior of direct and indirect managers
Relationship with supervisor	Relationship between an employee and his direct and indirect managers
Organizational culture	A pattern of basic assumptions that has developed among a set a of people with enough stability and common history to have allowed a culture to form (Schein, 1990)
Group voice climate	The group-level perceptions and shared beliefs about speaking up (Morrison et al., 2011; Ashford et al., 1998; Frazier and Fainshmidt, 2012)

Individual constructs

Independent of the context, some people engage in voice more often than others. This implies that individual constructs, such as attitudes and disposition, can make a difference (Morrison, 2011). Much empirical research has been done to find out which constructs explain this difference. For each individual constructs in table 2.1, appendix B explains why the construct is relevant and how it relates to other constructs, if applicable. For practical reasons, they are included in the theoretical framework as a list.

Contextual constructs

Contextual constructs are those that "lie outside of the individual actor" (Morrison and Milliken, 2000). Employees actively look for cues in their work environment before deciding to engage in issue selling (Dutton et al., 1997, 2002) or employee voice in general (Morrison and Milliken, 2000). Given the fact that this behavior is discretionary and potentially risky (Dutton et al., 2002), the organizational context impacts the probability that employees will speak up (Morrison and Milliken, 2000) by conveying messages about the acceptability and desirability of voice (Morrison, 2011).

In an organizational context supportive of voice, employees receive cues that they can make a contribution (and thus perceived efficacy is high) (Morrison, 2011), without causing personal harm (in other words, with high perceived safety) (Morrison and Milliken, 2000; Morrison, 2011; Dutton et al., 1997). Opposite, a climate of silence comes into existence when cues are diffused withholding voice (Dutton et al., 1997). Then, silence is not merely a result of individual choosing to stay silent, but rather the product of organizational forces that stimulate silence systematically (Morrison and Milliken, 2000).

The constructs are strongly related to each other: The organizational structure (page 134) entails work group structures (page 134) and formal voice mechanisms (page 135). It is strongly dependent on manager's implicit beliefs about employee voice (Morrison and Milliken, 2000) (page 135). The organizational structure sets the tone for supervisor behavior (page 135), the relationship with the supervisor (page 136), the organizational culture (page 137) and the group voice climate (page 138). For each construct, the following sections present its impact on the decision to engage in voice.

Results:

When an individual decides whether or not to display employee voice, he makes a subjective estimate that individuals make of the positive and negative consequences of voice; the so-called *utility calculus*.

Three mechanisms influence this utility calculus; the *motive for the idea*, *perceived safety* and *perceived efficacy*. Once a decision has been made by the individual, the next step is the action of either engaging in voice or staying silent.

A set of individual and contextual factors influences the mechanisms perceived safety and perceived efficacy, such as 'individual disposition' and 'supervisor and leader behavior'.

2.2.2. Promotive voice

The concept *promotive voice* was introduced by Liang et al. (2012) in 2012 and is defined as follows.

Definition of promotive voice

Promotive voice is the proactive expression of ways to improve existing work practices and procedures to benefit the organization (Liang et al., 2012; Long et al., 2015).

In contrast to the definition of employee voice on page 16, promotive voice aims to improve organizational functioning (Chamberlin et al., 2016; Liang et al., 2012; Van Dyne and LePine, 1998). As a member of the promotive behaviors, promotive voice is proactive; it "promotes, encourages or causes things to happen" (Van Dyne and LePine, 1998). Morrison (2011) had named this *suggestion-focused voice*, before adopting Liang et al. (2012)'s term (Morrison, 2014). On the contrary, prohibitive behaviors protect and prevent something (Van Dyne and LePine, 1998), for example by stopping undesirable situations (Rusbult et al., 1988; Withey and Cooper, 1989).

This definition assumes that the individual already has an idea in mind. The idea generation has already taken place, so the content of the message is an *idea for improvement* or, in other words, a suggestion regarding an opportunity (Chamberlin et al., 2016). Ideas for improvement can be defined as follows.

Definition of ideas for improvement

"Ideas for improvement represent new or modified cognitive structures which, compared to existing routines, provide individuals with (more) adequate solutions for dealing with problems they encounter in [an operators'] work context" (Schepers et al., 2016).

Ideas for improvement involve creative thinking for innovation (Schepers et al., 2016), but even though then can be completely new, ideas for improvement are often a significant recombination of existing knowledge (Oldham and Cummings, 1996). Ideas for improvement can be inspired by many things, such as a (recurring) problem or somebody else's idea.

Engaging in promotive voice is a continuum. This means there is no clear distinction between people who engage in promotive voice and people who don't. In every latent voice opportunity he makes a new decision, although some people speak up more often than others. his research studies promotive voice as a *one-time* decision for speaking up, in the situation where the individual has a specific idea in mind.

The concept *promotive voice* is relevant for my research, because it exclusively includes ideas for how to do things differently; what I call *ideas for improvement*. Instead of seeing promotive voice as only benefiting the organization, I found that self-gain plays a large role and sometimes overlaps with organizational gain. In this research, I only consider direct voice; two-way communication between employee and management, without mediation of a representative (Bryson, 2004).

From here on, the word *voice* is an abbreviation of promotive voice. When employee voice is meant, it will explicitly be named like that.

Additional literature about promotive voice

Since promotive voice was only introduced in 2012 (Liang et al., 2012), only 22 studies have been found about the concept. They mainly study the antecedents of promotive voice, as opposed to prohibitive voice. Table B.1 in appendix B shows for 17 studies which antecedents were studied in each article. Several of these antecedents fall under the individual and contextual constructs of table 2.1.

Four articles did not study specific antecedents of promotive voice. First of all, (Chamberlin et al., 2016) suggested a conceptual model of antecedents and outcomes of promotive and prohibitive voice. The main antecedent of promotive voice is *general promotion focus*. Another theoretical model of antecedents and outcomes is presented in Lin and Johnson (2015), in relation to promotion- or prevention focus and ego depletion. Li et al. (2017) and (Hassan et al., 2016) studied the outcomes of promotive voice, on which this study does not focus.

Results: Promotive voice

Promotive voice is a form of employee voice where ideas for improvement are shared. The small amount of research about promotive voice added some insights in individual and contextual constructs.

2.3. Interpretation

The results presented above include all required ingredients for building a theoretical framework. The theoretical framework is my interpretation of what determines whether an individual displays promotive voice. It includes aspects of the organizational context that a company could try to change, in order to increase the probability that operators display promotive voice.

Theoretical framework

The theoretical framework is shown in figure 2.1 and clarified below. The list of individual and contextual constructs equals that in table 2.1.

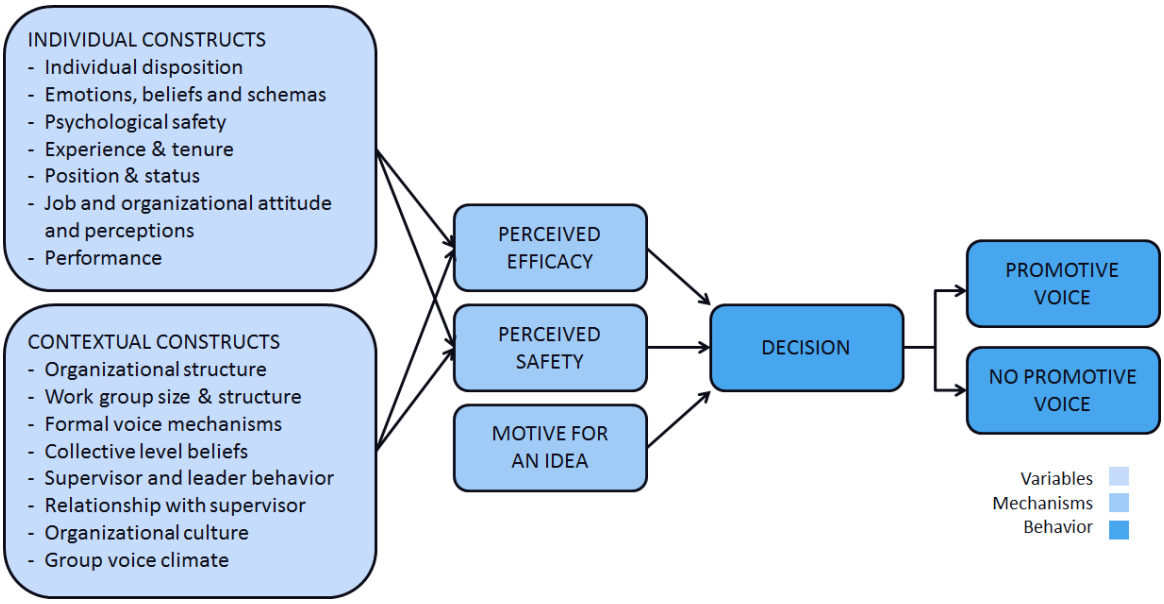


Figure 2.1: Theoretical framework of an individual's decision whether or not to engage in employee voice, given that he has an idea for improvement

The model considers a latent voice opportunity; the situation in which an employee has an idea for improving something at work. The individual has two options: share his idea; the block *promotive voice*, or keep it silent; the block *no promotive voice*. Central in the framework is the decision of the individual (the block *decision*) for either of these options.

In this model, this decision is the result of a utility calculus; a weighing of estimated positive and negative consequences. The *probability* of promotive voice is the chance that in a latent voice opportunity, the individual decides to display promotive voice. This chance is higher when the outcome of this utility calculus is more beneficial, i.e. when estimated positive consequences outweigh the estimated negative consequences.

The probability that operators display promotive voice

The probability that an operator displays promotive voice is higher when the outcome of this utility calculus is more beneficial. This utility calculus is a weighing of estimated positive and negative consequences.

The utility calculus depends on three mechanisms[2]. The employee estimates the perceived efficacy of voice (the block *perceived efficacy*), and the perceived safety of voice (the block *perceived safety*). Lastly, the motive for an idea (the block *motive for an idea*) can positively influence the utility calculus. This utility calculus and these three mechanisms from the literature on employee voice were adopted, because most authors endorse it and no objections were found against it in OB literature [3]. These three elements are constructs, but for clarity I refer to them in the text as mechanisms.

The mechanisms *perceived efficacy* and *perceived safety* are influenced by multiple individual and contextual constructs, visualized in the two blocks on the left. This statement is in line with OB and HRM literature on employee voice, which both acknowledge the influence of personal factors as well as the context in which voice takes place. Individual constructs, which depend on the character and situation of the employee, are individual disposition, emotions, beliefs and schemas, psychological safety[4], experience & tenure, position & status, job and organizational attitudes and perceptions and performance. Contextual constructs, which depend on the work environment of the employee are organizational structure, work group size & structure, formal voice mechanisms, collective level beliefs, supervisor and leader behavior, relationship with supervisor, organizational culture and group voice climate. This is a selection of constructs that were studied in the context of employee voice and which I expect (or research has shown) to impact promotive voice. Antecedents for promotive voice do not inspire additional constructs, because they were also studied with regard to employee voice, or because they were included in these constructs. In this model, the motive for an idea is not influenced by anything, because a motive comes along with each idea; for each idea an operator has a desired effect in mind, which he finds to some extent important[5].

[2] Liang et al. (2012) proposed alternative mechanisms. These were not adopted, because this article was found after the first round of qualitative interviews took place.

[3] From the field of HRM, there is criticism against the models from OB (Kaufman, 2015). However they criticize the approach of OB to study individual behavior, rather than taking into account the whole system within which voice takes place. Since I deliberately focus on the individual decision to speak up, this criticism does not withhold me from following the OB literature.

[4] *Psychological safety* differs from *perceived safety*. The former describes the shared belief about the safety of risk taking in general (Edmondson, 1999), whereas the latter entails the shared belief about the safety of sharing an idea for improvement (Morrison, 2011).

[5] The model of Morrison (2014) states that the motive for an idea is influenced by the same constructs that influence perceived efficacy and perceived safety. Since chapter 5 shows that the intervention focuses on enhancing perceived efficacy, I do not include any antecedents for motive for an idea.

Assumptions

The following assumptions were made. Firstly, the main difference between describing employee voice and promotive voice is the considered *behavior*. With regard to employee voice, the behavior is 'speaking up with an idea, suggestion, concern or opinion'. With regard to promotive voice, the behavior is 'sharing an idea for improvement'. This theoretical framework studies the decision for *sharing an idea for improvement*, assuming that the decision-making process for engaging in promotive voice can be modeled in the same way as the decision to display employee voice. I expect that this assumption is reasonable, because promotive voice is a form of employee voice, and because mechanisms for employee voice were also used to describe other specific forms of employee voice (Miceli and Near, 1992; Ashford et al., 1998).

The second assumption is the re-interpretation of the *motive for voice* as the *motive for an idea*. The studied behavior is *sharing an idea* (Liang et al., 2012), instead of *speaking up*. The possibility for improvement can motivate an employee to speak up (Pauksztat et al., 2011). The *motive for an idea* refers to the desired outcome of the *idea*, rather than the desired outcome of *speaking up* in general. The *motive for an idea* is expected to contribute to the utility calculus in the same way, because the motive is the initial force driving an employee towards the consideration of sharing his idea. If his motive would be infinitely strong, he would definitely share his idea, whereas a weak motive is easily overruled by low perceived efficacy or safety. The stronger the motive for an idea, the larger the probability of voice.

Arrows between the constructs and mechanisms do not necessarily represent a causation. A causal relationship has been found in empirical research only for a few constructs. It is plausible that many constructs causally impact perceived efficacy and perceived safety, because they change the situation in which the employee makes these estimations. The arrow from motive for an idea towards the decision is my assumption based on the literature, as explained above.

2.4. Conclusion

According to the theoretical framework in figure 7.1 the decision to speak up depends on three mechanisms: *perceived efficacy*, *perceived safety* and the *motive for the idea*. High perceived efficacy, low perceived safety and a strong motive each increase the probability that the individual speaks up with his idea. Perceived efficacy and perceived safety are influenced by a set of individual and contextual constructs.

3

Selection of case company and sample

The theoretical framework in chapter 2 identified many constructs that play a role in the individual's decision to share his idea or to stay silent. The next step of design-based research is to apply this framework to a case study to see what it means in practice. This chapter selects a sample for the qualitative interviews in chapters 4 and 5.

After selecting the case company in section 3.1, a quantitative questionnaire is explained in section 3.2.1, which allows for selecting a sample from the operators of this company in section 3.2.2.

3.1. Selection of case company

3.1.1. Selection criteria

This research studies the decision of operators to share an idea for improvement or to keep it silent. To study this behavior in practice, I need a set of operators from a case company to participate in my research. This way, operators can be studied within their natural environment.

The case company should meet a few criteria.

- It should be a manufacturing company that employs operators, because the potential of this group is not always used. Operators are employees who operate the machines in the factory.
- The company should pursue sustainable innovation, because I study promotive voice in this context.

- The company must involve its employees in the process of sustainable innovation. Operators should have regular opportunities to share ideas for improvement; e.g., there must be space for speaking up within the hierarchy and organizational culture. Such opportunities must be present in order to study the decision that operators make to use this opportunity or to stay silent, and to study the barriers and stimulants that influence this decision.

Method: Case company

A case company is selected, because it allows to study a set of operators. The company should be a manufacturing company, pursue sustainable innovation in which operators are involved. Operators should have regular opportunities to share ideas for improvement.

3.1.2. Case company

Van Houtum B.V. was selected as the case company, because it satisfies the above mentioned criteria; it is a manufacturing company that produces hygienic papers, such as toilet paper and paper towels. Van Houtum employs operators in their two factories. They have an ambitious attitude regarding sustainability and are an innovative organization. Their organizational structure and culture provide room for ideas for improvement from operators.

Here, I briefly describe Van Houtum's attitude towards sustainability, its organizational culture and their attitude towards ideas for improvement. More details can be found in appendix C.

Organizational structure and culture

The target group of this research consists of the operators in the production factory; teams 1 up to 5 and their team leaders. These employees operate the machines in the production factory. Five teams of eight operators occupy the five shifts system to keep the factory running 24/7. The team leader has the same tasks as his colleagues, while leading his team. Recently, team leaders are being trained for coaching leadership; a way of leading in which responsibilities are taken by team members, if possible.

The place of the target group and other relevant employees in the organizational hierarchy is presented in the figure below. The managing director has six direct reports within the management team, among whom the manager production. He is assisted by the assistant manager (who coaches team leaders), and the coordinator education (who takes care of the education of all operators). The manager production is in charge of every aspect of the production factory, among which the chief process technology and the operator teams. The final employee in this scheme is the staff advisor.

Van Houtum formulated the following core values: *honesty* (integer), *future-oriented* (toekomstgericht) and *enthusiasm* (bevlogen). From a technical perspective, Van Houtum calls itself *decisive* (vastberaden), *ground-breaking* (baanbrekend) and *connective* (verbindend).

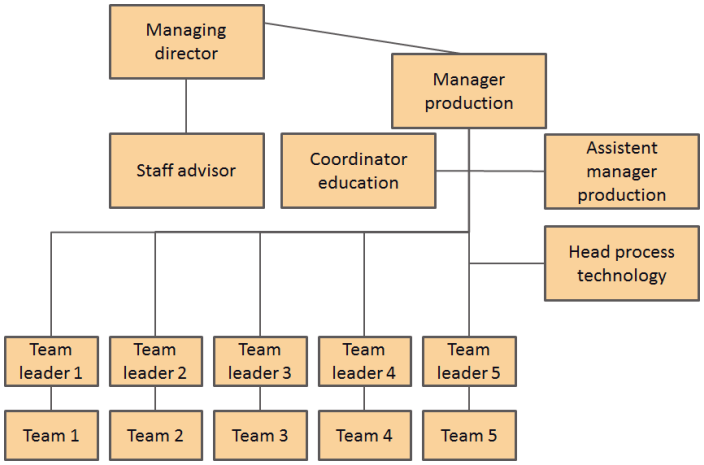


Figure 3.1: A selection of the organizational structure of Van Houtum, only including employees who are relevant for this research

Together, these values represent their focus on *corporate social responsibility* (CSR), which is a driving inspiration within the company. Meanwhile, *entrepreneurship at all levels* is stimulated by sincerely being open for suggestions (Van Houtum B. V., 2016h). For example, this is illustrated by the fact that job advertisements for a team leader in the production facility mentions six personal characteristics, of which two are related to improvement (Van Houtum B. V., 2017b).

The website states that the *flat organizational structure* allows for quick decision-making and collaboration between manager and staff, but mainly it facilitates *open and transparent communication* among employees. This is possible due to a culture of *trust*. The management stated in interviews that they are *open* for ideas and suggestions, as well as complaints. I noticed that many employees know each other. Together with the local Limburgian *friendliness*, this felt to me as an *informal atmosphere*.

Ideas for improvement

The system around promotive voice is briefly described here; where ideas come from, when and through which channels they are shared and what happens with them after being shared. It is based on the data collected in the whole research. More details can be found in section C.2.

One manager said that operators have plenty of ideas for improvement. Team leaders are expected to strive for continuous improvement, says the coordinator education. Indeed, I noticed that team leaders have attention for ideas from operators, to varying extent and with varying approaches. Managers believe that employees should be given the space to think along; *"je moet mensen de ruimte geven om mee te denken"* (resp D). At Van Houtum, promotive voice is mainly informal and experienced as discretionary behavior; voluntary behavior that employees can choose to engage in, but is not compulsory (Van Dyne and LePine, 1998; Morrison, 2011).

Ideas for improvement can be triggered by different things; often ideas are triggered by (recurring) problems. Multiple channels are in place to voice such an idea. The main channel for

sharing an idea is to discuss it in person. Discussion most often takes place with direct colleagues, with the team leader or with the manager that knows most about the topic. Different operators choose to share their idea with different colleagues. Formal mechanisms (such as a form on which ideas can be filled in) are also available. The idea can be shared during a coffee break, during the shift change or while working at the machines.

A distinction is made between ideas that can be executed on a small scale, and ideas that need interference of higher ranked people. Small ideas can be implemented by the operator himself. When he decides to share the idea, it often stays within the team. More complex ideas are first assessed on feasibility. When the idea has potential, it is passed on to the person with most knowledge on the topic and/or the production manager who decides about limited financial investments. When more financial resources are required, the works council makes the decision.

Sometimes a problem is identified, rather than an idea. When this problem is prioritized as important, but is too complex or large to be solved by the manager, technicians or individual operators, a small group activity (abbreviated SGA) is started to find a solution to the problem.

The operator perspective on team leader behavior. Some think their team leader handles ideas very well. Others feel that action is sometimes taken upon ideas, depending on the situation. The last group feels like they are banging their head against a brick wall; *"ik vind heel vaak dat we gewoon tegen een muur praten"* (resp 24). This is harmful, because it creates a climate of silence *"dan krijg je een beetje zo'n sfeertje van: we zeggen niks meer"* (resp D).

Two remarks should be made from the perspective of the team leaders. First of all, despite the desire to keep operators up to date, team leaders sometimes experience a lack of feedback from colleagues who decide what happens with ideas. Secondly, respondent 14 argues that the behavior of operators plays a part in this as well. He sees that operators often grumble about problems rather than suggesting specific ideas; *"vaker is het niet 1, 2, 3 een idee, maar dan wordt er bijvoorbeeld gemopperd over iets"* (resp 14). The assistant manager has the feeling that operators only hear what they want to hear.

Sustainability

As mentioned before, one of the core values of Van Houtum is corporate social responsibility (CSR), which they try to accomplish by measuring multiple KPI's for financial, environmental and social aspects of CSR. This section describes the vision regarding CSR and measures for assessing its progress, based on the CSR reports of 2015 and 2016 (Van Houtum B. V., 2016f,0) and the CSR-page on the website (Van Houtum B. V., 2017c).

Van Houtum is a front runner with regard to CSR, where sustainability is a main part of its vision and mission: "Van Houtum B.V.'s mission is to grow continuously by investing in innovative, differentiated products and services in a way that focuses strongly on Corporate Social Responsibility (People - Planet - Profit) and integrates CSR in operational management, supported and assured via management systems including Balanced Score Cards, communication and training" (Van Houtum B. V., 2016a). As an example, they have developed the brand Satino Black,

which has been certified as Cradle-to-Cradle, FSC certified, CO_2 neutral and carries the European Eco-label.

At Van Houtum, sustainable innovation is anchored in the organization by means of ISO norms [1], sustainability certificates and the organizational culture. They use key performance indicators (KPI's) to measure their environmental, social and financial performance. The targets for these KPI's are formulated on a yearly basis and monitored every week. Multiple explicit approaches are in place to realize these targets.

Result: Case company

This research is performed by means of a case study. Van Houtum B.V., a Dutch manufacturing producer of hygienic papers, is selected as a case company. They strive for sustainable innovation and their operators have opportunities to share their ideas for improvement.

3.2. Sample selection

To select a sample among the operators of this company, a quantitative questionnaire is performed. The operators from the sample will be interviewed in chapter 5.

3.2.1. Method

The case company that will be introduced in section 3.1.2 employs 40 operators. Since it is too time-intensive to interview them all, a sample needs to be selected from this research population. I want to compose a sample of extremes with regard to *proactivity* and *pro-environmental behavior*.

A questionnaire is a suitable method to collect this data, because it takes little time (Baarda, 2010) and because it allows to compare the scores of operators with each other (Verhoeven, 2007) for both characteristics.

A sample of extremes includes operators whose scores are very high or very low (Baarda, 2010). This type of sample is useful, because operators with different characteristics might experience different barriers and stimulants and might display different behavior. To gain insight in the decision to speak up of different types of operators, it is necessary to interview them all.

[1] ISO norms are standards for "requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose". They are managed by the International Organization for Standardization (nd: see ISO).

Sample size

In the factory of the case company (introduced in 3.1.2) 40 operators are employed. This research population consists of male, full-time employed machine operators doing shift work in five teams. Each team of 8 operators is led by a team leader; an experienced operator who coordinates the team. He divides the tasks, helps with problem solving and is the contact person for the manager. In this sample selection, team leaders are treated equally as operators.

The sample size is 15, such that at least 2 operators are interviewed per team, even when a few respondents are absent.

Measures

The quantitative questionnaire measures proactive personality and pro-environmental behavior. To operationalize both characteristics, I draw upon existing measures. The complete questionnaire can be found in appendix D. A concise description is provided here.

The characteristic *proactivity* is a relevant characteristic, because proactive operators might come up with more ideas for improvement and once they have an idea, they are more likely to display voice than their passive colleagues (Bateman and Crant, 1993). The proactive personality scale was introduced by Bateman and Crant (1993). It measures the individual difference to engage in proactive behavior; "the extent to which [people] take action to influence their environment" (Bateman and Crant, 1993). It is a uni-dimensional 17-items scale, ranked on a 7-point Likert scale (Bateman and Crant, 1993) with good internal and test-retest reliability (Trifiletti et al., 2009). Claes et al. (2005) shortened the measure and translated the items (translation of the items was found in (Zomerdijk, 2015), not in (Claes et al., 2005)) into a 6-item Flemish measure with Cronbach's alpha[2] of 0.79. The formulation of three items was clarified, making the questionnaire as reliable, low-threshold and suitable as possible for Dutch speaking respondents.

Pro-environmental behavior[3] is related to *how* important the operator finds sustainability (Whitmarsh and O'Neill, 2010), and thus to the strength of *sustainability* as a motive for ideas for improvement (see chapter 4). Pro-environmental behavior in private life is measured, rather than at work, because this behavior is driven by personal motives. Personal motives can influence pro-environmental work behavior.

[2] Cronbach's alpha is a measure with a value between 0 and 1 for the internal consistency of a set of items (Bland and Altman, 1997). A higher value means better consistency.

[3] Many measures are available about pro-environmental or ecological concern, commitment and attitudes (Mayer and Frantz, 2004; Weigel and Weigel, 1978; Rusbult et al., 1998; Lafuente and Sánchez, 2010; Dunlap et al., 2000). Since concern, commitment or attitude do not guarantee any visible result, I measure behavior.

Among the measures for *pro-environmental behavior*[4], I select the one by Whitmarsh and O'Neill (2010), because it contain straightforward questions about daily life behaviors in private life that can be measured easily. I select 17 relevant items, including 3 items about transport, 4 about citizenship, 2 on recycling, 2 on food and 6 on energy saving. I translated them to Dutch, formulated several items more specific and subdivided them into 'individual' and 'house- and car-related' items.

All in all, the questionnaire consists of 13 items. The items on individual pro-environmental behavior come first, using the 4-item Likert scale; *never*, *sometimes*, *often* and *always*. The only exception is the question about separating waste, where any of the six types of waste can be selected. The second part contains the items on pro-activity, using a 7-point Likert scale. The concluding part asks about house- and car-related pro-environmental behaviors, using a tailor-made 4-point scale with the options *not applicable*, *never*, *more than 5 years ago*, *1 to 3 years ago* and *last year*. The scales equal those in the articles I draw from.

Pre-tests were performed in two rounds. In the first round, test persons reflected on the clarity of the questions (Baarda, 2010) and the structure of the questions. The order of questions was changed, the option *not applicable* was added, small language-related adjustments were made and information was added to the introduction of the questionnaire (eg. not mentioning TU Delft to avoid operators feeling intimidated). In the second round, the questionnaire was experienced as short enough and containing clear questions. No more changes were made.

Data collection

The questionnaire is printed and I visited the factory to distribute them, because the managing director of Van Houtum warned me that operators feel uncomfortable filling out an online form. Visiting the factory would give a higher response rate, and questions can be answered if necessary (Baarda, 2010).

Ideally, all 40 operators would fill out the questionnaire, but due to holidays only 30 operators were present during my visit on the 5th and 9th of September 2016. 28 operators cooperated, the other 2 operators wished not to participate for unknown reasons.

In random order and one by one, the operators came to the factory canteen. The questionnaire was introduced very briefly by saying the aim of the questionnaire is "to measure what they find important, in their private life rather than in a work environment". They received a printed version of the questionnaire and took 3 to 5 minutes on average to answer the questions. The real aim of the questionnaire was not mentioned on purpose, to avoid the bias that operators either would or would not want to be interviewed.

[4] Other measures for environmentally related behavior are not about daily life behavior (Maloney and Ward, 1973), are specifically about workplace behavior (Inoue and Alfaro-Barrantes, 2015), or specific for tourist behavior (Hung et al., 2012). The measure by Markle (2013) was another option, but the distribution between categories was less suitable for the target group.

Most operators had no questions and filled in the questionnaire completely. Some had small questions about specific statements. From these questions it did not appear that they misunderstood the questionnaire as a whole. However, some operators did not circle any type of waste, probably because they had not understood they were supposed to circle the applicable words.

Data analysis

This section presents which rules are used for determining the scores. They are adapted from Whitmarsh and O'Neill (2010) as closely as possible. The application of these rules to the data, as well as the further steps, can be found in section 3.2.2.

The data is analyzed in three steps. First, the scores of pro-activity and pro-environmental behavior are composed for each operator. These scores are plotted in a graph. Thirdly, the most extreme scores are selected for the sample of extremes.

In the first step, the scores are calculated as follows. For all Likert scales, the left option had score 0. One option to the right made the score 1 point higher, as shown in tables 3.1 and 3.2. 'Not applicable' and 'Never' both get 0 points. This is in accordance with the original measure (Whitmarsh and O'Neill, 2010). For the question about waste separation, the number of selected waste types equals the score.

Table 3.1: Scores for the 4-point Likert scale

Answer	Never	Sometimes	Often	Always
Score	0	1	2	3

Table 3.2: Scores for the 4-point Likert scale about house and car

Answer	Not applicable	Never	More than 5 years ago	1 to 3 years ago	Last year
Score	0	0	1	2	3

This gives one score for proactive personality and one score for pro-environmental behavior; the sum of scores for individual and house- and car-related items. In the second step, the score for proactive personality is plotted against the score of pro-environmental behavior.

Finally, the sample of extremes is selected by identifying the respondents with extreme (high and low scores) on either of the scores, complemented with one respondent with average scores.

Method: Quantitative questionnaire

The results of the quantitative questionnaire allow me to select a sample of extremes for the qualitative interviews described in chapters 4 and 5.

3.2.2. Results

The answers of 28 respondents are translated into scores along the approach described in section 3.2.1. This gives one score for proactive personality and one score for pro-environmental behavior (the sum of scores for individual and house- and car-related items). Figure 3.2 shows the scores of proactive personality against pro-environmental behavior in a scatter plot.

The horizontal axis denotes the score for proactive personality (PP). For all respondents, these scores were between 24 and 42 points. 42 points was the maximum score. All respondents see themselves as medium to strongly proactive, which is reflected by the fact that they are located on the right half of the graph.

The vertical axis represents pro-environmental behavior (PEB). With 54 points to be collected, the maximum score is 30 points only, meaning that most respondents are located in the lower half of the graph. The lowest score was 9, the average 21,4. Three corners of in this area are well-represented, but the lower left corner was not. Therefore, this type of operators will be under-represented in the sample.

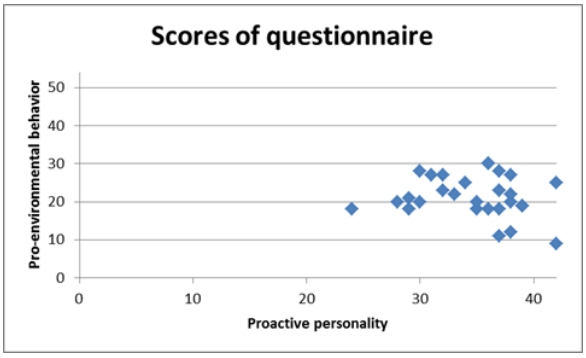


Figure 3.2: Scatter plot of the scores for proactive personality and pro-environmental behavior per respondent

Table 3.3: Final sample for first round of interviews

	Respondents number
Sample	1, 6, 7, 8, 10, 13, 17, 18, 22, 24, 25, 27 ,28

The sample is selected by identifying the respondents with extreme (high and low scores) on either of the scores, complemented with one respondent with average scores [5]. In total, this results in a sample of 13 operators.

[5] For both PP and PEB, the four lowest and the four highest scores are identified. This makes a set of 14 respondents. Together, these respondents represent the extremes into three directions (but not the lower left corner). Respondent 7 was added to the sample, because he has average scores close to the lower left corner (PP: 37 and PEB: 18). Two respondents were absent during the interviews.

3.3. Conclusion

A case company has been selected: Van Houtum B.V. is a Dutch manufacturing producer of hygienic papers. This company is a suitable case study, because they strive for sustainable innovation and their operators have opportunities to share their ideas for improvement.

Within this company, a sample was selected among the operators in the production factory. A sample of extremes was composed, because, because operators with different characteristics might experience different barriers and stimulants and might display different behavior.

Quantitative scores of self-evaluated proactivity and pro-environmental behavior of 28 operators were collected by means of a questionnaire. Table 3.3 shows the selected sample: 13 respondents with very high and very low scores are included, as well as one respondent with average scores.

4

Sustainability as a motive

Chapters 4 and 5 apply the theoretical framework to the case study, to see what plays a role in practice. Three mechanisms influence the operators' decision to display promotive voice, among which the *motive for an idea*. The *motive for an idea* is how important the individual assesses the envisioned outcome of the idea. A strong motive makes an employee put more effort into realizing the possible outcome. In this research, employees would try harder to share their idea and make sure it is implemented. It is interesting to know how important employees think motives are, compared to each other.

One motive for an idea is *making work processes more sustainable*. This chapter investigates how strongly different groups of employees value sustainability as important, as compared to other motives for improvements. This will answer sub-question 2;

> *To what extent do operators, team leaders and management at Van Houtum B.V. find sustainability an important motive for improvement?*

From the interviews described in section 4.1.1, section 4.1.2 extracts a list of motives describing what operators want to achieve with their idea. Section 4.2.1 explains how operators, team leaders and managers ranked these motives according to importance, of which the results are presented in section 4.2.2.

4.1. List of motives

For assessing to what extent sustainability is a motive for ideas for improvement, I first need to know which other motives play a role.

4.1.1. Method

I apply the theoretical framework to the case company by means of semi-structured, qualitative interviews. These will coincide with the interviews in chapter 5. In this chapter I present only these elements of the interview strategy and those results that are specific for motives.

I want to investigate which motives play a role for operators, when they decide to share an idea for improvement. I conduct semi-structured qualitative interviews, because they provide respondents with the freedom to share their personal experiences. In these interviews I ask *why* they decide to share an idea, which relates to the motive for an idea.

The interviews are individual, because I am interested in the personal story of each operator (Verhoeven, 2007). Moreover, I expect different responses from different operators, because the theoretical framework indicates that many individual constructs can play a role.

Conducting the interviews face-to-face is a natural way to collect data where respondents are likely to participate due to little physical effort and the ability to take a passive attitude (Baarda, 2010). Other advantages are the possibility to explain, rephrase information, to ask more complex questions (Baarda, 2010) and ask follow-up questions where relevant. The main disadvantage is the risk that respondents might give socially desired answers (Baarda, 2010), so the interview protocol should be designed to reduce this risk.

Sample

The sample for the qualitative interviews has already been selected in section 3.2.2. It is a sample of extremes with regard to self-evaluated proactivity and pro-environmental behavior and contains 14 operators.

Interview strategy

This section presents a concise description of the interview strategy regarding motives. For more details, I refer to the complete interview protocol in appendix F.

The construct from the theoretical framework that I want to measure is the *motive for an idea*. The semi-structured interviews are based on two broad questions and respondents can inspire their answers on interview topics.

The questions are as follows: 'why did you (not) tell the idea?'. The positive version invites respondents to mention their motives; what they want to achieve with the idea. The negative question allows respondents to mention reasons not to speak up. The lack of a motive appeared to be one of the reasons for staying silent.

Interview topics are provided on cards. The cards mention the motive for an idea, as well as the constructs from the theoretical framework (as explained in section 5.1). To become tangible, specific and unambiguous (Baarda, 2010) and Dutch, the *motive for an idea* is operationalized as *what you want to achieve with the idea*. Table 4.1 shows the card about motive, and its Dutch and English translation.

Table 4.1: Interview card used during interviews, based on theoretical framework

Theoretical framework	Interview card Dutch	Interview card English	Description
Motive for an idea	Wat je met het idee wil bereiken	What you want to achieve with the idea	The desired effect of the idea

Data collection

The interviews were performed on three different days during the regular work shifts at the end of September 2016. The sample was the one in table 3.3, consisting of 13 operators.

Respondents were taken apart for half an hour in a separate, undisturbed room in the office. Audio was recorded. In general, respondents were cooperative, talked openly, seemed to trust me quite a lot. Most of them said that anonymity was not important for them, illustrating their openness within the company. With hindsight, the managing director informed me that operators had told me a lot, which is special.

Data analysis

Qualitative content analysis is a technique to systematically analyze text. I applied this type of analysis to the transcripts of the interview audio records. Together with the results for chapter 5, this resulted in 39 pages of text. An example of a transcript can be found in appendix G. These texts were coded (Verhoeven, 2007) using Atlas.ti, in order to identify codes that represent motives for ideas.

A deductive content analysis is useful when data is based on previous knowledge (Elo and Kyngäs, 2008). Indeed, my focus is on the motives that operators have, so I determine the categories for which I expect to find data. This means that I created the category 'Motive'.

Quotes and codes were made as follows. Every time a respondent mentions a construct or a variable, this part of the text is quoted and a code is attached to it. The code describes the topic of the quote. When a longer conversation is held about this aspect, multiple quotes are coded. When an operator talks about a certain topic multiple times, a quotes is created every time. Most quotations are between half a sentence and two sentences long. When codes represented a motive, they were added to the category 'motive'. Iteratively, I assessed whether codes should be renamed or merged. The coding process resulted in 95 distinct quotes about a motive to voice or not. These are grouped under 15 codes, of which 3 are limiting and 12 are stimulating.

Method: Qualitative interviews

Qualitative interviews were held with 13 respondents to investigate which motives for ideas exist; the things they want to achieve with their ideas. This method results in a list of motives; types of improvements that operators might want to achieve by sharing their idea. These are then rated by operators in the exercise described below.

4.1.2. Results

The qualitative interviews ask the question 'why do you (not) tell an idea?'. Answers to this question comprise both constructs in the context of the idea (such as feeling at ease), as well as what operators want to achieve with their idea (such as: to improve the process). Here, the latter is of interest, because it represents a *motive for the idea*. This section explicates how the qualitative data is used to extract eight different motives for an idea.

Motives

A motive is stimulating when its intended effect is desirable. These motives are presented below. On the other hand, limiting motives are those where the intended effect is undesirable. Data showed that an idea with a limiting motive is never told, because the individual lacks a reason to share his idea. Data about limiting motives was moved to appendix I.1.

One of the motives is 'improvement'; including quotes about ways in which operators want to improve work processes. This and other general motives are presented in appendix I.2. Here, 'improvement' is split up into concise ways of improvement. Table 4.2 gives an overview of the identified motives.

Table 4.2: Number of quotes and respondents mentioning seven specific motives; ways in which the technical process can be improved upon

Stimulating motive	**#Quotes**	**#Resp.**
Easier	15	7
Safer	9	5
Cheaper	6	4
More sustainable	4	3
Faster	4	3
Cleaner	1	1
More production	1	1

Easier, mentioned most frequently by 7 respondents lies close to personal interest; *"omdat ik er zelf profijt van heb"* (resp 10) and *"ik zal niet moeilijk doen als het makkelijk kan"* (resp 22). With 9 quotes by 5 respondents, *safer* comes second. Respondent 6 has had an accident himself; *"kijk, ik heb zelf een ongeval gehad"*, but many others confirm that safety[1] can be a motive. The third motive is *cheaper*, which is named by four respondents; *" zuiniger voor het bedrijf op gebied van kosten, bijvoorbeeld door te besparen op gas of energie"* (resp 8). The motive *more sustainable* is discussed below.

Faster is mentioned by three respondents, when talking about ideas that could speed up specific tasks; *"zodat het sneller ging.. Dus qua tijd, dat we veel sneller zijn met vilt intrekken"* (resp 13). Respondent 24 was the only one mentioning cleanliness; *"zodat er minder rommel in zit"*. Finally, one remark was made about *more production*; *"als we daar meer productie mee kunnen maken, dat zijn goeie redenen"* (resp 7).

[1] The motive safety describes physical safety in the form of accidents. Thereby, it differs from *perceived safety*; potential social risks of displaying promotive voice.

Sustainability No explicit quote mentions the word 'sustainability', 'better for the environment', or something related. Only one quote has been found aiming for *more sustainable* production, and it is not even very explicit. Respondent 22 talked about raising the efficiency; *"sowieso als het efficiënter werken is"*. Admittedly, this quote could have been included in the motives *cheaper*, *faster* or *easier*.

Besides, savings are mentioned three times in the context of energy or gas. In one case the respondent thinks about saving money by saving energy or gas; *"Zuiniger voor het bedrijf op gebied van kosten, bijvoorbeeld door te besparen op gas of energie"* (resp 8). In another quote, it is unclear whether physical energy or electrical energy is meant; *"overal waar energie bespaard wordt, dat is ook werkenergie wat bespaard kan worden"* (resp 17). The third case talks about the importance of savings and improvements; *"ik vind, als het over besparingen of verbeteringen gaat, en je hebt een idee, dan moet het bedrijfsbelang eigenlijk boven de "relatie met" [je ploegleider] staan"* (resp 17).

4.2. Importance of sustainability as a motive

This section investigates the importance of the motive *more sustainable*, compared to the other motives.

4.2.1. Method

I want to assess the order of importance of eight motives for ideas. Motives can be seen as a type of *values*. Two approaches are often used for measuring values: ranking and rating (Maio et al., 1996). Given that rating is more suitable for small sets (Alwin and Krosnick, 1985), I chose this approach. The results of this rating exercise give insight in the relative importance of sustainability, compared to the other motives.

Sample selection

As indicated in sub-question 2, I want to compare the responses of the management, team leaders and operators of Van Houtum. Since the sample of section 4.1.1 only includes operators, it does not satisfy. A new sample is composed that consists of three groups and is presented in table 4.3. It is also used for the second round of the qualitative interviews in section 6.2.1.

Table 4.3: The sample for the rating exercise, divided into groups

Group	Respondents number
Management	A , B , C , D , E
Team leaders	9 , 10 , 13 , 14 , 20
Operators	1 , 5 , 6 , 11 , 15 , 17 , 22 , 24 , 25 , 28 , 29 , 30

The first group is the management. Five managers are included, because they are involved in idea sharing of operators; the managing director, the manager production, the assistant pro-

duction manager, the coordinator education and the chief process technology. There were introduced in section 3.1.2. For ease, I call this group 'management'.

Secondly, all team leaders are included. Two of them were included in the sample in section 4.1.1. There they were considered an operator. Here, they are considered in their role as team leader. The remaining three team leaders, respondents 9, 14 and 20, are added.

Finally, 11 operators are added to the sample. To begin with, these are 7 operators from the sample in section 4.1.1, because this is beneficial for the method in section 6.2.1 which uses the same sample as this method. Four more operators were added, respondents 4, 5, 12 and 15[2], to make sure that each team is represented by at least 2 operators.

In total, this makes a sample of 22 respondents divided over three groups. Unfortunately, not all employees from the sample were available due to absence or breakdown of the machines. Eventually, interviews were held with respondents 1, 5, 6, 9, 10, 11, 13, 14, 15, 17, 20, 22, 24, 25, 28, 29, 30, A, B, C, D and E. Table 4.3 illustrates to which group each respondent belongs.

Eight motives for an idea

Motives for ideas describe what an operator wants to achieve with his idea. Often, the idea is an improvement of an aspect of the technical work process. Seven motives were mentioned literally in the qualitative interviews (see section 4.1.2); to make the work process *cheaper, more sustainable, easier, faster, cleaner, safer* or make *more production*. The motive *better quality* was not mentioned explicitly, but since respondents talked about specific quality aspects, such as thickness and color of the paper, I decided to add this motive.

The complete set of motives, in random order, is shown in table 4.4. Each motive was represented on a card, along with a brief description in Dutch. After the first interview day, I revised the description of *more sustainable*, because it was too much focused on saving, which immediately relates to finances. This is undesirable, because I am curious for the interpretation of the respondent. The new description, better for the environment, is much broader.

Procedure

A rating exercise is one where respondents distribute a number of points among the different options. In this case, the options are the eight motives. 24 points are to be distributed, to provide the space for differentiating between importance, without making the amount of points overwhelming (average: 3 per motive). This Constant Sum Problem (Survey Analysis, 2015) inevitably creates a dilemma: giving more points to one motive means giving less points to the others (Puylaert, 2016). This dilemma is needed, in order that respondents compare the importance of different motives, instead of saying they are all important.

[2] These additional operators are those with the highest proactivity score on the quantitative questionnaire, because that increases the chances they have experience with sharing ideas and receiving feedback on them.

Table 4.4: Cards describing motives for an idea

Dutch cards	English translation	Description
Goedkoper	Cheaper	Make process with lower expenses
Duurzamer	More sustainable	Day 1: Use less energy or materials Day 2 & 3: Better for the environment
Makkelijker	Easier	Process with less effort for the same tasks
Sneller	Faster	Process with less time for the same tasks or process
Schoner	Cleaner	Process with less rubbish
Veiliger	Safer	Process with less (risk for) accidents
Meer productie	More production	Produce more paper in same time
Betere kwaliteit	Better quality	Product product with good color, thickness, strength, etc

Exercise

The exercise is introduced by giving an example of a motive for an idea. Next, I put a large paper 'ruler' on the table, ranging from *not important* to *very important*. While reading the motives out loud, I lay down eight cards representing the motives. The table now looks like in figure 4.1. Then I ask the central question:

> *If you want to improve something in the factory, what do you find important to improve?*[3]

After putting the cards in the right order, the respondent distribute 24 stones (representing points) among the cards. He needs to use all points, to allow for comparing the results between

[3]This central question deliberately asked about motives to *improve* something, rather than what they find important in the factory in general, because promotive voice aims to *change* the status quo. Possibly, a motive might receive a lower rating, because the respondent estimates low chances that he can change anything about it (read: low perceived efficacy). This information would be captured in the second question

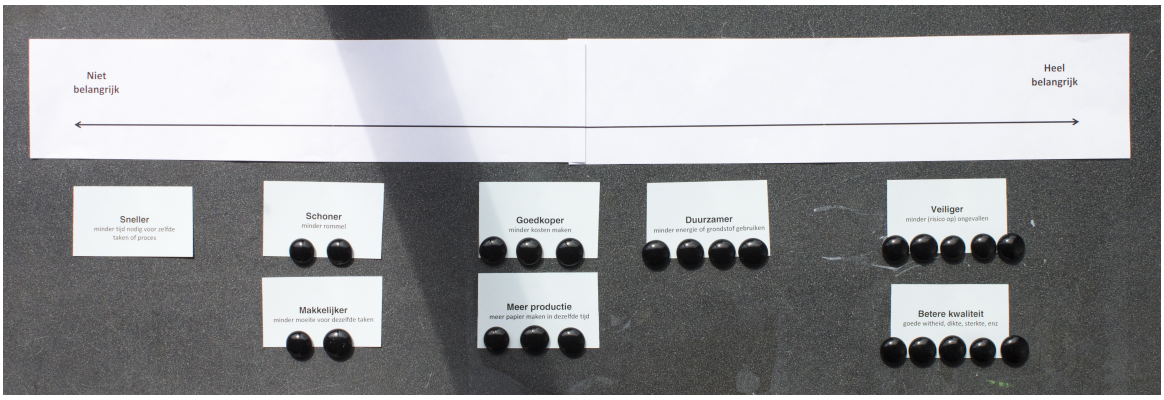


Figure 4.1: The rating exercise. The ruler indicates the importance of the motives for an idea, which are written on separate cards. Respondents first determine the order of the cards, before distributing 24 points among them. This picture shows a possible answer.

respondents. However, not every card needs to receive points, allowing for more extreme ratings. When finished, I denominate which motives have an equal amount of points and are therefore equally important, to make sure the respondent agrees with the distribution of the points.

A second question is posed after the respondent has distributed all points among the cards:

Why does sustainability receive ... points?

This question invites the respondent to explain why he chose this rating. It reveals information about the relative importance of sustainability, compared to other motives. Moreover, many respondents explain what they mean by the word sustainability.

Data collection

The rating exercise was performed on three different days during the regular work days in March 2017. They took place on the same occasion as the second round of interviews from section 6.2.1.

The meetings with managers mainly took place in their office. Those with team leaders and operators were located in a separate room. Meetings took between 10 and 30 minutes, of which the rating exercise took 5 to 10 minutes.

To collect quantitative data, I wrote down the amount of points that each motive has received. To catch the answer to the second question, I audio recorded the complete exercise.

Data analysis

Quantitative data

The exercise is a *rating* exercise, of which the data is translated into a *ranking*. Per respondent, the quantitative data is converted to ordinal rankings[4]. Averages of the rankings were calculated (per group and of the whole sample). These averages were sorted. Rankings are scientifically valid, as opposed to the data from the rating itself.

The standard deviation was computed for the ranking, both per group and between the groups. This gave insight in the degree of disagreement between the respondents.

Qualitative data

The parts of the conversation about the motive *more sustainable* were transcribed and coded using open coding, to investigate the meaning of sustainability and reasons for placing sustainability high or low in the rating. 180 quotes by 22 respondents have been coded under 52 codes. Appendix I.2 contains some more general results from the coding process.

[4] Data from the questionnaire was translated to ordinal data for each respondent. This involved ordering the motives according to the amount of points it has. The motive with most points received rank 1, the one with least points had rank 8. When ties occurred (e.g. shared second place), an average rank is composed (both 2,5, instead of both rank 2).

Method: Quantitative rating

After this step, the relative importance of the motives can be compared between operators, team leaders and the management. This leads to the answer to the fourth subquestion: To what extent do operators, team leaders and management at Van Houtum B.V. find sustainability an important motive for improvement?

4.2.2. Results

Respondents distributed 24 points among the eight motives, where the number of points represented the relative importance of *improving* this aspect of the production process. The translation of the data into a ranking is presented, as well as respondents' explanations why the motive *more sustainable* received that amount of points.

Ranking

Figure 4.2 shows the average ranking per group, while the average ranking of all respondents is presented in table 4.5.

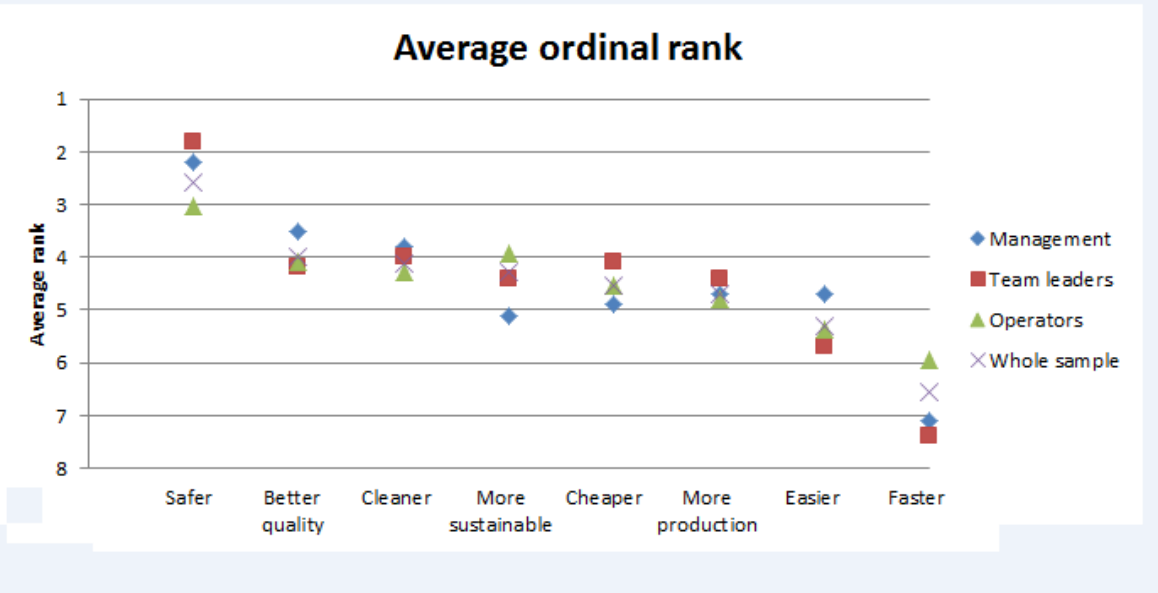


Figure 4.2: The average ranking of the constant sum problem, after converting data into a ranking

The graph shows that the groups had comparable opinions about all motives. All groups agreed that *safety* is most important to improve, while *speed* and then *ease*, are least important. The next five motives lied very close to each other: *better quality*, *more sustainable*, *cheaper*, *cleaner* and *more production*. Each motive is discussed below, based on the voluntary clarification on the rating exercise.

All groups agreed it is most important to make the factory *safer*. Among the groups, team leaders found this the most important. By safety they meant no litter and cleaner, to avoid accidents. It scored high and was considered a crucial prerequisite, because accidents are a direct

Table 4.5: The average ranking of motives, by all respondents. Rank 1 denotes *most important*, while rank 8 means *least important*.

Motive	**Ranking**
Safer	2,6
Better quality	4,0
More sustainable	4,1
Cheaper	4,3
Cleaner	4,5
More production	4,7
Easier	5,3
Faster	6,5

danger for the operators. However, some respondents scored low on safety, arguing that the conditions are very safe already. Safety was positively associated with *cleanliness*.

Better quality was ranked second by the management, for operators it ranked third, for team leaders fourth. Under quality, they particularly mentioned the amount of fractions in the paper, probably because that is a current problem. They found quality important for keeping customers satisfied and because the converting factory has to work with the product. Reaching a high quality has become more difficult with the use of multiple materials. No reasons were mentioned why quality would not be important. A few respondents sketched a negative relationship between *better quality* and *faster*.

Making the factory *more sustainable* ended on the third place, according to the whole sample, with an average rank of 4.1 out of 8. Team leaders ranked this motive second, the management third and operators fourth. The scores of the groups lied very close together, indicating agreement on its relative importance. The interpretation of sustainability was mainly Planet-oriented: 10 respondents said it is *"better for the environment"*. Concisely, this can mean different things: from reducing (or reusing) energy (5 resp), water (3 resp) and waste (2 resp), to working with Cradle-2-Cradle principles (5 resp), to reducing costs (7 resp) and aligning practice with the vision of the company (3 resp). One respondent explicitly mentioned sustainable employability, which he would have given 5 points instead of the 0 for ecological sustainability.

Reasons vary why improving sustainability was important. Five people mentioned the sustainable vision of the company as a reason to care about sustainability. Five respondents mentioned the benefits for the environment or the future. The managing director stated that sustainability is an ongoing process, while the production manager saw it as a way to optimize the production.

When asked why this motive is *not* the most important, respondents noticed the balance with costs (4 resp). Some respondents indeed related more sustainable to more expensive, but others talked about the balance between costs and benefits. Many considered safety (7 resp), quality (5

resp) and more production (4 resp) more important. One person said sustainability should be on the first place, while another said the production is very sustainable already. A team leader argued that sustainability is not his responsibility.

The next motive was *cheaper*, which scored highest for operators and lowest for the management. Remarkably, operators ranked this motive second, while for the management this is the second *least* important motive. By cheaper they meant reducing the costs, by reducing the use of materials, water and energy, or investing in growth of the company. Cheaper was considered important for the financial health of the company and its future, partly due to its immediately impact on the future of all employees. It was sometimes seen, especially by the management, as the secondary result of more production, more sustainable. Respondents associated *cheaper* with *cleaner* and *better quality*, because these lead to less rejected paper, and thus cheaper and more sustainable production.

Cleaner scored slightly lower, and of the three groups, team leaders valued it highest, followed by operators. This is probably because these people work with the machines, of which some they are annoyed by litter in the materials and in the factory. Many people gave it low score, because it is nor a crucial condition, nor improves the performance of the company. Some respondents positively associated *cleanliness* with *safety*. Others found it the least important motive, because cleaner can not be the goal.

More production came next in the overall ranking, where it must be noticed that the scores of the groups are extremely close to each other. Some regarded it as a core goal for staying financially healthy, especially since the production is regressing. Since *more production* was understood as producing more tons of paper, it was related to *faster*. However, higher speeds and more production were only beneficial when the quality is sufficient, because low quality paper causes rejection of paper or dissatisfied customers.

The last motive but one was *easier*. The management scored this motive higher that the other groups. For team leaders and operators, this was the second least important motive, although two respondents hypothesized that operators would value this high. Operators appreciated *ease*; working smart instead of hard, because it lightens their daily tasks and enhances enjoyment. However, *ease of tasks* was not considered a requirement; one manager said it is okay to put effort into making a *high quality* product.

For each group, making production *faster* was the least important motive for improvement. Especially management and team leaders gave this motive little points. *Higher speeds* were only appreciated when the *quality* of the paper was safeguarded and *safety* remains.

Difference within and between groups

This section illustrates to what extent respondents agreed with each other about the importance of sustainability as a motive. This provides richer insights in the opinions of the three groups of respondents.

The standard deviation is a mathematical measure for the extent to which values (in this case: rankings) differ from each other. A low standard deviation means that the ranking are very comparable with each other. Standard devations allow for an explanation of disagreement about the rank of *more sustainable*, both within and between groups.

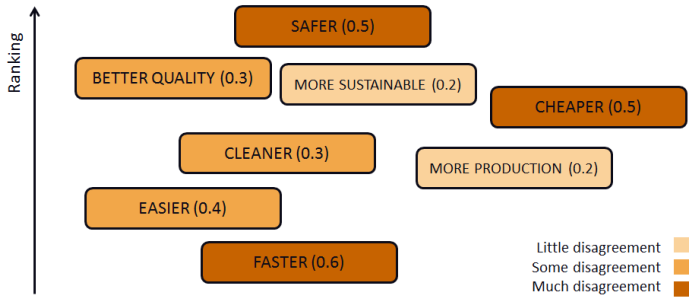


Figure 4.3: All eight motives, ranked on importance (average ranking as in table 4.5). The standard deviation between the three groups is given between brackets.

In figure 4.3, the eight motives are ordered according to their average ranking. Between brackets, the standard deviation between the three groups is added. For example, the standard deviation of *safer* (between the rankings 5.1, 4.4 and 3.9, respectively) is 0.5.

The lowest standard deviation between the groups is that of *more sustainable* and *more production*: 0.2. Hence, the opinions of the three groups about the importance of these motives is very much alike.

Table 4.6: The standard deviations per motive for the whole sample, and per group

Motive	All	Management	Team leaders	Operators
Cheaper	2.1	2.0	1.6	2.1
More sustainable	1.8	1.7	1.8	1.8
Easier	2.0	2.2	2.0	1.9
Faster	1.6	0.7	0.5	1.9
Cleaner	2.0	2.0	0.7	2.3
More production	2.0	2.1	1.9	2.0
Safer	1.9	0.9	1.4	2.3
Better quality	1.9	1.9	2.4	1.6

The standard deviation per motive per group is depicted in table 4.6. The standard deviation of *more sustainable* among managers is 1.7, among team leaders and among opeators it is 1.8. In other words, there is little disagreement about the rank of *more sustainable* in each group.

In general, the standard deviation between groups is very low, compared to that within each group. Hence, people disagree more as a person, than as a group.

Why sustainability receives this rank

The qualitative data provides answers to three questions about the motive *sustainability*:

1. What does sustainability mean?
2. Why is it not ranked lower?
3. Why is it not ranked higher?

Among others topics, respondents talked about the 'Meaning of sustainability', 'Reasons why sustainability was not ranked lower' and 'Reasons why sustainability was not ranked higher'. The three questions from above are answered concisely. More details can be found in appendix I.2.

1) What does sustainability mean?

Most respondents interpret sustainability as ecologically friendly. Many respondents also relate to sustainability as (part of) the vision of the company. Besides other interpretations, sustainability is also associated with the savings; of costs, energy or materials.

2) Why is it not ranked lower?

There were three main reasons why sustainability is not ranked lower. First, sustainability is considered important. Second, the sustainable vision of the company is a reason to pay attention to sustainability of the work process. Finally, some respondents just found other motives less important.

3) Why is it not ranked higher?

In alignment with the ranking, *safety* is perceived as more important than sustainability. Others argue that *more sustainable* and *cheaper* do not go along or that *better quality* benefits the customer. Some respondents value *more production* over *more sustainable*.

4.3. Data interpretation

This section explains the different responses of the three groups. The interpretation of the meaning of sustainability is transferred to appendix J.0.1.

Why groups of respondents rank *more sustainable* differently

As described above, the three groups rank sustainability almost equally high. However, there is some disagreement within each group about its rank. Here, I clarify possible reasons these phenomena.

Disagreement within the groups can be due to differing opinions, or due to the design of the exercise. The first reason is illustrated by some opposite quotes within the group of operators about the financial effects of sustainability: respondent 29 said *"duurzamer is ook dit moment gewoon duurder"*, while respondent 17 said *"als je duurzamer gaat werken, dan ga je goedkoper*

werken". Another reason is the felt responsibility for improving sustainability. One respondent felt it as his responsibility to contribute, while team leader 10 does not; *"ik doe er zelf niet echt in mee, (...) het is meer aan [de procestechnoloog], en [de directeur]"*.

The design of the exercise can cause disagreeing ranks, for example, when the description of the cards is ambiguous: *". je hebt natuurlijk ook duurzame inzetbaarheid van personen, daar krijg je een heel ander effect"* (resp 10). Meanwhile, the question *"if you want to improve something in the factory, what do you find most important to improve?"* might sometimes have been interpreted as *"what do you find most important in the factory"*. This can result in a different answer, since an important aspect can be experienced as 'optimal already'.

If we assume that the quantitative data are valid, it means that operators and team leaders at this company find it almost equally important to *improve sustainability* as the management. Still, the group situated higher in the hierarchy value it slightly higher. This coincides with the observation that multiple respondents mention the vision of the company (set out by the management) is a reason to find sustainability important.

4.4. Conclusion

In a rating exercise about the importance of these motives, *more sustainable* ended on the third place out of eight. Thus, making the factory more sustainable is valued as relatively important by all groups. Still more important were *safety* and *better quality*.

5

Barriers and stimulants

The theoretical framework for promotive voice suggested that a set of individual and contextual constructs influences the decision to engage in promotive voice or to stay silent. Chapter 5 applies the theoretical framework to identify what operators at the case company perceive as barriers and stimulants for promotive voice and how strong they are, to answer research question 2:

> *To what extent do operators at Van Houtum B.V. perceive barriers and stimulants to display promotive voice?*

Qualitative interviews are held with operators, as explained in section 5.1. Interview data reveal perceived barriers and stimulants that operators experience (section 5.2.1), as interpreted in section 5.3. Section 5.4 answers research question 2.

Definition of barriers and stimulants

A *barrier* is defined as a variable that contributes to unfavorable circumstances for promotive voice. Conversely, a variable that influences the circumstances in a way that makes promotive voice more likely, is called a *stimulant* for promotive voice.

5.1. Method

Semi-structured qualitative interview with operators at Van Houtum are used to find out which variables operators perceive as stimulating or inhibiting. The list of constructs in the theoretical framework is used for inspiring respondents to mention barriers and stimulants. These interviews are integrated with those from section 4.1.1.

Since I am interested in the personal experience of respondents, and because the topic comprises many different aspects, qualitative interviews are a suitable method (Verhoeven, 2007). Another reason is that I do not yet have a list of potential barriers and stimulants.

I choose to conduct semi-structured interviews. This provides respondents with the freedom to explain why they engage in voice or stay silent (Verhoeven, 2007; Bryman, 2012). Sharing ideas for improvement appeared to be a topic they are not very aware of, so they were often thinking out loud and telling pieces of the story in random order. On the other hand, semi-structured interviews are sufficiently goal-oriented to collect answers that are comparable with each other. It allows me to adapt the questions to the respondent and to pose follow-up questions when needed; to steer the conversation towards my interests. As a result, interviews with each respondent have a different focus. For the same reasons as in section 4.1.1, the interviews are individual and face-to-face.

Sample

Since the interviews are the same as those in chapter 4, the sample is also equal. The sample for the qualitative interviews has been selected in section 3.2.2. It is a sample of extremes with regard to self-evaluated proactivity and pro-environmental behavior and contains 14 operators.

Interview strategy

This section presents a concise description of the interview strategy. For more details, I refer to the complete interview protocol in appendix F.

The interview is based on a small amount of questions. The aim is to use the theoretical framework to identify barriers and stimulants for promotive voice. Therefore, the focus lies on its elements that are modeled as independent[1]; the constructs and the motive for an idea. Implicitly, the perceived safety and perceived efficacy are integrated in the interview, because each of these can be reasons why an operator does (not) share his idea.

Interview topics

The interview cards in table 5.2 support the semi-structured interviews, by offering respondents a broad set of topics that might inspire them to mention barriers or stimulants that they experience. The cards represent all 15 constructs from the theoretical framework, because I want to know what stimulates or limits operators to engage in voice. They are adapted to make them tangible, specific and unambiguous (Baarda, 2010) for low-educated respondents. Meanwhile the topics are translated, because the interviews are held in Dutch. However, I try to stay as close to the original meaning as possible. All topics are formulated neutrally (not positive or negative), reducing the risk for biased answers. The results of this adaptation and translation process are checked by two peers, leading to the operationalization presented in table 5.2. A few cards require explanation.

[1] This is also the reason why perceived efficacy and perceived safety are not explicitly investigated: these constructs can not be influenced by a company, because they depend on the constructs. Yet, respondents sometimes mentioned these mechanisms spontaneously, so I did collect some data about them. In other words, I am not validating

Table 5.1: Interview questions, both original and translated, and the constructs they investigate. Texts in italics are no questions, but explanations.

Question (translated)	**Question (original)**
Explanation of 'idea for improvement'	*Uitleg van 'idee voor verbetering'*
Can you remember a situation where you shared an idea for improvement?	Kan je een voorbeeld noemen waarin je je idee voor verbetering vertelde?
Why did you share your idea?	Waarom heb je dat idee verteld?
Can you remember a situation where you DID NOT share an idea for improvement?	Kan je een voorbeeld noemen waarin je je idee voor verbetering NIET vertelde?
Why did you NOT share your idea?	Waarom heb je dat idee NIET verteld?
Introduce cards	*Kaartjes introduceren*
Why do you share your idea?	Waarom vertel je je idee?
Why do you NOT share your idea?	Waarom vertel je je idee NIET?

The constructs *collective level beliefs* and *organizational culture* are merged into one topic: *unwritten rules. Job and organizational attitudes and perceptions* was split into *engagement* and *the feeling that you can contribute.* From the construct 'experience & tenure', *tenure* is left out as a topic, because all operators are employed full-time. 'Experience' is made more clear by naming it 'work experience'. Since a preliminary version of the theoretical framework is used, the construct 'formal voice mechanisms' is not included in the interviews.

Procedure

Before starting the interview, I have an informal conversation to create a low-threshold atmosphere where the interviewee feels safe (to reduce the risk for socially desired answers) and I introduce myself and the research (Verhoeven, 2007).

First of all, the respondent needs to know what I mean by an 'idea for improvement'[2] (construct 'idea for improvement'). The central questions of the interview are open, to give respondents the space to tell about their experiences (Verhoeven, 2007). They are formulated from both a positive and negative perspective. Subsequently, he is invited to remember a situation where he did and did not share his idea (constructs 'promotive voice' and 'no promotive voice') and why (constructs 'mechanisms' and 'constructs'). This is meant to make him think about the situation for which the theoretical framework is constructed; a latent voice opportunity.

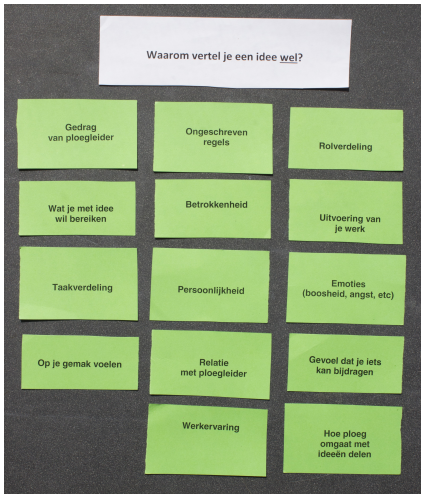
For the main part of the interview, I put 14 interview cards on the table, while reading them out loud. Each card mentions a construct, as can be seen in figure 5.1a. After stressing to consider his own situation and the team at this moment I repeated the central question; *why* he would or would not share his idea. The cards inspire the respondent to mention a broader set

the theoretical framework.

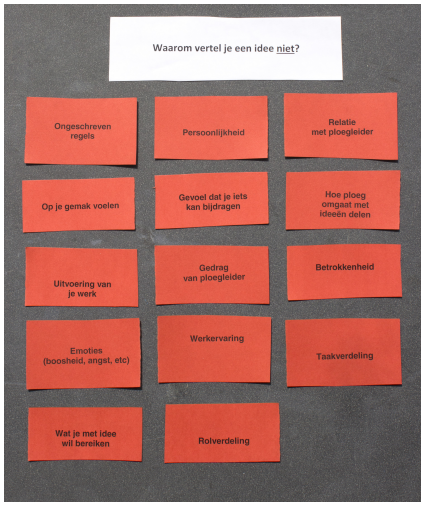
[2]The reason not to ask about sustainable ideas specifically, is my estimation that operators do not assess ideas in terms of sustainability. Hence, I expect that asking about sustainable ideas would have resulted in little response.

Table 5.2: Interview cards, operationalized from the constructs in the theoretical framework

THEORETICAL FRAMEWORK	INTERVIEW CARDS		DESCRIPTION
English constructs	**Dutch constructs**	**(Literal) english translation**	
Individual disposition	Persoonlijkheid	Personality	Personal traits and characteristics
Emotions, beliefs and schemas	Emoties (boosheid, angst, etc)	Emotions (anger, fear, etc)	Emotions that can influence behavior at work
Psychological safety	Op je gemak voelen	Feeling comfortable	Psychological safety; the social aspect of feeling at ease in the work environment
Experience and tenure	Werkervaring	Work experience	Amount and type of work experience
Position and status	Rolverdeling	Role distribution	The role within the team and organization, power distribution and status
Job and organizational attitudes and perceptions	Betrokkenheid	Engagement	The extent of feeling involvement with the job, colleagues and company
	Gevoel dat je iets kan bijdragen	The feeling that you can contribute	Perceived efficacy; the feeling that your input can be implemented to improve the work
Performance	Uitvoering van je werk	Execution of your work	Performance; the quality of delivered work and level of skills
Organizational structure & workgroup size and structure	Taakverdeling	Task distribution	Hierarchy of the organization and the team and division of the work tasks
Collective level beliefs & organizational culture	Ongeschreven regels	Unwritten rules	Conscious and unconscious beliefs, norms and habits in work environment
Supervisor and leader behavior	Gedrag van ploegleider	Behavior of team leader	Conscious and unconscious behavior of team leader and other employees higher up in the hierarchy
Relationship with supervisor	Relatie met ploegleider	Relationship with team leader	Formal and informal aspect of the relationship between the operator and the team leader
Group voice climate	Hoe de ploeg omgaat met ideeen delen	How the team handles sharing ideas	Group voice climate; the way colleagues act upon their own ideas and react on others' ideas



(a) Cards with constructs for voice, with the question 'why do you decide to tell your idea?'



(b) Cards with constructs for voice, with the question 'why do you decide not to tell your idea?'

Figure 5.1: Cards with constructs for voice

of constructs, because for each construct from the theoretical framework, respondents consider whether it influences their decision or not.

Each time a respondent mentions a barrier or stimulant, after which I invite him to explain *why* this plays a role. I try to pose an equal amount of follow-up questions per card. After asking *why*, the respondent says that he was thanked for his idea: *"stel je voor je hebt een idee, en daar wordt wat mee gedaan en ze komen daarna een keer terug van: luister, het is goed, bedankt"* (resp 25). The latter is a specific barrier, falling under 'supervisor behavior'. The respondent get sufficient time for giving more answers, until he is content.

The interview was pre-tested with someone who was not aware of the research and its goals, to make sure the questions are unambigious, specific and neutral (Baarda, 2010). As a result, the names of multiple cards have been adapted and the introduction of the interview was extended. The questions did not change. Unfortunately the test person, with academic education, was not representative for the target group.

Data collection

The data collection coincided with that of the interviews in chapter 4. Interviews were performed with 14 operators during their work shift, of which 13 were used for this research[3]. Conversations were held in a quiet room and took about half an hour. Audio was recorded.

Data analysis

Since this interview is integrated with that of section 4.1.1, the same data analysis is performed. Audio records of 13 interviews have been transcribed, of which an example can be found in appendix G.

[3]The 14th respondent was too hard to understand, due to this Limburgian accent

Deductive content analysis was performed by coding all transcripts using Atlas.ti. A complete overview of the codes can be found in appendix H.1, and significant results can be found in section 5.2.1. Since this chapter is based on theory, it is possible to pre-determine categories (Elo and Kyngäs, 2008). For each interview card, a category is created, representing a construct from the theoretical framework. In the coding process, each code is added to all categories to which it relates. Iteratively, categories were added, codes are grouped under the relevant mentioned category, and codes are merged[4] All iterations were done in a consistent and structured way; changes were applied to all transcripts and all codes.

The amount of quotes per code was counted, to say something about the importance of the barriers and stimulants. Table I.7 presents these quantified results. I assume that respondents talk more about topics they consider more important, relevant or that keep them busy. So, I can determine to what extent each construct plays a role in stimulating or inhibiting promotive voice. This makes data analysis easier. Per respondent, I expect this assumption is a relatively good estimation of how important they find the topic. By putting the cards on the table simultaneously and in random order, I prevented creating any preference in topics. But stories of less talkative respondents, or those who tell their story in fewer words, weighs lighter than those using lots of words.

The coding process produced 447 quotes. They were grouped into 283 codes, which each belonged to one or more of the 17 categories. In this chapter, a code represents a barrier or stimulant. 14 categories represent constructs from the theoretical framework that potentially influence the decision to engage in voice or stay silent. The 14 categories contain 98 codes (each representing a barrier or stimulant), of which 29 are placed under multiple constructs. Among all codes, 23 codes represent a specific barrier and 30 codes represent a stimulant.

Method: Qualitative interviews

The qualitative interviews with operators revealed which barriers and stimulants they perceived, and how strong they were. This answers the question “To what extent do operators at Van Houtum B.V. perceive barriers and stimulants to display promotive voice?”

[4]The category ‘Motives’ (anticipated outcomes of idea, as discussed in section 4.1.2) represents the mechanism *motive for an idea*. Two categories were added during the coding process; ‘ideas’, ‘protocol’. Perceived efficacy and perceived safety were also mentioned, but did not receive a separate category. Many related codes were found in multiple categories that describe ‘(not) being heard’. These codes were merged and redistributed among the relevant categories. Hence, some codes belong to multiple categories. For all codes it was assessed whether the code was relevant (if not, remove), unique (if not, merge) and belonged to the category (if not, add to other category).

5.2. Results

5.2.1. Perceived barriers and stimulants for operators of Van Houtum

In the representation of results from all interviews I sometimes refer to respondent X, operator X, team leader X or (in chapter 6) manager X, where X denotes a number. When the role of the employee is irrelevant or obvious, it suffices to talk about a 'respondent'. Yet, when the role of the respondent is relevant, I will call him by his role; e.g. 'team leader X'. This means that operator 3 is the same person as respondent 3.

Summaries of relevant constructs

For the constructs *work experience* and *engagement* I composed a summary of how operators experience these constructs in their daily work, based on quotes from the interviews. These two constructs are relevant, because the intervention in chapter 6 affects these constructs (see page 78. A brief version is included here, for more details I refer to appendix I.3.

Individual construct: Work experience

Roughly, respondents distinguish between having (very) little work experience and having a lot of work experience.

Work experience can be irrelevant. Two operators agree that the amount of work experience does not matter for coming up with ideas for improvement. Seeing ideas for improvement as an opportunity for learning, experienced employees can still learn.

Multiple reasons are mentioned why work experience is beneficial. For example, work experience is seen as helpful because you understand the process very well. Work experience can be limiting as well, for example by having negative experiences from the past.

On the other hand, without work experience you can also come up with ideas. Two disadvantage of little work experience are mentioned. Without work experience it is tempting to choose a wait-and-see attitude and as an inexperienced employee, you are not fully aware what you have to take into account before an idea is ready for implementation.

Individual construct: Engagement

Regarding engagement with their work, respondents describe what it means for them, how they estimate engagement of themselves and others and explain the impact of feeling engaged.

What operators mean by engagement is showing interest in their work and contributing to continuous improvement. It is the opposite of only coming to work for the money. Even though 7 respondents consider themselves engaged, one operator ascertains that the degree of engagement differs amongst operators.

Multiple aspects of feeling engaged stimulate operators to share ideas for improvement. When ideas are implemented, they feel engaged, recognized and feel satisfaction. As a result, feeling engaged positively affects the utility calculus for promotive voice.

Operators feel restricted to share their ideas when engagement is low; *"als het je niks interesseert, dan ga je ook niet met ideeën komen"* (resp 17). They are more likely to stay silent when they are not involved in projects, or when there is little support for their idea.

Perceived barriers and stimulants

Barriers and stimulants presented below are related to any of the 15 constructs, not only to those mentioned above. All 23 barriers and 30 stimulants are presented, ordered according to the number of times they were mentioned.

Barriers

Table 5.3 presents those barriers that were mentioned more than once.

As many as 8 respondents say, on their own initiative, that they don't experience any barrier to share their ideas. Of these respondents, three respondents (7, 8 and 17) indeed do not mention any barrier during the interview. Three others (1, 6 and 28) mention less than three barriers, while two respondents (10 and 13) mention four to six barriers. Since this barrier does not represent a barrier, it is not included in table 5.3.

Not being heard was mentioned in 38 quotes by 7 respondents. This barrier describes the feeling that you share an idea, but it doesn't bring about any action;*"ik merk gewoon dat er niks mee gebeurt"* (resp 24).

Second, 8 quotes by 4 respondents address the situation that *somebody 'steals' your idea.* In the past it has happened that an operator shared his idea with someone who would claim the compliments of that idea; *"dan gaat iemand anders met de eer strijken. Dat hoort niet"* (resp 18).

On the third place, *negative reactions* by colleagues are mentioned 7 times by 3 operators. Colleagues can laugh at an idea, not take it seriously or suggest you are a brown noser; *"omdat het heel vaak wordt afgekraakt"* (resp 24).

Next comes *little work experience - a wait-and-see attitude* with 6 quotes by two operators with little work experience. They sometimes keep an idea for themselves, because they are unsure whether the idea would be bad; *"je weet nog niet alles (. . .) Ik durf het wel te zeggen, maar soms zeg ik het maar niet, want dan is het misschien fout"* (resp 6).

Table 5.3: Total amount of quotes and number of respondents who mentioned specific barriers.

Barrier	#Quotes	#Resp.	Description
Not being heard	38	7	The feeling that nothing will happen with the idea anyway
Idea being stolen	8	4	The phenomenon that somebody to whom you told the idea presents the idea as being their own
Negative reaction	7	3	Negative reactions from colleagues when sharing the idea
Little work experience - a wait-and-see attitude	6	2	Due to little work experience, the feeling that you do not yet know enough to share the idea
Little work experience - no idea about elaboration	2	2	Due to little work experience, not having a clear view whether the idea is feasible after elaborating it in more detail
Fear	2	2	Fear for the reaction of others and for sharing a bad idea
Frustration	2	2	Frustration that ideas are often not implemented
Not happy - idea being stolen	2	2	Negative emotion caused by other people presenting the idea as being their own
Resistance to change	2	1	Coping with resistance to change from colleagues
Communication skills	2	1	Lack of skills to get the attention and clearly explain the idea
No knowledge about someone else's work	2	1	Not feeling capable of doing a good suggestion about a task you never perform

Stimulants

Out of 29 stimulants, those mentioned by two or more respondents (15 stimulants) are presented in table 5.4.

Being heard is mentioned 33 times by 10 out of 13 respondents. It includes being listened to; *"daar wordt ook naar geluisterd"* (resp 10), ideas being implemented *"ik heb bijvoorbeeld procesveranderingen doorgegeven, daar werd ook wat mee gedaan"* (resp 17) and receiving a response from team leaders or other colleagues; *"stel je voor je hebt een idee, en daar wordt wat mee gedaan en ze komen daarna een keer terug van: luister, het is goed, bedankt"* (resp 25). Additional data about being herad can be found on page 62.

Table 5.4: Total amount of quotes and number of respondents who mentioned specific stimulants.

Stimulant	#Quotes	#Resp.	Description
Being heard	36	10	The feeling that something will happen with the idea
A lot of work experience	7	6	The advantage of having a lot of work experience for coming up with ideas and assessing their feasibility
Thinking along	7	4	Thinking along with each other to improve an idea or assess it as infeasible
Reaction on a good idea	7	4	The positive reaction by colleagues when a good idea is shared
Not care about any of this cards	5	2	Sharing the idea, without being inhibited by anything
Always tell idea	4	4	The attitude or personality-trait to always tell an idea
Atmosphere	4	2	The organizational culture within the team
Little work experience - open mind	3	3	Having a fresh perspective due to having little work experience
Response	3	2	Receiving a response about the shared idea
Exemplary role	3	1	Having an exemplary role as a mentor towards colleagues
Thanks	3	1	Receiving a thanks from colleagues who have implemented the idea
Doer	2	2	The trait of quickly coming into action
Work experience does not matter	2	2	Both experienced and unexperienced operators can come up with ideas
Frustration	2	1	Frustration about something that stimulates the employee to share is idea in order to resolve the frustration
No fear	2	1	No fear for the reaction of others and for sharing a bad idea

Having a lot of work experience comes second, mentioned 7 times by 6 respondents. Where some respondents argue that work experience does not matter; *"het maakt niet uit hoeveel werkervaring je hebt"* (resp 17), others think work experience helps to have more and better ideas; *"omdat je dan veel makkelijker dingen uit kan sluiten, hoe het niet moet"* (resp 13). The construct 'work experience' is discussed in more detail on page 57.

Thinking along and *reaction on good idea* share the third place, both mentioned 7 times by 4 respondents. Thinking along means that respondents help each other to further develop an idea *"met z'n allen ga je kijken misschien is dit of dit beter. En dan heb je misschien iets daarop toe te voegen"* (resp 1). Positive reactions on good ideas are enthousiasm, admiration or even jealousy (experienced as a compliment) *"wel heel enthousiast wordt ontvangen"* (resp 18).

Barrier 'being heard' and stimulant 'not being heard'

I compose a definition of being heard, based on the aspects that respondents described. Being heard is the feeling that your input (e.g. an idea, an opinion) is taken seriously by the other. This entails that the other sincerely listens to you and when the input is assessed as valuable, there is a probability that action will be taken. The *input* is an idea for improvement. The *other* is the target of voice; a colleague, the team leader or other colleagues.

Definition of being heard in this research

Being heard is the feeling of the operator that his idea for improvement is taken seriously by the target of voice.

Table 5.5 indicates four aspects of *being heard* that respondents have mentioned; being listened to, action being taken, receiving a thank you and receiving feedback about what will happen with the idea. In a comparable fashion, *not being heard* consists of the negative opposites. A few quotes illustrate what respondents mean with these aspects.

Table 5.5: Elements of *being heard* subdivided into different aspects. (Amount of quotes)

Being heard (33)	**Not being heard (35)**
Being heard listens (10)	Not being heard does not listen (6)
Being heard action (26)	Not being heard no action (19)
Being heard thanks (1)	Not being heard no action with reason (14)
Being heard feedback (2)	

Being listened to

Respondents make very mixed remarks about whether or not colleagues listen to them. Being listened to differs from being heard, because the first means that the idea is understood by the target of voice, whilst the latter means the idea is taken seriously. It is possible that the idea is understood, but not taken seriously. For example, respondent 7 says *"ik kan zeggen wat ik wil.*

Dan wordt er ook wat mee gedaan", while respondent 24 says "ik vind heel vaak dat we gewoon tegen een muur praten."

Taking action

In some cases, operators have the idea that people take action upon the idea for improvement, which inspires them to share their idea the next. In other situations, respondents feel that no action is being taken upon the suggestion. Most of these are remarks referred to previous experience in which no action has been taken. Some concrete reasons are mentioned for not taking action, such as financial limits. infeasible ideas and low priority of the idea. No matter what the reason is, when no action is being taken, this demotivates the respondent to voice his idea in another time.

Thank you

A smaller amount of remarks is made about the response of the team leader or manager to the idea. These remarks suggest that a compliment or a thanks would be appreciated, as phrased by respondent 25: *"stel je voor je hebt een idee, en daar wordt wat mee gedaan en ze komen daarna een keer terug van: luister, het is goed, bedankt. Kijk dat geeft een, of ik het nou ben, of ieder mens, er komt een dankjewel, dat doet een mens goed he".*

Feedback

Another quote formulates the appreciation to receive feedback about a shared idea; *"dan krijg je ook respons (. . .) om te horen of het goed is"* (resp 10).

5.2.2. Exploratory interviews and observations

Before the qualitative interviews, I had exploratory conversations with multiple employees. The topic of being heard had been mentioned in several conversations. Their remarks about operators' feeling *to be heard* and about *feedback* upon ideas are presented.

Being heard

The production manager and process technologist each state the importance of taking operators ideas seriously, to make them feel heard. The latter explicitly said he tried to use operator input when it is useful, and stimulates operators to share his next idea again. When ideas appear successful, operators receive a compliment from the team leader, the management and some colleagues. Especially SGA teams are often proud of their accomplishments.

Three operators confirm that they value the feeling to be heard. Respondent 21, who was involved in educating his colleagues to handle the Omnipulper, thinks that idea sharing behavior can be stimulated by giving compliments and making sure it is seen. Seeing that action is being taken upon ideas motivates to share them again in the future, according to respondent 25. If nothing would happen with ideas, he said, he would stop telling them. Due to previous experiences, respondent 23 has given up his proactive attitude. Once in a while he tries to be proactive again, but sometimes it again does not work.

Feedback

Two managers mentioned how important it is that team leaders give feedback to operators about what happened to their idea. *Feedback* is defined as "the transmission of evaluative or corrective information about an action, event, or process to the original or controlling source" (Feedback, nd: Def. 2b). Specifically for promotive voice, giving feedback is closing the loop through feeding back 'that what has been discussed about the idea' to the employee who shared the idea (Onze Taal, 2016; Feedback, nd)(nd: Training managers). In Dutch it is called *terugkoppeling*.

Definition of feedback

Giving *feedback* is closing the loop through feeding back 'that what has been discussed about the idea' to the employee who shared the idea.

According to the assistant manager, the lack of feedback inhibits operators to share their ideas. Also when it has been decided that no action will be taken upon the idea, it must be explained *why* this choice is made. The same is mentioned by the production manager. The assistant manager sees this lack of feedback as the *bottleneck*. When no feedback is provided, the operator will stay silent the next time he has an idea.

Ways to stimulate promotive voice are, in the eyes of the production manager, discussing it in team leader meetings, putting a memo on the Lean board in the canteen, and talk about it a lot.

5.3. Data interpretation

Figure 5.2 recalls the theoretical framework. Figure 5.3 and figure 5.4 visualize the results of the interviews; respectively for the case study and more generally. This section clarifies how my interpretation of (and several reflections on) the data inspired the changes to develop the theoretical framework into these models. Finally, this section identifies a critical condition for promotive voice, on which the remainder of this research will focus.

The utility calculus and all three mechanisms were mentioned

Each of the three mechanisms has been recognized in the data. The utility calculus was also mentioned; the balance between the positive and negative consequences of sharing the idea determined whether the idea would be shared. Therefore, these elements are present in figure 5.3.

Individual and contextual *constructs* are replaced by *variables*

Respondents often mentioned *elements of* individual and contextual constructs as a barrier or stimulant for promotive voice. These elements are *variables*; measurable phenomena that are included in one or more constructs. All constructs were therefore left out, while the following variables were added.

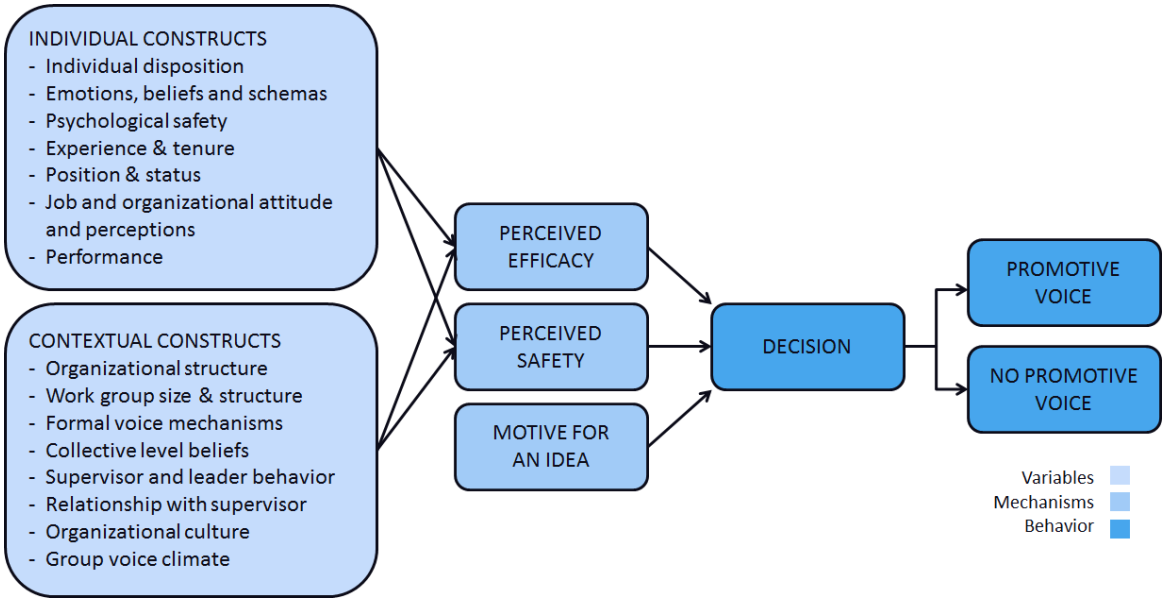


Figure 5.2: Theoretical framework of an individual's decision whether or not to engage in employee voice, given that he has an idea for improvement. Copy of figure 2.1

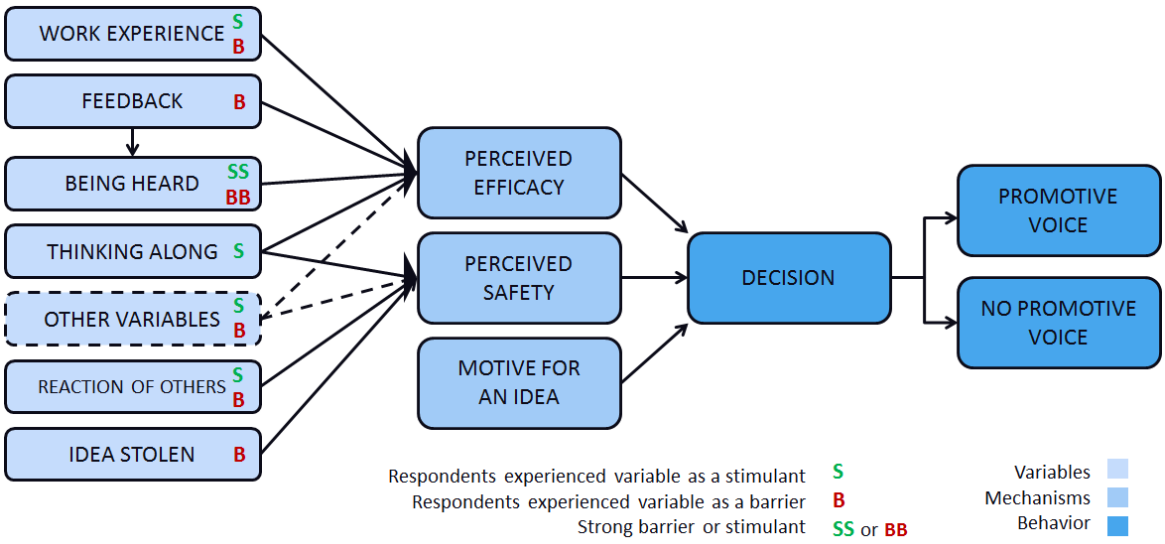


Figure 5.3: My interpretation of the strongest barriers and stimulants for promotive voice, as perceived by operators

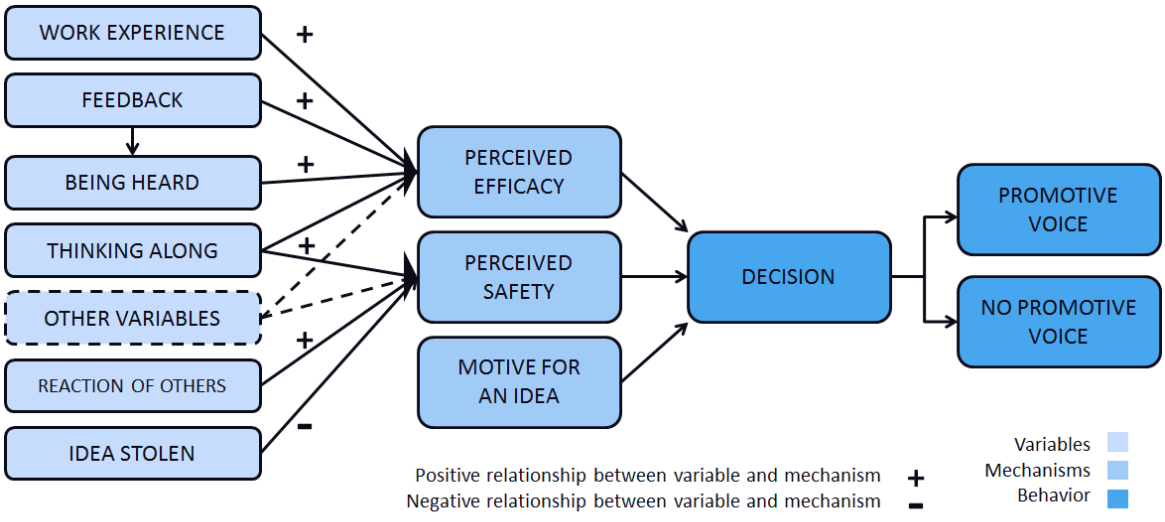


Figure 5.4: My interpretation of the relationship between the most important variables (according to operators) and the mechanisms

Strongest barriers and stimulants

Many barriers and stimulants were mentioned by respondents. The four strongest barriers and four strongest stimulants (see page 5.2.1) are included in figure 5.3. A variable can both be perceived as a stimulant or a barrier; denoted by ' S' or 'B', respectively. Each variable influences one or more mechanisms, as denoted by the arrows in figure 5.3. All variables are contextual variables, apart from the individual variable *work experience*.

- Work experience[5] impacted perceived efficacy, because it helped operators to come up with high quality ideas. A lack of work experience made respondents more hesitant to share their idea. Respondents mentioned it both as a barrier and as a stimulant.
- *Feedback* was added, because the lack of feedback causes operators to not feel heard (for details, see page 66).
- Being heard influenced perceived efficacy, because when operators did no feel taken seriously, they felt their idea wouldn't make a difference. Oppositely, when they felt heard they were more likely to share new ideas. Respondents mentioned this variable both as a barrier and as a stimulant.
- Thinking along enhanced perceived efficacy, because operators together developed an idea. It also heightened perceived safety, because the team had a positive attitude towards ideas. This variable was mentioned as a stimulant.
- The reaction of others has influence on perceived safety, because positive responses make an operator feel proud and negative responses make operators feel stupid. Both positive (stimulant) and negative experiences (barrier) were shared by operators.
- When an idea was stolen by somebody else, respondents experienced injustice and did not feel happy; a negative outcome of promotive voice. This lowered perceived safety and thereby made promotive voice less likely; this variable was experienced as a barrier.

Remarkably, the strongest barrier; *not being heard*, and the strongest stimulant; *being heard* are each other's' opposite. Appendix J.1 studies why both the barrier and the stimulant are strong, but found no clear explanation. The only insight was that five people talked about the topic much more than other respondents, and that each of these respondents mentioned being heard both as a barrier and as a stimulant.

Relationship between variables and mechanisms

Figure 5.4 presents a more general interpretation of the data. For the variables included in figure 5.3, it shows whether the relationship between this variable and the mechanisms is positive or negative. A positive relationship means that a stronger variable makes the mechanism stronger. A negative relationship means that a stronger variable makes the mechanism weaker.

[5]The construct *work experience* had already been operationalized into a measurable variable.

The variables 'work experience', 'feedback', 'being heard' and 'thinking along' have a positive relationship with (either of) the mechanisms perceived efficacy and perceived safety. The relationship between 'reaction of others' and perceived safety is also positive, because a positive reaction of others has a positive effect. When 'idea stolen' is stronger, this has a negative effect on the decision.

The variable *being heard*

Tables 5.3 and 5.4 indicated that *not being heard* is the barrier mentioned most often (38 times), while the most mentioned stimulant is *being heard* (33 times). Literature confirms that *not being heard* is a barrier for voice. "Voice is about having opinions and observations heard. How voice is realized, recognized and acted upon is what matters. There is no 'real' voice if it is not listened to" (Dundon et al., 2004). The right to be heard plays a large role in performance and employee commitment (Gollan and Xu, 2014; Kwon et al., 2016).

The variable *being heard* is included in the constructs 'supervisor and leader behavior' (in the case study, team leaders are the supervisors), 'group voice climate' (e.g. a climate of silence or negative responses of colleagues on ideas), 'the feeling you can contribute' (when you're not being heard, you can certainly not contribute to the organization) and 'what you want to achieve with the idea' (when not heard, you'll never realize the idea). Being heard is a *perception* of the operator. He can feel heard by different colleagues[6]; fellow-operators, his team leader, or other colleagues who are involved with the potential implementation of the idea. Whether you feel heard is a result of the way team members collaborate and interact, and of the behavioral patterns in the team. Hence, the feeling that you are (not) being heard becomes a part of the team culture.

Focus on being heard

The remainder of this research focuses on whether or not operators feel heard, because *not being heard* is the most important barrier and *being heard* is the strongest stimulant for promotive voice.

Not being heard includes *no feedback* from team leader

To enhance the perception of operators that they are *being heard*, many approaches can be taken. Among the four options on page 61, this research focuses on enhancing *feedback* from team leaders towards operators, because it mentioned several times in the exploratory interviews. Besides, I saw more opportunities to enhance feedback behavior in a short period of time, than to enhance *listening* and *taking action*.

[6] The term *managerial regard* by de Vries et al. (2012) is related to being heard. Yet, managerial regard only entails the interaction between the employee and his supervisor, instead of the interaction between the employee and all his colleagues.

I focus on feedback about the idea *from team leaders to operators*. This form of behavior is included in the contextual construct 'supervisor and leader behavior'. One team leader (as mentioned in section 5.2.2) acknowledged that he often discusses the suggestion with fellow team leaders, but does not always communicate the results to the operator who had the idea. The assistant manager confirmed that team leaders usually discuss ideas of operators, but often fail to feedback the response. He knew that operators tend to interpret this as "my team leader did not take any action". Therefore, the barrier *feedback* was added to figure 5.3.

Literature sees a lack of feedback as an aspect of management responsiveness. Management responsiveness influences the decision to engage in whistle-blowing (and I think also voice), by altering the utility calculus in two ways (Keil et al., 2010). Management responsiveness gives the individual the feeling he has the capability to bring about change (Dozier and Miceli, 1985) and it can decrease the perceived costs (Keil et al., 2010). In a broader perspective, innovation can be enhanced when voice behavior of supervisors supports an environment where employees can learn (Chen and Hou, 2016; Burris, 2012; Detert and Burris, 2007; LePine and Van Dyne, 1998; Tangirala and Ramanujam, 2008a). Appendix K provides more theoretical background for this argument.

Focus on feedback

As an approach to make operators feel heard, this research focuses on *feedback* from the team leader towards to operators about what happened with his idea.

5.4. Conclusion

Operators perceived many different barriers and stimulants with regard to sharing ideas. The four strongest barriers and four strongest stimulants in the table on page 68 answer research question 3.

The strongest barrier is that operators do not feel heard, followed by the risk that their idea might get stolen and negative reactions from colleagues. On the fourth place, little work experience withholds operators to share their idea.

The most significant stimulant is when an operator feels heard. Also, a lot of work experience and positive reactions by colleagues stimulate promotive voice. Several operators state that nothing withholds them from sharing their idea.

Table 5.6: Strongest barriers and stimulants for displaying promotive voice, as perceived by operators

(a) Barriers

Which constructs inhibit promotive voice?
1) Not being heard
2) Idea is stolen
3) Negative reaction on sharing idea by colleagues
4) Little work experience

(b) Stimulants

Which constructs stimulate promotive voice?
1) Being heard
2) Lot of work experience
3) Positive reaction on sharing idea
4) Nothing withholds me to share my idea

6

Effect of intervention

The theoretical framework for the decision to engage in promotive voice was composed in chapter 2. This framework was applied to a case company in chapters 4 and 5, indicating which elements from the organizational context play a role for operators at this case company. As a next step of design-based research, this chapter designs an intervention to stimulate voice, by changing the organizational context. By measuring the effect, I can answer the last sub-question:

> *How can Van Houtum B.V. increase the probability that operators display promotive voice by changing the organizational context?*

This phase of the research involves not only operators, but also team leaders and the management. This chapter describes an intervention with team leaders at the case company. A second round of qualitative interviews investigates whether a change has been provoked, from the perspective of the management, team leaders and operators.

6.1. Provoking a change

A change is attempted to be provoked: an intervention is performed with the team leaders to raise awareness about the importance of feedback and develop skills for how giving feedback. Hopefully, this intervention causes a behavior change for team leaders in such a way that operators feel more heard.

6.1.1. Method

Theoretically, there are three approaches to increase the probability that operators display promotive voice: reduce a barrier, strengthen a stimulant or influence which motives are considered as important.

Procedure

Aim

For the intervention, I select an approach with which most results can be achieved[1]. Section 5.3 identified as the main barrier that operators often *do not feel heard*. More specifically, there was a lack of *feedback* from team leaders towards operators about the progress of the idea.

Figure 6.2 visualizes the goal of the intervention. Due to the focus on being heard and feedback, all other variables from figure 6.1 are left out. The goal of the intervention is denoted with a dark orange outline. The desired effect of enhanced feedback is that operators feel they are being heard, estimate a higher perceived efficacy, and through the utility calculus have a higher probability to display promotive voice. This is denoted with a light orange outline.

Aim of intervention

The intervention aims to provoke a change in the feedback behavior of team leaders, to make operators feel more heard. The sub-goals are:

1. Enhancing the awareness of team leaders ...
   (a) ...about the importance of promotive voice for the organization
   (b) ...about the impact of their behavior on operators; specifically the importance of giving feedback;
2. Enhancing their skills to give feedback to the employee who voiced the original idea.

The first sub-goal aims to make participants aware of the existence and importance of promotive voice and how their behavior influences the decision of operators whether or not to speak up with their idea. Awareness can impact the *attitude* of the team leader towards feedback, and thereby affect his *behavior* (Bettinghaus, 1986). This is required for the second sub-goal; to teach team leaders the *skill* to give feedback, such that the team leader is more capable to display the desired behavior.

Sample

The five team leaders of the production factory of Van Houtum constitute the sample for this method, because it is their role to give operators feedback about their ideas. The team leaders are respondents 9, 10, 13, 14, and 20.

[1] Chapter 4 concluded that sustainability is considered relatively important, already. I do not see much room to improve this.

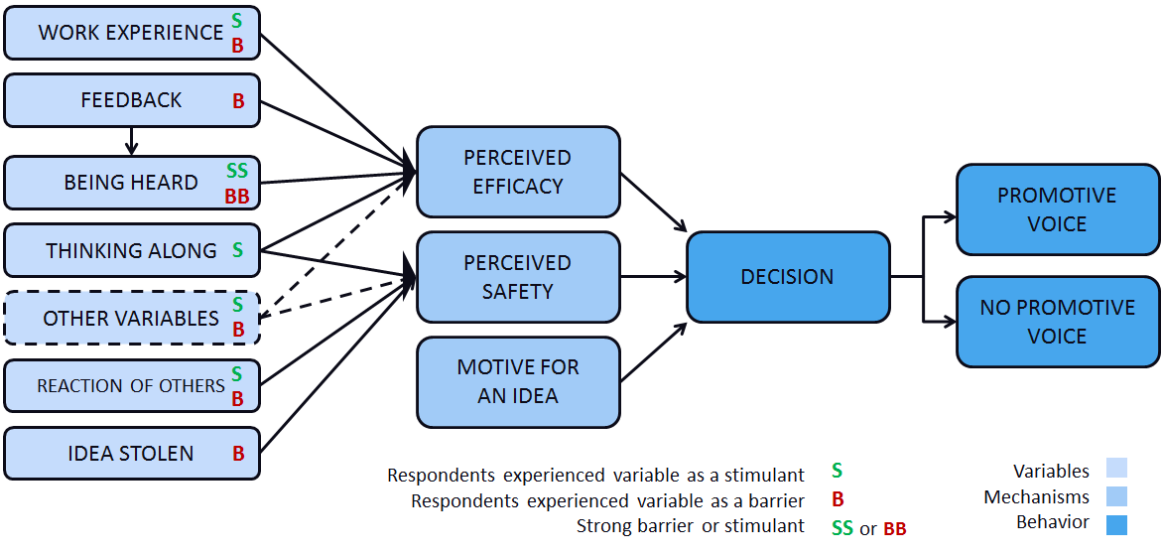


Figure 6.1: My interpretation of the strongest barriers and stimulants for promotive voice, as perceived by operators. Copy of figure 5.3

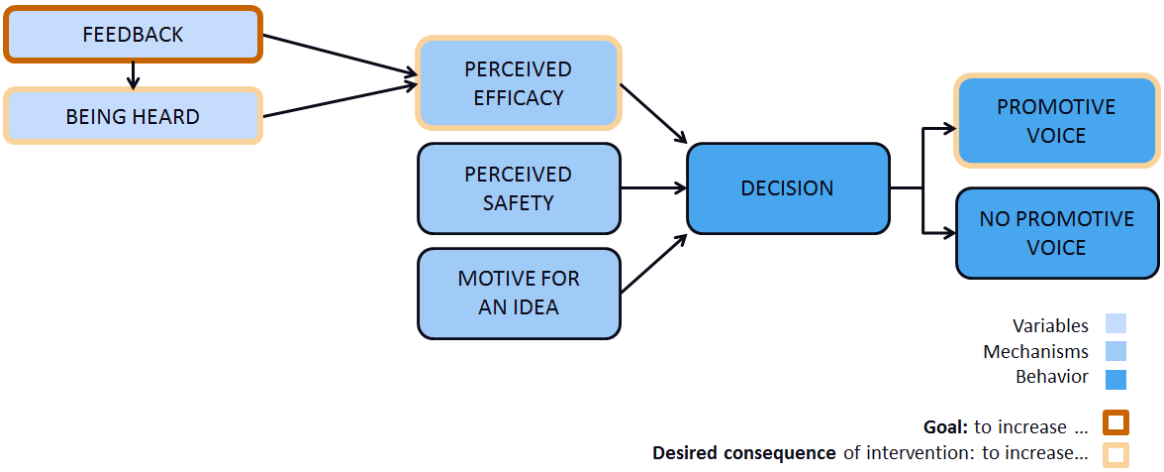


Figure 6.2: The **goal** and **desired effect** of the intervention with team leaders

Developing the intervention

The intervention is limited to 1.5 hours, because the participants prefer a practical session and I expect this will suffice. Given the small target group with practice-oriented people and the aim is to develop a specific skill, the assistant manager agrees on an interactive workshop; some information is presented, followed by exercises to practice with this information.

The workshop was designed by me. During the designing process, the assistant manager and coordinator education provided some feedback, to make sure the workshop is well-tuned to the target group.

Types of interactions are inspired on educational learning methods (Hoogeveen and Winkels, 2011) and a persuasion technique (Cialdini, 2001). Since I could not find scientific literature about how to teach managers in giving feedback, I used online available management websites.

The workshop

While a more detailed explanation of all elements of the workshop can be found in appendix L, I present a short version here.

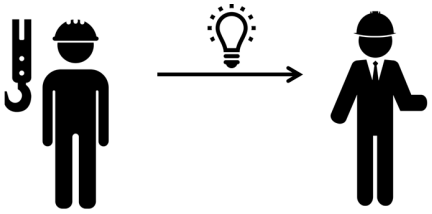
The story that is to conveyed in the workshop is the following: “When you, as a team leader, give feedback to the operator (in other words, you tell what has been decided about his idea for improvement), the operator feels that he has heard. This motivate him to share his future ideas for improvement. By sharing these ideas, the operator feels he has an influence on his work, the team leader can use the knowledge of his colleagues, and the company profits from the improvements of the work which is beneficial for the competitive advantage.”

The intervention is an interactive workshop with four elements, as listed in table L.1. It communicates the importance of feedback behavior, teaches participants a small amount of theory, which they immediately apply in practice. We reflect on this exercise and participants formulate resolutions for their daily work.

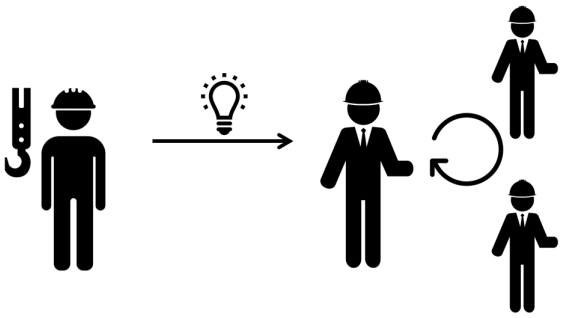
Table 6.1: Goals of the interaction types used for the intervention

Goal	Interaction type	Source
To collect input, experiences or opinions of the participants	Open question	
To stage a situation in which the operator feels unheard, because he received no feedback. This illustrates the importance of feedback.	Communication game: Breaking the code	(Hoogeveen and Winkels, 2011)
To practice how to give feedback, when team leaders have decided whether or not they are going to take action upon the idea.	Role play: Your idea? My idea?	(Hoogeveen and Winkels, 2011)
To let participants make concrete resolutions on how to give feedback	Resolutions	(Cialdini, 2001)

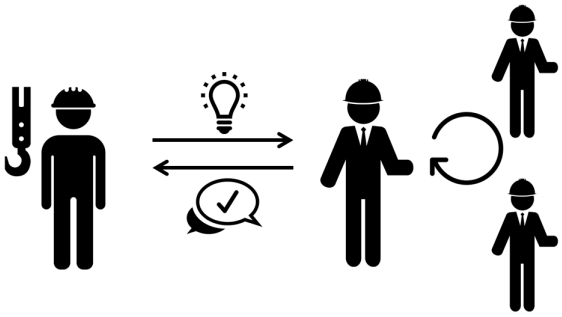
Open questions are posed about the attitude of team leaders towards operators that share ideas for improvement and about *why* feedback is useful. In the communication game ‘breaking the code’ one participant helps the others to break the code, but is excluded from the rest of the exercise. It illustrates the feeling of not being heard. Then feedback behavior is introduced, according to figure L.1. The explanation of *how* to give proper feedback is based on figure L.2. In the role play, the communication steps of figure L.1 and L.2 are practiced by two operator-team leader couples. It is followed by a discussion on how to give feedback. The assistant manager estimated that both the communication game and the role play are suitable for the target group, avoiding intimidation. To conclude, the participants write down their intentions regarding applying the theory in their daily work.



(a) Step 1: An operator (left) shares an idea with his team leader (right).



(b) Step 2: The team leader discusses with fellow-team leaders and with managers what the next steps are (if any).



(c) Step 3: The team leader gives feedback to the operator by telling the decision and explaining why this has been decided. If applicable, next steps are discussed.

Figure 6.3: Visual representation of the communication between an operator and a team leader about an idea for improvement in three steps

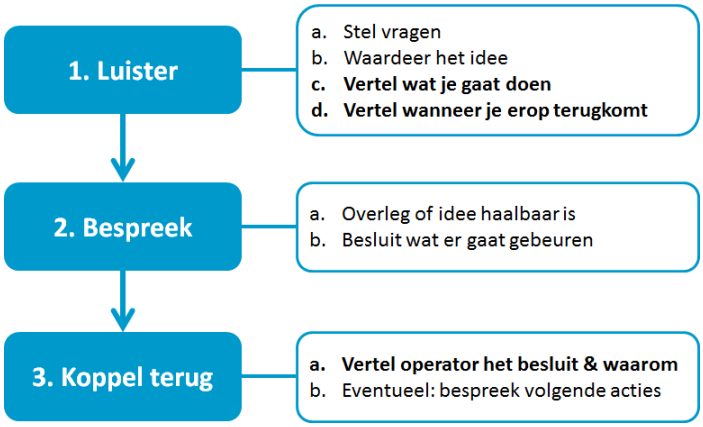


Figure 6.4: The presented information about giving feedback to an operator about the idea he has shared

Execution

The workshop took place on the 12th of December in a meeting room at Van Houtum. Everyone who was invited attended the workshop. All exercises are supported and connected by a PowerPoint presentation. My role of facilitator and presenter is shared with assistant manager. By engaging their colleague, team leaders are perhaps more willing to implement what they learned.

The participants are the five team leaders, as well as their manager and their assistant manager. These are the people with whom most ideas are shared by employees. Hence, the behavior of this group of people mainly determines whether employees feel heard. The staff advisor and coordinator education attended the workshop as observers (not participants), because they are involved with the learning processes of the participants.

During the two months after the intervention, the team leaders had the opportunity to practice giving feedback about ideas and thus changing their behavior.

Method: Intervention

The aim of the intervention is to stimulate team leaders to give feedback upon ideas from operators. In other words, stimulating them to keep operators up to date about the progress of the idea. This is attempted by means of an interactive workshop with all team leaders and some managers. Qualitative interviews investigate whether a change has been provoked in the barriers and stimulants that operators experience.

6.1.2. Results

During the intervention no data has been recorded. but a few remarks are worth noticing.

The attitude of the team leaders was serious and interested. They agreed with me that ideas for improvement are important (in general, not specifically for sustainability) and had already adapted their behavior to varying extent. In the workshop they took the exercises seriously, contributed (moderately or extensively) to the successive discussions. Related topics they addressed are; what to do when you feel passed by, because an operator speaks up to your boss? and; sometimes an operator has a bad feeling after you tell him his idea will not be implemented.

The second exercise resulted in an explicitly formulated learning: 'As a team leader you can be transparent and tell the idea that received priority'. This shows that transparency is not obvious, nor a habit, for the team leaders. It appeared that they do not always give (clear and transparent) arguments for *why* an idea is not implemented. Overall, I have the feeling that all team leaders want to do their best and are concerned with their job, and with helping the organization to develop and improve.

After two days, the production manager told me on the phone that team leaders had come back to the workshop, so he concluded that the message had landed. The assistant manager mentioned *giving feedback* a few times, but due to circumstances he has insufficient time to evalu-

ate with each team leader. In his experience, team leaders are actively working on it, so he expects that operators already notice a difference.

6.2. Measuring a change

In the second step, the same qualitative interviews are held with operators as in section 5.1 to identify the changes they experienced. Team leaders and several managers are asked about their vision on the possibly occurred changes.

6.2.1. Method

Through qualitative interviews with the management, team leaders and operators I try to assess whether a change has occurred in the behavior of team leaders and in the barriers and stimulants that operators perceive.

The interviews are qualitative, semi-structured, individual and face-to-face, for the same reasons as in section 4.1.1. Different interviews are held with the team leaders than with regular operators. Team leaders have attended the intervention and might change their behavior consciously, whereas operators might have noticed this behavior change of their team leader.

Sample

This time I want to know whether the management, team leaders and operators of Van Houtum have perceived any change in promotive voice since the intervention. The management includes the managing director, the manager production, the assistant production manager, the coordinator education and the chief process technology. Secondly, all team leaders are included. Finally, 12 operators are added to the sample. These are the operators from the sample in section 4.1.1, complemented with 5 others. In total, this makes a sample of 22 respondents divided over three groups, the same sample as in section 4.2.1. It is repeated in table 6.2.

Table 6.2: The sample for the rating exercise, divided into groups. Copy of table 4.3

Group	Respondents number
Management	A , B , C , D , E
Team leaders	9 , 10 , 13 , 14 , 20
Operators	1 , 5 , 6 , 11 , 15 , 17 , 22 , 24 , 25 , 28 , 29 , 30

Procedure

This section presents a concise description of the interview procedure for operators, team leaders and managers. The complete interview protocol can be found in appendix M.

Management

The interviews with the five managers are unstructured. The goal is to hear their perception on any changes in feedback behavior, whether operators feel heard, and other potential changes caused by the intervention. Different questions were posed to each manager, because each of them had different information to share.

Team leaders

Interviews with the team leaders examine whether they have changed their behavior with regard to giving feedback after an operator shared his idea. This includes giving feedback more often, and having improved his skills on how to give feedback.

I asked team leaders how they experienced the workshop and tell them I am interested how they respond to ideas from operators now. In the central part two topics are discussed, starting with self-evaluated behavior change. I ask in what way their behavior changed with regard to ideas from operators. I ask for examples about why his behavior changed and what the effects are on operators. By asking whether he discussed the topic with his colleague team leaders, I get an idea of their communication about this topic.

The second topic reflects on *why* this behavior change either or not took place. I invite respondents to reflect why they managed to give more feedback, or why they didn't manage, before asking how they could be supported to further develop this skill.

Operators

Interviews with the operators aim to find out whether they feel more heard since the workshop, when compared to the first round of interviews. These interviews investigate how the experience the feedback from their team leader.

To start off with, I remind respondents of the previous interview and tell them I am again interested in the question why they share their idea or stay silent. The central part consist of two elements. The first element is exactly the same as in the previous interview (see 5.1), with the central question

Why do you decide to (not) tell your idea?

This question is posed without and with cards, in the same way as described on page 52. Again, perceived efficacy and perceived safety are implicitly included, because the cards might inspire respondents to mention these mechanisms.

In the second element, I ask which barriers have become stronger weaker seems our previous interview. Follow-up questions ask for an example of what has changed and why it changed. Then, the same questions are asked about stimulants. Lastly, I explicitly ask how the team leader responds when an idea is shared, and whether a change took place in this behavior.

Data collection

The interviews are performed 10 weeks after the workshop took place; at the end of February 2017. Respondents were taken apart for approximately 25 minutes in a separate, undisturbed room in the office. Audio was recorded.

Before the interviews with operators, I read the summary of the answers from the previous interviews. This way I could compare the answers and ask follow-up questions based on their previous answers. Respondents were very cooperative and open to tell about their experiences. Only respondent 29 did not want to go into detail about his negative experiences with confronting his team leader with (in his eyes) intolerable behavior. Compared with the first interviews, respondents mentioned fewer cards and were less extensive in commenting on them. This might because they do not see value in repeating their answers, or because my attitude was unknowingly a little impatient.

Data analysis

Transcribing the audio records resulted in 90 pages of text. An example of the transcripts can be found in appendix N. Different approach were taken to analyze the data from team leaders and management, as compared to operators.

Team leaders and management

Adversely, the coding of the interviews with the team leaders and managers is done using open coding; new codes are made, purely inspired on the transcripts. This approach is suitable, because I am looking for new insights, without knowing what to expect (Corbin and Strauss, 1990).

Operators

The interviews with operators were very much like the interviews in the first round. Hence, almost the same approach is used for data analysis (see page 55). This time the categories and codes from the previous interviews are used to code the new interviews. This is a deductive coding approach (Elo and Kyngäs, 2008). When necessary, codes are added, adapted or merged. Many codes from the previous interviews were not used. More codes were created about the channels through which ideas find their way and about feeling heard and receiving feedback, because I asked more follow up questions about that.

Method: Qualitative interviews 2

Comparison between data of the first and second round of interviews leads to insights in whether or not changes have occurred in what operators experience as barriers or stimulants for speaking up.

6.2.2. Results

This section presents the results from the qualitative interviews. Remarks about the challenge of measuring change were moved to appendix P.

What participants learned from the workshop

All five team leaders and managers B, C and D took part in the workshop. This paragraph presents the self-evaluated effect of the intervention on the team leaders. Where relevant, the experience of managers is included as well.

Participants liked the workshop and found it informative; *"dus het kan nog he! 55 jaar, en toch nog mijn ogen geopend"* (a humoristic resp 13). Several participants described it as a wake-up call; *"je wordt met je neus op de feiten gedrukt"* (resp 20 and D, and resp 13 (with respect to *how* to give feedback)). Team leader 10 notes that the workshop is very much in line with a recent training program: coaching leadership; *"[terugkoppeling] is coachend leidinggeven"* (resp 10). Two months later, each participant can express what he learned from it; *"dit van die workshop blijft wel hangen"* (resp 9).

Team leaders extracted many different lessons from the workshop and inspired by this, they experimented with new behavior. Since these two types of results of the workshop are intertwined, they are together listed in table P.1. Explanations of each learning are provided in appendix P.

Table 6.3: Overview of learnings by team leaders from the workshop

Learnings	**Respondents**
Feedback is important	9, 20, D
Formulate a question to engage operators	9, 13
More time to listen	10, 20
Did you think about <this>?	10
Sharing status more often	9
Give arguments for rejecting idea	14
Explain that not all ideas can be carried out	14
Stimulate sharing of ideas	14, 20
Ask for feedback	9

Changes that were perceived by the management, team leaders and operators

Three groups of employees were asked about the changes they noticed since the workshop. The changes in behavior of each of these groups was discussed. Besides, each group gave its perspective on whether the barriers and stimulants for promotive voice *of the operators* changed.

Management

No change has been identified concerning the behavior of the management, by any of the three groups. About his own behavior, manager D gave an example in which he gave feedback, which he would have done the same before the workshop; *"Interviewer: Zou je dat voor de workshop ook zo hebben gedaan? Respondent: Ja, ik denk het wel"*. Operators have not noticed any change in feedback from the management, even when explicitly asked about it (respondents 15, 24 and 25).

Team leaders; their own perspective

All team leaders have deliberately changed (part of) their behavior. I describe in which ways team leaders said about themselves that they behaved differently. As a result of this, some team leaders had the impression that operators have noticed this change and that it impacted the operator perception of the constructs; *engagement*, *feeling they can contribute*, *feeling heard* and *perceived efficacy*. Note that this data is very implicit; it is not provided by the operators themselves.

Each team leader mentioned at least one thing he tried after the workshop. Team leader 10 says he takes more time to listen to ideas; *"als mensen komen met een idee, dat ik meer tijd neem om te luisteren"*. Respondent 9 gives more status updates; *"status [vertellen]; gelijk die feedback geven zodat [operators] op de hoogte zijn"*, while respondent 14 puts more effort into explaining why ideas were not executed; *"wat meer tijd in gestopt om uit te leggen"*. When team leaders are not informed themselves, respondetn 9 more actively asked for status updates; *"Meer achter [terugkoppeling van bovenaf] aan gaan. Dus niet op zitten wachten. Je wilt toch die feedback hebben"*. Even when ideas are not executed, team leader 14 stresses the importance to keep telling ideas; *"om te zeggen dat alle ideeën goed zijn, dat ze er vooral niet mee moeten stoppen"*. Team leader 9 told an anecdote in which he gave feedback about the progress of an idea. He did not consider this a change, because he would have done the same before the workshop.

Four team leaders experience different reactions by operators on their new behavior. Team leader 9 felt that operators appreciate his feedback, making him credible; *"dat ik geloofwaardig word"*. By giving feedback to keep operators up to date, respondent 9 felt more understood; *"gelijk die feedback geven zodat ze op de hoogte zijn. Dan word je ook meer begrepen "*. Respondent 10 experienced that operators feel understood when you take the time to explain; *"als mensen denken dat ze begrepen worden, dat is fijn hè. Gewoon omdat ze de tijd voor je nemen"*. In the team meeting with one team leader, operators were much more involved than previous times. Another team leader engaged operators in designing a solution for a problem, which they took up actively; *"ik was daarmee begonnen, dus dan vraag je dat, dan begint hij mee te denken, en op een gegeven moment hoefde ik niets meer te doen"* (resp 13). When the problem was solved, they were proud; *"dan zijn ze trots, hè, dit kunnen we met z'n allen maken! we hebben dat gedaan!"* (resp 13). The solution received more support from within his team; *"ook naar de ploeg toe wordt het breder gedragen"*. The fourth team leader experienced a new reaction after clearly explaining why an idea would not be executed. The operators took a moment to let it sink in and instead of coming back to it (as usual), they now kept silent; *"het was net alsof het*

effe binnenkwam, dat was goed. Ik heb er niks meer over gehoord" (resp 14). Respondent 9 tried a new approach to giving feedback, by asking more questions; *"Interviewer: Geef je nu terugkoppeling op een andere manier? Respondent: Ja, ook meer bij de mensen neerleggen. (...) Vragen stellen bijvoorbeeld: wat denken jullie ervan?"*. Finally, respondent 9 experienced that when operators see that action is being taken upon their ideas, they are more likely to share ideas in the future; *"Interviewer: En de volgende keer als operators een ander idee hebben voor verbetering, denk je dat ze dat nu sneller zouden vertellen? Respondent: Ja, ik denk van wel. Interviewer: Waarom? Respondent: Omdat ze zien dat er iets in gang wordt gezet, het komt er ook"*.

Team leaders; perceived by other groups

For the team leaders this is different; at least one quote about a change has been found in the responses of each group. Manager C heard some team leaders talk about giving feedback; *"ikzelf zie [geen verschil in gedrag] (...) ik heb wel opmerkingen gehoord dat ze er iets mee doen"* (resp C). An operator sees a behavior change, because his colleague was recently upgraded to team leader; *"ja, nu moet hij er meer mee doen, omdat hij nu teamleider is, dat hij er wel mee verder gaat, en het bij de juiste mensen neerlegt"* (resp 22).

I heard more people say that behavior of team leaders had not changed. Manager C explained that team leader 14 naturally gives feedback, and that he did not hear team leader 9 about the topic. No operator confirmed that team leaders had changed their behavior or that their own reaction was different. I explicitly asked operators 1, 6, 15, 17, 24 and 25 about feedback behavior of their team leader, but that yielded no responses either. Four operators were satisfied with the behavior of their team leader regarding ideas.

Operators

Overall, operators have the feeling that nothing changed significantly. Five operators explicitly said that the way people handle ideas for improvement has not changed. However, some details are worthwhile mentioning.

Some operators experienced a change in barriers, illustrated by 6 quotes. Operator 6 argues that his increased amount of work experience and heightened understanding of his work allows him to think about and explain the idea better; *"omdat ik het beter snap kan ik het ook beter uitleggen en beter over het idee nadenken"*. For operator 22, the increase in work experience makes him feel more socially free; *"ik werk hier al iets langer, dus je hebt meer je plaats gevonden, je draai in de ploeg. Dus je voelt je vrij"*. Also, he is more eager to share his idea because he realizes he will work here for many more years; *"maar nu ben ik eerder geneigd om iets te zeggen, omdat je weet: ik moet ook nog lange tijd meedraaien, dus ik kan beter nu al beginnen met het voor mezelf voor later te optimaliseren"*.

6.3. Data interpretation

This chapter evaluates the success of the intervention and visually sketches the interpretation of the results.

6.3.1. Evaluation of the intervention

The goal of the intervention (as presented on page 70) was threefold. Two out of three goals have been reached. The first goal was to increase awareness among team leaders about the importance of promotive voice and the effect of their behavior towards operators. Three out of five team leaders had become more aware of the importance of giving feedback to operators.

Secondly, the intervention aimed to enhance team leader awareness and teach skills about *how* to give feedback to operators. The results on page 190 show that all five team leaders have learned about the importance of giving feedback and have distilled one up to three concrete lessons on *how* they can display this behavior. Four team leaders could name examples in which they displayed different behavior than before the workshop. By provoking a behavior change with team leaders, the intervention indeed changed an element of the organizational context of operators.

As a result of their behavior, team leaders identified different reactions from operators. Via the constructs 'engagement' and the 'feeling they can contribute', team leaders thought that operators experienced higher 'perceived efficacy' and a stronger 'motive'. In multiple ways, team leader behavior positively affected the utility calculus for operators to display promotive voice and would thereby increase the probability that operators speak up.

The overarching goal; "...to make sure operators feel more heard", has not been reached. Even though team leaders perceive a difference in the attitude of operators and operators' feelings of being heard, the operators themselves do not mention this[2]. Nor did operators recognize any new behavior of team leaders, even when explicitly asked for.

6.3.2. Interpretation of the results

The qualitative interviews have investigated the actual effect of the intervention. Figure 6.6 visualizes which changes occurred, according to the management, team leaders and operators. Compared to the goal of the intervention in figure 6.5, three variables were added, because respondents noticed changes in these variables[3]. Colored outlines denote that the variable or mechanism had become stronger.

[2] There was one exception: two operators mentioned that the six months of extra work experience made them more likely to speak up, lightening the barrier of having little work experience. This change was not aimed for, but occurred naturally.

[3] Although they were constructs in the original theoretical framework, the operationalization process resulted in the measurable variables *the feeling you can contribute, work experience* and *engagement*.

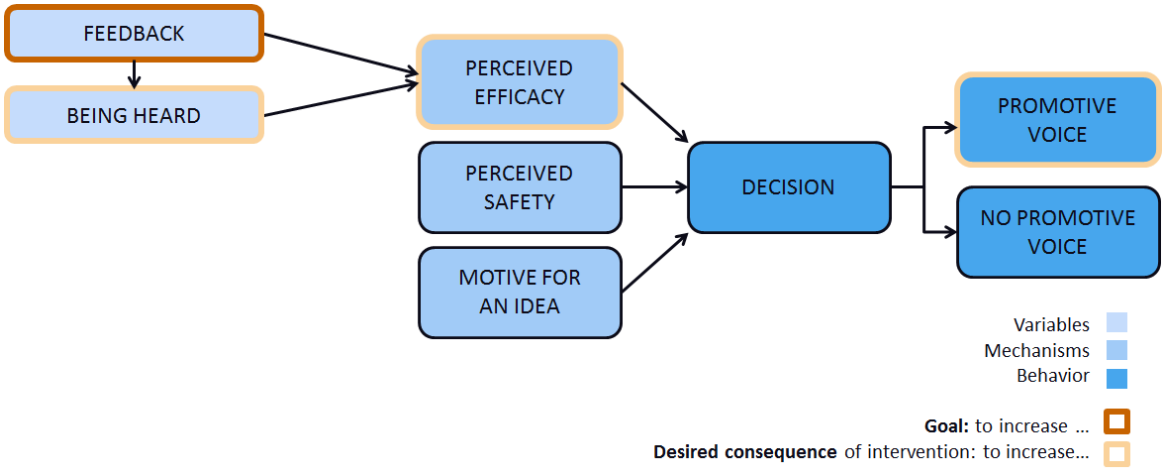


Figure 6.5: The **goal** and **desired effect** of the intervention with team leaders. Copy of figure 6.2.

This visualization only includes the most relevant findings according to my **interpretation**, which is not complete nor objective. The text describes some doubts that I had in composing this figure. Although some constructs might overlap, I do not focus on their interrelations.

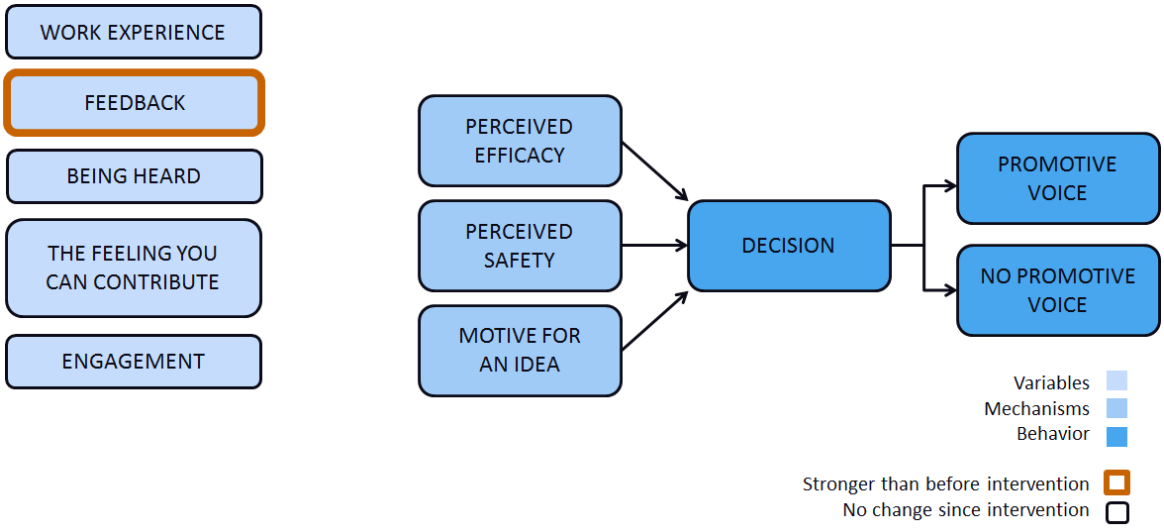
Perception of management

Figure 6.6a visualizes the experience of the management. This group of respondents noticed that team leaders are actively trying to give more feedback and to do this in a more constructive way. Since they are not always present when feedback is given, they have no proof that the actual behavior of team leaders has changed.

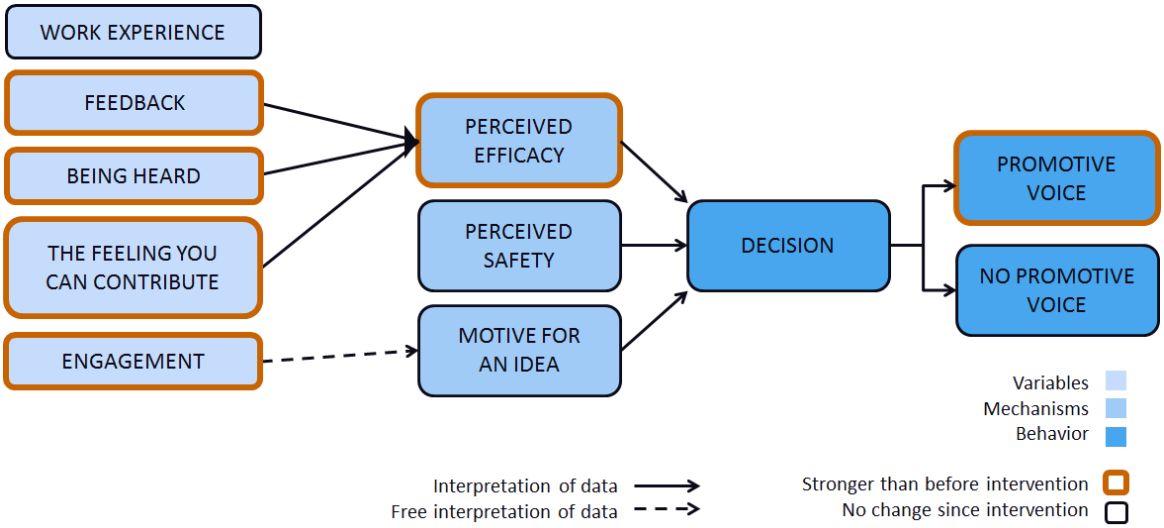
Perception of team leaders

The dark orange outline of 'feedback' in figure 6.6b represents four team leaders who said that they either give *more* feedback to operators about what will happen with their idea, or they provide feedback *differently*. As a result, some team leader sense that operators operators feel more heard or see that their idea is acted upon (resulting in increased perceived efficacy and thereby the probability of voice). Figure 6.6b visualizes this with dark orange outlines of *feedback*, *being heard* and *perceived efficacy*.

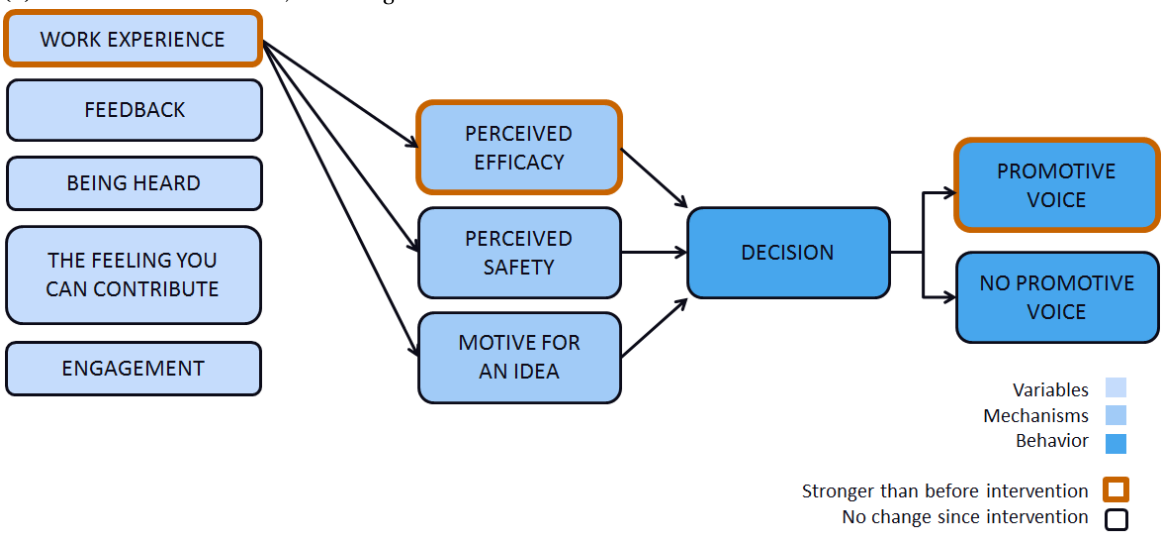
By engaging operators with ideas, 'the feeling you can contribute' and 'engagement' were enhanced (visualized by orange outlined blocks). Page 57 stated that respondents related 'engagement' to higher probability of speaking up, but not through which mechanism. I think engagement led to a stronger motive for the idea, because the team leader noticed more support within the team for the idea. This arrow is dotted, because this interpretation is only implicitly based on data. By engaging operators with ideas, they were proud of what they achieved. I interpret this remark as a heightened 'feeling by operators that they can contribute' to the organization, because they saw a result. In my interpretation this enhances perceived efficacy, because their idea had effect on the work process.



(a) Effect of the intervention, according to management



(b) Effect of the intervention, according to team leaders



(c) Effect of the intervention, according to operators

Figure 6.6: My interpretation of the effect of the intervention on the barriers and stimulants that operators perceived, from the perspective of (a) the management, (b) team leaders and (c) operators. 'Feedback' represents feedback that team leaders give to operators about their idea

Perception of operators

Most operators experienced no relevant changes at all. Only two operators experienced a decrease in the barrier *little work experience*, resulting in a higher probability to speak up, as illustrated by dark orange outlines in figure 6.6c. This argumentation is in line with the theoretical framework and the results of section 5.2.1. They mentioned reasons from each of the three mechanisms; perceived efficacy (e.g. more capable to explain idea), perceived safety (feel more free within the team) and motive (realize that it is for his own benefit to improve the processes).

6.4. Conclusion

In order to increase the probability that operators display promotive voice , the intervention aimed to reduce the greatest barrier: the feeling of operators that they are *not being heard*. The intervention tried to change the organizational context for operators, by stimulating team leaders to give feedback about the ideas of operators.

The effect of the intervention was limited, though in line with the goal of the intervention. According to team leaders, the probability that operators display promotive voice had slightly increased, because operators felt more heard. Team leaders thought this was the consequence of operators receiving more or different feedback, a stronger feeling that they can contribute or a stronger feeling of engagement. Yet, operators noticed no change in the behavior of team leaders, nor in the barriers of stimulants they perceived, nor did they feel more heard than before.

7

Conclusion

Sustainable innovation is essential for companies to stay in competition (Rangus and Slavec, 2017; Waite and Sheehan, 2013). Ideas, the first phase of sustainable innovation (Perry-Smith and Mannucci, 2017), can be generated by all employees (Teza et al., 2016), among which operators. Yet, companies often do not use the potential of their operators' ideas for improvement (Axtell et al., 2000). This problem statement led to the main research question that will be answered for one case company:

> *How can changes in the organizational context increase the probability that operators display promotive voice in companies that strive for sustainable innovation?*

7.1. Answers to sub-questions

Four sub-questions were formulated. They will be answered here.

Sub-question 1

What stimulates and limits promotive voice, according to literature?

According to the theoretical framework in figure 7.1 the decision to speak up depends on three mechanisms: *perceived efficacy*, *perceived safety* and the *motive for the idea*. High perceived efficacy, low perceived safety and a strong motive each increase the probability that the individual speaks up with his idea. Perceived efficacy and perceived safety are influenced by a set of individual and contextual constructs.

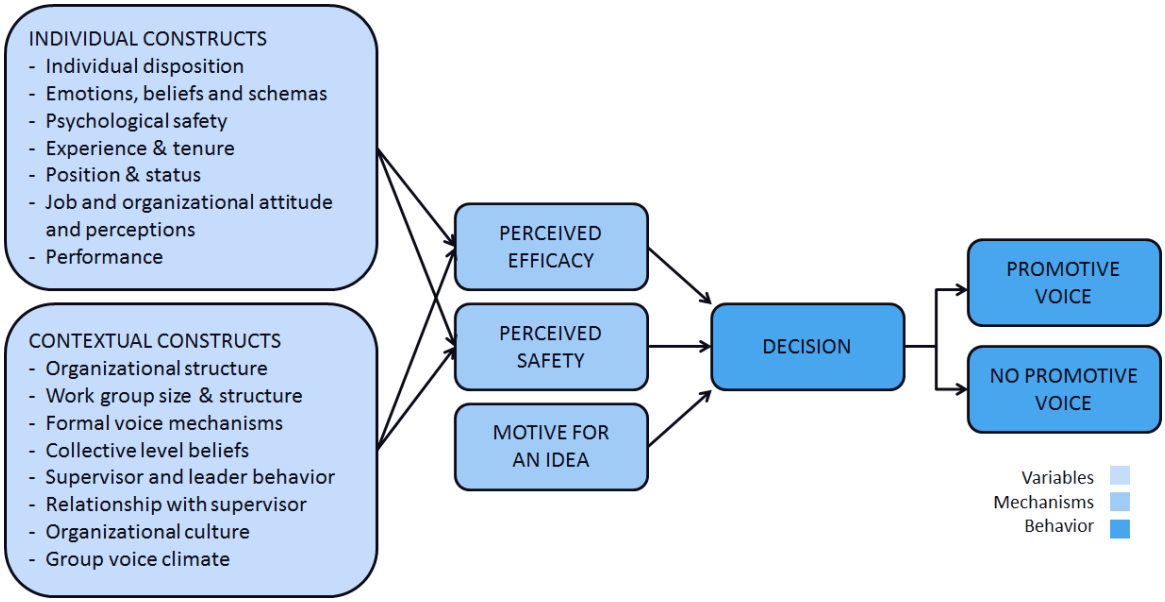


Figure 7.1: Theoretical framework of an individual's decision whether or not to engage in employee voice, given that he has an idea for improvement. Copy of figure 2.1

Before proceeding, Van Houtum B.V. was selected as a case company. This made it possible to do design-based research and apply the theoretical framework to a situation in practice. The remaining three sub-questions are answered with data that was collected at this company.

Sub-question 2

To what extent do operators, team leaders and management at Van Houtum B.V. find sustainability an important motive for improvement?

Operators named eight motives for ideas for improvement: work processes *safer, more sustainable, cheaper, cleaner, easier* or *faster*, making a product with *better quality* or making *more production*.

In a rating exercise about the importance of these motives, *more sustainable* ended on the third place out of eight. Thus, making the factory more sustainable is valued as relatively important by all groups. Still more important were *safety* and *better quality*.

Sub-question 3

To what extent do operators at Van Houtum B.V. perceive barriers and stimulants to display promotive voice?

Operators perceived many different barriers and stimulants with regard to sharing ideas. The four strongest barriers and four strongest stimulants in the table on page 68 answer research question 3.

The strongest barrier is that operators they do not feel heard, followed by the risk that their idea might get stolen and negative reactions on the idea from colleagues. On the fourth place, little work experience withholds operators to share their idea.

The most significant stimulant is when an operator feels heard. Also, a lot of work experience and positive reactions by colleagues stimulate promotive voice. Several operators state that nothing withholds them from sharing their idea.

Table 7.1: Strongest barriers and stimulants for displaying promotive voice, as perceived by operators

(a) Barriers

Which constructs inhibit promotive voice?
1) Not being heard
2) Idea is stolen
3) Negative reaction on sharing idea by colleagues
4) Little work experience

(b) Stimulants

Which constructs stimulate promotive voice?
1) Being heard
2) Lot of work experience
3) Positive reaction on sharing idea
4) Nothing withholds me to share my idea

Sub-question 4

How can Van Houtum B.V. increase the probability that operators display promotive voice by changing the organizational context?

In order to increase the probability that operators display promotive voice, the intervention aimed to reduce the greatest barrier: the feeling of operators that they are *not being heard*. The intervention tried to change the organizational context for operators, by stimulating team leaders to give feedback about the ideas of operators.

The effect of the intervention was limited, though in line with the goal of the intervention. According to team leaders, the probability that operators display promotive voice had slightly increased, because operators felt more heard. Team leaders thought this was the consequence of operators receiving more or different feedback, a stronger feeling that they can contribute or a stronger feeling of engagement. Yet, operators noticed no change in the behavior of team leaders, nor in the barriers of stimulants they perceived, nor did they feel more heard than before.

7.2. Answer to research question

Building upon the conclusions of sub-questions above, the main research question is answered:

Main research question

How can changes in the organizational context increase the probability that operators display promotive voice in companies that strive for sustainable innovation?

Since only one case study has been done, this section concludes how the sharing of ideas can be made more likely by changing the organizational context, at a case company that strives for sustainable innovation.

From a theoretical perspective, companies that strive for sustainable innovation can increase the probability that operators display promotive voice by influencing how important their employees value different motives for an idea or by influencing the constructs in figure 7.1, such as 'supervisor and leader behavior', 'job and organizational attitudes and perceptions' and 'group voice climate'.

In this case study, the company could increase the probability that operators display promotive voice by giving operators the feeling that their ideas are heard. The effect of the intervention which aimed to enhance feedback behavior about ideas was limited, though in line with the goal of the intervention. According to team leaders, the probability that operators display promotive voice had slightly increased.

Thus, in theory, there are many starting points for companies to increase the probability that operators display promotive voice, but in practice it is not easy to change the organizational context in favor of promotive voice.

8

Discussion

With this exploratory research, I set foot in an almost unchartered field of study: the study of promotive voice in the context of sustainable innovation. The fact that little research has yet been done made this research an exciting adventure.

In this chapter I reflect on the theoretical framework in section 8.1.1, on sustainability in section 8.1.2 and the used methodology in section 8.1.3. Then, I discuss the scientific and societal relevance of this research in sections 8.2.1 and 8.2.2, respectively. Finally, recommendations are made for future research in section 8.3.1 and for practice in section 8.3.2.

General discussion

The title of this report is *Facilitating promotive voice for contributing to sustainable innovation*. It uses the potential of employees to enhance sustainable innovation, by using the natural tendency of employees to come up with ideas for improvement. The word *facilitating* refers to the fact that ideas arise naturally, but employees often keep ideas to themselves. Employees should be facilitated to *share* their ideas for improvement.

Promotive voice is a concept that has only recently been studied as a specific behavior type. I used literature about promotive voice and employee voice to construct a theoretical framework. In a situation where an employee has an idea, this preliminary framework attempted to describe all factors that influence his decision to either or not display promotive voice.

This framework was meant to help companies to increase the probability that employees display promotive voice, because ideas for improvement are the first step towards (sustainable) innovation. Since human behavior is difficult to change, it took the standpoint that companies

can *facilitate* an organizational context in which the employee feels more invited to share his ideas for improvement. The framework can be applied by all organizations that strive for innovation, or even those that want to gradually improve their work processes. To contribute to *sustainable* innovation, companies can either attempt to enhance promotive voice in general, or to increase the percentage of sustainable ideas.

To make promotive voice probable in a case company, I attempted to enhance one element of the organizational context by means of an intervention. The effect of this intervention was limited, though seemed to be in accordance with its goal and with the theoretical framework. For further development of the model, I suggest to identify critical variables for promotive voice.

8.1. Reflection

Reflections on the theoretical framework, on sustainability and on the research methodology are presented.

8.1.1. Theoretical framework

Goal

The goal of the theoretical framework was to help companies that strive for sustainable innovation facilitate their employees to display promotive voice. This approach to develop a descriptive model of the antecedents of promotive voice is similar to the theoretical advancement of the study of employee voice.

Original theoretical framework

The original theoretical framework was a cognitive decision model that recognizes how beliefs and attitudes have influence on the decision that individuals make (Donovan, 2011). It included many factors that play a role in the decision of an individual to display promotive voice. However, it lacked detail; explicit barriers and stimulants (i.e. elements of the organizational context) were not included. To address this weakness, I suggest to identify a limited amount of *critical variables* for promotive voice; the most important variables that determine whether an individual decides to display promotive voice. These variables can either be elements in the organizational context which companies can change (this was the focus of this research), or they can be variables within the individual (this would make the framework suitable for explaining why employees do or do not display promotive voice).

Revised theoretical framework

This research inspired a revision of the theoretical framework that is shown in figure 8.1. Critical variables for promotive voice were added to the model[1]. Individual and contextual constructs were removed, because their function (a guideline to identify barriers and stimulants)

[1] Axtell et al. (2000) suggested that certain constructs are more strongly related to voice behavior than others. Instead of adding all barriers and stimulants for voice, I therefore recommend to identify the strongest barriers and stimulants for promotive voice. Chamberlin et al. (2016) made a start with this and identified five dominant constructs for promotive voice; personal initiative, felt responsibility, engagement, leader–member exchange, and positive workplace climate.

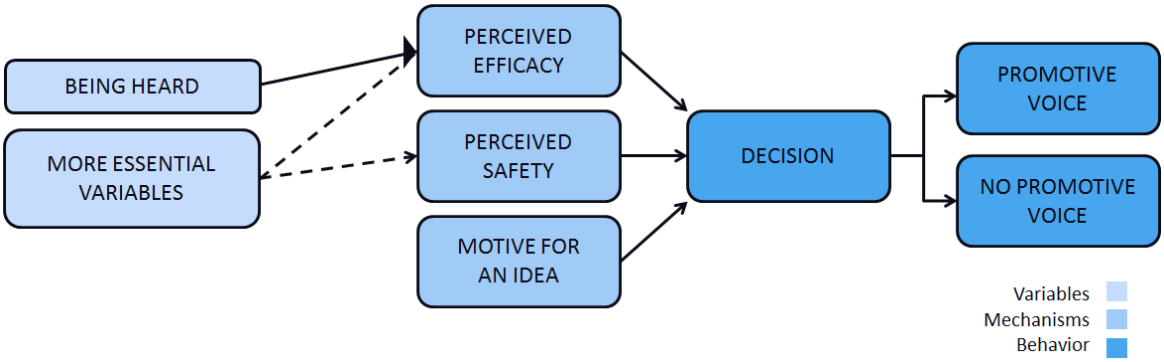


Figure 8.1: My suggestion for a revision of the theoretical framework

is no longer relevant. The three mechanisms stayed relevant, because they together constitute the utility calculus that precedes the decision. This study identified one critical variables in the organizational context for promotive voice: operators want to be heard. This variable has a positive relationship with perceived efficacy[2]. This feeling could be influenced by several supervisor behaviors, among which giving feedback. This revised model is less complete, but easier for companies to locate *what* they should change in the organizational context, e.g. through a quantitative questionnaire. As a descriptive model, it does not prescribe *how* companies could realize this change.

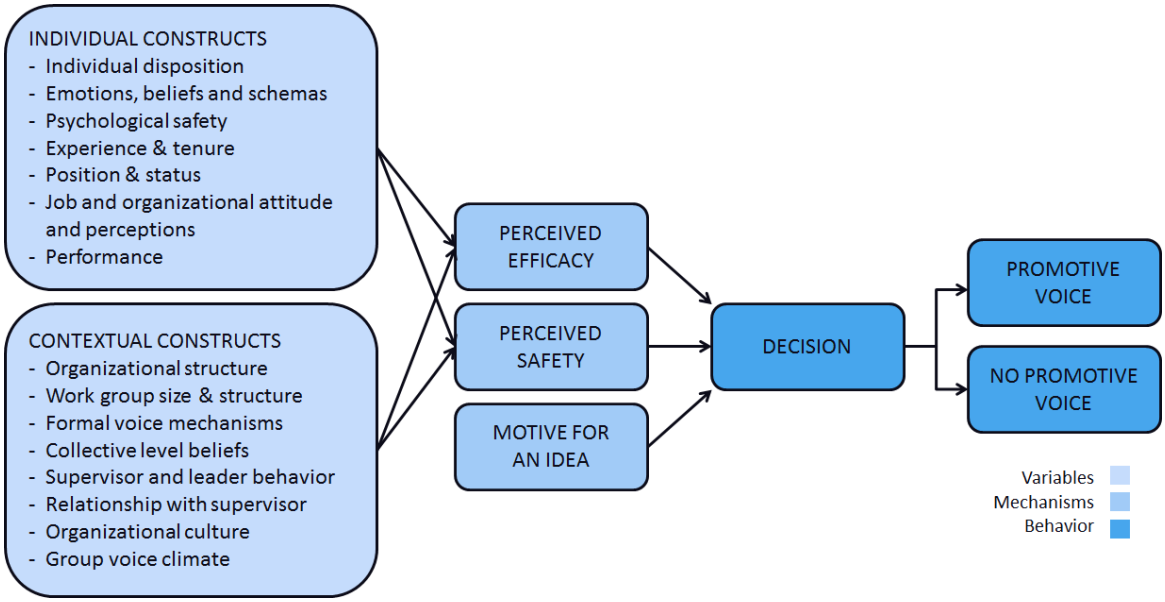
Goal has not yet been achieved

The goal of the theoretical framework has not yet been achieved with its revised version. A possibly suitable structure has been developed, based on the utility calculus. So far, one critical variable is included. The intervention seemed to have enhanced these variables, resulting in a slightly higher probability that operators displayed voice. Several other strong barriers and stimulants were identified in the case study. These are not included because I did not study whether they could be influenced by the company and whether they indeed affected the probability that operators display promotive voice.

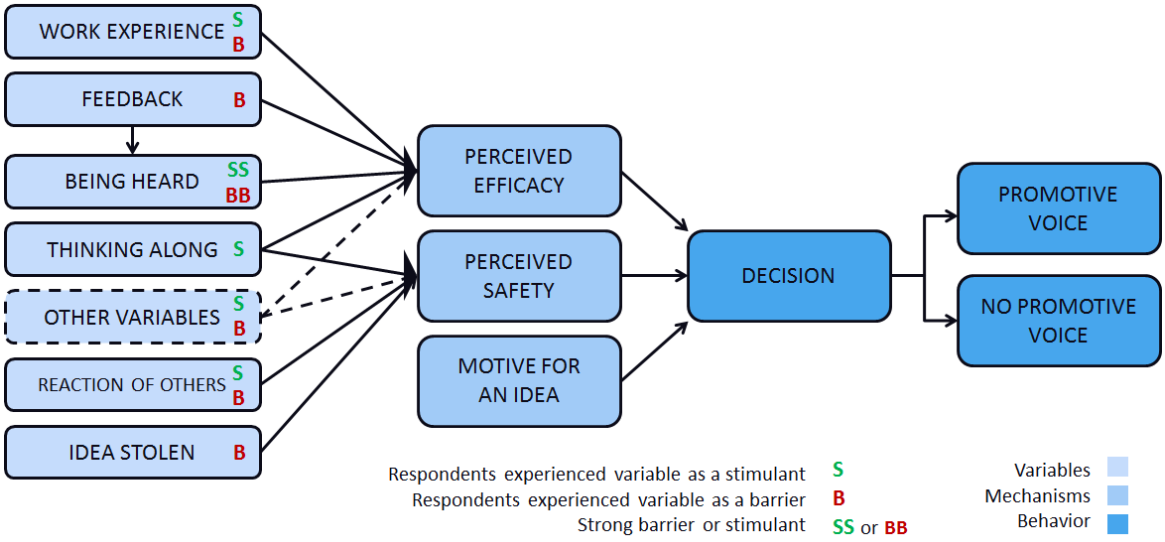
Future steps

To make the model serve its goal, extra iterations of the theoretical framework would be needed in which more critical variables are identified. Furthermore, the role of the motive of an idea should be understood in more detail. Insights could be gained with regard to the possibilities to impact the motives of an employee, and *how* and *to what extent* this influences his decision to share his idea.

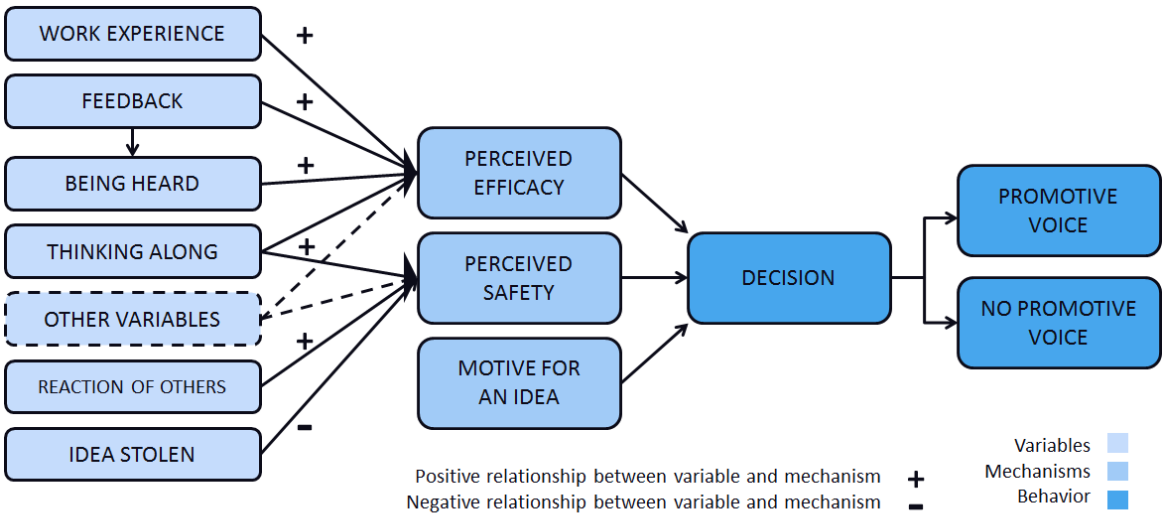
[2]When the variable is positive; the operator feels heard, it has a positive effect on perceived efficacy; he experienced higher perceived efficacy.



(a) Original theoretical framework. Copy of figure 2.3



(b) My interpretation of the strongest barriers and stimulants that operators perceived for promotive voice. Copy of figure 5.3



(c) My interpretation of the relationship between the most important variables (according to operators) and the mechanisms. Copy of figure 5.4

Findings

I reflect on how the findings inspired the development of the theoretical framework throughout this research. The original theoretical framework (figure 8.2a was applied to the case study, resulting in figure 8.2b and 8.2c. This inspired the goal of the intervention 8.2d, the effect of which is captured in figure 8.2e. Each block is discussed.

Promotive voice and No promotive voice

By replacing the outcome *employee voice* by *promotive voice*, I assumed that the same mechanisms and utility calculus were in place for both behaviors. As discussed before, I indeed recognized the mechanisms for employee voice in the case study. Hence, I suspect that this replacement did not disturb the validity of the framework.

I studied the behavior that an individual performs in a latent voice opportunity; a situation in which one individual has a specific idea for improvement in mind. If researchers would create a model that describes promotive voice from a collective perspective, then the distinction between *promotive voice* and *no promotive voice* would transform into, a continuum from never sharing his idea to always speaking up.

Decision to display promotive voice

The block *decision* represents the decision that an individual makes whether or not to share his idea. The probability that an operators displays voice is the chance that he decides to display promotive voice. The underlying utility calculus, the balance between the cost and benefits of sharing the idea was mentioned by a few respondents.

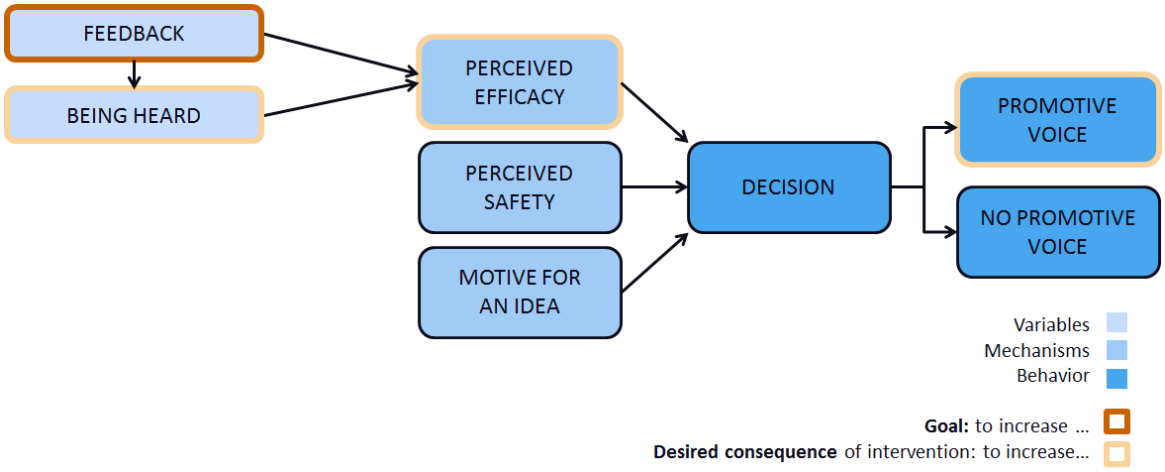
The *probability* that an individual displays promotive voice is not explicitly included in the theoretical framework. However, the utility calculus is important to understand, because it clarifies that the three mechanisms **together** determine the decision.

Perceived efficacy, perceived safety and motive for an idea

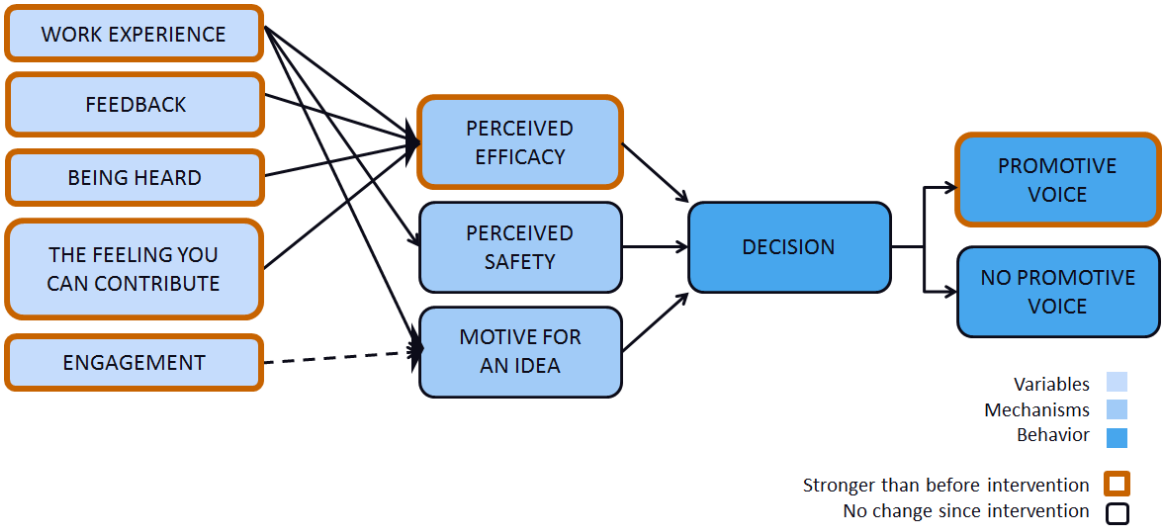
Each of the three mechanisms in the utility calculus has been recognized in the interviews. Perceived efficacy played a much larger role than the other two. This might be due to the fact that ideas for improvement are often constructive, not personal and non-challenging. Perceived safety was mentioned rarely, but could have a strong negative impact. A motives for an idea was strictly required for promotive voice, but often present.

The theoretical framework included *motives for an idea*, instead of *motives for voice* from literature. Operators understood what 'motives for an idea' were. So in my experience, the adaptation towards *motives for an idea* was successful and did not reduce the validity of the framework.

All three mechanisms are constructs, because they are influenced by multiple variables. The motive for an idea entails specific motives, which are seen as variables, because they are measurable. Specific motives were extracted from data. Respondents were able to assess how important each motive was, with respect to the others.



(d) The goal and desired effect of the intervention, as presented in section 6.1.1



(e) My interpretation of the effect of the intervention on the barriers and stimulants that operators perceive. The perspectives of the management, team leaders and operators of figure 6.6 are integrated into one figure.

Figure 8.2: Development of the theoretical framework throughout this research

I assumed that when operators find sustainability more important, they are more likely to share ideas to improve the sustainability of their work. Sauermann and Cohen (2010) argued that individuals put more effort to display behavior for which they have a strong motive. In this research, the motive to 'make work process more sustainable' was studied. However, the considered behavior is 'sharing a sustainable idea for improvement', which is only one step towards making the work process more sustainable. So, it is possible that the theory of Sauermann and Cohen (2010) is not directly applicable in this situation.

My theoretical framework was mainly based on literature about employee voice. Liang et al. (2012) formulated three different mechanisms for promotive voice: psychological safety, felt obligation for constructive change (FOCC), and organization-based self-esteem (OBSE)[3]. Psy-

[3]Note that the suggestion to replace perceived efficacy by organization-based self-esteem is incompatible with the

chological safety was included in the original theoretical framework as a construct and is less specific than perceived safety. FOCC is similar to the motive for an idea, but is more specific about causing change. OBSE is similar to, but broader than, perceived efficacy, because it entails the behavior of others as well. The mechanism *unconscious processes* could be added (Morrison, 2014). The fact that team leaders perceived a change in behavior of operators which operators did not notice themselves, suggests that unconscious processes are at stake in the decision to speak up. My choice to leave it out was a practical one; unconscious processes could not be noticed by the operators themselves.

Individual and contextual constructs

It should be noticed that many constructs relate to each other or even overlap. Barriers and stimulants could therefore be included in multiple constructs. There are no signals that this would make a difference for its effect on the decision, and is an extra argument to remove the constructs from the model.

The constructs 'supervisor and leader behavior' and 'experience and tenure' played a large role in this case study. Perhaps, they are more important for promotive voice than for employee voice. Perceived efficacy was the most important mechanism. Since this estimate depends on the involvement of others (Axtell et al., 2000), I think that 'supervisor and leader behavior' is extra important for promotive voice. 'Experience and tenure' might be extra important, because operators require sufficient knowledge about the work processes to assess the quality of their idea.

Contrary to the idea that companies need to actively change the organizational context to affect the utility calculus, some aspects of this organizational context change naturally. In this case study, 'work experience' changed naturally and had impact on the probability that operators would display promotive voice.

The original theoretical framework included 15 constructs that were formulated in a broad manner[4]. Data revealed that barriers and stimulants that operators experience are much more specific. So, the theoretical framework was not concise enough for companies to identify what they can do to enhance promotive voice[5], without defining concrete barriers and stimulants per construct. In the revised theoretical framework, the *constructs* are replaced by a set of *variables*, which are discussed below.

Variables: Barriers and stimulants

Each variable can be a barrier when it inhibits promotive voice, or a stimulant when in a state that enhances promotive voice. This implies that when a barrier has been reduced, it can even become a stimulant. Data confirms this for the variables *being heard*, *work experience* and *reaction of others*.

above remark that perceived efficacy depends on the behavior of others as well.

[4] Many constructs correlate, have overlap (Chamberlin et al., 2016) and/or interact (Morrison et al., 2011).

[5] Accidentally, several constructs were operationalized into variables. This is the result of an attempt to find clear, unambigious formulations. Unintentionally, this might have caused these variables to be mentioned more often, because other constructs were split up into more specific variables.

Barriers and stimulants were called *variables*, because they are specific enough to be measured, as opposed to constructs. Variables are elements of a construct. In the revised model without constructs, the variables directly influence the mechanisms. Figure 8.2c indicates whether these relationships are positive or negative.

Instead of only preceding voice, psychological constructs can also result from voice (Liang et al., 2012). This dynamic appeared to be present in the data, since previous experiences with voice were often mentioned as a reason to either or not speak up a next time. Future research might investigate which constructs are involved in such reciprocal dynamics.

Being heard & feedback

Respondents perceived *being heard* as the most important variable. This is not surprising, because only when employees feel heard, they believe that voicing their idea might be effective (i.e. high perceived efficacy). When employees do not feel heard at all, or when they suspect pseudo-voice (i.e. voice opportunities where the input is not taken seriously) (de Vries et al., 2012), perceived efficacy and therefore the probability of voice are much lower. Perhaps, being heard is an important variable for promotive voice in all contexts.

Being heard was extracted from interview data as a variable that belonged to many different constructs. It was mentioned way more often than all other variables. Data suggested that four supervisor behaviors impact whether operators feel heard. The intervention tried to enhance one of these team leader behaviors; team leaders giving feedback to operators about what happened to their idea. It would be interesting to compare the effect of feedback behavior to the other three supervisor behaviors that make operators feel (un)heard.

Validate the revised theoretical framework

Once revised, the new version of the theoretical framework could be validated in two ways.

Quantitative validation

The theoretical framework could be validated by means of a quantitative survey with a large sample from different types companies. If this survey measured all elements of the theoretical framework, factor analysis could verify whether correlations exist between the three mechanisms and the decision to display promotive voice. I am especially interested whether the *motive of an idea* is considered an adequate replacement of the *motive for voice*. The same survey data can find correlations between the constructs and perceived efficacy and perceived safety. Meanwhile, it can indicate which mechanisms and variables have stronger impact on the decision.

Qualitative validation

By means of qualitative study, researchers could examine *how* specific barriers and stimulants affect the utility calculus to display promotive voice. Do they influence other barriers or stimulants? Or the feeling of being heard? Do they influence perceived efficacy, perceived safety, or both? Or even the motive for an idea? Answers to these questions offer starting points for designing interventions to facilitate promotive voice.

Hypotheses for other contexts

The overall research aim was to gain insight in how companies that strive for sustainable innovation can facilitate operators to display promotive voice. The case company was a Dutch, innovative, sustainability-oriented, manufacturing company where I studied male operators. For each of these characteristics, I formulate hypotheses about what the findings could mean for other companies, which could be studied in future research.

- The different national culture in foreign companies is expected to influence promotive voice (Liang et al., 2012). In cultures with greater power distance, research shows that idea champions are more likely to gain support of those in authority before coming into action (Shane et al., 1995). In uncertainty avoiding cultures, employees are expected to operate within the existing norms and rules (Shane et al., 1995). Both could create different collective level beliefs and organizational culture than in the Netherlands. Personally, I expect that in many countries employees are less direct, or have the feeling they are not expected to share ideas. This could lower the perceived safety of sharing ideas.

- In less innovative companies, I dare not say anything about the amount of promotive voice. I expect that radically innovative ideas are less likely to be implemented, because it does not fit with the ambitions of the organization. On the other hand, small ideas might be implemented in the same way as in innovative companies. However, when the company is very open for ideas, I expect that promotive voice is more common because employees feel safer, estimate sharing ideas as more effective and have a stronger motive to speak up, to contribute to the organization.

- In companies that do not strive for sustainability, I expect that in general the amount of voice is not different than in sustainability-focused companies. More than the amount of voice, I expect that motive for the idea would differ. In companies that do not strive for sustainability, I expect employees to be less likely to come up with sustainable ideas and share them, due to little support within the company for the topic.

- In companies that do not manufacture products, there is little I can say about the amount of promotive voice. The motives for ideas for improvement will probably be different, because they depend on the work processes in which employees are involved. A few motives mentioned in this research might be relevant in all companies, such as cheaper, easier, and better quality.

- In departments where male and female employees work together, the work environment might impact promotive voice in a different way than in the target group that I studied. The organizational culture and group voice climate might be different, but perhaps also the way in which people tell their idea, the general type and amount of communication between employees and the amount and type of feedback from supervisors to word's employees. I can not predict what the effect would be on promotive voice.

- Finally, I hypothesize the following for other employees than operators. Employees with more power and authority might estimate the perceived efficacy to be higher (due to larger perceived control) and perceived safety to be lower (because they carry more responsibility). This is my guess, because they have the power to make decisions or they might be closer to those with power. Potentially, people with higher ranks might feel more responsibility towards the vision of the organization. Possibly, their motives for ideas will be different, because they perform other tasks and might have different interests.

8.1.2. Sustainability

I studied how promotive voice can be enhanced among employees in the context of sustainable innovation. There are two approaches to achieve this; increase the percentage of sustainable ideas, or enhance promotive voice about all ideas.

In the first case, the company can attempt to influence the motives of operators. When an operators already finds sustainability important, this can be used to strengthen his motivation to share sustainable ideas. When he does not, the company can attempt to make this motive stronger, for example by communicating the vision of the company or explaining the importance of sustainability. In another company this might have had priority, but motives are not easy to influence.

The second approach was taken in this study; to facilitate the sharing of *all* ideas. Operators found sustainability relatively important, so there was more potential in enhancing promotive voice about all ideas. When employees would share a higher number of ideas, they would inherently share more sustainable ideas. Also, operators defined sustainability in a more narrow sense than the management (see appendix I.2). If operators would have been asked to only share sustainable ideas, they would keep many ideas to themselves.

A suitable method to address both challenges comes from goal-setting theory; the setting of specific and realistic goals (that contribute to sustainable innovation) motivates employees to achieve these goals (Latham, 2016). This method immediately strengthens the perceived efficacy of promotive voice, because the management is more likely to take action upon ideas that contribute to this goal. Operators can share all related ideas; sustainable or not, because somebody else assesses which ideas contribute to the goal (and hence to sustainable innovation).

This study illustrated that there are multiple ways to enhance sustainable employee behavior. For employees, this does not need to feel like a ‘sustainable project’. To motivate employees to perform the desired behavior, companies can create an organizational context in which employees feel that their ideas are a contribution. In leader-subordinate interaction, leaders can use the employees’ personal motives to motivate him for these goals.

Sustainability and innovation can stimulate each other in both directions. On the one hand, sustainability can inspire fresh innovations for surprising elements of the organization, because

it takes into account financial, social and environmental costs of products and processes. Vice-versa, innovation can enhance sustainability by reducing the required resources for the same product or by developing new business models. As a criterion for evaluating innovative ideas, sustainability can also give direction to innovation.

Results

Two results are worth mentioning.

Sustainability was assessed as more important than I expected

In the first round of qualitative interviews I met many operators and had some conversations about their work. Even though they work at a sustainable company, most operators did not show their passion for sustainable manufacturing to me. Some were indeed very enthusiastic, but others were skeptical or made jokes about it.

Nevertheless, the rating exercise revealed that many operators valued sustainability as quite important (scoring fourth out of eight). Their scores were not much lower than that of the management. Indeed, some operators found it very irrelevant, or not their responsibility, but there was also a group with dedication to sustainability.

I can think of a few explanations. Possibly, the operators consciously chose to work at this company for its sustainable ambition. Many respondents said they found sustainability important, because it is the vision of the company. This might mean that they want to contribute to this vision, maybe because they feel engagement, or because it contributes to the financial health of the company and therefore their own salary. A final explanation could be that operators are inspired for sustainability by each other or by managers.

For this study, the fact that sustainability was considered almost as important by managers as by operators was a reason to design an intervention for something else. In other contexts, it would be interesting to study the different perception and see whether companies can change something about that.

Respondents interpreted sustainability as ecologically sustainable

I analyzed what employees mean by the term *sustainable* in appendix J.0.1. Although the vision of the company sees sustainability as *People, Planet and Profit*, employees do not mention all of these aspects. Mainly, they are concerned with environmental friendliness, and sometimes they mentioned the balance between that and financial health of the organization. So, the vision of the company was not fully understood by all employees.

Besides, respondents said they relate the motive sustainability to many other motives. This indicates that sustainability is interwoven with many other motives.

8.1.3. Methodology

This section reflects on my decisions for an overarching research methodology strategy and multiple methods, which appeared to be satisfying choices. Subsequently, I discuss each of the applied methods, as well as the overall validity and reliability of this study.

Research methodology: Design-based research

Design-based research was selected as a research methodology, because it allowed data from practice to be incorporated into the research. Indeed, theoretical and practical insights developed alternately. The theoretical framework functioned as a firm basis that supported the identification of barriers and stimulants in practice by inspiring respondents to consider multiple topics. This data revealed the main problem and a possible solution, inspiring an updated framework. Additional theory was used to design an intervention, of which the measured effects gained more theoretical insights.

This iterative process influenced the conclusions, because the trust of respondents in me increased along the way. Data from practice provided me with a solid understanding of the complexity of the case study[6]. Understanding this complexity is required to design an appropriate intervention, because "cognition and action emerge from a complex interaction in development, and in interaction with the environment" (Thelen and Smith, 1996). Inherently, DBR is subjective; another researcher might interpret the data differently or make different decisions, resulting in a different conclusion.

The ultimate purpose of DBR is theoretical development (Bakker and van Eerde, 2015; Yin, 2009). Data from this research inspired a revised theoretical model and a set of theoretical hypotheses (on page 97); two contributions to theory development about promotive voice.

The disadvantage of DBR is that the theoretical insights from practice still have to be validated. Also, it is hard to make sure respondents are completely honest and open. Also, the methods studied the perception of operators. This determines how operators behave, but it might not reveal the underlying problem that companies should address.

I did not fully answer the research question about *how* companies could increase the probability that operators display voice, because the results from one case study were not validated for all *companies that strive for sustainable innovation.* Also, one intervention is insufficient to evaluate this approach to change the organizational context.

This experiment was a modest start on the path towards developing evidence-based interventions. It aimed to reduce a barrier. Remarkably, many important barriers were also mentioned (the other way around) as strong stimulants. So, relieving a barrier simultaneously strengthens the corresponding stimulant. This approach seems more realistic than making motives more important.

[6] For example, *feedback* was identified as an important variable, even though operators only mentioned this once. The attention for coaching management created momentum for enhancing feedback.

As a next step for Van Houtum, I would apply several approaches to further reduce the greatest barrier that operators experience. Making operators feel heard requires a culture change that embeds feedback in the daily interaction between employees. Its realization can take place through social learning (Kristjanson et al., 2014). A different culture does not guarantee that all operators feel heard, because they possibly might not *want* to see it.

Van Houtum B.V. as a case study

The practical part was executed at the case company Van Houtum B.V. The context is that of an innovative, sustainability-oriented company with a relatively flat hierarchy, which is not representative for companies in general. Nonetheless, I think the choice for this company was beneficial, because its flat hierarchy and focus on innovation gives operators relatively much room for promotive voice. This was important, because behavior that rarely occur is harder to study. The fact that the company is oriented towards sustainability made my study of motives for an idea relevant in the context of sustainable innovation. Since sustainability indeed appeared to be an important motive for employees, I could draw conclusions from the data.

Methods

Literature research

The literature research collected an appropriate set of literature as input for the theoretical framework, mainly because it explicitly focused on what literature calls the *antecedents* or *determinants* of voice. Unfortunately, the concept *promotive voice* was identified so late in the process that the work of (Liang et al., 2012) could not be integrated in the structure of the theoretical framework.

Theoretical framework

The theoretical framework was necessary to study promotive voice in practice. The interview cards (i.e. operationalized version of individual and contextual constructs) inspired operators to talk about many more aspects of their work, than they did without the cards. This observation implies that the descriptive model has additional value when researchers or companies want to study or facilitate promotive voice behavior.

It was a good choice to take an organizational behavioral perspective (rather than a HRM perspective), where the *decision of the individual* was central. This allowed me to focus on individual behavior and investigate which aspects of the organizational context influences operators' behavior. As a result, the theoretical model can support companies to give operators the space to engage in promotive voice.

Questionnaire

The questionnaire reached its goal: the scores allowed me to select a sample. A strength is the fact that the measures were based on measures from literature (Whitmarsh and O'Neill, 2010; Bateman and Crant, 1993). Statistically, the results of the quantitative questionnaire are not significant, due to the low number of respondents. Also, the questions were not very consistent and they were based on a non-validated measure (Whitmarsh and O'Neill, 2010).

Interviews

The qualitative interviews also achieved their purpose. They produced data about the considerations that respondents make in their mind before deciding to speak up. In this method, the interview cards were essential, because I noticed that respondents spoke about many more topics as soon as they were on the table[7].

Due to their semi-structured nature, I did not know which topics would be important to ask follow-up questions about. Ideally, I would have performed an extra round of interviews in which I asked every respondent to what extent he feels heard, and what exactly makes him (not) feel heard.

Another disadvantage is that I used self-evaluative methods to investigate which barriers operators perceives. This is valid for as long as I am interested in the operator perception. However, data about aspects in which other people were involved (such as feedback behavior), could have been complemented by the perspective of these colleagues.

I did not ask respondents about *sustainable* ideas for improvement, because I expected that operators would not evaluate ideas in these terms, and because by asking for sustainable ideas, operators would consider a smaller amount of situations. Although operators had an opinion about the importance of sustainability (in chapter 4), I did not study whether they consciously assess ideas according to these motives. So, I can not conclude whether it was a good choice.

Rating exercise

The rating exercise achieved its aim to quantitatively assess how important each respondent found each of the eight motives, relative to each other. The rating exercise was clearly understood by respondents and the data could be interpreted easily, due to its quantitative nature. The only drawback is the fact that it measured the relative importance of motives, instead of absolute[8]. To tackle this, an inquiry of the overall motive to improve something at work should be performed.

Intervention

Out of the infinite possibilities for selecting a goal for the intervention, I chose to relieve the greatest barrier, because I expected that this approach could make the biggest difference. With hindsight that was a good choice, because this barrier was acknowledged as a challenge in the case company. This made team leaders motivated to improve their behavior and created support for my intervention among the managers.

The effect of the intervention corresponded with the expected and desired effect: team leaders had become more aware of the importance of giving feedback, they had extracted learnings from the workshop and experimented with new behavior. In my experience, this is the result of a very focused, interactive workshop that was prepared together with the assistant manager.

[7] Another advantage of the interview procedure is the fact that it is easy to copy, for example by companies who want to investigate barriers for voice. However, the procedure is time intensive.

[8] By distributing a fixed amount of points among the motives, I gained insight in how important these motives were, compared to each other. Still, it is possible that some respondents do not care about those motives at all, while others find them utterly important.

Participants seemed to understand the message and trust me, because the assistant manager was on my side. The interactive elements made them experience the message first-hand. Finally, the reminders of the assistant manager in the consecutive weeks helped them to keep the inspiration fresh.

Even though the kind of effect was desirable, it only made a slight difference. Multiple reasons can account for this. Firstly, any single intervention is unlikely to cause significant change. Also, since there was only two months between the workshop and the second round of interviews, team leaders did not have a lot of time to practice their new behavior.

When they practiced giving feedback, operators might (unconsciously) not have *wanted* to see this change, or not want to admit it (cognitive dissonance). Another possibility is that operators indeed changed their attitude, but did not notice this change. This hypothesis is supported by the anecdote by the managing director and assistant coach [9]. A third option is that some operators do not address their team leader with ideas for improvement, but directly contacted the person with the most technical knowledge. Fourthly, team leaders might have observed a change, because that is the change they hope to see. Another explanation is that team leaders are now more aware of the topic, and therefore notice more details than they did before.

As a solution, taking more time before measuring the effect of the intervention would not be an ideal situation, either, because of the risk that team leaders forget their resolutions. Rather, I think that a combination of multiple interventions (possibly of varying sorts) and sufficient amount of time would increase the effects.

The good news is that for the long term there is potential to increase the probability that operators will display more promotive voice. Awareness among team leaders has increased, and their new behaviors have caused the right type of effect. With more support, this small change could be enlarged.

Second round of interviews

The second round of interviews aimed to evaluate which changes had occurred since the intervention and to what extent. Asking team leaders about the changes they noticed yielded useful data. However, asking operators the same questions as in the first round of interviews, as well as explicitly asking which changes they perceived, only yielded little data about small changes.

Due to practical reasons, a partly different set of operators was interviewed for the second round of interviews[10]. This was unfortunate, because it decreased the chances of identifying whether they perceived changes in barriers and stimulants, or in team leader behavior.

With hindsight, it would also have been interesting to explicitly ask respondents *why* a certain barrier makes them feel heard, *why* feeling heard increases perceived efficacy and *why* higher

[9] Starting with a training about safety, operators have improved safety during the time span of a year. After this year, a repeat training was planned. Here, the managing director started by asking: what have we improved on safety in the last year? Operators responded: nothing. Only when pictures and examples were mentioned, they realize that a lot has regarding safety in the last year. This anecdote illustrates that operators do not always notice a change that takes place.

[10] 7 respondents overlapped, 5 new operators were added.

perceived efficacy leads to a greater probability that they display promotive voice. Answers to these questions would have shed light on the relationship between the elements of the model.

Validity

A study has high internal validity when it indeed measures what it wants measure. The investigation of the barriers and stimulants that operators perceive for engaging in promotive voice was relatively valid, because it was based many constructs that were extracted from literature. However, these constructs were measured in a less valid way, because they were not split into measurable variables. The effect of the intervention was also not measured in a very valid way, because the questions were less structured, nor supported by theory.

External validity is the extent to which the results of a study are generalizable. The raw data is only valid in the studied context (Wang and Hannafin, 2005) and can not be statistically generalized (Yin, 2009), because it originates from one case study. The external validity of the results can be found in the revision of the theoretical framework. Validation of the hypotheses about what I expect to happen in other contexts will have to point out their external validity.

Reliability

The reliability of a study is high when its results are free of random errors and replicable. Barriers and stimulants were examined in a much more reliable way than the effect of the intervention.

Despite the differences between the experience of individuals, I gained a relatively reliable understanding of the different perceptions of operators. This was achieved by including a large percentage of the operators and because I drew conclusions based on the number of times that a remark was made. The investigation of the motives for an idea were even more reliable, because of the large sample and the quantitative nature.

Yet, the measurement of the effect of the intervention was less reliable. These conclusions were based on the experience of four team leaders, because other respondents had not noticed any change.

All the while, observer bias reduces the reliability of this research. In my role as a researcher, I influence the results of the study through my behavior and personality. In this type of research it is unavoidable, and I indeed noticed situations where this bias played a role.

8.2. Relevance of this research

8.2.1. Scientific relevance

It was thrilling to translate knowledge about employee voice to this concept. Within the freedom of a nearly blank page, I followed by fascination to make choices about which direction my research would go. At the same time, the lacking of an overarching model of voice makes it hard to deliver concise results which are immediately applicable to practice and perfectly relevant for literature. Rather, this research sets out a direction for future research to further explore the study of the antecedents of promotive voice.

Relevance for the study of promotive voice

Promotive voice is one of many forms of employee voice (Maynes and Podsakoff, 2014). This research adds to the study of promotive voice by creating an overarching descriptive model, for which only a first suggestion had been made by Chamberlin et al. (2016). The construction of such a model stresses that promotive voice is not identical to employee voice. By applying the theoretical framework to a case study, I made a first step towards improving the model and and a suggestion to validate it. As indicated before, this research did not fully conclude *how* companies could increase the probability that operators display voice, because only one case study was done and one intervention has been performed.

Descriptive model of promotive voice

A descriptive model of the antecedents of promotive voice did not yet exist. In this research, I constructed a first draft for such a model. First of all, the choice for including the antecedents of the decision to engage in promotive voice aligned well with the focus of the research. According to respondents, many constructs from the model indeed played a role in this decision.

The descriptive nature of the model allowed it to be used in the interviews. The constructs from the model supported operators in reflecting on their decision, by offering a broad range of topics to consider.

Yet, since the constructs are very broad, barriers and stimulants for promotive voice do not represent a construct as a whole. They are more specific. This means that the theoretical framework does not concisely represent the factors that influence promotive voice. The question is whether this would at all be possible, because there are so many aspects of the organizational context that might have impact, and because every individual experiences the same context in a different way.

The scientific value about motives for an idea is limited. I found indications that the motive for an idea is indeed a mechanism that influences the utility calculus, but this has not been validated. No generic set of motives has been produced, because motives for an idea differ per company, depending on the job tasks.

Promotive voice differs from employee voice

The concept of employee voice has been studied extensively in past decades. Although this took place in different streams of research (among which organizational behavior (OB) and human resource management (HRM)). This research adds to macro-OB in the sense that it incorporates constructs on three levels; individual, group and organizational (O'Reilly III, 1991).

Meanwhile, scholars acknowledge that employee voice is an overarching concept that includes different forms of voice behaviors. Some have been a frequent object of study, such as issue selling (Ashford and Barton, 2007; Dutton and Ashford, 1993) and whistle-blowing (Dozier and Miceli, 1985; Keil et al., 2010; Miceli and Near, 1992). Since promotive voice was only introduced in 2012 (Liang et al., 2012), it received little attention so far. Among the published studies, most focus on one or two antecedents. By taking a broad approach, this study sets off for an overarching understanding of the concept of promotive voice.

Design-based research offers a complementary view to existing approaches within the field of organizational behavior

Design-based research entailed the application of theory to practice, trying to change something in practice and reflecting on the effects for the purpose of advancing theory. It is new to the field of organizational behavior[11].

Traditionally, the majority of studies is empirical in nature (Van Dyne and LePine, 1998: e.g.). In doing so, scholars often quantitatively examine the relationship between certain constructs, which are often studied in isolation from others. Other studies develop theory based on these empirical studies about the antecedents of employee voice (Morrison, 2011,0; Klaas et al., 2011; Mowbray et al., 2015; Kaufman, 2015), or even promotive voice (Chamberlin et al., 2016).

Yet, these theories are not applied to practice as whole. The advantage of applying a comprehensive theory to practice, as I did, is that the researcher gains insight in the whole system of voice behavior and that relationships between different aspects are revealed. Indeed, HRM studies the voice system, but they expand their focus beyond the individual. The impact of the whole system on the individual decision is considered in this research. Hence, I think design-based research offers a new and complementary perspective on an existing field of study.

Relevance for SEC Delft

In three ways, this research makes a contribution to the research of SEC Delft; by studying professionalization, innovation and knowledge sharing.

Professionalization

This research contributes to the field of professionalization by studying a type of employee behavior and investigating how companies can facilitate their employees to display this behavior. In that way, employees can develop their promotive voice skills, to benefit the performance of

[11] Only one article was found with the keywords "design-based research" AND ("organizational behavior" OR "organisational behaviour") in Scopus, Web of Science and ScienceDirect. This book studies professional learning from an educational perspective (Henderson et al., 2015). I think it was a hit, because it mentions the concept 'positive organizational behavior'.

the organization. This falls into the *competence model* of Ruler (2003), which perceives professionalization as the development of people into experts who generate value for their employer.

For employees, developing the skill or self-esteem to display promotive voice is a way to develop their professional identity. Within the model of (teacher[12]) professional identity by Hong (2010), experimenting with promotive voice affects how the employee perceives his efficacy and the value of this behavior, and affects his knowledge and beliefs about, and commitment to idea sharing. This research acknowledges that the companies plays a role in facilitating, or at least providing room, for the development of promotive voice as part of an employees professional identity.

These days, hierarchical relations in organizations are weakening, reducing the power of the manager (Grey, 1999; Sneller, 2016). Compared to traditional hierarchies, employees in such organizations have more responsibility and autonomy (Grey, 1999). This can give employees more room to express themselves, e.g. by sharing their ideas. Yet, this does not need to come naturally, because many barriers can prevent employees from speaking up with their ideas. This research maps which barriers might prevent employees from speaking up and how companies can lower these barriers.

Knowledge sharing & innovation

Science Communication studies knowledge sharing within organizations (Inkpen and Tsang, 2005; Ipe, 2003). This research examined how companies can invite their employees to share their ideas for improvement; these are pieces of knowledge. Diffusion of ideas is one way in which knowledge spreads through an organization (Inkpen and Tsang, 2005).

According to Ipe (2003), knowledge sharing is essential to make organizations innovate, because it leads to the dissemination of ideas for innovation. Indeed, promotive voice is a specific type of behavior that takes place in early phases of innovation (Perry-Smith and Mannucci, 2017). By studying how promotive voice can be facilitated, this research gains insights in how companies can stimulate innovation. Specifically, I investigated promotive voice behavior of one type of employees; operators. The potential of this group to contribute to (especially incremental) innovation is large (Axtell et al., 2000).

8.2.2. Societal relevance

An increasing amount of companies strives for sustainable innovation. These companies often do not use the potential of their operators' ideas for improvement. To overcome this problem, companies need to know three things; *what* influences promotive voice, *which* opportunities there are for improvement and *how* they can use these opportunities. On a general level, this study identified ways in which companies can facilitate promotive voice.

[12] Originally, the model was developed for teachers. However, when interpreting the elements of the model more generally, the model seems to be applicable to any job.

Knowing what influences promotive voice

First, companies need to know *what* influences the probability that operators (or employees in general) display promotive voice. The theoretical framework provides relevant insights in which constructs can play a role for promotive voice. The application of the theoretical framework to a case study resulted in a set of concrete potential barriers and stimulants.

Certain barriers and stimulants, though not all, can be influenced by (the management of) companies. Once validated, significant relation between constructs and voice can be used as a point of leverage by companies to manage voice (Chamberlin et al., 2016).

Identifying which opportunities there are for improvement

Before companies can change anything, they need to know which barriers are most pressing and which stimulants are strongest in *their organization*. To find this out, I used a method (see section 5.1) that can also be used by companies; in a semi-structured qualitative interview, respondents explained why they decide to share an idea or to stay silent. Their thought process was supported by 15 interview cards, representing many aspects of the organizational context that might influence this decision. The method appeared effective in identifying a wide range of barriers and stimulants.

Once barriers and stimulants are located, the company should estimate what they can change in the organizational context to remove a barrier or enhance a stimulant. Not all constructs from the theoretical framework can be actively influenced by the company. In my perception, individual disposition and work experience can not be altered at all, and a company can only indirectly try to change many others [13]. Tenure, position and status can be changed.

Meanwhile, the list of motives for improvement that I composed in section 4.1.2 can be (adapted and) used by companies to activate a debate among all employees about which aspects of the work processes should have priority to improve. Again, companies should estimate whether it is possible to actively provoke a change in which motives operators find important.

Evidence-based approaches for how to change the organizational context

As soon as companies have identified opportunities for improvement, the case company could try to change those elements over which they control, in order to increase the probability of promotive voice. In doing so, they can benefit from evidence-based approaches on *how* to change the organizational context in favor of promotive voice. This research made a modest start with this, by performing an intervention with this aim.

[13] Namely emotions, beliefs and schemas, psychological safety, job and organizational attitude and perceptions and performance.

8.3. Recommendations

8.3.1. Future research

By setting up a theoretical framework and performing an intervention to change something in organizational context of operators, I set out a new path for research about promotive voice. Still, many opportunities are open for further investigation.

Review theoretical framework

Recommendations for a revision of the theoretical framework were made on page 96.

Validate the theoretical framework

Suggestions on how to validate such a revised theoretical framework can be found on page 96.

Study how constructs can be influenced

This research tested only one intervention, aiming to relieve just one barrier for promotive voice. Even though its effect was in line with the goal of the intervention, it did not cause significant changes. Design-based research could be used to further develop evidence-based approaches for tackling this and other barriers. On the long term, differentiated approaches could be developed for different types of contexts. In the same way, it would be interesting to examine how stimulants can be further enhanced.

Study whether a strong motive indeed results in a greater probability of promotive voice

According to Sauermann and Cohen (2010), a stronger motive for certain behavior increases the effort that the individual is willing to put into displaying this behavior. I assumed that regarding ideas for improvement, this means that individuals are more likely to *share* their idea. Yet, sharing is only the first step of realizing their idea. Therefore, it is possible that individuals do not put much effort in idea sharing when they do not believe it will be implemented anyway. Hence, future research could investigate which type(s) of behavior becomes more likely when motives become stronger, in the context of sharing ideas for improvement.

Develop evidence-based interventions

In the future, it would be interesting to study promotive voice in multiple companies to see which patterns re-occur, and to develop interventions with which companies can successfully change their organizational context for the benefit of promotive voice.

With regard to motives for an idea, companies would benefit from insights in whether and to what extent motives can be influenced by changing the organizational context. Researchers could draw from organizational behavior literature (Sauermann and Cohen, 2010), but also from psychological literature about motives and changing these (McClelland, 1965; Banes et al., 2014).

Prove or disprove the hypotheses on page 97

For different contexts, I formulated hypotheses about what the findings of this study could mean for other companies. Each of these could be investigated, in order to prove or disprove it.

8.3.2. Practice

The findings of this study inspired several recommendations on how Van Houtum and other companies can increase the probability that their operators display promotive voice.

Recommendations for Van Houtum

The effect of the intervention was in line with the goal of the intervention, though limited. This raises the question what Van Houtum can do to reinforce this movement into the right direction. Figure 8.3 presents two recommendations, in which dark colored outlines represent which variables and constructs could be enhanced and light orange outlines indicate their desired effect.

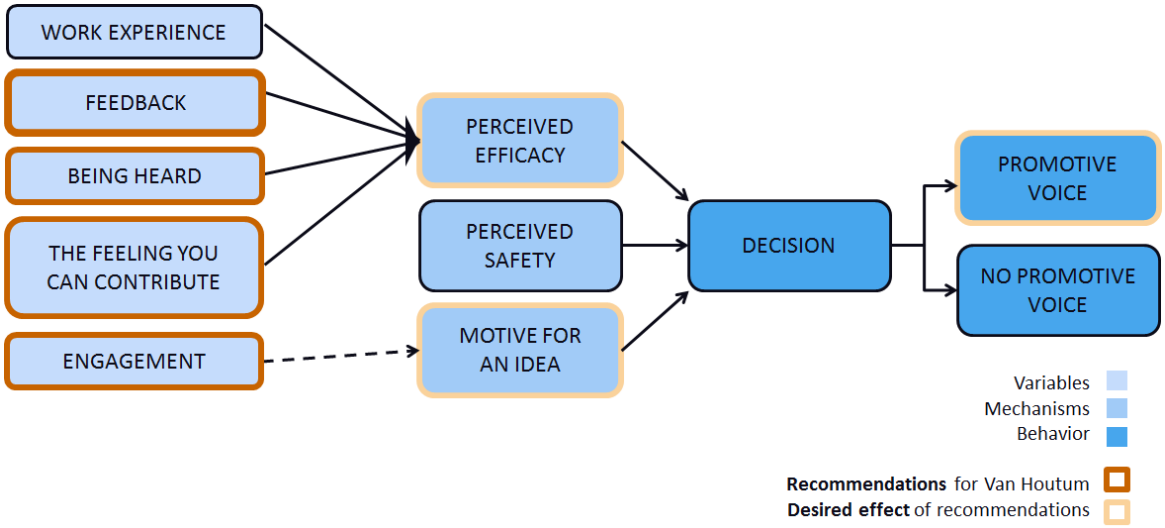


Figure 8.3: My recommendations to increase the probability that operators Van Houtum display promotive voice

Enhance feedback behavior

The data revealed that the highest priority at Van Houtum is to make operators feel more heard when sharing their ideas. One approach is to stimulate feedback behavior about what happened to their idea, as indicated in figure 8.3. This can be done by listening to ideas with more attention, by thanking operators for their idea, by more often taking action upon ideas, and by giving feedback about what happened to the idea. Feedback behavior can be supported between multiple groups of employees.

- Enhance feedback behavior between team leaders and operators: The intervention in this research aimed to enhance feedback behavior from team leaders towards operators. Team leaders and a few managers formulated several recommendations for further developing skills of giving feedback and integrating this behavior in the culture.

  In their eyes, Van Houtum could perform more interventions, regularly evaluate feedback behavior, and stimulate each other to ask for feedback. Team leaders could take notes to

remember whom they want to speak to and take time for giving feedback during work shifts. Additionally, I recommend Van Houtum to integrate feedback giving with coaching leadership to stimulate operators to take a more proactive attitude (Vrgovic et al., 2013).

- Enhance feedback behavior between all employees who are involved with ideas for improvement: Feedback behavior from team leaders towards operators is not enough. In the second round of interviews, team leaders complained that they do not always receive feedback from colleagues who are involved in the process of implementing ideas. When this happens, team leaders obviously can not pass on any information to operators, who get the feeling their idea has been forgotten. For this reason, it would be useful to enhance feedback behavior within the complete organization.

Stimulate engagement and the feeling you can contribute

Three recommendations are made to stimulate these two constructs, which have the potential to increase the feeling to be heard, as shown in figure 8.3.

First of all, I recommend to set goals for improvement, instead of enhancing *sustainability* as a motive. When an operators finds sustainability important, this can be used to motivate him, but when they are not it is hard to change his motives in a short time (Banes et al., 2014). Goal-setting theory argues that individuals can be motivated to contribute to a specific improvement goal that has been set (Latham, 2016). This has multiple advantages. It forces different layers of management to agree what has the highest priority. Meanwhile, for operators it would be very clear which ideas are likely to be taken action upon. Literature about goal setting theory confirms that difficult, specific goals motivate employees to put effort (Grant and Ashford, 2008). Yatsuzuka et al. (2009) developed a method to generate such a *priority order for improvement*.

All the while, behavior of supervisors can enhance the engagement of operators, for example by involving them in the development of a solution for a problem. Respondent 13 noticed that this approach led to proud operators and more support for the solution within the team. In my interpretation, this can increase the probability that they decide to share their idea in the future.

Team leaders can also play a part in giving operators the feeling they can contribute, for example by showing what happened to their idea. In the experience of team leader 9, this increases the probability that operators share ideas, because they see that action is taken upon their idea.

Recommendations for other companies

Other companies might also benefit from the results of this study. Since most findings can not be generalized directly, I will only hypothesize what the implications for other types of companies might be. Two recommendations can be made regarding the type of intervention.

Chapter 6 started with the performance of an intervention that aimed to relieve the strongest barrier for speaking up. This intervention was a 1.5 hour workshop with the team leaders (which

are not the people who experienced this barrier). This one intervention appeared insufficient to lighten the barrier for operators. In general, this means that for addressing problems like this, which are a result of a behavioral pattern, can not be solved by one intervention. Therefore, I recommend a set of interventions to solve such a challenge.

On top of that, it might not have been the best idea to try to change the behavior of team leaders, rather than performing an intervention with the operators. That way, they would have been more aware of the possible changes and feel more in charge of the outcomes. I recommend organizations to carefully consider which target group they want to address in an intervention.

References

(2011). Innovate or die: Why innovation is the key to business success in a changing world. *Strategic Direction*, 27(7):12–14.

Afsar, B., Badir, Y., and Kiani, U. S. (2016). Linking spiritual leadership and employee pro-environmental behavior: The influence of workplace spirituality, intrinsic motivation, and environmental passion. *Journal of Environmental Psychology*, 45:79–88.

Alwin, D. F. and Krosnick, J. A. (1985). The measurement of values in surveys: A comparison of ratings and rankings. *Public Opinion Quarterly*, 49(4):535–552.

Amabile, T. M. and Conti, R. (1999). Changes in the work environment for creativity during downsizing. *Academy of Management Journal*, 42(6):630–640.

Anderson, T. and Shattuck, J. (2012). Design-based research: A decade of progress in education research? *Educational researcher*, 41(1):16–25.

Argyris, C. (1990). *Overcoming organizational defenses*. Allyn and Bacon Boston, MA.

Argyris, C. and Schön, D. (1978). Organizational learning, readings. *MA: Addison*.

Ariely, D., Gneezy, U., Loewenstein, G., and Mazar, N. (2009). Large stakes and big mistakes. *The Review of Economic Studies*, 76(2):451–469.

Ashford, S. J. and Barton, M. A. (2007). Identity-based issue selling. *Identity and the modern organization*, 223:244.

Ashford, S. J., Rothbard, N. P., Piderit, S. K., and Dutton, J. E. (1998). Out on a limb: The role of context and impression management in selling gender-equity issues. *Administrative Science Quarterly*, pages 23–57.

Ashford, S. J., Sutcliffe, K. M., and Christianson, M. K. (2009). Speaking up and speaking out: The leadership dynamics of voice in organizations. *Voice and silence in organizations*, pages 175–202.

Ashforth, B. E. and Mael, F. (1989). Social identity theory and the organization. *Academy of management review*, 14(1):20–39.

Axtell, C. M., Holman, D. J., Unsworth, K. L., Wall, T. D., Waterson, P. E., and Harrington, E. (2000). Shopfloor innovation: Facilitating the suggestion and implementation of ideas. *Journal of occupational and organizational psychology*, 73(3):265–285.

Baarda, B. (2010). *Research: This is it! Guidelines for setting up, doing and evaluating quantitative and qualitative research*. Noordhoff Uitgevers, Groningen.

Bakker, A. and van Eerde, D. (2015). *An introduction to design-based research with an example from statistics education*, pages 429–466. Springer.

Banes, K. E., Stephens, R. S., Blevins, C. E., Walker, D. D., and Roffman, R. A. (2014). Changing motives for use: Outcomes from a cognitive-behavioral intervention for marijuana-dependent adults. *Drug and alcohol dependence*, 139:41–46.

Baregheh, A., Rowley, J., and Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management decision*, 47(8):1323–1339.

Barrett, R. (2010). *Full Spectrum Sustainability. Moving beyond the triple bottom line*. Barrett Values Centre.

Bassett-Jones, N. and Lloyd, G. C. (2005). Does herzberg's motivation theory have staying power? *Journal of management development*, 24(10):929–943.

Bateman, T. S. and Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of organizational behavior*, 14(2):103–118.

Baumeister, R. F. and Leary, M. R. (1997). Writing narrative literature reviews. *Review of general psychology*, 1(3):311.

Bettinghaus, E. P. (1986). Health promotion and the knowledge-attitude-behavior continuum. *Preventive medicine*, 15(5):475–491.

Bhal, K. T. and Ansari, M. A. (2007). Leader-member exchange-subordinate outcomes relationship: Role of voice and justice. *Leadership Organization Development Journal*, 28(1):20–35.

Björk, J., Boccardelli, P., and Magnusson, M. (2010). Ideation capabilities for continuous innovation. *Creativity and innovation management*, 19(4):385–396.

Bland, J. M. and Altman, D. G. (1997). Statistics notes: Cronbach's alpha. *BMJ*, 314(7080):572.

Boroff, K. E. and Lewin, D. (1997). Loyalty, voice, and intent to exit a union firm: A conceptual and empirical analysis. *ILR Review*, 51(1):50–63.

Bossle, M. B., de Barcellos, M. D., Vieira, L. M., and Sauvée, L. (2016). The drivers for adoption of eco-innovation. *Journal of Cleaner Production*, 113:861–872.

Botero, I. C. and Van Dyne, L. (2009). Employee voice behavior interactive effects of lmx and power distance in the united states and colombia. *Management Communication Quarterly*, 23(1):84–104.

Brockner, J., Heuer, L., Siegel, P. A., Wiesenfeld, B., Martin, C., Grover, S., Reed, T., and Bjorgvinsson, S. (1998). The moderating effect of self-esteem in reaction to voice: Converging evidence from five studies. *Journal of Personality and Social Psychology*, 75(2):394.

Brunton, M., Eweje, G., and Taskin, N. (2015). Communicating corporate social responsibility to internal stakeholders: walking the walk or just talking the talk? *Business Strategy and the Environment*.

Bryman, A. (2012). *Social Research Methods*. Oxford University Press, New York, 4th edition.

Bryson, A. (2004). Managerial responsiveness to union and nonunion worker voice in britain. *Industrial Relations: A Journal of Economy and Society*, 43(1):213–241.

Burris, E. R. (2012). The risks and rewards of speaking up: Managerial responses to employee voice. *Academy of Management Journal*, 55(4):851–875.

Burris, E. R., Detert, J. R., and Chiaburu, D. S. (2008). Quitting before leaving: the mediating effects of psychological attachment and detachment on voice. *Journal of Applied Psychology*, 93(4):912.

Calik, E. and Bardudeen, F. (2016). A measurement scale to evaluate sustainable innovation performance in manufacturing organizations. *Procedia CIRP*, 40:449–454.

Camerer, C. F., Hogarth, R. M., Budescu, D. V., and Eckel, C. (1999). *The effects of financial incentives in experiments: A review and capital-labor-production framework*, pages 7–48. Springer.

Chamberlin, M., Newton, D. W., and Lepine, J. A. (2016). A meta-analysis of voice and its promotive and prohibitive forms: Identification of key associations, distinctions, and future research directions. *Personnel Psychology*, 70(1):11–71.

Chen, A. S.-Y. and Hou, Y.-H. (2016). The effects of ethical leadership, voice behavior and climates for innovation on creativity: A moderated mediation examination. *The Leadership Quarterly*, 27(1):1–13.

Cialdini, R. B. (2001). Harnessing the science of persuasion. *Harvard Business Review*, 79(9):72–81.

Circular Economy Overview (n.d.). Retrieved april 2, 2017, from https://www.ellenmacarthurfoundation.org/circular-economy/overview/concept.

Claes, R., Beheydt, C., and Lemmens, B. (2005). Unidimensionality of abbreviated proactive personality scales across cultures. *Applied Psychology*, 54(4):476–489.

Constructs in Quantitative Research (2012). Retrieved may 27, 2017, from http://dissertation.laerd.com/constructs-in-quantitative-research.php.

Context (n.d.). In *Merriam Webster Online Dictionary*. Retrieved June 5, 2017, from https://www.merriam-webster.com/dictionary/context.

Corbin, J. M. and Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative sociology*, 13(1):3–21.

Crant, J. M., Kim, T.-Y., and Wang, J. (2011). Dispositional antecedents of demonstration and usefulness of voice behavior. *Journal of Business and Psychology*, 26(3):285–297.

Cua, K. O., McKone, K. E., and Schroeder, R. G. (2001). Relationships between implementation of tqm, jit, and tpm and manufacturing performance. *Journal of operations management*, 19(6):675–694.

De Medeiros, J. F., Ribeiro, J. L. D., and Cortimiglia, M. N. (2014). Success factors for environmentally sustainable product innovation: a systematic literature review. *Journal of Cleaner Production*, 65:76–86.

De Vries, F. (2016). Van houtum brengt de keten bij elkaar om unieke kringloop- concepten te ontwikkelen. retrieved february 20, 2017, from http://www.circulairondernemen.nl/uitdagingen/van-houtum-brengt-de-keten-bij-elkaar-om-unieke-kringloopconcepten-te-ontwikkelen.

de Vries, G., Jehn, K. A., and Terwel, B. W. (2012). When employees stop talking and start fighting: The detrimental effects of pseudo voice in organizations. *Journal of Business Ethics*, 105(2):221–230.

Dean, T. J. and McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of business venturing*, 22(1):50–76.

Detert, J. R. and Burris, E. R. (2007). Leadership behavior and employee voice: Is the door really open? *Academy of Management Journal*, 50(4):869–884.

Detert, J. R. and Edmondson, A. C. (2011). Implicit voice theories: Taken-for-granted rules of self-censorship at work. *Academy of Management Journal*, 54(3):461–488.

Detert, J. R. and Treviño, L. K. (2010). Speaking up to higher-ups: How supervisors and skip-level leaders influence employee voice. *Organization Science*, 21(1):249–270.

Dewberry, E. and de Barros, M. M. (2009). Exploring the need for more radical sustainable innovation: what does it look like and why? *International Journal of Sustainable Engineering*, 2(1):28–39.

Donaghey, J., Cullinane, N., Dundon, T., and Wilkinson, A. (2011). Reconceptualising employee silence: problems and prognosis. *Work, employment and society*, 25(1):51–67.

Donovan, R. (2011). *Theoretical models of behaviour change*, pages 15–31. SAGE, London.

Dozier, J. B. and Miceli, M. P. (1985). Potential predictors of whistle-blowing: A prosocial behavior perspective. *Academy of Management Review*, 10(4):823–836.

Dundon, T., Wilkinson, A., Marchington, M., and Ackers, P. (2004). The meanings and purpose of employee voice. *The International Journal of Human Resource Management*, 15(6):1149–1170.

Dunlap, R. E., Van Liere, K. D., Mertig, A. G., and Jones, R. E. (2000). New trends in measuring environmental attitudes: measuring endorsement of the new ecological paradigm: a revised nep scale. *Journal of social issues*, 56(3):425–442.

Durmaz, L. (November 28th, 2013). How to respond to employee suggestions. retrieved december 7, 2016, from http://www.espninja.com/how-to-respond-employee-suggestions/.

Dutton, J. E. and Ashford, S. J. (1993). Selling issues to top management. *Academy of management review*, 18(3):397–428.

Dutton, J. E., Ashford, S. J., Lawrence, K. A., and Miner-Rubino, K. (2002). Red light, green light: Making sense of the organizational context for issue selling. *Organization Science*, 13(4):355–369.

Dutton, J. E., Ashford, S. J., O'neill, R. M., Hayes, E., and Wierba, E. E. (1997). Reading the wind: How middle managers assess the context for selling issues to top managers. *Strategic management journal*, pages 407–423.

Dutton, J. E., Dukerich, J. M., and Harquail, C. V. (1994). Organizational images and member identification. *Administrative science quarterly*, pages 239–263.

Edmondson, A. C. (1996). Learning from mistakes is easier said than done: Group and organizational influences on the detection and correction of human error. *The Journal of Applied Behavioral Science*, 32(1):5–28.

Edmondson, A. C. (1999). Psychological safety and learning behavior in work teams. *Administrative science quarterly*, 44(2):350–383.

Edmondson, A. C. (2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. *Journal of management studies*, 40(6):1419–1452.

Edwards, M. S., Ashkanasy, N. M., and Gardner, J. (2009). Deciding to speak up or to remain silent following observed wrongdoing: The role of discrete emotions and climate of silence. *Voice and silence in organizations*, pages 83–109.

Eisenberger, R. and Shanock, L. (2003). Rewards, intrinsic motivation, and creativity: A case study of conceptual and methodological isolation. *Creativity Research Journal*, 15(2-3):121–130.

Elkington, J. (1998). *Cannibals With Forks - the triple bottom line of 21st centrury business*. New Society Publishers, Gabriola Island, Canada.

Elo, S. and Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing*, 62(1):107–115.

Environment (n.d.). In *Merriam Webster Online Dictionary*. Retrieved June 5, 2017, from https://www.merriam-webster.com/dictionary/environment.

Erez, A., Lepine, J. A., and Elms, H. (2002). Effects of rotated leadership and peer evaluation on the functioning and effectiveness of selfmanaged teams: a quasiexperiment. *Personnel Psychology*, 55(4):929–948.

Feedback (n.d.). In *Merriam Webster Online Dictionary*. Retrieved December 3, 2016, from https://www.merriam-webster.com/dictionary/feedback.

Floyd, S. W. and Wooldridge, B. (1994). Dinosaurs or dynamos? recognizing middle management's strategic role. *The Academy of Management Executive*, 8(4):47–57.

Frazier, M. L. and Fainshmidt, S. (2012). Voice climate, work outcomes, and the mediating role of psychological empowerment: a multilevel examination. *Group Organization Management*, 37(6):691–715.

Frese, M., Teng, E., and Wijnen, C. J. (1999). Helping to improve suggestion systems: Predictors of making suggestions in companies. *Journal of Organizational Behavior*, pages 1139–1155.

Fussler, C. and James, P. (1996). *Driving Eco-Innovation.* A Breakthrough Discipline for Innovation and Sustainability. Pitman Publishers, London.

Gao, L., Janssen, O., and Shi, K. (2011). Leader trust and employee voice: The moderating role of empowering leader behaviors. *The Leadership Quarterly*, 22(4):787–798.

Gerstner, C. R. and Day, D. V. (1997). Meta-analytic review of leader–member exchange theory: Correlates and construct issues. *Journal of Applied Psychology*, 82(6):827–844.

Get Cradle to Cradle Certified (n.d.). Retrieved april 2, 2017, from http://www.c2ccertified.org/get-certified/product-certification.

Glauser, M. J. (1984). Upward information flow in organizations: Review and conceptual analysis. *Human Relations*, 37(8):613–643.

Gollan, P. J. and Xu, Y. (2014). Re-engagement with the employee participation debate: beyond the case of contested and captured terrain. *Work, Employment Society*.

Graen, G. B. and Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (lmx) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6(2):219–247.

Grant, A. M. and Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in organizational behavior*, 28:3–34.

Grey, C. (1999). 'we are all managers now';'we always were': On the development and demise of management. *Journal of Management Studies*, 36(5):561–585.

Hallenga-Brink, S. and Brezet, J. (2005). The sustainable innovation design diamond for micro-sized enterprises in tourism. *Journal of Cleaner Production*, 13(2):141–149.

Harvey, P., Martinko, M. J., and Douglas, S. C. (2009). Causal perceptions and the decision to speak up or pipe down. *Voice and silence in organizations*, pages 63–82.

Hassan, I. e., Batool, F., and Hassan, M. u. (2016). Managerial implications of rocking the floor by employees: Consequences of voice behaviour. *Business Information Review*, 33(3):136–144.

Henderson, R., Noble, K., and Warner, M. (2015). *Professional learning, induction and critical reflection: Building workforce capacity in education.* Springer.

Hofstede, G. and Hofstede, G. (1991). *Culture and Organizations. Software of the Mind: Intercultural Cooperation and Its Importance for Survival.* McGraw-Hill, New York, NY.

Hong, J. Y. (2010). Pre-service and beginning teachers' professional identity and its relation to dropping out of the profession. *Teaching and teacher Education*, 26(8):1530–1543.

Hoogeveen, P. and Winkels, J. (2011). *Het didactische werkvormenboek.* Van Gorcum B.V., Assen, 10th edition.

Hornstein, H. A. (1986). *Managerial courage: Revitalizing your company without sacrificing your job*. John Wiley Sons Inc.

Hostager, T. J., Neil, T. C., Decker, R. L., and Lorentz, R. D. (1998). Seeing environmental opportunities: effects of intrapreneurial ability, efficacy, motivation and desirability. *Journal of Organizational Change Management*, 11(1):11–25.

Hsiung, H. and Tsai, W. (2017). The joint moderating effects of activated negative moods and group voice climate on the relationship between power distance orientation and employee voice behavior. *Applied Psychology*.

Hung, H.-K., Yeh, R.-S., and Shih, H.-Y. (2012). Voice behavior and performance ratings: The role of political skill. *International Journal of Hospitality Management*, 31(2):442–450.

Ilkhanizadeh, S. and Karatepe, O. M. (2017). An examination of the consequences of corporate social responsibility in the airline industry: Work engagement, career satisfaction, and voice behavior. *Journal of Air Transport Management*, 59:8–17.

Inkpen, A. C. and Tsang, E. W. (2005). Social capital, networks, and knowledge transfer. *Academy of management review*, 30(1):146–165.

Inoue, Y. and Alfaro-Barrantes, P. (2015). Pro-environmental behavior in the workplace: A review of empirical studies and directions for future research. *Business and Society Review*, 120(1):137–160.

International Organization for Standardization (n.d.). We're iso: we develop and publish international standards. retrieved april 2, 2017, from https://www.iso.org/standards.html.

Ipe, M. (2003). Knowledge sharing in organizations: A conceptual framework. *Human resource development review*, 2(4):337–359.

Islam, G. and Zyphur, M. J. (2005). Power, voice, and hierarchy: Exploring the antecedents of speaking up in groups. *Group Dynamics: Theory, Research, and Practice*, 9(2):93.

Janssen, O. and Gao, L. (2015). Supervisory responsiveness and employee self-perceived status and voice behavior. *Journal of Management*, 41(7):1854–1872.

Jennings, D. F. and Seaman, S. L. (1990). Aggressiveness of response to new business opportunities following deregulation: an empirical study of established financial firms. *Journal of Business Venturing*, 5(3):177–189.

Jones, E. E. (1964). *Ingratiation: a Social Psychological Analysis*. Appleton-Century-Crofts, East Norwalk, CT, US.

Ju, L., Duan, J., and Lin, Z. Abusive supervision and subordinate promotive voice behavior: The moderation effect of employee forgiveness behavior. In *Proceedings of Cross-Cultural Occupational Health Psychology Forum*, page 92.

Kakkar, H., Tangirala, S., Srivastava, N. K., and Kamdar, D. (2016). The dispositional antecedents of promotive and prohibitive voice. *Journal of Applied Psychology*, 101(9):1342.

Kaufman, B. E. (2015). Theorising determinants of employee voice: an integrative model across disciplines and levels of analysis. *Human Resource Management Journal*, 25(1):19–40.

Keil, M., Tiwana, A., Sainsbury, R., and Sneha, S. (2010). Toward a theory of whistleblowing intentions: A benefit-to-cost differential perspective. *Decision Sciences*, 41(4):787–812.

Kish-Gephart, J. J., Detert, J. R., Treviño, L. K., and Edmondson, A. C. (2009). Silenced by fear: The nature, sources, and consequences of fear at work. *Research in organizational behavior*, 29:163–193.

Klaas, B. S., Olson-Buchanan, J. B., and Ward, A. K. (2011). The determinants of alternative forms of workplace voice: An integrative perspective. *Journal of Management*, 38(1):314–345.

Knoll, M. and Redman, T. (2015). Does the presence of voice imply the absence of silence? the necessity to consider employees' affective attachment and job engagement. *Human Resource Management*.

Kristjanson, P., Harvey, B., Van Epp, M., and Thornton, P. K. (2014). Social learning and sustainable development. *Nature Climate Change*, 4(1):5–7.

Kuenzi, M. and Schminke, M. (2009). Assembling fragments into a lens: A review, critique, and proposed research agenda for the organizational work climate literature. *Journal of Management*, 35(3):634–717.

Kwon, B., Farndale, E., and Park, J. G. (2016). Employee voice and work engagement: Macro, meso, and micro-level drivers of convergence? *Human Resource Management Review*, 26(4):327–337.

Lafuente, R. and Sánchez, M. (2010). Defining and measuring environmental consciousness. *Revista Internacional de Sociología (RIS)*, 68(3):731–755.

Latham, G. P. (2016). Goal setting: a possible theoretical framework for examining the effect of priming goals on organizational behavior. *Current Opinion in Psychology*, 12:85–88.

LePine, J. A. and Van Dyne, L. (1998). Predicting voice behavior in work groups. *Journal of applied psychology*, 83(6):853.

LePine, J. A. and Van Dyne, L. (2001). Voice and cooperative behavior as contrasting forms of contextual performance: evidence of differential relationships with big five personality characteristics and cognitive ability. *Journal of Applied Psychology*, 86(2):326.

Lewin, D. (1987). Dispute resolution in the nonunion firm a theoretical and empirical analysis. *Journal of Conflict Resolution*, 31(3):465–502.

Li, A. N., Liao, H., Tangirala, S., and Firth, B. M. (2017). The content of the message matters: The differential effects of promotive and prohibitive team voice on team productivity and safety performance gains. *Journal of Applied Psychology*.

Li, F., Li, A., and Zhu, Y. (2016). Employee work experience, locomotion, and voice behavior. *Social Behavior and Personality: An International Journal*, 44(11):1851–1862.

Li, J., Wu, L.-Z., Liu, D., Kwan, H. K., and Liu, J. (2014). Insiders maintain voice: A psychological safety model of organizational politics. *Asia Pacific Journal of Management*, 31(3):853–874.

Liang, J., Farh, C. I., and Farh, J.-L. (2012). Psychological antecedents of promotive and prohibitive voice: A two-wave examination. *Academy of Management Journal*, 55(1):71–92.

Lieberman, S. (1956). The effects of changes in roles on the attitudes of role occupants. *Human relations*, 9(4):385–402.

Lin, S.-H. J. and Johnson, R. E. (2015). A suggestion to improve a day keeps your depletion away: Examining promotive and prohibitive voice behaviors within a regulatory focus and ego depletion framework. *Journal of Applied Psychology*, 100(5):1381.

Lipponen, J., Bardi, A., and Haapamäki, J. (2008). The interaction between values and organizational identification in predicting suggestion-making at work. *Journal of Occupational and Organizational Psychology*, 81(2):241–248.

Liu, W., Tangirala, S., Lam, W., Chen, Z., Jia, R. T., and Huang, X. (2015). How and when peers' positive mood influences employees' voice. *Journal of Applied Psychology*, 100(3):976.

Liu, W., Zhu, R., and Yang, Y. (2010). I warn you because i like you: Voice behavior, employee identifications, and transformational leadership. *The Leadership Quarterly*, 21(1):189–202.

Livingston, J. (2007). *Founders at Work: Stories of Startups' Early Days*. Apress, New York.

Loi, R., Ao, O. K., and Xu, A. J. (2014). Perceived organizational support and coworker support as antecedents of foreign workers' voice and psychological stress. *International Journal of Hospitality Management*, 36:23–30.

Long, C., Li, Z., and Ning, Z. (2015). Exploring the nonlinear relationship between challenge stressors and employee voice: The effects of leader–member exchange and organisation-based self-esteem. *Personality and Individual Differences*, 83:24–30.

Maio, G. R., Roese, N. J., Seligman, C., and Katz, A. (1996). Rankings, ratings, and the measurement of values: Evidence for the superior validity of ratings. *Basic and Applied Social Psychology*, 18(2):171–181.

Maloney, M. P. and Ward, M. P. (1973). Ecology: Let's hear from the people: An objective scale for the measurement of ecological attitudes and knowledge. *American psychologist*, 28(7):583.

Marchington, M., Wilkinson, A., Ackers, P., and Goodman, J. (1993). The influence of managerial relations on waves of employee involvement. *British Journal of Industrial Relations*, 31(4):553–576.

Markle, G. L. (2013). Pro-environmental behavior: Does it matter how it's measured? development and validation of the pro-environmental behavior scale (pebs). *Human Ecology*, 41(6):905–914.

Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, 35(2):63.

Mayer, F. S. and Frantz, C. M. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology*, 24(4):503–515.

Maynes, T. D. and Podsakoff, P. M. (2014). Speaking more broadly: An examination of the nature, antecedents, and consequences of an expanded set of employee voice behaviors. *Journal of Applied Psychology*, 99(1):87.

McClelland, D. C. (1965). Toward a theory of motive acquisition. *American psychologist*, 20(5):321.

McDonough, W. and Braungart, M. (2010). *Cradle to cradle: Remaking the way we make things*. MacMillan.

McIntyre, M. G. (n.d.). Responding to employee concerns. retrieved december 7, 2016, from http://www.yourofficecoach.com/topics/lessons_in_leadership/effective_leadership/ responding_to_employee_concerns.aspx.

Metcalf, S. (n.d.). 8 proven methods for responding to employee feedback. retrieved december 7, 2016, from https://www.15five.com/blog/employee-feedback/.

Meyer, J. P., Becker, T. E., and Vandenberghe, C. (2004). Employee commitment and motivation: a conceptual analysis and integrative model. *Journal of Applied Psychology*, 89(6):991.

Miceli, M., Near, J., and Dworkin, T. (2008). *Whistle-blowing in Organizations*. Routledge.

Miceli, M. P. and Near, J. P. (1992). *Blowing the whistle: The organizational and legal implications for companies and employees*. Lexington Books.

Miceli, M. P., Near, J. P., and Dworkin, T. M. (2009). A word to the wise: How managers and policy-makers can encourage employees to report wrongdoing. *Journal of Business Ethics*, 86(3):379–396.

Milliken, F. J., Morrison, E. W., and Hewlin, P. F. (2003). An exploratory study of employee silence: Issues that employees don't communicate upward and why. *Journal of Management Studies*, 40(6):1453–1476.

Mo, S. and Shi, J. (2016). The voice link: A moderated mediation model of how ethical leadership affects individual task performance. *Journal of Business Ethics*, pages 1–11.

Morrison, E. W. (2011). Employee voice behavior: Integration and directions for future research. *The Academy of Management Annals*, 5(1):373–412.

Morrison, E. W. (2014). Employee voice and silence. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1):173–197.

Morrison, E. W. and Milliken, F. J. (2000). Organizational silence: A barrier to change and development in a pluralistic world. *Academy of Management review*, 25(4):706–725.

Morrison, E. W. and Phelps, C. C. (1999). Taking charge at work: Extrarole efforts to initiate workplace change. *Academy of management Journal*, 42(4):403–419.

Morrison, E. W. and Rothman, N. B. (2009). Silence and the dynamics of power. *Voice and silence in organizations*, 6:111–134.

Morrison, E. W., Wheeler-Smith, S. L., and Kamdar, D. (2011). Speaking up in groups: a cross-level study of group voice climate and voice. *Journal of Applied Psychology*, 96(1):183.

Mowbray, P. K., Wilkinson, A., and Tse, H. H. M. (2015). An integrative review of employee voice: Identifying a common conceptualization and research agenda. *International Journal of Management Reviews*, 17(3):382–400.

Naus, F., Van Iterson, A., and Roe, R. (2007). Organizational cynicism: Extending the exit, voice, loyalty, and neglect model of employees' responses to adverse conditions in the workplace. *Human Relations*, 60(5):683–718.

Nemeth, C. J. (1997). Managing innovation: When less is more. *California management review*, 40(1):59–74.

Nijhof, A., Krabbendam, K., and Looise, J. (2002). Innovation through exemptions: building upon the existing creativity of employees. *Technovation*, 22(11):675–683.

Nijstad, B. A. and Stroebe, W. (2006). How the group affects the mind: A cognitive model of idea generation in groups. *Personality and Social Psychology Review*, 10(3):186–213.

Nijstad, B. A., Stroebe, W., and Lodewijkx, H. F. (2002). Cognitive stimulation and interference in groups: Exposure effects in an idea generation task. *Journal of Experimental Social Psychology*, 38(6):535–544.

O'Connor, G. C. (2006). Open, radical innovation: toward an integrated model in large established firms. *Open Innovation: Researching a New Paradigm*, pages 62–81.

Oldham, G. R. and Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39(3):607–634.

Olson-Buchanan, J. B. and Boswell, W. R. (2002). The role of employee loyalty and formality in voicing discontent. *Journal of Applied Psychology*, 87(6):1167.

Onze Taal (2016). Alternatieven voor ouderwetse en formele woorden. retrieved december 8, 2016, from https://onzetaal.nl/taaladvies/ouderwets-taalgebruik.

O'Reilly III, C. A. (1991). Organizational behavior: Where we've been, where we're going. *Annual review of psychology*, 42(1):427–458.

Ortega, A., Van den Bossche, P., Sánchez-Manzanares, M., Rico, R., and Gil, F. (2014). The influence of change-oriented leadership and psychological safety on team learning in healthcare teams. *Journal of Business and Psychology*, 29(2):311–321.

Parker, S. K. and Collins, C. G. (2010). Taking stock: Integrating and differentiating multiple proactive behaviors. *Journal of Management*, 36(3):633–662.

Pauksztat, B., Steglich, C., and Wittek, R. (2011). Who speaks up to whom? a relational approach to employee voice. *Social Networks*, 33(4):303–316.

Peirce, E., Smolinski, C. A., and Rosen, B. (1998). Why sexual harassment complaints fall on deaf ears. *The Academy of Management Executive*, 12(3):41–54.

Perry-Smith, J. E. and Mannucci, P. V. (2017). From creativity to innovation: The social network drivers of the four phases of the idea journey. *Academy of Management Review*, 42(1):53–79.

Personality (n.d.). In *Merriam Webster Online Dictionary*. Retrieved December 3, 2016, from https://www.merriam-webster.com/dictionary/personality.

Pinder, C. C. and Harlos, K. P. (2001). *Employee silence: Quiescence and acquiescence as responses to perceived injustice*, pages 331–369. Emerald Group Publishing Limited.

Pizam, A. (1974). Some correlates of innovation within industrial suggestion systems. *Personnel Psychology*, 27(1):63–76.

Position (n.d.). In *Merriam Webster Online Dictionary*. Retrieved December 3, 2016, from https://www.merriam-webster.com/dictionary/position.

Pratt, M. G. (1998). Central questions in organizational identification. *Identity in organizations*, pages 171–207.

Premeaux, S. F. and Bedeian, A. G. (2003). Breaking the silence: The moderating effects of self-monitoring in predicting speaking up in the workplace. *Journal of Management Studies*, 40(6):1537–1562.

Puylaert, S. (2016). *Social desirability and mobility impacts of early forms of automated vehicles*. Thesis.

Qin, X., DiRenzo, M. S., Xu, M., and Duan, Y. (2014). When do emotionally exhausted employees speak up? exploring the potential curvilinear relationship between emotional exhaustion and voice. *Journal of Organizational Behavior*, 35(7):1018–1041.

Raineri, N., Mejía-Morelos, J. H., Francoeur, V., and Paillé, P. (2016). Employee eco-initiatives and the workplace social exchange network. *European Management Journal*, 34(1):47–58.

Ramus, C. A. and Steger, U. (2000). The roles of supervisory support behaviors and environmental policy in employee "ecoinitiatives" at leading-edge european companies. *Academy of Management Journal*, 43(4):605–626.

Ran, X. and Xu, J. (2013). Voice game between coworkers with low relative leader-member exchange. *Journal of Applied Sciences*, 13:3182–3188.

Rangus, K. and Slavec, A. (2017). The interplay of decentralization, employee involvement and absorptive capacity on firms' innovation and business performance. *Technological Forecasting and Social Change*.

Raub, S. (2008). Does bureaucracy kill individual initiative? the impact of structure on organizational citizenship behavior in the hospitality industry. *International Journal of Hospitality Management*, 27(2):179–186.

Ruler, A. A. v. (2003). Communicatiemanagement: van kwantiteit naar kwaliteit : over professionalisering van het management van organisationele communicatie. University of Twente, Enschede.

Rusbult, C. E., Farrell, D., Rogers, G., and Mainous, A. G. (1988). Impact of exchange variables on exit, voice, loyalty, and neglect: An integrative model of responses to declining job satisfaction. *Academy of Management journal*, 31(3):599–627.

Rusbult, C. E., Martz, J. M., and Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal relationships*, 5(4):357–387.

Ryan, K. and Oestreich, D. K. (1991). *Driving fear out of the workplace : how to overcome the invisible barriers to quality, productivity, and innovation*. Jossey-Bass management series. Jossey-Bass Publishers, San Francisco.

Salomo, S., Weise, J., and Gemünden, H. G. (2007). Npd planning activities and innovation performance: the mediating role of process management and the moderating effect of product innovativeness. *Journal of product innovation management*, 24(4):285–302.

Sauermann, H. and Cohen, W. M. (2010). What makes them tick? employee motives and firm innovation. *Management Science*, 56(12):2134–2153.

Schein, E. H. (1990). *Organizational culture*, volume 45. American Psychological Association.

Schepers, J. J., Nijssen, E. J., and van der Heijden, G. A. (2016). Innovation in the frontline: Exploring the relationship between role conflict, ideas for improvement, and employee service performance. *International Journal of Research in Marketing*, 33(4):797–817.

Shane, S., Venkataraman, S., and MacMillan, I. (1995). Cultural differences in innovation championing strategies. *Journal of management*, 21(5):931–952.

Sneller, T. (2016). Het einde van de manager. in het licht van de critical management theory. Bachelor thesis. School of Governance, University of Utrecht, Utrecht.

Snyder, M. and Copeland, J. (1989). Self-monitoring processes in organizational settings. *Impression management in the organization*, pages 7–19.

Stamper, C. L. and Van Dyne, L. (2001). Work status and organizational citizenship behavior: A field study of restaurant employees. *Journal of Organizational Behavior*, 22(5):517–536.

Status (n.d.). In *Merriam Webster Online Dictionary*. Retrieved December 3, 2016, from https://www.merriam-webster.com/dictionary/status.

Survey Analysis (2015). The analysis of constant-sum data. retrieved february 14, 2017, from http://surveyanalysis.org/wiki/the_analysis_of_constant-sum_data.

Svendsen, M., Jønsson, T. S., and Unterrainer, C. (2016). Participative supervisory behavior and the importance of feeling safe and competent to voice. *Journal of Personnel Psychology*.

Svetlik, I., Stavrou-Costea, E., and Lin, H.-F. (2007). Knowledge sharing and firm innovation capability: an empirical study. *International Journal of manpower*, 28(3/4):315–332.

Tangirala, S. and Ramanujam, R. (2008a). Employee silence on critical work issues: The cross level effects of procedural justice climate. *Personnel Psychology*, 61(1):37–68.

Tangirala, S. and Ramanujam, R. (2008b). Exploring nonlinearity in employee voice: The effects of personal control and organizational identification. *Academy of Management Journal*, 51(6):1189–1203.

Tangirala, S. and Ramanujam, R. (2012). Ask and you shall hear (but not always): Examining the relationship between manager consultation and employee voice. *Personnel Psychology*, 65(2):251–282.

Tello, S. F. and Yoon, E. (2008). Examining drivers of sustainable innovation. *International Journal of Business Strategy*, 8(3):164–169.

Teza, P., Miguez, V. B., Fernandes, R. F., Dandolini, G. A., and Souza, J. A. d. (2016). Ideas for innovation: a systematic mapping of the literature. *Gestão Produção*, 23(1):60–83.

Thelen, E. and Smith, L. B. (1996). *A dynamic systems approach to the development of cognition and action*. MIT press, Cambridge, US.

Thomas, J. P., Whitman, D. S., and Viswesvaran, C. (2010). Employee proactivity in organizations: A comparative meta-analysis of emergent proactive constructs. *Journal of Occupational and Organizational Psychology*, 83(2):275–300.

Thompson, J. A. (2005). Proactive personality and job performance: a social capital perspective. *Journal of Applied Psychology*, 90(5):1011.

Townsend, K., Wilkinson, A., and Burgess, J. (2013). Filling the gaps: Patterns of formal and informal participation. *Economic and Industrial Democracy*, 34(2):337–354.

Training managers to listen and respond to employee voice (n.d.). Retrieved december 7, 2016, from http://academlib.com/1235/management/training_managers_listen_and_respond_employee_voice.

Trifiletti, E., Capozza, D., Pasin, A., and Falvo, R. (2009). A validation of the proactive personality scale. *Testing, Psychometrics, Methodology in Applied Psychology*, 16:77–93.

Van de Vrande, V., De Jong, J. P., Vanhaverbeke, W., and De Rochemont, M. (2009). Open innovation in smes: Trends, motives and management challenges. *Technovation*, 29(6):423–437.

Van Dyne, L., Ang, S., and Botero, I. C. (2003). Conceptualizing employee silence and employee voice as multidimensional constructs. *Journal of Management Studies*, 40(6):1359–1392.

Van Dyne, L. and LePine, J. A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management journal*, 41(1):108–119.

Van Houts, H. (2003). Functieprofiel pm4. taken, verantw, houding kva.

Van Houts, H. (2015). Brian hughes evaluatie niv 3 pm 4.

Van Houtum B. V. (2016a). Csr policy. Retrieved at March 22, 2017, from http://www.vanhoutum.nl/en/about-van-houtum/2966/innovation-and-quality.html.

Van Houtum B. V. (2016b). Dare to be black. Retrieved at December 15, 2016, from http://www.vanhoutum.nl/en/brands/5195/satino-black.html.

Van Houtum B. V. (2016c). Energy policy. Retrieved at March 22, 2017, from http://www.vanhoutum.nl/en/about-van-houtum/2966/innovation-and-quality.html.

Van Houtum B. V. (2016d). Labour protection policy (arbo). Retrieved at March 22, 2017, from http://www.vanhoutum.nl/en/about-van-houtum/2966/innovation-and-quality.html.

Van Houtum B. V. (2016e). Mvo data 2016. Retrieved at December 15, 2016, from http://www.vanhoutum.nl/mvo/297/mvo-in-cijfers.html.

Van Houtum B. V. (2016f). Mvo rapportage 2015. Retrieved at December 15, 2016, from http://www.vanhoutum.nl/mvo/297/mvo-in-cijfers.html.

Van Houtum B. V. (2016g). Quality policy. Retrieved at March 22, 2017, from http://www.vanhoutum.nl/en/about-van-houtum/2966/innovation-and-quality.html.

Van Houtum B. V. (2016h). Van houtum mvo. Retrieved at December 15, 2016, from http://www.vanhoutum.nl/98/mvo.html.

Van Houtum B. V. (2017a). Kam kpi's.

Van Houtum B. V. (2017b). Van houtum vacatures. Retrieved July 12, 2016, from http://www.vanhoutum.nl/over-van-houtum/3829/vacatures.html.

Van Houtum B. V. (2017c). Webpage csr.

Van Osch, D. and Van Doorn, A. (2006). *Communicatiekunde. Inleiding tot het beroep van een communicatiekundige.* Boom onderwijs, Amsterdam.

Verhoeven, N. (2007). *Doing Research. The Hows and Whys of Applied Research.* Boom academic, Amsterdam.

Vrgovic, P., Vidicki, P., and Senk, V. (2013). Employees' communication patterns in unorganized idea-sharing activities. *International Journal of Industrial Engineering and Management*, 4(1):11–18.

Vroom, V. H. (1964). *Work and motivation. 1964*, volume 45. John Wiley Sons, New York.

Waite, A. M. and Sheehan, M. (2013). Leadership's influence on innovation and sustainability: A review of the literature and implications for hrd. *European Journal of Training and Development*, 38(1/2):15–39.

Walumbwa, F. O., Morrison, E. W., and Christensen, A. L. (2012). Ethical leadership and group in-role performance: The mediating roles of group conscientiousness and group voice. *The Leadership Quarterly*, 23(5):953–964.

Walumbwa, F. O. and Schaubroeck, J. (2009). Leader personality traits and employee voice behavior: mediating roles of ethical leadership and work group psychological safety. *Journal of Applied Psychology*, 94(5):1275.

Wang, F. and Hannafin, M. J. (2005). Design-based research and technology-enhanced learning environments. *Educational Technology Research and Development*, 53(4):5–23.

Wang, H., Wu, W., Liu, Y., Hao, S., and Wu, S. (2016). In what ways do chinese employees speak up? an exchange approach to supervisor–subordinate guanxi and voice behavior. *The International Journal of Human Resource Management*, pages 1–23.

Ward, A.-K., Ravlin, E. C., Klaas, B. S., Ployhart, R. E., and Buchan, N. R. (2016). When do high-context communicators speak up? exploring contextual communication orientation and employee voice. *Journal of Applied Psychology*, 101(10):1498.

Wei, X., Zhang, Z.-X., and Chen, X.-P. (2015). I will speak up if my voice is socially desirable: A moderated mediating process of promotive versus prohibitive voice. *Journal of Applied Psychology*, 100(5):1641.

Weigel, R. and Weigel, J. (1978). Environmental concern the development of a measure. *Environment and behavior*, 10(1):3–15.

Whitmarsh, L. and O'Neill, S. (2010). Green identity, green living? the role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of Environmental Psychology*, 30(3):305–314.

Withey, M. J. and Cooper, W. H. (1989). Predicting exit, voice, loyalty, and neglect. *Administrative Science Quarterly*, pages 521–539.

Xie, X.-Y., Ling, C.-D., Mo, S.-J., and Luan, K. (2015). Linking colleague support to employees' promotive voice: A moderated mediation model. *PloS ONE*, 10(7):e0132123.

Yatsuzuka, D., Taguchi, Y., and Tabe, T. (2009). *A Study on a Method of Support for Improving the Motivation of Employees*, volume 5617, pages 197–204. Springer, Berlin, Heidelberg.

Yin, R. (2009). *Case study research design and methods.* SAGE Publications Ltd, London.

Zhang, X., Hu, B., and Qiu, M. (2014). Job satisfaction as a mediator in the relationship between performance appraisal and voice behavior. *Social Behavior and Personality: An International Journal*, 42(8):1315–1323.

Zomerdijk, R. (2015). De juiste student op de juiste plek. onderzoek naar de invloed van studentprofiel op academische motivatie. Bachelor thesis. Faculty of Behavioural, Management and Social Sciences. Universiteit Twente, Enschede. Retrieved from http://essay.utwente.nl/67708/1/Zomerdijk_BA_BMS.pdf.

A

Keywords for literature research

Section 2.1 describes how a literature research was performed to collect information about promotive voice and its antecedents. This appendix shows which (combinations of) keywords were used and how many hits they gave, both in the search for promotive voice and in the search for specific constructs. 2.1

A.1. Promotive voice

Three search engines were used; Scopus, Web of Science and ScienceDirect. Figure A.1 shows the number of hits per keyword. The numbers in overlapping circles represent the amount of hits when both search terms were entered with the Boolean “AND”. Since the hits for “challenging voice” were not relevant, this keyword was not combined with other keywords.

A.2. Individual and contextual constructs

For each individual and contextual construct that was extracted from the above literature, a small additional literature was performed. The search engine Scopus was used. The keywords were (variations on) “factor” AND “voice”AND “<construct>” applied in a title-only search. Table A.1 presents the amount of results.

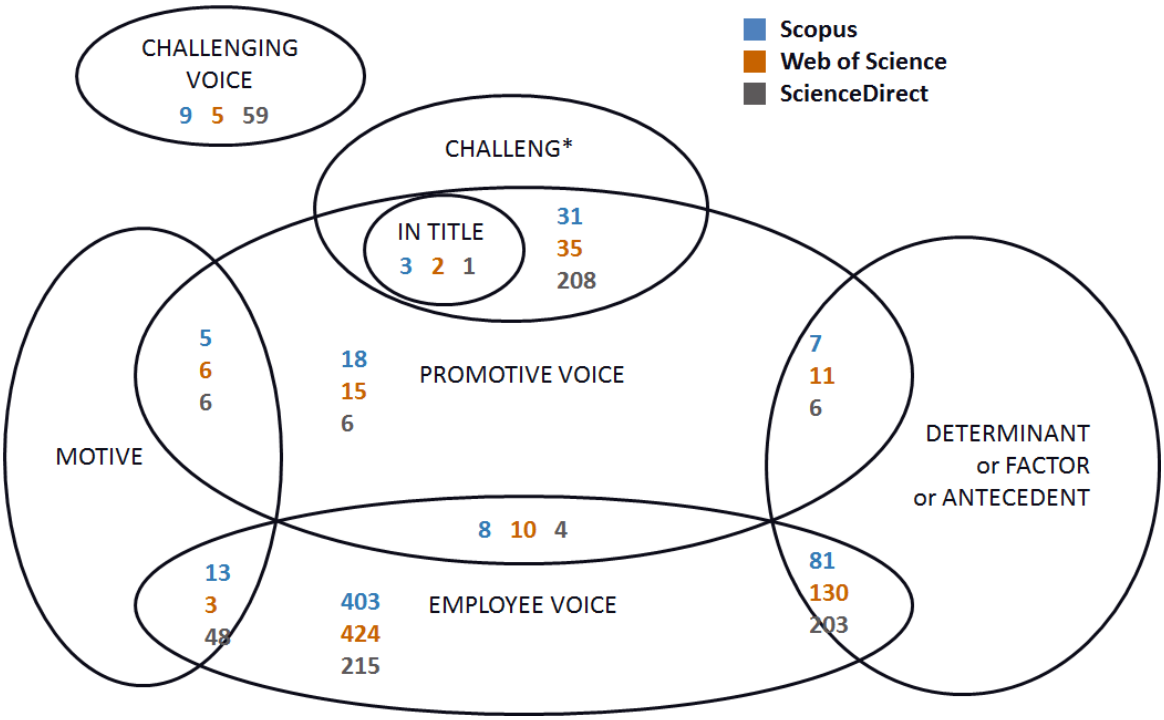


Figure A.1: Visual representation of the number of hits for multiple combinations of keywords in three search engines

Table A.1: Number of hits in Scopus per construct

Construct	#Hits	Remarks
Personality	2	
Emotions,beliefs and schemas		not searched, due to a sufficient quantity of literature
Psychological,safety	4	
Performance	7	not very relevant
Experience & tenure	1	“employee voice” AND “work experience”
Position & status	1	3 hits for “job satisfaction”
Role definitions	7	with “in-role” AND “extra-role” (also in abstract)
Job and, organizational attitudes and perceptions	64	also in abstract
Organizational structure	1	
Work group size and structure	4	("employee voice" OR "voice behavior" OR "voice behaviour") AND team
Formal voice mechanisms	23	also in abstract
Supervisor and leader behavior		not searched, due to a sufficient quantity of literature
Relationship with supervisor	4	“voice” AND “leader-member exchange”
Organizational culture	16	also in abstract
Collective level beliefs		not searched, due to a sufficient quantity of literature
Group voice climate	16	also in abstract

B

Additional literature for theoretical framework

Multiple individual and contextual constructs account for why speaking up behavior differs per occasion. From the list in table 2.1, this appendix presents brief literature reviews.

B.1. Individual and contextual constructs

Brief literature reviews are provided for all individual and contextual constructs that were identified from literature and included in the theoretical framework.

B.1.1. Individual constructs

Individual disposition

Individual disposition includes two aspects; demographics and personality. Demographics includes givens such as race, gender, age and country. About gender differences, ethnic minorities and cultural differences, mixed results have been published (Morrison, 2011; Klaas et al., 2011). The personality of an individual entails the totality of an individual's behavioral and emotional characteristics (Personality, nd: Def. 3a). Many specific behavioral and emotional characteristics have been empirically studied with respect to its relation with voice behavior.

In general, voice behavior occurs more frequently among individuals who score high on conscientiousness and extraversion (Morrison, 2011), action-oriented personality traits such as extraversion, assertiveness, and proactive personality (Crant et al., 2011; LePine and Van Dyne, 2001; Naus et al., 2007), through stimulating perceived efficacy (Morrison, 2014). Characteristics that were found to motivate informal, pro-social voice behavior are self-esteem (Morri-

son, 2011,0; Klaas et al., 2011), either or not by directly enhancing perceived efficacy (Morrison, 2014), conscientiousness (LePine and Van Dyne, 2001; Thomas et al., 2010), extraversion (LePine and Van Dyne, 2001), proactive personality (Parker and Collins, 2010; Klaas et al., 2011) and openness to change (Lipponen et al., 2008).

Research about the influence of personal characteristics on the usage of formal voice systems mentions being open to change (Lipponen et al., 2008), focus on creativity (Pizam, 1974) and problem solving as motivating factors (Klaas et al., 2011), as well as work initiative (Frese et al., 1999). Traits that appear to negatively influence voice behavior in general are neurotism and agreeableness (LePine and Van Dyne, 2001), and performance goal orientation (Parker and Collins, 2010). Botero and Van Dyne (2009) found that self-reported informal, prosocial voice is negatively influenced by power distance; to what extent do I find the level of power inequality appropriate? (Hofstede and Hofstede, 1991) (as referred to by (Morrison, 2011))

All the while, employees have the desire to behave in a way that is consistent with that identity can also drive voice behavior. (Morrison, 2014) This can influence voice behavior, to affirm their sense of self and reinforce what they value (Ashford and Barton, 2007).

Emotions, beliefs and schemas

Strongly related to individual disposition is are emotions, beliefs and schemas (cognitive structure for processing information efficiently (Markus, 1977)). There has been much research on how this construct has the potential to stimulate or limit employee voice in two ways; the emotions fear and anger can play a large role, as well as the taken for granted beliefs or schemas that voice is risky, authority should not be challenged.

Experiencing fear for speaking up, perhaps caused by negative experiences with voice, reduces the likeliness to engage in voice (Kish-Gephart et al., 2009; Morrison, 2014; Morrison and Milliken, 2000; Ryan and Oestreich, 1991; Milliken et al., 2003), or the employee might retreat from voice altogether (Morrison, 2014). In this case, the risks and rewards voice are no longer considered. Rather, an automatic process tells the employee to stay silent. This emotional retreat of the employee is illustrated by Ryan & Oestreich (Ryan and Oestreich, 1991: p. 7): “If you experience fear every day, it drags you down and you become cowardly. After my suggestions were ignored, the quality of my work was still there, but I wasn’t.”

Conversely, anger can limit and enhance employee voice. Although not much empirical research has been done in this context, it has been shown that anger can increase the likelihood of whistle-blowing to report the wrongdoings (Edwards et al., 2009; Harvey et al., 2009). Frustration or intense anger can also push the employee towards voice, skipping the careful consideration of risk and rewards (Morrison, 2014; Kish-Gephart et al., 2009).

Second, implicit voice theories, or taken-for-granted beliefs about voice might create an automatic process of staying silent (Morrison, 2014). According to such beliefs, voice is risky and dangerous, futile, inappropriate in hierarchical situations (Detert and Edmondson, 2011; Morrison, 2014). Example are that “challenging the status quo can have negative career consequences” (Detert and Edmondson, 2011), “no one really wants to hear what I have to say” (Morrison,

2014) or "one should not embarrass one's boss in public" (Detert and Edmondson, 2011). When this automatic process occurs, the calculative consideration of benefits and risks of voice is skipped (almost) completely, immediately making the decision not to engage in voice (Morrison, 2014).

Detert and Edmondson (2011) consider implicit voice theories as a direct cause for staying silent and Morrison (2014) included this phenomenon as the mechanism *noncalculative automatic processes* in her model from voice. I did not include this phenomenon as a construct, because I consider the decision to voice a conscious decision. Acknowledging the role of this implicit voice theories, I included as a construct that might influence the perceived efficacy voice. Admittedly, the option to not even consider voice as an option, is not included in my theoretical framework.

Psychological safety

Psychological safety is strongly related to emotions, beliefs and schemas, since it is defined as "shared belief held by members of a team that the team is safe for interpersonal risk taking" (Edmondson, 1999). Sharing an idea for improvement is an example of risk taking. When psychological safety is low, employees fear significant personal losses from speaking up (Detert and Edmondson, 2011). This belief can exist both at the individual level (Detert and Edmondson, 2011) and at team level (Edmondson, 1999; Walumbwa and Schaubroeck, 2009). With a high amount of uncertainty and conflict, employees experience high risks in honest communication, whereas certainty and harmony make the work environment be perceived as low risk (Li et al., 2014). Perceiving (any type of) voice to be unsafe withholds employees to voice (Detert and Edmondson, 2011; Liang et al., 2012). When engaging in issue selling, one's image can be at risk (Ashford et al., 1998).

Leadership behaviors influence the perception of psychological safety (Milliken et al., 2003; Ryan and Oestreich, 1991), because it is critical against the status quo (Milliken et al., 2003). Detert and Burris (2007) show that psychological safety is a mediator between change-oriented leadership and improvement-oriented voice by employees. When managers do not accept input from subordinates, they will stay silent (Hornstein, 1986). On the contrary, by showing interest, listening and taking action, managers show that the risk is small engaging in voice (Edmondson, 2003).

In sum, employees estimate the risk of personal losses, as caused by speaking up. This risk is part of the mechanism *perceived safety*, mentioned in section 2.2.1. I chose to put psychological safety as a construct instead of a mechanism, because it only represents the part of perceived safety; other constructs, such as organizational structure and supervisor and leader behavior also contribute to perceived safety.

Experience & tenure

Related to performance is the construct experience and tenure; the amount of work experience and the work status (full-time or part-time) of an employee. Under certain conditions, having a lot of work experience and being employed full-time are said to increase the likelihood of engaging in voice (Morrison, 2011; Milliken et al., 2003; Rusbult et al., 1988). Indeed, Milliken et al. (2003) found that 32.5 % of the respondents mention their lack of experience, tenure or rank (which falls under the construct position and status) as one of the barriers for sharing their input.

Less experienced employees are expected to display less voice than their experienced colleagues for three reasons; new employees feel uncertain about how to effectively and safely engage in voice (Morrison, 2011), they feel a lack of credibility and an especially high image risk (Morrison, 2011; Milliken et al., 2003) and their engagement with the company, and therefore motivation to make it effective, is still limited (Morrison, 2011). Rusbult et al. (1988) found a positive correlation among employees who had both invested a lot in their job and who had good quality job alternatives, and the likelihood to engage in voice. This suggests that good quality job alternatives increase the likelihood for an employee to voice, because the perceived risk is lower (Morrison, 2011).

Tenure (being employed full-time versus part-time) may affect voice for two reasons: full-time employees are more likely to perceive their work as a social relationship rather than an purely economic exchange, motivating them to display discretionary behavior (Stamper and Van Dyne, 2001), and second because full timers often have a job with higher status, increasing perceived efficacy for voice morrison11. Even though Morrison (2011) refers to Tangirala and Ramanujam (2008b) and Stamper and Van Dyne (2001) to show a positive correlation between full-time employment and employee voice, the story is more nuanced. Stamper and Van Dyne (2001) conclude that full-time employees did not display more voice behavior then part-time employees. They also found that a match between desired and actual tenure was a requirement for high levels of voice. However, Tangirala and Ramanujam (2008a) found no relation between organizational tenure and employee silence.

Position & status

Interpreting the word ‘position’ not as “an employment for which one has been hired” (Position, nd), but as a “social or official rank or status” (Position, nd: Def 5b) or ‘a place in the hierarchy’ (Morrison, 2011), shows its relation with ‘status’; “position or rank in relation to others” (Status, nd: Def. 1a).

Although not much, there is empirical evidence about the correlation between power (difference) and employee silence (Pinder and Harlos, 2001; Miceli et al., 2008), and thus implicitly employee voice. In general, the introduction of a hierarchy inhibits free communication from lower- to higher- ranked people, especially about negative information (Milliken et al., 2003). More specifically for voice, a research within work groups showed that in a simulated environment, employees with high power positions shared their opinions more often than lower power colleagues (Islam and Zyphur, 2005). The qualitative research by Dutton et al. (2002) found that

for the decision to raise gender-equity issues depends both on respondents' position and reputation. This impact of difference in position and status can be explained through its influence on both perceived efficacy (Morrison, 2014; Miceli et al., 2008; Morrison and Rothman, 2009; Pinder and Harlos, 2001) and perceived safety (Tangirala and Ramanujam, 2008a; Morrison and Rothman, 2009).

First, people with status are perceived (by others) to hold more influence and authority (Morrison and Milliken, 2000; Tangirala and Ramanujam, 2008a), which is positively related to their perceived efficacy, as estimated by others (Tangirala and Ramanujam, 2008a). Instead, power differences can induce silence among subordinates about mistreatment and wrongdoing, by giving them the feeling that voice is not taken seriously (Pinder and Harlos, 2001; Miceli et al., 2009). For people being in a (formal or informal) position of high power, their own perceived efficacy is strengthened (Miceli et al., 2008; Morrison and Rothman, 2009).

Conversely, the presence of the high ranks colleague also reduces the perceived safety of speaking up, because subordinates fear to be viewed negatively in his or her presence (Tangirala and Ramanujam, 2008a) (referring to (Jones, 1964)). For the higher ranked employee, the fear of being punished for speaking up is weaker (Morrison and Rothman, 2009).

Combined, the question is which force is stronger; high perceived efficacy or low perceived safety. Evidence shows that especially for front-line employees, low perceived safety often weighs heavier (Tangirala and Ramanujam, 2008a; Edmondson, 1996; Morrison and Milliken, 2000). Tangirala and Ramanujam (2008a) argues this is the case, because front-line employees often having only one supervisor as their authority figure, making them particularly vulnerable for harming this relationship. Moreover, the belief that subordinates have no influence can become a self-fulfilling prophecy when the manager is not open to input and is less self-censoring (eg. violating norms), while his subordinates adapt to a status of inhibition (estimating a low efficacy) and see risks of speaking up (Morrison and Rothman, 2009).

Job and organizational attitude and perceptions

The construct *job and organizational attitude and perceptions* represents how employees feel about their work (Morrison, 2011), including employee commitment, job satisfaction and personal control (Meyer et al., 2004; Tangirala and Ramanujam, 2008a; Klaas et al., 2011; Morrison, 2011; Morrison, 2014), each having an impact on the decision to engage in voice.

Professional commitment can be described as the affective attachment of an employee to his or her organization (Meyer et al., 2004). Research on voice identified a (weak) relation with organizational commitment as a response to dissatisfaction (Rusbult et al., 1988), as well as in case of mistreatment (Klaas et al., 2011). Nevertheless, Morrison and Rothman (2009) noticed that commitment is no sufficient condition. Tangirala and Ramanujam (2008a) responded to this remark and identified a climate of procedural justice as a requirement for highly committed employees to engage in voice. The same mechanism was found for work identification (Tangirala and Ramanujam, 2008a); the experience of belonging whereby the individuals' identity relates to organizational identity (Ashforth and Mael, 1989; Dutton et al., 1994; Pratt, 1998).

A positive association between voice has been found with overall job satisfaction (Morrison, 2014), even when voice stems from dissatisfaction (Morrison, 2011). Moreover, informal voice positively associates with satisfaction and perceived investment in the firm (Klaas et al., 2011). On the contrary, a negative relationship between psychological detachment and voice have been found (Detert and Burris, 2007; Burris et al., 2008; Morrison, 2014). Regarding formal voice, mistreatment is more likely to be brought up when job satisfaction is low, while formal grievance behavior is less likely when loyalty to the organization is high (Klaas et al., 2011).

The last aspect of this construct operates through perceived efficacy; personal control: "sense of personal agency" (Morrison, 2011; Morrison, 2014). More specifically, Tangirala and Ramanujam (2008b) found that both very low and very high sense of personal control gives an employee the feeling that voice will be effective.

Morrison (Morrison, 2011) mentions job attitudes as an individual construct influencing perceived safety and perceived efficacy, without making explicit why. In my interpretation, both professional commitment and job satisfaction enhances the motivation of the employee to contribute to the organization; voice inspired by prosocial motivation. Personal control affects perceived efficacy.

Performance

The general performance of an employee (how well the employee does his job) may influence the willingness and frequency to engage in voice (Ashford et al., 1998; Detert and Burris, 2007). This might have to do with the feeling they can make a difference (Morrison, 2011), the trust that speaking will not harm their image (Morrison, 2011; Ashford et al., 2009) and the perception that speaking up is a part of their job responsibility (Detert and Burris, 2007). Detert and Burris (2007) refer to Snyder and Copeland (1989) when arguing for causation in the other direction: employees skilled at adapting their behavior to their work environment might become better performers. Only a few articles can be found about the correlation between performance and employee voice. Here, I summarize the relevant findings.

No matter the direction of the causation, these scholars expect a correlation between performance and employee voice. Although Brockner et al. (1998) states that employees with higher self-esteem, which often correlates with performance, are more motivated to speak up, Detert and Burris (2007) put this into perspective by saying this is only the case when leaders create a condition in which speaking up is welcomed. Morrison (2011) agrees when saying that " higher performers were especially likely to speak up when their bosses appeared interested in input from employees, but especially unlikely to do so when their bosses appeared unreceptive to input". A comparable phenomenon is found by Detert and Burris (2007); leadership behavior has a stronger impact on well-performing employees, than on poor-performing employees.

B.1.2. Contextual constructs

Organizational structure

Organizational structure is the way in which an organization is designed in an effort to insure consistency and coherence in achieving its objectives (Jennings and Seaman, 1990). 30 % of the respondents in the survey of Milliken et al. (2003) mentioned organizational structures and cultures as a reason to stay silent. This shows the importance of organizational structures for the decision to engage in voice.

In general, employee voice is facilitated by a flat organizational structure(Morrison, 2011) with decentralized decision making process (Morrison and Milliken, 2000; Glauser, 1984) and the presence of formal voice mechanisms (Morrison and Milliken, 2000), (which is discussed in more detail on page 135). When the top management is not open to employee input, Morrison and Milliken (2000) refer to Floyd and Wooldridge (1994), posing that different layers of management copy that attitude. For subordinates, these are all signs that the input of employees is welcomed by the management, impact both perceived efficacy and perceived safety of voice.

Employees do not feel taken seriously (Morrison and Rothman, 2009), nor they believe their input will be acted upon (Morrison, 2011) in highly bureaucratic work environments. This indicates low feelings of perceived efficacy.

The power difference in hierarchical organizational structures creates a feeling of low safety for speaking up (Morrison and Rothman, 2009; Morrison, 2014), because higher ranked colleagues often control rewards and resources (Pinder and Harlos, 2001) and they might be less open to input (Morrison and Rothman, 2009). In addition, subordinates fear that speaking up will be assessed as inappropriate, or that they will be punished (Morrison and Milliken, 2000; Pinder and Harlos, 2001; Morrison and Rothman, 2009).

Work group size & structure

A specific aspect of organizational structure is the size and structure of the work groups. I extract this as a separate construct, because I look at voice within teams. The structure and size of work groups can impact the extent to which voice is perceived as intimidating, useful and safe (Morrison, 2011; Klaas et al., 2011), in the following ways.

First, more voice is displayed in smaller groups (Islam and Zyphur, 2005), due to low conformity pressure and relatively high responsibility for the group outcomes (LePine and Van Dyne, 1998). In other words, little risk is experienced for speaking up (LePine and Van Dyne, 1998). A high degree of autonomy, such as in self-managed teams, has been shown to enhance employee involvement, a feeling of responsibility, and especially the engaged in voice (LePine and Van Dyne, 1998). I argue that this is due to a high perceived efficacy, caused by the autonomy of work. Thirdly, teams with rotated leadership or peer evaluation, as examples of egalitarian practices, appeared to have higher levels of voice (Erez et al., 2002). Even in favorable work group structures, LePine and Van Dyne (1998) have shown that individual constructs, such as job satisfaction and self-esteem, impact the likelihood that a subordinate speaks up.

Formal voice mechanisms

The lack of formal voice mechanisms (formal upward feedback channels (Morrison, 2011)) is reported to contributing to employee silence in general (Glauser, 1984; Morrison and Milliken, 2000; Morrison, 2011) and in whistle-blowing (Miceli et al., 2009).

While designing the organizational structure (see page 134), the management of an organization determines the voice architecture (Mowbray et al., 2015). This system can facilitate employee voice, but it can also be a "hollow shell" Mowbray et al. (2015). Another way to disturb the functionality of a (sincere) voice architecture is when the management controls the topics that are discussed (Donaghey et al., 2011; Mowbray et al., 2015)

When they work properly, then formal voice mechanisms can still withhold employee to engage in voice. At least in the case of discontent, participating in formal voice mechanisms is sometimes experienced as dangerous (low perceived safety). Grievance filers and whistle-blowers are sometimes punished for speaking up (Lewin, 1987; Boroff and Lewin, 1997; Olson-Buchanan and Boswell, 2002). Grievance filers also report a "fear of reprisal" (revenge) (Lewin, 1987; Boroff and Lewin, 1997).

Collective level beliefs

Collective level beliefs are shared implicit beliefs within a group about what is and is not appropriate behavior in a hierarchical setting (Morrison, 2011; Morrison, 2014). They are an unconscious (Morrison and Milliken, 2000) part of the organizational culture, as discussed in section B.1.2. Such beliefs in the minds of managers and employees can be powerful in influencing voice, through impacting perceived efficacy and safety (Morrison and Milliken, 2000; Morrison, 2011,0; Frazier and Fainshmidt, 2012; Morrison et al., 2011).

Morrison and Milliken (2000) mention three examples of collective level beliefs among managers: (1) employees are self-interested and not trustworthy, (2) management can take the best decisions and (3) disagreement should be avoided, because in a healthy organization there is unity, agreement and consensus. Managers might hold such beliefs because they identify less with subordinates, as they move upward in the hierarchy, and thus hold different beliefs (Lieberman, 1956).

Employees in some organizations believe they should not "rock the boat" by challenging the status quo (Morrison and Milliken, 2000), because their organization is intolerant of dissent, which makes them stay silent (Nemeth, 1997). Alongside collective level beliefs, individual implicit beliefs can exist which can be extremely different between individuals (Edmondson, 1999).

Supervisor and leader behavior

Supervisor and leader behavior (from now on referred to as supervisor behavior) has been shown to have a critical influence on the decision to speak up (Morrison, 2014; Ashford et al., 2009), because the supervisor is often the target of voice and he has power over resources (Morrison, 2011). From an organizational perspective, supervisors implement policies and practices for voice (Marchington et al., 1993; Detert and Burris, 2007; Morrison and Milliken, 2000; Detert

and Treviño, 2010) and their behavior impacts the voice climate (Mowbray et al., 2015; Morrison and Milliken, 2000; Detert and Treviño, 2010; Detert and Burris, 2007). Finally, they are the intermediary between the employee and the higher management (Mowbray et al., 2015).

Supervisors can impact employees' decisions to voice or stay silent through their leadership style. For example, abusive leadership is likely to enhance silence (Detert and Treviño, 2010; Detert and Burris, 2007; Morrison, 2014), while ethical leadership (Walumbwa et al., 2012; Walumbwa and Schaubroeck, 2009) and change-oriented leadership (Detert and Burris, 2007; Ortega et al., 2014), such as transformational leadership (Detert and Burris, 2007; Liu et al., 2010), stimulate employee to display voice. On a critical note, Detert and Burris (2007) argue that not the leadership style, but the specific supervisor behavior can enhance voice or silence.

Aspects of supervisor behavior that impact both perceived efficacy and safety of speaking up are his upward influence (Morrison, 2011), valueing input from subordinates (Glauser, 1984) and having a supportive relationship with subordinates (Morrison, 2011; Milliken et al., 2003).

More specifically, the estimate how safe it is to engage in voice is dependent on the behavior of supervisors (Detert and Burris, 2007). Trust in leadership determines the effectiveness of voice (Morrison, 2011; Mowbray et al., 2015), while it might also make employees rely on their leader so much that they stay silent (Gao et al., 2011). Supervisors can advance feelings of psychological safety by downplaying the power difference (Edmondson, 2003) and by being open to voice (Detert and Burris, 2007; Morrison, 2014; Detert and Treviño, 2010). When supervisors fear receiving input or negative feedback from subordinates, they create a feeling that speaking up is risky (Ashford et al., 2009; Burris, 2012; Morrison, 2014; Morrison and Milliken, 2000), the latter two referring to (Argyris, 1990) and (Argyris and Schön, 1978).

Through their behavior, supervisors influence to what extent subordinates estimate speaking up as useful (Detert and Burris, 2007; Morrison, 2011; Morrison, 2014). Managers who solicit suggestions by employees and listen to them, make subordinates feel more influential (Tangirala and Ramanujam, 2012), especially when top management is willing to listen (Milliken et al., 2003). Previous experiences that supervisors are receptive to input (Morrison, 2014) or, conversely, do not act on it (termed the 'deaf ear syndrome' in the case of complaints (Peirce et al., 1998)) (Pinder and Harlos, 2001; Burris, 2012) respectively encourage or withhold employees to speak up.

Relationship with supervisor

The relationship between an employee and his supervisor plays a role in the employee's decision to engage in voice (Milliken et al., 2003; Glauser, 1984). Townsend et al. (2013) stress that this is true for informal voice. In a study by Bassett-Jones and Lloyd (2005), 80 % of the respondents who had shared their idea, had a positive attitude towards their direct supervisor. Glauser (1984) also identifies the superior-subordinate relationship as a construct for upward communication; specifically trust, the influence of superiors over subordinates and the role relationship (leadership versus supervision).

Leader-member exchange (LMX) is an organizational leadership theory that focuses on the dyadic (a social interaction between two people) relationship between a leader and a follower (Gerstner and Day, 1997). A positive (perceived) LMX correlates with higher levels of voice (Detert and Treviño, 2010; Morrison, 2014; Botero and Van Dyne, 2009; Liu et al., 2010), especially for engaging in informal voice (Mowbray et al., 2015; Klaas et al., 2011). Reasons are that higher LMX facilitates greater opportunities for speaking up and sharing ideas (Mowbray et al., 2015), more support and resources (Graen and Uhl-Bien, 1995). Employees with a relatively good LMX can experience pride of status, identify with their leader (Liu et al., 2010) and feel the duty to warn him or her (Ran and Xu, 2013).

Even when LMX is high, employees might still evaluate the utility calculus for engaging in voice (Mowbray et al., 2015). A poor LMX blocks a communication channel, creating a 'hollow shell' where employees have little opportunity to exert any influence (Mowbray et al., 2015). A positive LMX allows employees to have a say in decision making (Bhal and Ansari, 2007), and in issue selling it has increases the likelihood that issue-selling is successful (Ashford et al., 1998). Note that the relationship between an employee and the senior management also impacts the expected efficacy (Detert and Treviño, 2010; Ashford et al., 1998).

Subordinates with relatively low LMX either experience higher concern to speak up, or deliberately stay silent (Ran and Xu, 2013). In issue selling, a high LXM reduces the perceived image risk, but the relation with efficacy is stronger (Ashford et al., 1998).

Organizational culture

Organizational culture is a pattern of basic assumptions that has developed among a set a of people with enough stability and common history to have allowed a culture to form (Schein, 1990). It can encourage or reduce voice (Morrison, 2011). For example, in a study by Milliken et al. (2003), 30 % of the respondents mentioned organizational structures and culture as a barrier to speak up. Many of them felt that knowledge about the issue was widespread among colleagues, yet not communicated.

What has been identified as a favorable culture is one with little bureaucracy (Stamper and Van Dyne, 2001). Research on issue selling adds support for issue selling, willingness among top management to listen (Dutton et al., 1997, 2002), favoring norms (Morrison, 2011) and identifies organizational change as an opportunity to speak up (Dutton et al., 1997).

Conservative or unsupportive cultures are unfavorable for voice (Dutton et al., 1997, 2002), as well as resistance to change (Dutton et al., 1997), a climate of silence (Morrison and Milliken, 2000; Pinder and Harlos, 2001), organizational hierarchy (Pinder and Harlos, 2001; Morrison, 2014; Milliken et al., 2003). "The extent to which the organizational values employees and cares about their well-being"; perceived organizational support, positively relates to both estimated success chances and estimated safety to engage in issue selling (Morrison, 2011; Dutton et al., 2002). Obviously, a climate of fear limits the perceived safety of speaking up (Pinder and Harlos, 2001).

Group voice climate

Group voice climate is an aspect of the organizational culture (section B.1.2) (Morrison et al., 2011), based on a specific type of collective belief (section B.1.2) (Pinder and Harlos, 2001). Group voice climate refers to the group-level perceptions and shared beliefs about speaking up (Morrison et al., 2011; Ashford et al., 1998; Frazier and Fainshmidt, 2012). Such beliefs, on a group or organizational level (Kuenzi and Schminke, 2009), can range from very positive to very negative (Morrison et al., 2011). The latter is called a *climate of silence*, where speaking up is considered dangerous and not worth the effort (Pinder and Harlos, 2001; Morrison and Milliken, 2000; Morrison et al., 2011; Kish-Gephart et al., 2009). The group voice climate strongly predicts both informal and formal voice behavior (Klaas et al., 2011; Morrison et al., 2011). While Morrison and Milliken (2000) state that group voice climate is pervasive throughout an organization, Morrison et al. (2011) found it can vary per group.

Characteristics that create the group voice climate are work group characteristics (section B.1.2), organizational culture (section B.1.2) and leadership (section B.1.2) (Klaas et al., 2011), as well as organizational structure (section B.1.2), collective-level beliefs among managers (section B.1.2) (Morrison, 2011; Pinder and Harlos, 2001; Morrison and Milliken, 2000) and their fear of negative feedback (Morrison and Milliken, 2000). Edmondson (1996) identifies that the consequences of making mistakes (blame-oriented versus learning-oriented climate) influence the reporting of mistakes. Rather, dialogue and feedback throughout all layers of the hierarchy and an open problem-solving environment contribute to a positive group voice climate by giving employees the feeling that speaking up is safe (Miceli et al., 2008).

B.2. Additional literature about promotive voice

Section 2.2.2 introduced additional literature about promotive voice. Table B.1 presents for 17 studies which antecedents were studied in each article. For the remaining four studies, their main topic is listed.

Table B.1: Topics of the 22 relevant studies about promotive voice, subdivided into studies about antecedents and other aspects and ordered alphabetically with regard to authors

Author	**Antecedents of promotive voice**
Long et al. (2015)	Leader-member exchange and organization-based self-esteem
Hsiung and Tsai (2017)	Negative mood & power distance orientation
Janssen and Gao (2015)	Supervisory responsiveness & self-perceived status
Ju et al.	Abusive supervision & employee forgiveness behavior
Kakkar et al. (2016)	Personal disposition
Knoll and Redman (2015)	Employer-sponsored voice practices & affective attachment to the organization & job engagement
Li et al. (2016)	Work experience & locomotion
Liang et al. (2012)	Three mechanisms & many antecedents
Loi et al. (2014)	Perceived organizational support and coworker support
Liu et al. (2015)	Mood of target
Mo and Shi (2016)	Ethical leadership
Qin et al. (2014)	Many, such as job security, interactional justice climate (context: emotionally exhausted employee)
Svendsen et al. (2016)	Participative supervisory behavior
Wang et al. (2016)	Supervisor-subordinate guanxi
Ward et al. (2016)	Contextual communication orientation
Wei et al. (2015)	Value on power distance & supervisory delegation & value on harmony & group voice climate
Xie et al. (2015)	Colleague support & felt obligation for constructive change
Zhang et al. (2014)	Performance appraisal & job satisfaction
Author	**Other topic**
Chamberlin et al. (2016)	Meta-analysis of promotive and prohibitive voice
Lin and Johnson (2015)	Model of antecedents and consequences
Li et al. (2017)	Effect of message on outcomes for team performance & Boundary conditions for influence of promotive voice on outcomes
Hassan et al. (2016)	Manager response to promotive voice

C

Case description

The case company Van Houtum B.V. was introduced in section 3.1.2. After a short description of their activities, this appendix presents a more extensive description of two aspects of the company: their attitude towards ideas for improvement and their vision and approach regarding sustainability. These aspects are relevant, because I study ideas for improvement in order to enhance sustainable innovation.

C.1. Description of the company

Van Houtum B. V. was founded in 1935 and is located in Swalmen, Limburg. The former family-owned business is run by Bas Gehlen since 2012. This manufacturing company produces hygienic papers, such as toilet paper and paper towels under the brand name *Satino* (figure C.1). These days, they offer complete innovative toilet solutions including soap dispensers and other toilet accessories.

With approximately 200 employees and a production of 42,000 tonnes of paper per year, the annual turnover is around 65 million euros. Van Houtum is only a small player in the Dutch paper industry. In the Dutch *sanitary* paper industry, however, Van Houtum is a large player, producing 37% of all Dutch sanitary paper.

Their ambitious attitude regarding corporate social responsibility and sustainability makes Van Houtum stand out. This chapter shows that this attitude is penetrated into their attitude towards ideas for improvement C.2 and how they implement sustainability C.3.

Figure C.1: The brand Satino

Figure C.2: The sustainable brand Satino Black

C.2. Ideas for improvement

Section 4.1.1 describes how operators of the production facility of Van Houtum take part in this research. The attitude towards ideas for improvement has influence on employee behavior and interaction. This section provides a context description for the production facility of Van Houtum.

C.2.1. Attitude towards ideas for improvement

This section describes the system around promotive voice; where ideas come from, when and through which channels they are shared and what happens with them afterwards; both in an ideal situation and in practice. Such ideas that contribute to sustainable innovation are deeply embedded in the management system and culture of Van Houtum. Whilst executing this research, my understanding of the system has been refined. Hence, this description is based on all collected data; mainly from exploratory interviews, two rounds of qualitative interviews and the intervention.

Idea generation

Idea generation occurs regularly and among many operators. The question is whether they speak up to a colleague, their team leader or someone else with the power to support the idea. Multiple approaches and channels are available for sharing ideas. A distinction is made between ideas that can be executed on a small scale, and ideas that need interference of higher ranked people.

Channels

The main channel for sharing an idea is to discuss it in person. Discussion most often takes place with direct colleagues, with the team leader or with the manager that knows most about

the topic. It depends on the operator whom to speak to. Some operators always tell colleagues and/or their team leader, while other operators directly contact the concerning manager. When operators prefer, or when managers are absent (remember that the factory runs 24/7), they can use a formal voice mechanism; fill out a change form or a safety form. I appears that some ideas are mentioned so informally that they are hardly noticed, while the operator feels that he said it very often *"[operators zeggen:] ik heb het al zo vaak gezegd"* (resp 14, team leader).

Timing

There are various moments in which an operator can share his idea. While working, he can share it with his colleague or immediately find the team leader. During coffee breaks there is time for a chat, and the shift change is suited for ideas as well. When the operators wants to talk to an office employee, he might ask for permission during his shift or visit him/her after his shift finishes.

Procedure after sharing idea

Operators sometimes implement small-scale ideas with or without sharing them, for example changing the settings of a machine. When shared, this information often stays within the team. Another option is to share the idea, discuss it and together improve it. Then, operators decide whether or not they want to implement it. An anonymous option is to fill out a change form, describing the idea. The use of these forms is evaluated differently among operators.

When the sender and the recipient immediately conclude that the idea is infeasible, the process stops here. When, on the other hand, the idea is considered feasible, a next action is taken. It is passed on to the person with more knowledge on the topic, or it is discussed in the monthly team leader meeting. In case of a feasible idea requiring limited financial resources, the production manager can decide that it will be implemented during the next round of maintenance. When it requires financial investment, it is forwarded to the works council. In both cases, three groups of operators can be informed about this decision. Either nobody is informed, or the operator with the idea is informed, or all operators are informed. A lack of information in this phase is reported regularly and by multiple people.

Sometimes a problem is identified, rather than an idea. When this problem is prioritized as important, but is too complex or large to be solved by the manager, technicians or individual operators, a small group activity (abbreviated SGA) is started. This construction was started in 2002 to tackle problems in a small team consisting of different types of experts. For example in 2015, an SGA realized an increase in the digestion of bottle labels from 9,000 to 12,500 tonnes per year.

Procedures in practice

According to respondent 17, the management is more innovation-oriented than a few years ago. He adds that in times of turnover decline, there is even more attention for ideas for improvement. Contrary to former times, managers now have the attitude that employees should be given the space to think along; *"je moet mensen de ruimte geven om mee te denken"* (resp D).

Team leaders are expected to strive for continuous improvement, says the education manager. Indeed, they all have attention for ideas from operators, to varying extent and with varying approaches. The operator perspective on team leader behavior can be divided in three groups. Some think their team leader handles ideas very well. A second group has mixed experiences, resulting in the feeling that action is sometimes taken upon ideas, depending on the situation. The last group feels like they are banging their head against a brick wall; *"ik vind heel vaak dat we gewoon tegen een muur praten"* (resp 24). This is harmful, because it creates a climate of silence *"dan krijg je een beetje zo'n sfeertje van: we zeggen niks meer"* (resp D).

Two remarks should be made from the perspective of the team leaders. First of all, despite the desire to keep operators up to date, team leaders sometimes experience a lack of feedback from colleagues who decide what happens with ideas. Secondly, respondent 14 argues that the behavior of operators plays a part in this as well. He sees that operators often grumble about problems rather than suggesting specific ideas; *"vaker is het niet 1, 2, 3 een idee, maar dan wordt er bijvoorbeeld gemopperd over iets"* (resp 14). The assistant manager has the feeling that operators only hear what they want to hear.

Attitude towards ideas for improvement

At Van Houtum, there are many ideas and many channels to voice an idea for improvement. Also, many people can influence the process of taking action upon the idea. However, since there is no procedure how to go about when you have an idea for improvement, nobody knows where the idea stays on word goes. In other words, ideas are difficult to trace and it is hard to control the process of evaluating the idea.

C.3. Sustainability

As mentioned before, one of the core values of Van Houtum is corporate social responsibility (CSR). This section describes the vision regarding CSR and measures for assessing its progress, based on the CSR reports of 2015 and 2016 (Van Houtum B. V., 2016f,0) and the CSR-page on the website (Van Houtum B. V., 2017c).

C.3.1. Sustainability vision

Van Houtum formulated an explicitly mission regarding CSR. It illustrates the equal focus on People, Planet and Profit that is embedded in the organizational culture through management systems and communication.

Sustainability vision

"Van Houtum B.V.'s mission is to grow continuously by investing in innovative, differentiated products and services in a way that focuses strongly on Corporate Social Responsibility (People - Planet - Profit) and integrates CSR in operational management, supported and assured via management systems including Balanced Score Cards, communication and training" (Van Houtum B. V., 2016a).

Van Houtum is a front runner with regard to CSR by actively investing in sustainable entrepreneurship [1], circular economy [2] and Cradle-to-Cradle production [3]. In the past years, Van Houtum has taken a very progressive position regarding People, Planet and Profit. On the long term, they aim to realize fully Cradle-to-Cradle operations.

Ever since the beginning, Van Houtum has been convinced that disposable products should not be made from new paper. Rather, they use local recycled wastepaper or labels of returnable bottles. While their basic brand Satino is FSC-certified and carries the Eco-label, Van Houtum saw more opportunities. Further innovation in line with the Cradle-to-Cradle philosophy resulted in their brand Satino Black (figure C.2); which they call the most environmentally-friendly toilet paper around the world. It has been certified as Cradle-to-Cradle, FSC certified, CO_2 neutral and carries the European Eco-label (figure C.4). Last year, they further innovated by launching a new production line which processes Used Beverage Cartons as a material (see figure C.3). Used Beverage Cartons are empty drink- or yoghurt packages from households, which are supplied by a waste processing company.

Figure C.3: Used Beverage Cartons, the innovative material for the new production line 'Omnipulper' (De Vries, 2016)

Figure C.4: The brand Satino Black carries four sustainability labels (Van Houtum B. V., 2016b). Van Houtum claims it is the most sustainable toilet paper in the world.

[1] Dean and McMullen (2007) defines *sustainable entrepreneurship* as "the process of discovering, evaluating, and exploiting economic opportunities that are present in market failures which detract from sustainability, including those that are environmentally relevant".

[2] Circular economy looks beyond the traditional 'take, make, waste' model, in which products are discarded at the end of life. "A circular economy is restorative and regenerative by design, and aims to keep products, components, and materials at their highest utility and value at all times." (Circular Economy Overview, nd)

[3] Cradle-to-Cradle is a radically different manufacturing philosophy and practice, as compared to the Cradle-to-Grave model. It promotes the design of products of which the materials can be used after its end-of-life (McDonough and Braungart, 2010). To obtain a Cradle-to-Cradle certificate, five quality categories are assessed; material health, material reutilization, renewable energy and carbon management, water stewardship, and social fairness (Get Cradle to Cradle Certified, nd)

C.3.2. Measuring sustainability

At Van Houtum, sustainable innovation is anchored in the organization by means of ISO norms [4], sustainability certificates and the organizational culture that was shaped through Total Productive Maintenance systems [5] fifteen years ago. These ISO norms for quality, environment, working conditions, corporate social responsibility and energy safeguard that improving these processes is incorporated in daily work.

Key performance indicators

Environmental performance is measured using key performance indicators (KPI's) for environment and energy. These include water intake, pollution of surface water discharge, usage of natural gas and electricity and emissions of CO_2 and NO_x. For example, "[Van Houtum] participate[s] in the energy transition program that has been set up by the Dutch paper industry association, Koninklijke VNP, which sets a goal of a 50% reduction in energy consumption (including actions implemented in the chain) in 2020 relative to 2005" (Van Houtum B. V., 2016c). Additionally, the amount of regular (waste paper) and alternative fibre material (bottle labels and Used Beverage Cartons) is monitored, as well as the amount of paper residue and its sustainable use.

The social aspect of sustainability is monitored using KPI's such as sickness leave, number of accidents, number of medical treatments and the average number of years of service (Van Houtum B. V., 2017a). The average amount of incidents per year is 1,5. Although it is not monitored quantitatively, three people with poor job prospects and several homeless people have been hired.

Thirdly, financial sustainability is realized by recycling paper residue, increasing output and by reducing the use of chemicals, water and energy. Meanwhile, the Satino Black concept benefits profits by satisfying customers and bringing about a higher turnover.

In addition, Van Houtum started an extensive assessment of its suppliers on four aspects, including sustainability, in 2015. They started to with the transporters, but other suppliers will be evaluated in the future, because Van Houtum wants to take its responsibility throughout the chain.

Setting targets

Every year, the management team formulates more ambitious targets than the year before. Standard, they aim for an improvement with reference to the previous year. These targets are further detailed into concrete action plans with a responsible person and team, a budget and a planning, before they are approved of by the management team (Van Houtum B. V., 2016a). The

[4] ISO norms are standards for "requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose". They are managed by the International Organization for Standardization (nd: see ISO).

[5] Total Productive Maintenance (TPM) is an approach to manufacturing aiming to maximize equipment effectiveness throughout its lifespan (Cua et al., 2001).

responsible person is assisted by a 'focus team' and a cross-functional 'implementation team'. Every other month, the progress of the yearly targets is studied by a team, in order to implement change programs.

Realizing targets

To reach environmental targets, multiple approaches are in place for both environmental and social targets. The most relevant instruments are mentioned in the (incomplete) list below.

- First of all, the regularly improved management system stimulates entrepreneurship and is designed such that policy, objectives and company results are communicated to all employees through a cascade communication system. Employees are invited to be directly involved in the design and implementation of the management system (Van Houtum B. V., 2016a).
- Secondly, continuous improvement is embedded in the management systems: "Processes must be improved continuously and those improvements must be assured," reflecting that continuous improvement is considered a culture that requires maintenance and stimulation. This allows for responding to internal and external complaints and problems (Van Houtum B. V., 2016g).
- Regarding energy, Van Houtum uses the Balanced Scorecard technique, monitors energy consumption, considers the energy usage of new products or processes, (re-)uses heat and researches the use of renewable energy sources (Van Houtum B. V., 2016c).
- The works council (in Dutch: ondernemingsraad or OR) provides the opportunity for employees to share their opinion and influence company-broad decisions.
- Lower in the hierarchy, operators in the production factory are expected to contribute to CSR by sharing their ideas for improvement. In the corporate culture of Van Houtum ideas for improvement are stimulated from above, e.g. by having a flat organizational structure, being transparent, and being open for change. Their "proactive, taking initiative, result-oriented attitude" is mentioned in the function description (Van Houts, 2003) and "attention for continuous improvement" is part of their yearly assessment, although in most of these reports, the latter was not evaluated (Van Houts, 2015).
- In the factory canteen, graphs depicting the usage of water, gas and electricity are displayed on the Lean board. They are updated every other day and, when relevant, discussed during team transfer.
- Social targets, such as labor protection and employee working conditions, are safeguarded by means of the Labor Protection Committee. (Near-)accidents are tracked and resolved using forms and progress is discussed by the executive board and works council. All employees participate in safety trainings and safety checks are executed on a regular basis. Sickness absenteeism is analyzed, as well as (near-)accidents to prevent them in the future (Van Houtum B. V., 2016d).

Those of 2015 have been reached (Van Houtum B. V., 2016f). However, the usage of water, natural gas and electricity have increased significantly in 2016, as well as the emission of CO_2 and NO_x. This goes along with a 50% increase of alternative fibers use (including Used Beverage Cartons), but also a reduction in the amount of paper residue and rise towards 94% of its sustainable use. The managing director explains that the use of Used Beverage Cartons is indeed one of the reasons that water and energy usage have risen. By fine-tuning its production process, these KPI's might go down again. However, they will stay above the values, before Used Beverage Cartons were used. This is not necessarily environmentally unfriendly, because in other parts of the production chain water use is reduced.

Sustainability at Van Houtum

Van Houtum has an explicit sustainability vision, which they try to accomplish by measuring multiple KPI's for financial, environmental and social aspects of CSR. Targets for these KPI's are set each year and monitored on a weekly basis.

D

Quantitative questionnaire

The complete quantitative questionnaire that was described in section 3.2.1 is presented here.

D.1. Vragenlijst voor operators van Van Houtum

Voor- en achternaam:

Omcirkel ploeg: A B C D E

De vragenlijst bevindt zich op de volgende pagina

Hoe vaak doe je onderstaande dingen?							
Omcirkel de afvalstromen die je scheidt:	glas	papier	plastic	blik	drankkarton	GFT	
Lampen uitdoen als je de ruimte verlaat	nooit		soms		vaak		altijd
Lopen, fietsen of het openbaar vervoer gebruiken voor korte afstanden	nooit		soms		vaak		altijd
Carpoolen	nooit		soms		vaak		altijd
Vegetarisch eten	nooit		soms		vaak		altijd
Voorwerpen hergebruiken of repareren in plaats van ze weg te gooien	nooit		soms		vaak		altijd
Water besparen door korter te douchen	nooit		soms		vaak		altijd
De kraan uitzetten als je je tanden poetst	nooit		soms		vaak		altijd
Meedoen aan een actie of protest over een milieu-onderwerp	nooit		soms		vaak		altijd
In hoeverre ben je het eens met onderstaande stellingen?	**helemaal oneens**						**helemaal eens**
Als ik iets zie wat mij niet bevalt, probeer ik het te veranderen.	1	2	3	4	5	6	7
Als ik ergens in geloof dan zet ik mij voor 100% in, wat er ook gebeurt.	1	2	3	4	5	6	7
Ik neem verantwoordelijkheid voor mijn ideeën, zelfs als anderen het met mij oneens zijn.	1	2	3	4	5	6	7
Ik ben goed in het vinden van oplossingen voor problemen.	1	2	3	4	5	6	7
Ik zoek altijd naar manieren om dingen beter te doen.	1	2	3	4	5	6	7
Als ik in een idee geloof, zal niets mij tegenhouden om het uit te voeren.	1	2	3	4	5	6	7
Wanneer heb je deze dingen voor het laatst gedaan?							
Een waterbesparingsproduct gekocht (bijv. regenton of waterbesparende douchekop)	nvt	nooit	>5 jaar geleden		1-3 jaar geleden		afgelopen jaar
Overgestapt naar 'groene' stroom	nvt	nooit	>5 jaar geleden		1-3 jaar geleden		afgelopen jaar
Een energiezuinig huishoudelijk apparaat gekocht (bijv. stofzuiger of wasmachine)	nvt	nooit	>5 jaar geleden		1-3 jaar geleden		afgelopen jaar
Een zuinige auto gekocht	nvt	nooit	>5 jaar geleden		1-3 jaar geleden		afgelopen jaar
Een energiezuinig huis gekocht of gebouwd	nvt	nooit	>5 jaar geleden		1-3 jaar geleden		afgelopen jaar
Duurzame energie-opwekker geinstalleerd (bijv. zonnepanelen of windturbine)	nvt	nooit	>5 jaar geleden		1-3 jaar geleden		afgelopen jaar
De isolatie van mijn huis verbeterd	nvt	nooit	>5 jaar geleden		1-3 jaar geleden		afgelopen jaar

E

Literature about motives

Chapter 4 studies the important of sustainability as a motive for an idea, for operators at Van Houtum. The first step is to define what I mean by a *motive for an idea*. This appendix explains this in detail, as a background for the definition on page 17.

> An individual's motivation to perform an activity depends upon the expected benefits from engaging in that activity (e.g., contingent pay) as well as upon the intensity of her preferences for these benefits (e.g., how much does she care about money) (Sauermann and Cohen, 2010).

A motive is one part of a person's motivation to act (Sauermann and Cohen, 2010). They call the expected benefits from the activity *incentives*. By motives, they designate how strong the preference for this benefit is. Put differently, the motive of an idea is how important the individual assesses the envisioned outcome of the idea [1]. Note that the concept motive depends on the activity (in this case: sharing an idea).

Definition of the motive of an idea

The motive of an idea is how important the individual assesses the envisioned outcome of the idea[a].

[a] For example, an operator has the idea to install a dust suction above the paper machine. The *incentive* for this idea is to prevent dust from entering the factory, keeping it more healthy for the operators. When he finds health very important, his *motive* is strong.

[1] Remark that this study sees motives as personal preferences, as opposed to organizationally-provided incentives. In my interpretation, the motives of employees at work is a mix of personal preferences and organizational incentives. Employee personal motives can be reflected within their motives at work, which are partly inspired by organizationally-provided incentives.

In this research I identify eight different incentives[2] for which I assess how strongly they serve as a motive. A strong motive of an employee makes him put more effort into realizing the possible outcome, thus significantly impacting their innovative performance, Sauermann and Cohen (2010) concluded in a study of R&D scientists and engineers. Specifically for CSR, Ilkhanizadeh and Karatepe (2017) showed that environments that boost CSR goodwill and morale motivate employees to use voice behavior to make a contribution to the organization.

The motive of an employee results in better performance through two channels: *quantity of effort* and the *character of the effort.* The quantity of effort (i.e. the number of hours worked) depends on the size of the reward (e.g. amount of money to be earned) and on the strength of the motive (e.g. how important money is for the employee) (Sauermann and Cohen, 2010). Bigger size of rewards and stronger motives will increase the quantity of effort, but higher quantity of effort does not necessarily enhance innovative performance.

The second channel has even more impact; the *character of the effort.* It depends both on the incentive and the motive for the behavior and has two aspects. The *allocation of effort*; the type of activities undertaken, depends on the individuals' motives. The *quality of the effort* (the intensity of cognitive processes) rises when the intrinsic motive is stronger (Camerer et al., 1999). Yet, motives such as risk avoidance might inhibit the quality of the effort (Amabile and Conti, 1999). Researchers disagree whether extrinsic rewards (e.g. monetary) have positive or negative impact on the quality of the effort (Ariely et al., 2009; Eisenberger and Shanock, 2003).

People with stronger motives will put more effort into displaying the considered behavior (Sauermann and Cohen, 2010). For this research, that means an employee would try harder to share their idea and make sure it is implemented. They can do this by increasing the quantity of effort (e.g. sharing the idea with different people or more often), by undertaking different types of activities (e.g. discussing the idea with colleagues) and by increasing the quality of the effort (e.g. try harder to envision how the idea could be implemented). This implies that employees will share relatively more ideas about the incentives they judge as important, than about topics they consider irrelevant. Hence, it is interesting to know what the 'distribution of motives is'; how important employees think motives are, compared to each other.

Although little research is performed about deliberately changing an individual's motives, it has been studied in the context of treating addicted people. There, it appeared possible to change an individual's motives, but in general it is assumed that motives for (e.g. cannabis) use remain stable during adulthood (Banes et al., 2014).

The motive for an idea is part of the theoretical framework on page 23. It is one of the three mechanisms that together impact the decision of an individual to engage in promotive voice or stay silent. Through so-called 'utility calculus'; adding the positive and negative weights of *perceived efficacy, perceived safety* and *motive for the idea*, this choice is made. Any idea is related to an incentive, but the question is how important the individual values this incentive.

[2] In the report I call these incentive *motives*, because introducing the word *incentive* would make the story unnecessarily complex.

F

Interview protocol - first round

Section 5.1 sketches the interview protocol for the first round of qualitative interviews. This appendix presents its full version in Dutch.

F.1. Interview protocol Van Houtum

F.1.1. Introductie

Ik ben Marlien, en ik doe een studie over innovatie. Ik vind het leuk om dingen efficiënt te maken en zeker als we daarmee het milieu minder kunnen belasten.

Ik doe een onderzoek over **ideeën om dingen te verbeteren op je werk**. Het doel is dat jullie op een fijne manier omgaan met zulke ideeën. Bijvoorbeeld dat je je veilig voelt om ideeën te vertellen, of dat je weet wat er met je idee gaat gebeuren. Voor mijn onderzoek ben ik helemaal afhankelijk van jullie ervaringen, daarom doe ik deze interviews.

Van alle operators heb ik willekeurig 15 mensen gekozen. Van jou wil ik graag weten hoe het nu gaat als jij of iemand anders een idee heeft. Het kunnen hele **kleine ideeën** zijn.

Je antwoorden verwerk ik op een **anonieme** manier in mijn onderzoek, dus je kan helemaal eerlijk zijn. De informatie die ik verzamel komt in mijn rapport, maar nooit met je naam erbij. Vind je het goed als ik dit gesprek **opneem**?

F.1.2. Vragen

- Heb je wel eens ideeën hoe jullie je werk beter kunnen doen?
- Kan je een voorbeeld noemen waarbij je wel een idee had, maar het niet verteld hebt?
  - Waarom heb je het niet verteld?
  - Zijn er meer redenen waarom je het niet zou vertellen?
- Kan je een voorbeeld noemen, waarbij je het idee verteld hebt?
  - Waarom heb je het verteld?
  - Zijn er meer redenen waarom je het zou vertellen?
- Andere mensen hebben hier ook over nagedacht. Zij hebben nog een paar redenen verzameld waarom je je idee wel of niet vertelt. [Interviewkaartjes op tafel leggen en benoemen]
  - Welke herken je om niet je idee te delen?
  - Welke herken je om wel je idee te delen?

G

Interview transcript - first round

As mentioned on page 55, all interviews were transcribed. An example of these transcripts is included in this appendix. The interviewer is denoted by 'I', the respondent by 'R'. When the words were not understood, the time of the record was mentioned; e.g. (?1:00).

G.1. Example transcript: Respondent 27

I: Of je zelf wel eens een idee bedenkt hoe dingen handiger kunnen op je werk. Komt dat wel eens voor?
R: Ja, dat komt wel eens voor, ja
I: Kun je een voorbeeld herinneren dat je een idee hebt bedacht dat je ook hebt verteld aan collega's?
R: Die komen wel voor, ja, die zijn in het verleden ook wel eens voorgekomen ja.
I: Kun je een voorbeeld noemen, waar dat over ging?
R: Nou, god, dat is een poos terug. Zo ver is mijn geheugen ook niet, maar ik heb wel eens een keer voorgelegd. En, we hebben een keer 1 antwoord ervan gekregen: jullie zijn hier om te werken, en niet om je ideeen aan te.. ja.
I: En hoe lang was dat ongeveer geleden?
R: Dat is ..(?1:00) terug. De persoon die dat zei, die was wel een half jaar later met het idee ervandoor gegaan. Ja, ja. Maar die werkt hier niet meer. Nee, maar wij hebben in het verleden wel in het woonhuis (?1:20) met ideeen, vaak dan over het algemeen met ideeen ook wel eens gekomen enzo.
I: Waarom had je besloten om het idee te vertellen?
R: Je moet een idee vertellen als je er beter van wordt.
I: Als je er zelf beter van wordt?
R: Juist, ja. En er zijn ook ideeen waar het bedrijf ook beter van wordt.
I: Maar je moet er dus zelf ook beter van worden
R: Ja, en gemakkelijker.
I: Kun je ook wel eens herinneren dat je een idee had bedacht, maar het niet had verteld?

R: Ja, ook.
I: Waarom vertel je het dan niet?
R: Waarom vertel je het dan niet? Dan ga ik over de geschiedenis van het bedrijf praten. Het is in feite, waarom vertel je het niet. Als je erbij betrokken wordt, bij projecten, ga je iets vertellen, ja.
I: En als je niet betrokken wordt bij projecten?
R: Dan ben je te laat. Kijk, als er mensen zijn die, je krijgt tekeningen te zien en zo voorts, dan bij bepaalde dingen is het besluit al genomen, dan hebben we geen inspraak meer. En dan houdt het op, he.
I: Er zijn verschillende soorten ideeen
R: Ja, van klein tot gigantisch, he.
I: Het kan ook gebeuren dat iets al besloten is, bijvoorbeeld met [Omnipulper] is allemaal nieuw gebouwd, maar toch kan het zijn dat je daar nu nog ideeen, bijvoorbeeld dat een knop ergens anders moet staan of dat de instellingen iets anders moeten, of dat je misschien dingen in een andere volgorde kan doen.
I: Zijn er wel eens dat soort ideeen die je niet vertelt?
R: Nee, dat niet. Wij werken dan met drie man, en daar komt dan een gemiddelde van uit, en dat is gewoon de eerste de beste die we tegenkomen, meestal is van [process technologist], daar wordt het tegen verteld of wat dan ook.
I: En waarom vertel je dan dat soort dingen wel?
R: Kijk eens, het is net wat ik zeg. Als een machine daar beter door gaat lopen, he, neem bijvoorbeeld de pulper. Wat heeft het voor een zin als je een pulpertijd 20 minuten laat lopen, terwijl het met 10 minuten ook klaar is? Dus die dingen allemaal, dat zijn instellingen wat je dan probeert te verbeteren.
I: (kaartjes uitgelegd) waarom niet? Welke dingen spelen soms mee? Wat kan je tegenhouden?
R: Wat zou me tegen kunnen houden..? wat mij tegen zou kunnen houden is niet boosheid en angst, maar , waar valt het onder..
I: Hoeft niet per se bij een kaartje te horen. Wat wilde je zeggen?
R: Ja, waar valt het onder?
I: Het hoeft niet ergens onder te vallen. Het is bedoeld om makkelijker te maken om dingen te bedenken.
R: Ja, eigenlijk is het wat ik net ook al vertelde. Waarom vertel je een idee niet? Dat is gewoon per dag is dat anders. We vertellen wel ideeen, maar wordt het opgepakt of wordt het niet opgepakt. En als het niet opgepakt wordt, en je hebt weer een idee, dan vertel je het niet. Dus, en daar zitten heel veel mensen mee te worstelen, dus.
I: En waarom wordt er dan niks met dat idee gedaan? Heb je daar een beeld van?
R: Ik denk dat dat in de bedrijfscultuur zit
I: Hoe bedoel je?
R: je zit al lang in een bedrijf en je hebt al veel meegemaakt in het bedrijf. Dus soms weet je wel dat je met het idee mee naar voren kan komen, en soms weet je dat je het idee geen kans van slagen heeft. Af en toe is dat, sommige mensen hebben echt heel goeie ideeen, en soms is het echt triest voor woorden dat het er niet uit komt.
I: Dus soms heeft een idee gewoon, dan weet je van tevoren dat het niks wordt?
R: Ja
I: Omdat het geen goed idee is, of omdat je weet dat andere mensen er niks mee gaan doen?
R: Dat andere mensen er niks mee gaan doen.
I: En waar hangt dat dan vanaf? Met welke ideeen gaan ze wel aan de slag en met welke niet?
R: Nou ja, ja, welke wel en welke niet? Dat is lastig te omschrijven, want je hebt soms ideeen en dat vertel je dan, en op een gegeven moment zie je dat ze er niks mee doen, of te weinig draagkracht ervoor is, en dan word je eigenlijk ook weer geremd.
I: Zijn er nog andere redenen waarom je niet een idee zou vertellen?
R: Nee

I: Okee, dan draaien we de vraag om. Welke van deze dingen maken dat je soms wel een idee vertelt?
R: Ja, dan kom je het gevoel dat je iets kan bijdragen, ja. De uitvoering van je werk
I: Waarom?
R: Als je een idee hebt, net als ik daarstraks ook zij, als je een idee hebt waar je beter van wordt, of waar we allemaal beter van worden, dan kan je dat beter voorleggen. En toch is het algemeen, ik wil niet heel negatief praten, maar betrokkenheid bij het werk. En je hebt toch een stukje werkervaring door de jaren heen gelopen, je ziet toch met bepaalde dingen dat je dingen ziet dat het toch wel beter kan, he.
I: En waarom maakt betrokkenheid dat je je idee gaat vertellen?
R: Voor het bedrijf. Dus het is toch je werkgever, en als je
werkgever, als jij er goed van wordt en je werkgever wordt er goed van, krijg je op de werkvloer een betere verstandhouding.
I: Wil je nog iets toevoegen?
R: Nee, dat zijn ze
I: Hoe vaak gebeurt het ongeveer dat je ideeen bedenkt?
R: Dat is verschillend. Ja, dat is verschillend ja, daar kan ik niet, daar overval je me eigenlijk mee. Haha.
I: Stel dat je tien ideeen hebt bedacht over een bepaalde periode, hoeveel vertel je er wel en hoeveel vertel je er niet? Ongeveer de helft, of meer dan de helft?
R: Als je een idee zou hebben, dan zou je toch zeggen van, ja, laat ik zeggen dat je er drie vertelt. Want je hebt wel ideeen, maar dan moet je er ook over nadenken of het wel kans van slagen heeft.
I: Denk je altij eerst over na of het kans van slagen heeft, voordat je het vertelt?
R: Ja, kijk het kan zijn dat je een idee hebt, en dat je bij wijze van spreken er over na gaat denken en dat het toch niet zo denderend is. Dan heeft het geen zin om het te vertellen.

H

Analysis of interview transcripts - first round

This appendix presents the outcome of the data analysis of the first round of interviews as described on page 55. 17 categories were created, each containing multiple codes. Table H.1 presents all codes that were generated, the number of quotes each code includes, and a brief description of the code. This description is my interpretation of the code.

H.1. Codes per category

Table H.1 presents the codes that were developed while coding the first round of interviews. They are subdivided into 18 categories; 14 interview cards (13 construct and 'motive for an idea'), Being heard, Ideas, Protocol and Knowledge sharing. 'Being heard' was added, because many respondents talked about it in the context of multiple categories. The category 'Ideas' contains information about what happens with ideas. The category 'Protocol' contains remarks about the interview protocol. The category 'Knowledge sharing' was added, because it was mentioned several times. However, it was not taken into account in the report, because it probably emerged due to another element of the interview in which knowledge sharing played a role.

The left column lists the Dutch code name, which is translated in the middle column; my explanation of the meaning of the code. The right column divides the codes into multiple types. Some codes represent a barrier or a stimulant. Indirect barriers or stimulants mean that respondents mentioned a *hypothetical* situation in which they would experience this barrier or stimulant. Two types of motives were found; motives that limit or stimulate promotive voice.

'Descriptive' codes are about the respondents' interpretation of the interview cards, whereas 'Relevance' codes have to do with the importance of the cards. 'Other' codes are no antecedents for promotive voice.

Table H.1: Codes that resulted from the coding process of the first interviews

CODE	MEANING	TYPE OF CODE
Personality		
Communicatie skills	Communication skills	Barrier
Rekening houden met kaartjes	Not taking interview cards into account	Indirect barrier
Altijd vertellen	Always tell idea	Stimulant
Doener	Do-er	Stimulant
Niks van kaartjes aantrekken	Cards do not play a role	Stimulant
Unwritten rules		
Idee jatten	Idea stolen by somebody else	Barrier
Geen familiebedrijf	No family-owned company	Indirect barrier
Meedenken	Thinking along with each other	Stimulant
Reactie op verandering	Reaction to change	Stimulant
Sfeer	Atmosphere	Stimulant
Emotions (anger, fear, etc)		
Angst	Fear	Barrier
Frustratie	Frustration	Barrier
Geen begrip	No understanding	Barrier
Niet blij - idee jatten	Not happy - idea stolen	Barrier
Geen barriere	No barrier	Relevance
Kan barriere zijn	Can be barrier	Relevance
Anderen jaloers	Others are jealous	Stimulant
Bedankt	Thanks	Stimulant
Frustratie	Frustration	Stimulant
Geen angst	No fear	Stimulant
Kick	Kick	Stimulant
Leuk	Nice	Stimulant
Feeling comfortable		
Afgekraakt	Idea is called down by others	Barrier
Afstand houden	Keep distance	Indirect barrier
Geen aandacht trekken	Not attracting attention	Indirect barrier
Niet willen opvallen	Staying under the radar	Indirect barrier
In orde	Is all right	Relevance
Zonde	Is a pity	Relevance
Work experience		
Veel - slechte ervaringen	Lot - bad experiences	Barrier
Weinig - geen idee over uitwerking	Little - no insight in implementation	Barrier
Weinig - kat uit de boom kijken	Little - wait-and-see attitude	Barrier
In orde	Is all right	Relevance
Veel - andere kijk	Lot - different perspective	Relevance
Veel	Lot	Indirect stimulant
Maakt niet uit hoeveel	Amount does not matter	Stimulant
Veel	Lot	Stimulant
Weinig - open blik	Little - fresh view	Stimulant
Engagement		
Geen draagkracht	No support for idea	Barrier
Geen inspraak	No voice	Barrier
Geen kennis van andermans werk	No knowledge in work of colleagues	Barrier
Werken voor geld	Work for the money	Barrier
Continu verbeteren	Continuous improvement	Description
Interesse	Interested	Description
Meedenken	Thinking along with each other	Description
Belangrijk	Engagement is important	Relevance
Betrokken	Engaged	Relevance
Lage betrokkenheid	Low engagement	Relevance
Draagkracht	Support for idea	Stimulant
Eigen functie	About own function	Stimulant
Erkenning	Recognition	Stimulant
Inspraak	Voice	Stimulant
Niet alleen voor geld	Not only for the money	Stimulant
Voldoening	Satisfcation	Stimulant
The feeling that you can contribute		
Aan bedrijf	Contribution to company	Description
Aan ploeg	Contribution to team	Description
Ermee bezig zijn	Pre-occupied with improvement	Description
Goed idee	Good idea	Description
Via SGA	By taking part in SGA	Description
Vooruitgang	Progress	Description
Belangrijk	Contribution is important	Relevance
Execution of your work		

In orde	Is all right	Relevance
Werk goed doen	Good performance	Stimulant
How the team handles sharing ideas		
Idee jatten	Idea stolen by somebody else	Barrier
Nare reactie	Negative reaction on idea	Barrier
Weerstand tegen verandering	Resistance against change	Barrier
Geen familiebedrijf	No family-owned company	Indirect barrier
Geen overleg	No consultation	Relevance
Meedenken	Thinking along with each other	Stimulant
Reactie op verandering	Reaction to change	Stimulant
Draagkracht	Support for idea	Stimulant
Reactie op goed idee	Reaction on good idea	Stimulant
Task distribution		
Chaos	Chaotic task distribution	Barrier
Bespreken	Discuss task distribution	Description
Helder	Clear task distribution	Description
Belangrijk	Task distribution is important	Relevance
Goed geregeld	Is all right	Relevance
Role distribution		
Input niet gewaardeerd	Input is not appreciated	Barrier
Te duur	Too expensive	Barrier
Procestechnoloog	Process technologist	Description
Productiemanager	Production manager	Description
Wie	Other colleague	Description
Bevoegdheden	Authorization	Description
Niet verteld	Role is not discussed	Relevance
Korte communicatie	Direct communication	Stimulant
Voorbeeldfunctie	Examplary function	Stimulant
Behavior of team leader		
Relationship with team leader		
Slechte band	Bad relationship	Indirect barrier
In orde	Is all right	Relevance
Motive for an idea		
Geen belang bedrijf	No interest for company	Limiting motive
Geen eigenbelang	No interest for me	Limiting motive
Slecht idee	Bad idea	Limiting motive
Belang bedrijf	Interest of company	Stimulant
Belang bedrijf financieel	Interest of company - financial	Stimulant
Belang bedrijf regels	Interest of company - rules	Stimulant
Belang eigen	Personal interest	Stimulant
Belang iedereen	Interest of everybody	Stimulant
Belang ploeg	Interest of team	Stimulant
Duurzaam	Sustainable	Stimulanting motive
Goed idee	Good idea	Stimulanting motive
Verantwoordelijkheid	Responsibility	Stimulanting motive
Verbeteren algemeen	Improve general	Stimulanting motive
Verbeteren makkelijker	Improve easier	Stimulanting motive
Verbeteren technisch proces	Improve technical process	Stimulanting motive
Verbeteren veiligheid	Improve safety	Stimulanting motive
Being heard		
Actie niet	No action taken upon idea	Barrier
Actie niet reden	No action taken upon idea with a reason	Barrier
Luistert niet	They don't listen to idea	Barrier
Terugkoppeling niet	No feedback upon idea	Indirect barrier
Actie wel	Action is taken	Stimulant
Bedanken	Thanks	Stimulant
Luistert wel	Ideas is listened to	Stimulant
Terugkoppeling	Feedback	Stimulant
Knowledge sharing		
Kennis is macht	Knowledge is power	Barrier
Snel naar huis	Go home quickly after work	Barrier
Kanaal	Channel	Description
Leren	Learning	Description
Belangrijk	Knowledge is important	Relevance
Binnen ploeg	Knowledge sharing within team	Relevance
Tussen ploegen	Knowledge sharing between teams	Relevance
Kennis mist	Knowledge is lacking	Stimulant
Ideas		
Idee uitwerken	Work out the idea	Description
Kanaal binnen ploeg delen	Channel share within team	Description
Kanaal binnen ploeg niet delen	Channel not share within team	Description
Kanaal formulier	Channel form	Description
Kanaal naar baas	Channel to boss	Description
Kanaal niks	Channel nothing	Description
Kanaal SGA	Channel SGA	Description
Kanaal vertellen algemeen	Channel tell idea (general)	Description
Kanaal zelf nadenken	Channel think myself	Description

Kanaal zelf proberen	Channel try myself	Description
Procestechnoloog	Process technologist	Description
Productiemanager	Production manager	Description
Wie	Other colleague	Description
Voorbeeld	Example of idea	Other
Aanleiding	Trigger	Relevance
Aanleiding nieuw	Trigger: new situation	Relevance
Hoe vaak	How often have an idea	Relevance
Hoe vaak verteld	How often tell an idea	Relevance
Potentie	Potential of ideas	Relevance
Protocol		
Antwoord hoeft niet bij 1 kaartje te horen	Answer can belong to multiple cards	Other
Betekenis kaartje	Meaning of card	Other
Houdt zich in	Respondent restrains himself	Other
Kaartjes beinvloedt overweging niet	Cards do not play a role	Other
Moeilijk	Difficult questions	Other
Wat doen met kaartjes	What to do with cards	Other
Not in a category		
Geen	No barriers	Other
Teamleider	Team leader	Other

Interview results - first round

The interviews described in chapter 4 and chapter 5 were the same interviews. This appendix presents more detailed results than section 4.1.2 and section 5.2.

The interviews generated data about motives that operators have for their ideas for improvement (section I.1) and about the meaning of sustainability (section I.2). Barriers and stimulants were also identified for many individual and contextual constructs (section I.3).

I.1. Limiting and stimulating motives

Section 4.1.2 presents which motives for an idea were identified from the qualitative interviews with operators. Many stimulating motives were mentioned, but also a few limiting motives. Both types of motives are presented, while section 4.1.2 only discusses the stimulating motive *improvement* (see table I.2).

I.1.1. Limiting motives

Only three limiting motives were mentioned; bad idea, no self-interest and no company-interest. Limiting motives (see table I.1) were only mentioned 8 times and the main reason to wanting to share an idea is evaluating the idea as bad.

Data showed that an idea with a limiting motive is never told. For example, when implementing the idea would make your own work harder (undesirable effect), the limiting motive is 'no self-interest'.

Table I.1: Number of quotes and respondents mentioning three limiting motives

Limiting motive	#Quotes	#Resp.
Bad idea	5	4
No personal interest	2	1
No interest for the company	1	1

I.1.2. Stimulating motives

As many as 93 quotes were recorded about 6 general types of stimulating motives. Table I.2 presents the statistics. 44 of these quotes were about improving something at work, mentioned by 11 different respondents. Second, self-interest is mentioned 19 times by 9 respondents, followed by the company-interest which is mentioned 15 times by 7 respondents.

Table I.2: Number of quotes and respondents mentioning six general types of stimulating motives

Stimulating motive	#Quotes	#Resp.
Improvement	44	11
Personal interest	19	9
Interest of the company	15	7
Everyone's interest	8	5
Interest of the team	4	3
Responsibility	3	2

The motive 'improvement' is most interesting, because it includes the specific motives; explicit ways in which the technical process in the factory can be improved. This motive is split up into motives in section 4.1.2.

I.2. Meaning of *sustainability*

The qualitative data provides answers to three questions about the motive *sustainability*; What does sustainability mean?, Why is it not ranked lower? and Why is it not ranked higher?. General results were omitted in the report, but are included here. Moreover, a summarized version of the data is presented on page 49, but more details are provided here.

I.2.1. General results

180 quotes by 22 respondents have been coded under 52 codes, which are subdivided into five categories. Table I.3 indicates the number of quotes and respondents mentioning each category.

Table I.3: Categories under which the 52 codes are subdivided, and the amount of quotes and respondents mentioning the category. Note that the total is not the sum of the five values, because some codes belong to two categories.

Category	#Quotes	#Resp.
Meaning	90	21
Not lower	47	19
Not higher	31	20
Connection	21	10
System	26	9
TOTAL	180	22

I.2.2. What does sustainability mean?

The category 'Meaning' includes 19 codes, together representing 90 quotes. Table I.4 presents the eight descriptions that were mentioned by at least four respondents. Appendix I.2 comments on each of these descriptions.

Table I.4: The codes in the category 'Meaning' that were mentioned by four or more respondents

Meaning	#Quotes	#Resp.
Better for the environment	16	10
Vision of company	13	9
Reduce costs	8	7
Cradle-2-Cradle	6	5
Energy	5	5
Less materials	5	5
For customer	4	4
More expensive	6	4
TOTAL	90	

The most popular description is that sustainability is better for the environment; *"het is beter voor het milieu"* (a.o. resp 9), mentioned 16 times by 10 respondents. Second, 9 respondents relate sustainability to the vision of the company; *"Ik denk dat wij als Van Houtum heel erg in hebben gezet op duurzaamheid de laatste jaren, het Cradle-2-Cradle stuk"* (resp E). The Cradle-2-Cradle strategy itself is mentioned explicitly by 5 respondents. On the third place, 7 respondents perceive sustainability as a way to reduce costs; either by using less resources *"Goedkoper verbind ik toch altijd met duurzaam. Het goedkoper maken, minder kosten maken, is minder energie of grondstoffen"* (resp 24). Specific examples of resource reduction are listed 6th and 7th; reducing energy usage; *"Ik probeer vaak weer productie te draaien met minder energie, want het is goed voor het kostenplaatje"* (resp 28) and reducing material usage or replacing it by alternatives; *"Etiketten zijn goed, tetra is super, omdat het zo goedkoop is en we toch een goed product kunnen maken. "* (resp 15). Finally, four respondents think that becoming more sustainable

should be balanced with keeping costs low; *"Ik denk dat we dan (als we duurzamer willen) [met goedkoper] in de clinch komen"* (resp 15). In this line of thinking, some assume that sustainable products are inextricably more expensive; *"Wat ik daarmee bedoel: vaak is het zo dat alternatieve werkwijzen of alternatieve producten een stuk duurder zijn, omdat ze minder schadelijk voor het milieu zijn. "* (resp 30). It is worth noticing that (only) one respondent interpreted sustainability as sustainable employability.

I.2.3. Why is it not ranked lower?

The second and third question regard the amount of points that the card *more sustainable* received. Here, reasons are presented by sustainability is not ranked lower. Ten different reasons were mentioned, with a total of 47 quotes. Table I.5 presents the reasons mentioned by three respondents or more.

Table I.5: The codes in the category 'Not lower' that were mentioned by three or more respondents

Why not lower?	**#Quotes**	**#Resp.**
Better for the environment	16	10
Vision of company	13	9
Important	6	4
Future	3	3
Total number of quotes	47	

Three reasons occurred regularly, explaining why *more sustainable* did not receive more points. First of all, sustainability is considered important in general (by 10 respondents), for everyone (4 resp) or specifically for the future of their children (3 resp); *"ook voor het milieu en anders. Ook voor onszelf en onze kinderen en de hele aardbol."* (resp 14). Second, for 9 respondents the sustainable vision of the company is a reason to pay attention to sustainability of the work process; *"Wij zijn een milieubewust bedrijf, dus dat vind ik ook heel belangrijk."* (resp 6). Finally, since the exercise is a rating, some respondents just found other motives less important (one respondent mentioned this, but the behavior of others can be interpreted alike).

I.2.4. Why is it not ranked higher?

Respondents also named arguments for not rating sustainability higher; eleven different reasons, mentioned in 31 quotes. Table I.6 presents the reasons mentioned by four respondents or more, all of which boil down to the opinion that another motive is more important than *sustainability*.

In alignment with the ordinal rank, *safety* is perceived as more important by 6 respondents; *"Het allerbelangrijkste is veiligheid"* (resp 1). As mentioned before, four respondents argue that *more sustainable* and *cheaper* do not go along, evaluating the latter as more important; *"Dit is de boterham waar we hiervoor zijn"* (resp 9). On a third place, four respondents argue that *better quality* benefits the customer; *"Betere kwaliteit, omdat dat is wat je verkoopt aan de klant"* (resp

Table I.6: The codes in the category 'Not higher' that were mentioned by four or more respondents

Why not higher?	#Quotes	#Resp.
Safety	7	6
More expensive	6	4
Quality	4	4
More production	5	4
Total number of quotes	31	

1). In other words, quality is the right to exist; *"Maar alles begint bij de kwaliteit, dat is het recht om te bestaan. Je kunt een super duurzaam product maken, maar als niemand het wil hebben, dan heb je er niks aan"* (resp E). Lastly, three respondents value *more production* over *more sustainable*, because money is earned through quantity *"Dit is mijn werk (meer productie), en dit is waar ik aan moet denken tijdens mijn werk (duurzaam en goedkoper)"* (resp 17).

I.3. Barriers and stimulants

Respondents also reflected on the barriers and stimulants that they experience for displaying promotive voice.

I.3.1. Per construct: Counting barriers and stimulants

Barriers and stimulants were mentioned in the context of multiple constructs. Table I.7 provides a list of the constructs that were most often mentioned when respondents talked about a barrier or a stimulant to voice, including a description of the construct, according to my interpretation.

The same constructs are found in the top three for both barriers and stimulants, as indicated below. To find out why the same constructs score high for both barriers and stimulants, jump to section J.1.1.

I.3.2. Summaries of two constructs

Work experience and engagement are two constructs from the theoretical framework. For these, I composed a summary of how operators experience these constructs from the theoretical framework in their daily work, based on quotes from the interviews. This constructs are summarized, because in chapter 6 changes take place for these constructs. A brief version is included in section 5.2.1 and 5.2.1, but the complete summary can be found here.

Table I.7: Number of quotes mentioning barriers and stimulants, per construct

	Barriers		Stimulants		
Construct	**Quotes**	**Respon-dents**	**Quotes**	**Respon-dents**	**Description**
How the team handles sharing ideas	55	8	52	13	Group voice climate; the way colleagues act upon their own ideas and react on others' ideas
Role distribution	40	9	40	10	The role within the team and organization, power distribution and status
Behavior of team leader	38	7	36	10	Conscious and unconscious behavior of team leader and other employees higher up in the hierarchy
Feeling you can contribute	38	7	0	0	Perceived efficacy; the feeling that your input can be implemented to improve the work
Work experience	9	4	12	7	Amount and type of work experience
Unwritten rules	8	4	12	5	Conscious and unconscious beliefs, norms and habits in work environment
Emotions (anger, fear, etc)	7	4	13	5	Emotions that can influence behavior at work
Engagement	5	3	6	5	The extent of feeling involvement with the job, colleagues and company
Personality	2	1	11	7	Personal traits and characteristics
Feeling comfortable	1	1	0	0	Psychological safety; the social aspect of feeling at ease in the work environment
Task distribution	1	1	0	0	Hierarchy of the organization and the team and division of the work tasks
Relationship with team leader	0	0	0	0	Formal and informal aspect of the relationship between the operator and the team leader
Execution of your work	0	0	1	1	Performance; the quality of delivered work and level of skills

Individual construct: Work experience

Roughly, respondents distinguish between having (very) little work experience and having a lot of work experience.

Work experience can be irrelevant. Two operators agree that the amount of work experience does not matter for coming up with ideas for improvement; *"Werkervaring, dat vind ik eigenlijk helemaal geen reden. Ik bedoel, het maakt niet uit hoeveel werkervaring je hebt, al werk je net 1 dag hier"* (resp 17). Seeing ideas for improvement as an opportunity for learning, experienced employees can still learn, respondent 17 says: *"zelfs de meest ervaren mensen die leren van anderen"*.

More reasons are mentioned why work experience is beneficial. Work experience is seen as helpful because you can foresee what does not work: *"omdat je dan veel makkelijker dingen uit kan sluiten, hoe het niet moet"* (resp 13) or because you see room for improvement: *"dat je dingen ziet dat het toch wel beter kan"* (resp 27). Another reason is that you understand the process very well: *"als je (..) ergens iets verandert en je kan dat gedeelte heel goed, ja dan zeg je misschien eerder: zullen we het zo en zo doen? Omdat je dat gedeelte misschien beter snapt"* (resp 6) and that you come up with more ideas: *"het is meer de reden dat je op ideeën komt omdat je meer ervaring hebt"* (resp 7). Work experience can be limiting as well, for example by having negative experiences from the past: *"Ik werk natuurlijk al heel wat jaren hier, dus ik heb al het een en ander meegemaakt. Haha. Zowel positief als negatief"* (resp 18).

On the other hand, without work experience you can also come up with ideas, according to respondents 13, 17 and 22; *"[operators] die geen ervaring hebben die kunnen ook goede ideeën hebben"* (resp 13). Respondent 22 has less than one year of work experience and says *"dan zie je iets en dan denk je dat kan ook zo en zo"*, illustrating that little work experience does not mean you have no ideas for improvement.

Nevertheless, two disadvantage of little work experience are mentioned. Without work experience it is tempting to choose a wait-and-see attitude; focusing on acquiring knowledge and skills before contributing ideas; *"omdat ik nog niet zo lang hier werk, dat je eerst toch een beetje wil zien hoe alles werkt voordat je met ideeen komt"* (resp 22). Doubt about the quality of the idea can cause operators to stay silent; *"En je weet nog niet alles, dus ik denk dat dat, dat ik daar een beetje huiverig in ben. Ik durf het wel te zeggen, maar dan heb je wel eens vaker: ik zeg het maar niet. Want dan is het misschien fout, maar dan kan ik het wel zeggen, maar dan doe ik dat later maar. Op dat moment zou ik er eerder nog eens over nadenken"* (resp 6). It also has to do with the second disadvantage; having little insight in further elaboration of the idea. *"[Operators] die geen ervaring hebben die kunnen ook goede ideeen hebben, maar de uitwerking en wat er achteraan komt, dat is natuurlijk ook nog iets"* (resp 13). By this, they mean that the idea might be nice, but unexperienced operators do not know what they have to take into account for detailing the idea such that it can be implemented: *"Maar als je hier net begint dan is het vrij lastig, dan zie je iets en dan denk je dat kan ook zo en zo, maar je weet niet waar je rekening mee moet houden"* (resp 22). Many things can make an idea infeasible or unrealistic. As an unexpe-

rienced employee, you are not fully aware what you have to take into account before an idea is ready for implementation.

Individual construct: Engagement

Regarding engagement with their work, respondents describe what it means for them, how they estimate engagement of themselves and others and explain the impact of feeling engaged.

What operators mean by engagement is showing interest in their work; *"dan zien ze ook dat je interesse toont"* (resp 1), thinking along; *"je wilt toch meedenken met iedereen"* (resp 18), and contributing to continuous improvement; *"ik ben betrokken bij alles. Interviewer: bij je werk, in het team, en de mensen? Ja, en continu verbeteren"* (resp 7). It is the opposite of only coming to work for the money; *"dat je niet alleen komt om te werken en dat was het dan"* (resp 1).

Even though 7 respondents consider themselves engaged; *"ik voel me betrokken"* (resp 8), one operator ascertains that the degree of engagement differs amongst operators; *"Interviewer: Welke van deze dingen maken dat je soms wel een idee vertelt? Respondent: (...) en toch is het algemeen, ik wil niet heel negatief praten, maar betrokkenheid bij het werk."* (resp 27).

Multiple aspects of feeling engaged stimulate operators to share ideas for improvement. When ideas are implemented, they feel engaged, recognized and feel satisfaction; *"als het wel uitgevoerd wordt, dan voel je je wel betrokken"* (resp 24). As a result, feeling engaged increases the likelihood of speaking up; *"Interviewer: dus als jij je betrokken voelt, dan ga je sneller een idee vertellen? Interviewee: Ja"* (resp 22).

Operators feel restricted to share their ideas when engagement is low; *"als het je niks interesseert, dan ga je ook niet met ideeen komen"* (resp 17). More specifically, they are more likely to stay silent when they are not involved in projects; *"bij bepaalde dingen is het besluit al genomen, dan hebben we geen inspraak meer. En dan houdt het op "* (resp 27), or when there is little support for their idea; *"als er te weinig draagkracht voor is, en dan word je eigenlijk ook weer geremd"* (resp 27).

J

Interpretation of interview results - first round

This appendix presents a more extensive discussion of the data collected in the first round of interviews. It discusses qualitative results that were left out in section 4.3; how different respondents interpret the term *sustainability*. For chapter 5, it discusses a few remarkable results about barriers and stimulants that operators perceived.

J.0.1. Meaning of sustainability

The interpretation of sustainability

I discuss the general interpretation of sustainability, as well as the disagreement about the financial benefits of sustainable work processes.

General interpretation

A wide variety of meanings of sustainability have been identified (see page 49), ranging from doing good for the environment, to financial optimization, to telling a marketing story. Although the management of Van Houtum has formulated a vision and operationalized sustainability in the form of KPI's, this has not reached all employees. Even the credibility of the company striving for true sustainable production processes is not watertight. Yet, most respondents acknowledge that Van Houtum is indeed a sustainable player in the field that accomplished a lot, though has a long way to go.

Operators disagree with each other whether sustainability costs or saves money Amongst the three groups, operators talk most about finances. Seven of them see sustainability as a cost-saving approach, while four operators are convinced that sustainable production processes are more expensive. There is no correlation with their self-evaluated pro-environmental behavior.

The positive relation between *more sustainable* and *cheaper* is illustrated by operator 28 *"Ik probeer vaak weer productie te draaien met minder energie, want het is goed voor het kostenplaatje"*. In this line of reasoning, 4 respondents mention a positive relation between *more sustainable* and *cheaper*; *"Het goedkoper maken, minder kosten maken, is minder energie of grondstoffen"* (resp 24). Operator 15 explicitly mentions the financial benefits of the Omnipulper; *"Flesetiketten zijn goed en drankenpakken zijn super, omdat het zo goedkoop is en we toch een goed product kunnen maken"*.

On the other hand, four operators experience sustainability as something expensive; *"Kijk, duurzaam is ook duur. (...) Vaak is het zo dat alternatieve werkwijzen of alternatieve producten een stuk duurder zijn, omdat ze minder schadelijk voor het milieu zijn. Of dat je heel veel moet doseren, of dat je processen minder snel gaan, of een kwaliteitswijziging"* (resp 30). At least, they think the costs and benefits of sustainable investments should be carefully considered; *"maar ik vind dat je ook moet kijken: levert het wel geld op?"* (resp 5).

J.1. Barriers and stimulants

J.1.1. The constructs often mentioned with regard to barriers almost equal those mentioned with regard to stimulants

Remarkably, when comparing the data about barriers and stimulants from table I.7, three out of four constructs in the top 4 are equal: group voice climate, role distribution and behavior of the supervisor.

This shows that a few topics are considered important for operators when it comes to the decision to share an idea for improvement. For these important constructs, they mention both stimulants and barriers. This can be due to the different opinion of individuals. Secondly, the data shows a tendency of respondents to nuance critical remarks about the company. After describing a barrier, some respondents immediately make positive remarks to show that in general they are happy, content or positive about their company; *"er wordt natuurlijk ook wel eens met ideeën verder gegaan"* (resp 18). This proves engagement with the company.

J.1.2. Relevant constructs

The relevance of individual and contextual constructs appeared to be distributed very unevenly. Three important constructs can be related to the theoretical framework. 'Engagement' determines whether the employee *wants* to contribute to the organization, and thus whether any motive can be important for him. 'Work experience' impacts 'perceived efficacy', because respondents with little work experience have higher fears that the idea might be miserable. Through a low estimate of the quality and feasibility of the idea, this impact their estimate of how effective it would be to share this idea. Thirdly, *giving feedback* was interpreted above as a component of *being heard*, this way impacting the utility calculus.

K

Literature about feedback

On page 66 I interpreted that the lack of feedback from team leaders to operators is one of the causes that operators do not always feel heard. In literature, this behavior is included in *managerial response*. This appendix provides a theoretical background about this concept.

K.1. Managerial response

Although I used multiple keywords in both Dutch and English (combinations of the words oefening, exercise, terugkoppeling/feedback/(manager(ial)) response to employee voice/idea/suggesti(e)(on)), I found little literature addressing feedback about the idea *from team leaders to operators*. Two sources consider the type of managerial response in which a manager communicates what he has decided to do with the employee suggestion.

Managers should be approachable leaders, among other things by "closing the loop through feeding back the results to the employee who voiced the original concern" (nd: Training managers). This is part of management responsiveness, defined in the context of whistle-blowing as "the extent to which the management of the company will be responsive toward solving the reported problems" (Keil et al., 2010). Although Keil et al. (2010) talk about whistle-blowing, their statements appear equally useful for voice.

Management responsiveness influences the consideration to engage in whistle-blowing, by altering the so-called "benefit-to-cost differential" (Keil et al., 2010). In our case, we assume it influences the consideration to engage in employee voice. In general, managers signal to employee that they value employee voice (Keil et al., 2010). More specifically, its influence is twofold.

On the one hand, management responsiveness shows that the recipient is responsive to voice, giving the individual the feeling he has the capability to bring about change (Dozier and Miceli, 1985). (nd: Training managers) formulates this as showing that "reporting produces results". Both descriptions relate closely to perceived efficacy, since they describe the perception of the individual whether they can achieve something by sharing their idea.

On the other hand, management responsiveness can decrease the perceived costs, such as the concern to be reprised for speaking up (Keil et al., 2010). In other words, responding to employee voice indirectly communicates that "it is safe to speak up" (nd: Training managers). Both remarks fall perfectly under the concept of perceived safety, as included in the theoretical model (section 2.3).

Both effects alter the benefit-to-cost differential of (Keil et al., 2010), the consideration in which individuals weigh the relative costs and benefits in deciding whether or not to blow the whistle (or engage in voice). They posit that strong perceived benefits and/or weaker perceived costs increase the likelihood of employees to voice their concerns or ideas. Proper management responsiveness increases the chance that employees decide to engage in voice.

This view corresponds with the theoretical framework, in which high perceived efficacy and high perceived safety increase the chances of the consideration of the individual for deciding to engage in voice. Managerial response influences both perceived safety and perceived efficacy. A specific way to strengthen perceived efficacy is for a manager to give feedback, as described below.

L

Description of intervention

Section 6.2.1 concisely describes the intervention as a method for reducing a barrier for promotive voice. A more extensive explanation can be found in this appendix.

L.1. The workshop

The story that is to conveyed in the workshop is the following. When you, as a team leader, give feedback to the operator (in other words, you tell what has been decided about his idea for improvement), the operator feels that he has heard. This motivate him to share his future ideas for improvement. By sharing these ideas, the operator feels he has an influence on his work, the team leader can use the knowledge of his colleagues, and the company profits from the improvements of the work which is beneficial for the competitive advantage.

L.1.1. Interaction types

Multiple methods are applied to implement the information in an interactive way. All exercises are supported and connected by a PowerPoint presentation. The assistant manager estimated that both the communication game and the role play are suitable for the target group, taking away the concern that the role play might be experienced as intimidating. Table L.1 lists which types of interaction are used.

Introduction

The workshop starts with an investigation of the attitude of team leaders towards operators that share ideas for improvement. Even when team leaders are skeptical towards the relevance of ideas for improvement, the focus of the workshop is to make operators feel heard, to keep up his motivation to be proactive.

Table L.1: Goals of the interaction types used for the intervention

Interaction type	Goal	Source
Open question	To collect input, experiences or opinions of the participants	
Communication game: Breaking the code	To stage a situation in which the operator feels unheard, because he received no feedback. This illustrates the importance of feedback.	Hoogeveen and Winkels (2011)
Role play: Your idea? My idea?	To practice how to give feedback, when team leaders have decided whether or not they are going to take action upon the idea.	Hoogeveen and Winkels (2011)
Resolutions	To let participants make concrete resolutions on how to give feedback	Cialdini (2001)

Open questions

Open questions are posed regarding a few topics, such as their attitude towards operators sharing ideas for improvement and what they think influences the decision to voice or not.

The first topic is *why* feedback is useful: When you, as a team leader, give feedback to the operator (in other words, you tell what has been decided about his idea for improvement), the operator feels heard. This motivates him to share his future ideas for improvement. By sharing these ideas, the operator feels he has an influence on his work, the team leader can use their knowledge, and the company profits from the improvements of the work which is beneficial for the competitive advantage. A win-win-win situation.

Communication game

In the communication game, four players have to break a code together, using the instructions of the assistant. The answer tells them where they can find a prize. There is no feedback to the assistant. In the reflection afterwards, the assistant can share how he feels, being ignored by the team leaders as soon as they had the information they needed.

Explain theory

When discussing how to give feedback, two figures are used. Figure L.1 shows where giving feedback adds to the communication between the operator (left) and the team leader (right). The operator shares his idea with the team leader, after which the team leader discusses the idea with fellow team leaders and or the manager. I know feedback takes place, this the end of the process. However, when the team leader gives feedback, he now tells the operator what he has decided together with his fellow colleagues and the manager. This figure explains the participants that giving feedback is the last phase of the two-way communication process.

In the third step, figure L.2 explains *how* the team leader can give feedback. It is a summary and simplification of the recommendations from management websites, because scientific litera-

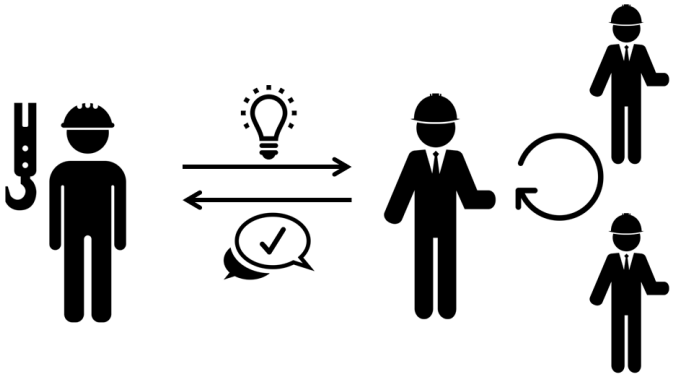


Figure L.1: Visual representation of the communication between an operator and a team leader about an idea for improvement, where giving feedback is the last step

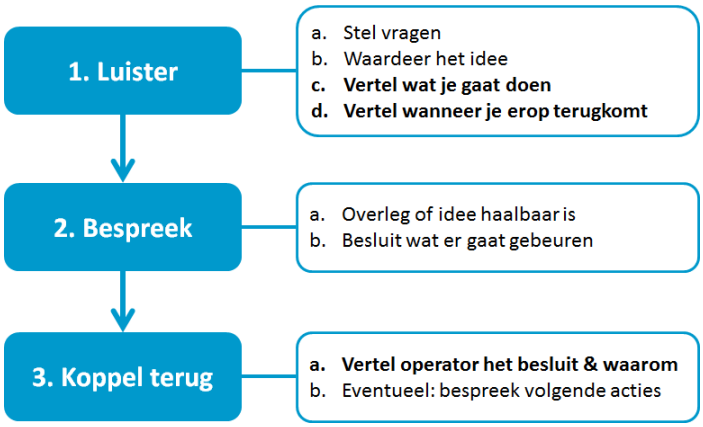


Figure L.2: The presented theory about giving feedback to an operator about the idea he has shared

ture does not discuss voice in such detail. First, the team leader listens to the idea of the operator (nd: Training managers), asks questions when clarity is required (Metcalf, nd; McIntyre, nd), and shows appreciation for the sharing of the idea (Durmaz, 2013; Metcalf, nd). He finishes by telling the operator what action he is going to take when he will feedback the outcome to the operator (McIntyre, nd). In the second phase, the team leader discusses feasibility of the idea with his fellow team leaders and/or the manager (Durmaz, 2013). They decide whether or not further action will be taken. The last phase, team leader gets back to the operator and tells what decision has been made and why (Metcalf, nd) (nd: Training managers). If applicable, they discuss what further actions are required and in fact the operator to take part (Metcalf, nd).

Role play

A role play is a short improvised play under prescribed circumstances. Each player is assigned a role (eg. operator) and a description (eg. you tell idea X to your team leader). In the role play, 2 operators each tell their idea to their team leader. The three team leaders discuss which of the two ideas will be implemented. Both team leaders feedback to the operator what has been decided. In the reflection afterwards, the operators share how they felt after the feedback. Moreover, the participants reflect on what aspects of giving feedback serve as an example and what could still be improved and how

Resolutions

As a concluding exercise, participants write down their resolutions. What did they learn from the workshop? What do they want to implement? How are they going to do that? What obstacles do you expect to stumble upon and how will you deal with those? Theory of consistency Cialdini (2001) posits that imagining your future behavior increases the chances that people will engage in that behavior.

L.2. Communication game

The communication game is described, after which the instructions of participants are added.

L.2.1. Description of the game

Beschrijving	4 spelers moeten samen een code kraken, met de instructies van de assistent. Het antwoord vertelt ze waar ze 4 kerstkransjes kunnen vinden als beloning. Er wordt niet teruggekoppeld naar de assistent
Doel	De assistent laten ervaren hoe belangrijk terugkoppeling is als vorm van waardering/bedankje/gehoord worden
Instructies	Iedereen krijgt een briefje De assistent helpt spelers op weg & verlaat dan de zaal De spelers proberen de code te kraken
Rolverdeling	Deelnemers: 4 spelers & 1 assistent Assistent = Een ploegleider die het meest skeptisch is over ideeen voor verbetering Spelers = 4 mensen. Iedereen mag meedoen, ook managers
Rol van publiek	Observeren wat er gebeurt en inleven hoe de assistent zich voelt
Beloning	Kerstkransjes die verstopt zijn in zaal
Nabespreking	Nodig om gehoord te voelen: - Terugkoppeling - Serieus nemen - Bedankje of compliment

L.2.2. Instructions of participants

The assistant receives a different instruction than the players.

	Jij weet hoe je de code kan kraken!
Assistent	Vervang elke letter door de letter die 3 plaatsen verderop in het alfabet staat.
	Bijvoorbeeld: 'A' wordt 'D'. Vertel dit aan de spelers en verlaat de zaal.

	Speler 1	**Speler 2**	**Speler 3**	**Speler 4**
Jouw code is:	AB	FK	CFGH	WLBH
Dat betekent:	_ _	_ _	_ _ _ _	_ _ _ _

Met z'n vieren kunnen jullie de code kraken

L.3. Role play

The role play is described and the instructions for participants are presented.

L.3.1. Description of role play

Onderdeel	Beschrijving
Beschrijving	2 operators vertellen idee aan hun ploegleider. Ploegleiders bespreken dat met elkaar en kiezen 1 idee dat ze gaan uitvoeren. Daarna koppelen ze terug.
Doel	Oefenen met terugkoppelen, oa als het idee is 'afgekeurd'?
Rolverdeling	2 operators & 3 ploegleiders Operators = vrijwillige ploegleiders Ploegleiders = overige 3 ploegleiders Managers doen niet mee met het rollenspel
Instructies	Ieder krijgt een briefje met instructies Spelleider waarborgt volgorde Idee 1: het ophangen van gordijnen zou de stofafzuiging verbeteren Idee 2: je kan het productieproces verbeteren met sensoren die automatisch dingen meten en die informatie naar een computer sturen
Wie wanneer in de zaal?	Operator 1 & Ploegleider 1 Operator 2 & Ploegleider 2 Operators verlaten de zaal Ploegleiders overleggen Operator 1 komt terug Ploegleider 1 & Operator 1 Operator 2 komt terug Ploegleider 2 & Operator 2
Rol van publiek	Observeren hoe er wordt teruggekoppeld. En suggesties doen hoe het ook anders zou kunnen.
Nabespreking	Wat ging goed? Wat kon beter? - Hoe vertel je 'Nee'? - Wees eerlijk - Geef redenen (evt cijfers)

L.3.2. Instruction of participants

Jouw rol	Instructie
Operator 1	Je hebt bedacht dat het ophangen van gordijnen de stofafzuiging zou verbeteren. Vertel dit idee aan ploegleider 1. Na de bespreking koppelt hij naar je terug.
Operator 2	Je hebt bedacht dat je met een sensor een automatische temperatuurmeting kan doen in PM3 die een waarschuwing geeft als het te warm wordt. Vertel dit idee aan ploegleider 2. Na de bespreking koppelt hij naar je terug.
Ploegleider 1	Operator 1 vertelt jou een idee. Kies met alle ploegleiders één idee dat jullie gaan uitvoeren. Koppel terug naar operator 1.
Ploegleider 2	Operator 2 vertelt jou een idee. Kies met alle ploegleiders één idee dat jullie gaan uitvoeren. Koppel terug naar operator 2.
Ploegleider 3	Ploegleiders 1 en 2 hebben ideeën gehoord van operators. Kies met alle ploegleiders één idee dat jullie gaan uitvoeren. Zorg dat jullie het beste idee kiezen.

M

Interview protocol - second round

The interview protocol of the second round of interviews consisted of two parts. Separate questions were prepared for team leaders than for operators. Team leaders could consciously have changed their behavior, as inspired by the intervention. Operators could have noticed changes in their environment or the behavior of team leaders. No interview protocol is included for the management, because these interviews were unstructured.

M.1. Interview protocol team leaders

The interview protocol with team leaders contained the following questions.

- Verandering van gedrag
  - Op welke manier is jouw gedrag ten opzichte van ideeën voor verbetering veranderd sinds de workshop over terugkoppeling? Geef een voorbeeld
  - Waarom is dat veranderd?
  - Wat zijn de effecten van jouw gedragsverandering op operators?
  - Heb je het met collega-teamleiders over terugkoppelen gehad?
- Reflectie
  - Waarom is het wel/niet gelukt om terug te koppelen?
  - Wat heb je nodig om vaker terug te koppelen?
  - Weten operators dat jullie een workshop over terugkoppeling hebben gehad?

M.2. Interview protocol operators

First, the same questions were asked as in the first round of interviews. For respondents who were new in this sample, these questions were new.

- Heb je wel eens ideeën hoe jullie je werk beter kunnen doen?
- Kan je een voorbeeld noemen waarbij je wel een idee had, maar het niet verteld hebt?
  - Waarom heb je het niet verteld?
  - Zijn er meer redenen waarom je het niet zou vertellen?
- Kan je een voorbeeld noemen, waarbij je het idee verteld hebt?
  - Waarom heb je het verteld?
  - Zijn er meer redenen waarom je het zou vertellen?
- Andere mensen hebben hier ook over nagedacht. Zij hebben nog een paar redenen verzameld waarom je je idee wel of niet vertelt. [Interviewkaartjes op tafel leggen en benoemen]
  - Welke herken je om niet je idee te delen?
  - Welke herken je om wel je idee te delen?

Then, I explicitly asked whether any change had taken place since the previous interviews. The interview cards were still on the table.

- Welke barrières zijn sinds ons vorige gesprek groter of kleiner geworden?
  - Wat is er veranderd? Geef een voorbeeld
  - Waarom is dat veranderd?
- Welke stimulansen zijn sinds ons vorige gesprek groter of kleiner geworden?
  - Wat is er veranderd? Geef een voorbeeld
  - Waarom is dat veranderd?
- Hoe reageert je ploegleider als je een idee vertelt? Is dat veranderd?

N

Interview transcript - second round

Section 6.2.1 mentioned that all interviews were transcribed before they were analyzed. An example of these transcripts is included in this appendix. The interviewer is denoted by 'I', the respondent by 'R'. When the words were not understood, the time of the record was mentioned; e.g. (?1:00).

N.1. Example transcript: Respondent 25

I: Waarom vertel je je idee wel?
R: Betrokkenheid, omdat je betrokken bent met iets. Je werkt er dagelijks mee, dus als je een idee hebt om iets te verbeteren dan ben je daar bij betrokken,.
I: Je weet er veel van?
R: Ja. Je hebt elke dag mee te doen, dus dan zul je wel moeten denken, je bent er gewoon bij betrokken.
R: Werkervaring, dat is natuurlijk hoe langer je aan een functie staat, hoe meer die je ziet.
I: Dus dat je meer ideeën krijgt?
R: Ja
R: Persoonlijkheid. Ik heb genoeg ideeën, en ik sta daar voor open, maar het is maar net wat ze ermee doen.
R: Het gevoel dat je iets kan bijdragen: heb je ideeën, wordt er wat me gedaan, dan heb je ook het gevoel dat je iets hebt bijgedragen. Maar, wordt er niks mee gedaan, dan kom je weer bij dit: emoties, boosheid. Angst niet. Maar meer boosheid, frustratie.
R: Ik moet niet te eerlijk zijn, maar.. Het is hoe ik het ervaar af en toe. De ene zegt dit, de andere zegt dat.
R: Rolverdeling: ik ben wel aanspreekpunt achter, dus het is mijn rol om, ik ben wel ietsje hoger dan de anderen met dus de twee waarmee ik samen werk. Die zijn al een beetje op leeftijd, dus die hebben ook niet meer die drang om voorop te lopen.
I: Om die te bedenken?
R: Ja, die hebben al genoeg ideeën verzonnen en bedacht in hun carrière, zover ik weet. Die zijn eind 50.

Je hebt natuurlijk altijd wel ideeën, maar dat is misschien wat minder dan toen ze wat jonger waren. Ik denk dat dat normaal is.

R: Wat ik met een idee wil bereiken: dat je aangehoord wordt, dat er naar je geluisterd wordt, dat er wat mee gedaan wordt. Dat ik verwacht ik van wat je met een idee wil bereiken.

R: De ploeg omgaat met ideeën: meestal gaat de ploeg er zelf altijd goed mee om, dat moet ik wel zeggen. Dat ze je aanhoren, dat ze je helpen, ze denken mee. Alleen de uitvoering is vaak niet aan ons, dat is aan een hoger iemand om die beslissing te nemen. In de ploeg zit dat wel goed, er wordt wel naar geluisterd. Het zou slecht zijn als het niet zo zijn.

R: Ongeschreven regels: als je overwerkt, er zijn altijd ploegen en daar zijn mensen die het altijd beter weten.

R: Maakt dat dan dat je je idee wel of juist niet verteld?

R: Vaak niet.

I: Is dat meer in een andere ploeg dan in je eigen ploeg?

R: Ja maar je bent eigen, in je eigen ploeg ben je eigen (voel je je thuis), dan weet je van iedereen wel wat. Andere ploegen hebben dat een heel andere werkwijze. Iemand zegt dan: dat idee wat ik heb, dat het al beter is wat hij doet op dat moment. Ik denk als je overwerkt en in een andere ploeg zit, dan heb je het ook wel eens over dingen, maar in je eigen dat is de basis. Daar weten we van elkaar wat de problemen zijn, dat is eigenlijk ook wel logisch. Daar hebben we het dagelijks over dingen. Bij die anderen ga je keer overwerken, en dan heb je het niet echt over ideeën.

I: Wat kan een reden zijn dat je je idee niet verteld?

R: Omdat je hier vaak.. Ik ben een jongen met ideeën, ik sta altijd voor Van Houtum klaar, maar het is hier toch vaak dat je bepaalde ideeën hebt en daar wordt gewoon eigenlijk helemaal niks mee gedaan. Dan krijg je dit: emoties, boosheid of frustraties en desinteresse eigenlijk: bekijken nou maar, ik heb het nou zes keer of 10 keer gezegd, maar er wordt niets mee gedaan. Ik kan wel 100 voorbeelden noemen, dat er vergaderingen zijn, en dat ze dan zeggen: we gaan het goed oppakken, dit doen, dat doen. En dan 3 of 4 weken later dan is het gewoon weg, dan hoor je er niks meer van. Ze creëren hier zelf af en toe een bepaalde.. De mensen worden hier zeg maar niet aangehoord, en dan krijg ik zo van: laat maar zitten, de volgende keer doe ik het niet meer.

I: En heb je een beeld van zodra je een idee, wat er dan met het idee gebeurt?

R: Er gebeurt eigenlijk niks

I: eigenlijk een black box?

R: Ja, zo komt dat over hier. Dat is ook de werkervaring, dat je weet hoe het af en toe hier in elkaar steekt.

I: Gebeurt het wel eens dat iemand dan bij je terugkomt van: hé, je had een idee,..?

R: ja, dan heb je een idee, en dan wordt het aangehoord en dan zeggen ze ook: goed idee, super. En dan verwacht je eigenlijk de volgende stap, dat het er komt of, en dan hoor je er helemaal niks ervan.

I: Helemaal nooit meer? Ook niet: we hebben ernaar gekeken, maar het kan niet?

R: Het is niet: nooit meer, maar grotendeels, dat is mijn ervaring, dan komen ze niet daarop terug.

I: Heb je daar verandering in gemerkt sinds de vorige keer?

R: Nee

I: als ik kijk naar [production manager], of [process technologist],..?

R: Kijk, [process technologist] kent mij heel goed. Die weet wat hij aan mij heeft, dus die luistert op zich wel. Maar hun beslissen toch altijd zelf. Af en toe heb ik gewoon het gevoel dat ze dan luisteren, ze onthouden het wel, na een paar maanden komen ze met het idee dat jij een keer verzonnen hebt, volgens mij.

I: Dus dat ze dan doen alsof het hun idee is?

R: Ja, ja.

I: Heb je het idee dat ze dat expres doen?

R: Nee. Kijk, ik word er niet voor betaald om allemaal creatieve ideeën uit te vinden, ik ben gewoon een operator. Ik ben hier om het werk te doen, ik ben hier om een werk goed te doen. Probeer mee te denken en verbeteringen, natuurlijk. Maar het houdt ergens een keer op. Als je betrokken bent bij bepaalde projecten, en ze luisteren naar je,.. het is gewoon af en toe dat gebied hier een beetje minder. En dat is frustrerend voor sommige mensen.

I: Hoe probeer je daarmee om te gaan? Probeer je daar iets aan te doen?

R: Op een gegeven moment ben ik er klaar mee. Nou, klaar mee is wat overdreven,.. Ik begin zelfs nou al: dan denk ik van, ja.. Er zijn zoveel dingen, bijvoorbeeld vorige keer hebben we een heftruckcursus gehad, een bijeenkomst over wat we kunnen verbeteren met veiligheid blablabla. Daar hebben we heel veel dingen voor aangegeven, en behandelt, maar dat zijn van die dingen, drie jaar geleden heb ik al bepaalde dingen gezegd. Een klein voorbeeld: dat de vrachtwagenchauffeurs, bijvoorbeeld als papier wordt gelost, dat zij de hal in komen lopen. (ik vind dat onveilig, dus ik vind dat we een bord moeten ophangen. Vier jaar lang heb ik daarvoor gepleit, maar het gebeurde maar niet. Nu hangt er een klein bord.) Toen werd er beetje laconiek over gedaan, beetje lachend voor mijn gevoel. Dan krijg je het idee: waarom maak ik mij daar druk over? Maar dat zit in mij, en dat begint nou alweer.. Dat zijn van die kleine voorbeelden, en dan heb je daar nu weer een vergadering over gehad een paar maanden geleden, dan gaat het weer over die hal, en dan begin ik daar weer over. Het is wel iets minder geworden, dat vrachtwagenchauffeurs minder binnenkomen dan eerst, maar het gevaar is er nog steeds en de duidelijkheid worden is minimaal. Het lijkt mij niet moeilijk om daar gewoon een groot bord met verboden toegang te hangen. Daar ben je dan een paar jaar mee bezig, en als zulke kleine dingetjes al zo moeizaam gaan, laat staan bij andere dingen. (nog een voorbeeld: chemicalien op stellage te hoog 16:05) Dat hebben we toen in die vergadering over de veiligheid van de heftruck allemaal opgeschreven, en er zijn dingen dan gebeurt er zijn ze mee bezig, maar deze kleine dingen.. Hier ook: dat kost geen geld, het is een actie die je gelijk kunt uitvoeren. Snap je wat ik bedoel? Dat zijn van die kleine dingen.. En dan ben ik er helemaal klaar mee

I: Vergadering: met wie is dat dan?

R: De meeste vergaderingen zijn met teamleiders onderling. Wij hebben een keer in de zoveel tijd met de ploeg bij elkaar, of met een maar man van de ploeg bij elkaar, en dan gaat het gewoon over de veiligheid met de heftrucks, maar beter kan met rijden. (vb voorrang zebrapad 18:10).

R: Heb je het idee dat de reacties van mensen op jou ideeën, bijvoorbeeld van je ploegleider, is veranderd sinds het vorige gesprek?

R: Hij luistert altijd wel,

I: en doet hij er dan iets mee?

R: Ja, zover hij kan, probeert hij er altijd wel wat mee te doen. Vaak doet hij er ook wat mee, het ligt er natuurlijk ook wat voor idee hebt en wat voor argumenten je hebt. Als het direct iets in het proces is, dan luistert hij er naar en dan doet hij er wat mee. Maar als het echt iets technisch is nog gemaakt moet worden verbeterd moet worden, dan is het natuurlijk iets anders. Dan luistert hij wel. Hij luistert altijd

I: dus dan voel je wel gehoord?

R: Ja. In de ploeg en onder collega's heb je ideeen genoeg, en daar wordt ook over gepraat. Maar wat er daarna mee gebeurt, dat is een tweede. Niet elk idee kun je oplossen. Er zijn ideeën daar kun je direct wat aan doen, en daar wordt dan vaak ook wel wat aan gedaan op dat moment. Maar, je werkt er ook elke dag mee, dus je weet op een gegeven moment wel: daar gaan we iets aan doen. Dan is het vaak de vraag van: wordt er wat mee gedaan?

I: Ik vind het leuk dat je zoveel ideeën hebt

R: Het is de aard van het beestje. Er zijn genoeg mensen die genoeg ideeën hebben,..

O

Analysis of interview transcripts - second round

This appendix presents the outcome of the data analysis of the second round of interviews as described on page 77. Transcripts of interviews with the management, team leaders and operators were coded during the same coding process. 19 categories were created, each containing multiple codes. Table O.1 presents all codes that were generated, the number of quotes each code includes, and a brief description of the code. This description is my interpretation of the code.

O.1. Codes

To start with, the categories from the first round of interviews was taken (see appendix H.1). The category 'Being heard' was replaced by 'Systeem', describing the system around ideas for improvement. Other new categories were 'Effect', containing quotes about the effect of the workshop, and 'Difference' about the difference that respondents experience, compared to the previous round of interviews. The list of codes from appendix H.1 was used to start with. Codes that were not linked to quotes were left out during the iterations. New codes were added as well.

Table O.1: Codes that resulted from the coding process of the second round of interviews

CODE	MEANING	TYPE OF CODE
Personality		
Bemoeial	Meddler	Barrier
Communicatie Skills	Communication skills	Barrier
Onzeker	Uncertain	Barrier
Hoeveel Ideeen	Amount of ideas	Description
Stress	Stress	Description
Altijd Vertellen	Always share idea	Stimulant
Doener	Do-er	Stimulant
Jong(Er)	Young(er)	Stimulant
Open Voor Feedback	Open for feedback	Stimulant

Te Direct	Too direct	Stimulant
Veel Ideeen	Many ideas	Stimulant
Voorgrond	Foreground	Stimulant
Willen Verbeteren	Want to improve	Stimulant
Unwritten Rules		
Idee Jatten	Idea is stolen	Barrier
Overwerk	Overtime	Barrier
Rivaliteit	Rivalry	Barrier
Ideeen Vertellen	Share ideas	Stimulant
Meedenken	Thinking along	Stimulant
Rivaliteit	Rivalry	Stimulant
Emotions (Anger, Fear, Etc)		
Angst	Fear	Barrier
Boosheid	Anger	Barrier
Desinteresse	Not interested	Barrier
Frustratie	Frustration	Barrier
Frustratie	Frustration	Stimulant
Feeling Comfortable		
Niet Met Ideeen Bezig	Not occupied with ideas	Barrier
Gehoord	Being heard	Description
In Orde	Is all right	Relevance
Wisselt	Varying	Relevance
Betrokken	Engaged	Stimulant
Bijdragen	Contribute	Stimulant
Succes	Success	Stimulant
Work Experience		
Naief	Naive	Indirect barrier
Veel - Slechte Ervaringen	Lot - bad experiences	Barrier
Weinig - Geen Idee Over Uitwerking	Little - no insight in implementation	Barrier
Weinig - Kat Uit De Boom Kijken	Little - wait-and-see attitude	Barrier
Weinig Kennis Over Machine	Little knowledge about machines	Barrier
In Orde	Is all right	Relevance
Andere Bedrijven	At other company	Stimulant
Genoeg	Enough	Stimulant
Maakt Niet Uit Hoeveel	Amount does not matter	Stimulant
Veel	Lot	Stimulant
Engagement		
Geen Inspraak	No voice	Barrier
Niet Eigen Functie	Not about own function	Barrier
Werken Voor Geld	Work for the money	Indirect barrier
Meedenken	Thinking along	Description
Continu Verbeteren	Continuous improvement	Description
Belangrijk	Engagement is important	Relevance
Betrokken	Engaged	Relevance
In Orde	Is all right	Relevance
Lage Betrokkenheid	Low engagement	Relevance
Bijdragen	Contribute	Stimulant
Eigen Functie	About own function	Stimulant
Erkenning	Recognition	Stimulant
Inspraak	Voice	Stimulant
Niet Alleen Voor Geld	Not only for the money	Stimulant
Vanuit Vh	From Van Houtum	Stimulant
Voldoening	Satisfcation	Stimulant
Eigenaarschap	Ownership	Indirect stimulant
Inspraak	Voice	Indirect stimulant
The Feeling That You Can Contribute		
Meedenken	Thinking along	Description
Aan Bedrijf	Contribute to company	Description
Opleiding	Education	Description
Bijdragen	Contribute	Relevance
Succesvol Idee	Successful idea	Stimulant
Execution Of Your Work		
Je Werk Goed Doen	Perform well	Stimulant
How The Team Handles Sharing Ideas		
Idee Jatten	Idea is stolen	Barrier
Lacherig Over Cursus	Make jokes of class	Barrier
Low Perceived Safety	Low perceived safety	Barrier
Nare Reactie	Negative reaction on idea	Barrier
Niet Open Voor Kritiek	Not open for criticism	Barrier
Niks Zeggen	Stay silent	Barrier
Nare Reactie	Negative reaction on idea	Indirect barrier
Ideeen Vertellen	Share ideas	Stimulant
Meedenken	Thinking along	Stimulant
Draagkracht	Support for idea	Stimulant
Omgaan Met Frustratie	Cope with frustration	Stimulant
Ondersteuning Van Team	Support of team	Stimulant
Reactie Op Goed Idee	Reaction on good idea	Stimulant
Sfeer In Ploeg	Atmosphere in team	Stimulant
Trots Op Idee	Proud of idea	Stimulant

Task Distribution		
Niet Mijn Verantwoordelijkheid	Not my responsibility	Barrier
Helpen	Helping	Stimulant
Taakverdeling Verbeteren	Improve task distribution	Stimulant
Role Distribution		
Kanaal Binnen Ploeg Delen	Channel share within team	Description
Kanaal Direct	Channel direct	Description
Kanaal Eenmalig	Channel once	Description
Kanaal Formulier	Channel form	Description
Kanaal Individueel	Channel individual	Description
Kanaal Informeel	Channel informal	Description
Kanaal Memo	Channel memo	Description
Kanaal Naar Ander Team	Channel to other team	Description
Kanaal Niet Zeggen	Channel stay silent	Description
Kanaal Samen	Channel together	Description
Kanaal Sga	Channel SGA	Description
Kanaal Td	Channel technical service	Description
Kanaal Tl	Channel team leader	Description
Kanaal Tl Stuurt Door	Channel team leader passes idea on	Description
Kanaal Vertellen Algemeen	Channel share idea general	Description
Kanaal Vragen	Channel ask	Description
Kanaal Zelf Nadenken	Channel think by myself	Description
TK Direct	Feedback direct	Description
TK Via Ma	Feedback via management	Description
TK Via Tl	Feedback via team leader	Description
Aanspreekpunt	Contact person	Stimulant
Korte Communicatie	Direct communication	Stimulant
Meerdere Functies	Multiple functions	Stimulant
Behavior Of Team Leader		
Aanspreken	Address someone on his behavior	Barrier
Maakt Niet Uit	Irrelevant	Barrier
Open	Openness	Stimulant
Relationship With Team Leader		
Slechte Band	Bad relationship	Indirect barrier
Aanspreken	Address someone on his behavior	Barrier
Geven En Nemen	Give and take	Description
In Orde	Is all right	Relevance
Niet Belangrijk	Relationship is not important	Relevance
Motive For An Idea		
Geen Eigenbelang	No personal interest	Limiting motive
Geen Informatie	No information	Limiting motive
Slecht Idee	Bad idea	Limiting motive
Beloning	Reward	Indirect motive
Succesvol Idee	Successful idea	Stimulating motive
Belang Bedrijf	Interest of company	Stimulating motive
Belang Eigen	Personal interest	Stimulating motive
Belang Iedereen	Interest of everybody	Stimulating motive
Belang Ploeg	Interest of team	Stimulating motive
Betere Kwaliteit	Better quality	Stimulating motive
Duurzamer	More sustainable	Stimulating motive
Goed Idee	Good idea	Stimulating motive
Goedkoper	Cheaper	Stimulating motive
Makkelijker	Easier	Stimulating motive
Meer Productie	More production	Stimulating motive
Ondanks Geen Informatie	Despite lack of information	Stimulating motive
Sneller	Faster	Stimulating motive
Veiliger	Safer	Stimulating motive
Verantwoordelijkheid	Responsibility	Stimulating motive
Verbeteren Algemeen	Improve general	Stimulating motive
Knowledge Sharing		
Kennis Is Macht - Niet	Knowledge is power - not	Barrier
Kennis Is Macht	Knowledge is power	Indirect barrier
Leren	Learning	Description
Tl Meer Informatie	Team leader has more information	Description
Idea		
Argumenten	Arguments	Description
Omnipulper	Omnipulper	Description
Resultaat	Result	Description
Vage Suggestie	Vague suggestion	Description
Voorbeeld	Example of idea	Description
Aanleiding	Trigger	Relevance
Aanleiding Nieuw	Trigger: new situation	Relevance
System		
Gehoord Niet	Not being heard	Indirect barrier
Actie Luistert Niet	They don't listen to idea	Barrier
Actie Niet	No action taken upon idea	Barrier
Actie Niet Met Reden	No action taken upon idea with a reason	Barrier
Comm Andere Manier Van Denken	Communication - different way of thinking	Barrier

Comm Geen Informatie	Communication - no information	Barrier
Gehoord Niet	Not being heard	Barrier
Gehoord Niet - Gevolg	Not being heard - result	Barrier
Gehoord Niet - Op Wil Niet Luisteren	Not being heard - operator does not want to listen	Barrier
Gehoord Niet Buiten Ploeg	Not being heard outside team	Barrier
TK Afwachten	Await feedback	Barrier
TK Niet	No feedback	Barrier
TK Niet Aan Tl	No feedback towards team leader	Barrier
Kanaal Procestechnoloog	Channel process technologist	Description
Kanaal Educatiemanager	Channel education manager	Description
Kanaal Assistentmanager	Channel assistant manager	Description
Kanaal Productiemanager	Production manager	Description
Tl Meer Informatie	Team leader has more information	Description
Actie Besluit	Action decision	Description
Actie In Progress	Action in progress	Description
Actie Oorzaak	Action reason	Description
Comm Andere Ploeg	Communication with different team	Description
Comm Tl Onderling	Communication between team leaders	Description
Hou Management	Attitude of management	Description
Hou Operator	Attitude of operators	Description
Hou Tl	Attitude of team leaders	Description
Omstandigheden Algemeen	Circumstances general	Description
Omstandigheden Nu	Circumstances now	Description
Overleg	Consultation	Description
Suggesties Omgaan Met Ideeen	Suggestions about handling ideas	Description
TK Boodschap	Feedback message	Description
TK Moment	Feedback moment	Description
TK Niet - Oorzaak	Feedback not - reason	Description
TK Reden	Feedback reason	Description
TK Voorbeeld	Feedback example	Description
Vroeger	Former system	Description
Gehoord Belang	Being heard importance	Relevance
TK Belang	Feedback importance	Relevance
TK Niet - Gevolg	No feedback - result	Relevance
Kanaal Via Tl	Channel via team leader	Stimulant
Actie Luistert Wel	Action listens	Stimulant
Actie Meer Vragen Stellen	Action ask more questions	Stimulant
Actie Wel	Action	Stimulant
Actie Wel Achter Schermen	Action behind the scenes	Stimulant
Actie Wel Ma Of Td	Action management of technical service	Stimulant
Actie Wel Met Team	Action with team	Stimulant
Actie Wel Met Tl	Action with team leader	Stimulant
Actie Wel Tl	Action team leader	Stimulant
Actie Wel Uitproberen	Action try	Stimulant
Actie Wel Zelf	Action himself	Stimulant
Comm Tl Ideeen Stimuleren	Communication team leader stimulate ideas	Stimulant
Gehoord	Being heard	Stimulant
Gehoord Buiten Ploeg	Being heard outside team	Stimulant
Gehoord In Ploeg	Being heard within team	Stimulant
TK	Feedback	Stimulant
TK Halen	Ask for feedback	Stimulant
TK Memo	Feedback memo	Stimulant
TK Reactie Op	Feedback reaction operator	Stimulant
Effect		
Effect Workshop	Effect workshop	Effect
Geleerd Praktijk	Learned in practice	Effect
Geleerd Workshop	Learned in workshop	Effect
Hoe Was Workshop	How was workshop	Effect
Suggesties TK Verbeteren	Suggestions to improve feedback	Effect
Theorie In Praktijk	Theory in practice	Effect
Uitdaging	Challenge	Effect
Verschil Waarnemen	Identify difference	Effect
Difference		
Be - Betrokken	Engagement	Difference
Gem - Zat Iets Dwars	Previous time: something was wrong	Difference
Ef - Tl Gedrag	Team leader behavior	Difference
Kaartjes Niet	No difference in cards	Difference
Ma - Ervaren Door Ma - Niet	No difference in management, perception of management	Difference
Ma - Ervaren Door Op - Niet	Difference in management, perception of operator	Difference
Op - Ervaren Door Op - Niet	No difference in operators, perception of operator	Difference
Op - Ervaren Door Op - Wel	Difference in operators, perception of operator	Difference
Op - Ervaren Door Tl - Wel	No difference in operators, perception of team leaders	Difference
Sys - Ervaren Door Op - Niet	No difference in idea sharing, perception of operator	Difference
Td - Ervaren Door Op - Niet	No difference in technical service, perception of operators	Difference
TK - Ervaren Door Op - Niet	No difference in feedback, perception of operators	Difference
Tl - Ervaren Door Ma - Niet	No difference in team leaders, perception of management	Difference
Tl - Ervaren Door Ma - Wel	Difference in team leaders, perception of management	Difference
Tl - Ervaren Door Op - Niet	No difference in team leaders, perception of operators	Difference
Tl - Ervaren Door Op - Wel	Difference in team leaders, perception of operator	Difference

Tl - Ervaren Door Tl - Niet	No difference in team leaders, perception of team leaders	Difference
Tl - Ervaren Door Tl - Wel	Difference in team leaders, perception of team leaders	Difference
Verschil Sinds Workshop	Difference since workshop	Difference
Kl - Draai Gevonden	More settled in	Difference
Pe - Vaker Zeggen	Say more often	Difference
We - Meer	More work experience	Difference
Protocol		
Betekenis Kaartje	Meaning of card	Other
Kaartjes Beinvloedt Overweging Niet	Cards do not play a role	Other
Kaartjes Samenvatting Vorige Keer	Cards summary first interview	Other
Not In A Category		
Geen	No barrier	Other
Team Leider	team leader	Other

P

Interview results - second round

P.1. What participants learned from the workshop

Table P.1 was presented in section 6.2.2. An explanation is given of each of the things that participants have learned from the workshop.

Table P.1: Overview of learnings by team leaders from the workshop

Learnings	Respondents
Feedback is important	9, 20, D
Formulate a question to engage operators	9, 13
More time to listen	10, 20
Did you think about <this>?	10
Sharing status more often	9
Give arguments for rejecting idea	14
Explain that not all ideas can be carried out	14
Stimulate sharing of ideas	14, 20
Ask for feedback	9

Most learnings relate to behavior towards operators. In general, respondent 9 realized that feedback is important *"Interviewer: Wat besef je nu? Respondent: Dat feedback belangrijk is, dat je weet waar je aan toe bent, die informatie wat je geeft dat er iets mee gedaan wordt, wat de status is"*. The role play helped to understand the difference in *how* you formulate a question; *"omdat we laatst dat dat toneelstuk hebben gespeeld, en dan merk je toch het verschil in hoe je vragen stelt (...) Je kan dat op verschillende manieren brengen. Je kan heel direct zeggen: hé, zo en zo. Of: hoe vind jij dat?"* (resp 13, and in other words resp 9). This creates more responsibility and support amongst operators; *"als ze het zelf doen, dan wordt het breder gedragen"* (resp 13).

Once an operator shares an idea, two operators now take more time to listen; *"je moet hem toch uit laten praten, de voors en tegens laten zeggen, en dan samen kijken om het wel of niet zou kunnen. Maar niet alleen zeggen van: het is helemaal niks"* (resp 20, and in other words resp 10). When team leader 10 sees obstacles he makes the operator aware of that aspect; *"als het niets is, dan kun je gelijk terugkoppeling geven. (...) Als je bepaalde argumenten hebt waarom een idee op stukloopt, dan kun je of richting sturen: stel je voor, heb je daar en daar aan gedacht?"*. Respondent 9 shares a status update more often; *"de status, (...) gelijk die feedback geven zodat ze op de hoogte zijn"*.

When it has been decided an idea will not be implemented, team leader 14 explains *why* the idea is (not) taken up; *"proberen uit te leggen waarom"* and that not all ideas can be carried out; *"om te begrijpen dat niet alles kan"*. Next, he stimulates operators to keep sharing their ideas; *"ik wil het liefst dat operators alles aangeven wat je denkt dat je kan verbeteren, of samen makkelijker kan maken"* (resp 14, and in other words resp 20).

Towards colleagues involved with the implementation of the idea, team leader 9 has become more active in asking for feedback about ideas he had shared; *"meer er achteraan gaan, (...) Je wilt toch die feedback hebben"*.

P.2. Challenge to identify change

Two managers remarked that if change has occurred, it might be challenging to measure it.

Managers A and C thought along with me about whether the method to identify change. They mentioned three reasons why I might find that operators did not see any change. Firstly, one workshop might not be enough; *"eigenlijk is dit iets waar je niet een interventie moet doen, maar een schakering van interventies"* (resp A). Secondly, the mood of the respondent might influence whether they feel heard; *"de situatie waar je in zit. Voel je je op dit moment happy, dat kan ook het antwoord beïnvloeden denk ik"* (resp C). Thirdly, both managers have experienced how difficult it is to make sure operators notice a change.

Separately, both managers told an anecdote about a repeated safety training starting with the question: do you notice any difference in safety? Operators say 'no'. Only after showing pictures and specific examples of change, they realize that changes have indeed occurred. *"We hadden een tweedaagse training over veiligheid. Een jaar later hadden we een herhaling van een halve dag. [Directeur] begint dan 's morgens: is er iets veranderd aan veiligheid? Niks. We wisten dat dat ging komen, en we hadden allemaal foto's is gemaakt: dit is aangepast, dat is aangepast, dat is veranderd. Dan zeggen ze: oh ja, oh ja, zoh ja. Ik denk dat dat bij dit [terugkoppeling] ook wel een beetje speelt"*. Operators immediately find it normal; *"mensen zijn dat meteen normaal gaan vinden"* (resp A).