

# Resources for Employee-Driven Innovation in a Formalised Setting

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## ABSTRACT

**Purpose** – *The purpose of this research is to identify the resources that are necessary to stimulate employee-driven innovation in a formalised setting. Every employee can contribute to the innovation process. However, most innovations are still generated by specific groups within the organisation, and there is uncertainty on how formalisation affects innovative behaviour among the employees. This study explores the resources that can help an organisation to stimulate employees to engage in employee-driven innovation in a formalised setting.*

**Methodology** – *We obtained secondary data from 15 interviews originating from two different highly formalised organisations. We used the resource-mobilisation theory as the framework for the analyses. By using the five different resources provided by the theory, we analysed, categorised, and compared the data. By continuously comparing the data, we gained an in-depth understanding of the different resources and their effect on the process of employee-driven innovation within a formalised organisation.*

**Findings** – *A formalised organisation can provide a degree of autonomy for its employees. Formalising an organisation does not mean that employee-driven innovation is excluded. Providing an employee-friendly environment with trust and support among the employees, and where there is an established communication infrastructure helps to stimulate employee-driven innovation. Involving employees and informing them of the organisational course gives them an indication of what the organisation needs and encourages them to help the organisation reach its goals.*

**Value** – *This research contributes to more insight into stimulating employee-driven innovation. Moreover, this study enriches the resource-mobilisation theory to grow into a method that can be used to analyse organisations. Additionally, this study contradicts the idea that formalisation always obstructs employee-driven innovation.*

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## Keywords

Innovation, Employee-driven innovation, resources, resource mobilisation theory, formalisation, individual innovation.

# 1. INTRODUCTION

Most organisations are competing in markets that are rapidly changing, and firms need to adapt to stay relevant in their environment (Bobby, 2014; Schilling, 2017). Shifting environments requires a flexible approach with a need for innovative thinking (Bobby, 2014; Cameron and Green, 2015; Schilling, 2017; De Spiegelaere et al. 2012). This thinking is a creative behaviour that each individual can possess, and every employee can develop skills and problem-solving ability that are necessary for innovation (Schilling, 2017). As a result, organisations have enormous potential for generating and implementing innovative ideas (Tidd and Bessant, 2009). However, innovation is still a limited task for specific groups within the organisation, and most employees barely contribute to the innovation process (De Spiegelaere et al. 2012).

Innovation that starts at the work floor and moves up the hierarchy ladder is called employee-driven innovation (EDI) (Høyrup, 2010; Smith et al. 2012). EDI is the generation and implementation of innovation across the boundaries of existing departments and professions (Høyrup, 2010). For EDI to occur, a company needs to have an employee-friendly environment that stimulates innovative thinking and provides employees with the freedom to make decisions and carry out tasks without extreme observation (Smith et al. 2012; Høyrup, 2010; Chen et al. 2016). This freedom in an individual's job is called autonomy, and it is a widely recognised job characteristic for developing a more flexible environment that enhances the creativity among the employees (Smith et al. 2012; Wang and Noe, 2010). However, there need to be some rules and procedures that regulate the behaviour of employees to guarantee the same quality of the products and services (Bobby, 2014; Robbins and Barnwell, 2006; Pandey and Scott, 2002).

The rules and procedures of an organisation are called formalisation. Formalisation leads to more efficient organisational processes by directing and controlling the employees (Bobby, 2014; Robbins and Barnwell, 2006). There are contradictions of how formalisation affects innovation (Rogers, 1971; Hirst et al. 2011; Mattes, 2014). Rules and procedures that are directing and controlling employees can harm the creativity and autonomy of the individuals (Hirst et al. 2011). However, formalisation can be a dominant factor in the stages of the innovation process and encourages the implementation of innovation. (Roger, 1971; Mattes, 2014). These contradicting statements make it unclear what effect formalisations has on EDI. Nonetheless, there needs to be a supportive environment within the company that motivates the employees to be innovative (Kesting and Ulhøi 2010; Smith et al. 2012).

By exploring the resources that can enable EDI in a formalised context, we hope to find the essentials that are needed in a formalised organisation to stimulate innovative behaviour among the employees. The resource-mobilisation theory (RM) will be applied to analyse the different resources essential for innovation. The goal of this thesis is to identify resources that are necessary for stimulating EDI in a

formalised setting; the research question is as follows:

*'Which resources are necessary for employee-driven innovation in a formalised setting?'*

The paper will continue as follows. We first conceptualise EDI in a formalised context and the role of resources in stimulating and facilitating EDI. Next, we present the results of comparing two multilevel case studies at highly formalised companies. We finalise with a conclusion, the practical and theoretical implications, and recommendation.

## 2. LITERATURE REVIEW

### 2.1 Formalisation

To reach the organisational goals, a company must have a structure that optimally utilises individuals and resources (Van Dam and Marcus, 2012). The organisational structure explains how communication flows through the company and sets out the pattern of relationships between employees at different levels of the organisation (Bobby, 2014; Fredrickson, 1986). Additionally, the structure describes how managers divide, supervise, and coordinate work (Bobby, 2014).

Formalisation is a component of organisational structure; it is the degree to which rules and procedures define managerial and employees' roles, authority, communication, norms, and sanctions in firms' activities (Fredrickson, 1986). A company with a high degree of formalisation has well-defined job descriptions, many organisational rules to follow, and there are clearly defined procedures that describe the work processes in the organisation (Robbins and Barnwell, 2006). The purpose of formalisation is to maintain a fair and transparent working method so that the company can guarantee the same quality and services for all the customers (Fredrickson, 1986; Robbins and Barnwell, 2006; Pandey and Scott, 2002). Another reason for having a formalised workplace is to reduce the unpredictability within the work processes, as it regulates employees in their behaviour (Robbins and Barnwell, 2006). Formalisation creates an organisation where employees know how others in the firm will act in certain situations and lays down guidelines to follow (Robbins and Barnwell, 2006). Additionally, formalisation can help run the organisation more efficiently with fewer managers, since a formalised workplace can substitute for some degree of managerial oversight (Schilling, 2017).

There are contradicting findings of how formalisation affects the innovativeness of an organisation (Rogers, 1971; Hirst et al. 2011; Mattes, 2014). On the one hand, high formalisation leads to reduced innovativeness because employees are used to behaving in a specific manner (Mintzberg, 1980). Moreover, formalisation with high levels of behavioural restrictions will harm the motivation and job satisfaction of employees, which will decrease the innovativeness of the individuals (Høyrup, 2010).

High formalisation does not necessarily mean that employees cannot be innovative (Raub, 2008; Vough et al. 2017). Formalisation and flexibility are not two dimensions on the opposite side of the scale; different

stages of innovation demand for various forms of formalisation and flexibility (Mattes, 2014). Formalisation and innovation can complement each other when there is a supportive environment within the organisation that stimulates innovative behaviour among the employees (Mattes, 2014; Vough et al. 2017).

## 2.2 Innovation and employee-driven innovation

Innovation has multiple definitions, an element that returns in almost all definitions is that innovation is an idea, practice, or object that is perceived as new by an individual or organisation (Rogers, 1983; Bobby, 2014; Schilling, 2017). This innovative idea must create value; in other words, it improves the conditions for one or more stakeholders (Rogers, 1983). Everyone can contribute to the generation and implementation of an innovation; employees throughout a company can learn and possess the skills needed to participate in this process (Tidd and Bessant, 2009). Innovation that is generated by “ordinary” employees is called employee-driven innovation (EDI) (Smith et al. 2012; Høystrup, 2012). EDI is primarily a bottom-up process that originates from employees where innovation is not part of their primary job responsibility (Smith et al. 2012). To fully conceptualise EDI, we will be using Høystrup (2012) definition:

*“Employee-driven innovation refers to the generation and implementation of new ideas, products, and processes – including the everyday remaking of jobs and organisational practices – originating from the interaction of employees, who are not assigned to this task. The processes are unfolded in an organisation and may be integrated in cooperative and managerial efforts of the organisation. Employees are active and may initiate, support or even drive the processes.” (Høystrup, 2012, p. 8)*

This broad involvement of employees has a positive economic effect on the company because high levels of employee satisfaction generate exceptional long-horizon returns for the company (Chen et al. 2016; Edmans, 2011). Organisations profit from EDI because it stimulates a general interest in improvement, which reduces the resistance to change and improves the coherency within the company (Chen et al. 2016; Edmans, 2011). Moreover, firms with an employee-friendly environment are more resilient to shocks because of their relative tolerance for failure (Edmans, 2011).

EDI may begin at the lower levels of the organisation; it is nonetheless a process that interacts with several people at different levels in the organisation (Høystrup, 2012). Employees need an organisation that provides a culture with trust, tolerance, openness, engagement, that there is a mentality to innovate and that mistakes are part of the innovation process (Martins and Terblanche, 2003; Loewe and Dominiquine, 2006). Additionally, autonomy is a vital factor in stimulating innovation

(Smith et al. 2012; Høystrup, 2012; Zhou, J. 1998). The self-determination theory goes even further and claims that autonomy is a basic psychological need for motivating all human beings (Deci and Ryan, 2012). However, an organisation cannot give their workers all the freedom in doing their job; a firm needs to document their activities to ensure a consistent quality (Bobby, 2014; Robbins and Barnwell, 2006; Pandey and Scott, 2002). Formalisation is an essential tool for creating harmony and equality of the organisation’s activities and in having a fair and transparent work method (Bobby, 2014; Robbins and Barnwell, 2006; Pandey and Scott, 2002). Organisations need to find tools that help the balance between formalisation and autonomy (Mattes, 2014; Pandey and Scott, 2002).

## 2.3 Resource-mobilisation theory

Resources are a vital link between a desire for change and the ability to mobilise around that desire (Loewe and Dominiquine, 2006). The resource-mobilisation theory (RM) will be the framework to analyse the essential resources for EDI. The RM theory originates from the social movement where the resources are at the centre of the analyses (McCarthy and Zald, 1977; Spier, 2017). The approach emphasises on the social movement’s ability to acquire resources and mobilise individuals towards achieving the movement’s goals (McCarthy and Zald, 1977; Spier, 2017). For a campaign to be successful, they need to carefully recognise crucial parts of various resources involvements and develop a strategy on how to proceed with these resources (Spier, 2017). The RM theory regards social movement as rational, goal-oriented social institutions, where the participant makes a sensible choice of participation (Edward and Gilham, 2013; Spier, 2017). The RM theory concentrates more on how the participants develop strategies and how they interact within the environment to pursue their goals (McCarthy and Zald, 1977; Canel, 1997). Leadership plays an essential role in the emergence of a social movement since leaders develop a group sense, devise strategies, and facilitate mobilisation by reducing its costs (Canel, 1997). The RM theory identifies five central resources that are crucial for the success of a movement (Edward and Gilham, 2013). These resources are moral, cultural, human, material, and social-organisational (Edward and Gilham, 2013). Although RM theory originates from the social movement, its natural closeness with organisational dynamics, leadership, and effectiveness makes it possible to use it in a corporate setting (Canel, 1997; Loewe and Dominiquine, 2006; Spier, 2017).

### 2.3.1 Moral resource

The moral resources of the RM theory include legitimacy, integrity, solidarity support and sympatric support (Edward and McCarthy, 2004). The moral resources originate outside of a social movement where external source provides the resources (Spier, 2017). Consequently, this resource can often be withdrawn and is less accessible and more exclusive toward a social movement (Edward and Gillham, 2013).

Legitimacy, solidarity, and other forms of social support are necessary for motivating people and for creating an environment that stimulates innovation (Høyrup, 2012). Trust between individuals creates a situation where there is a shared moral commitment to act in the best interest of the group (Bryk and Schneider, 1996). This trust is informal and of voluntary basis with no specific obligations (Bryk and Schneider, 1996). Social support and trust between employees stimulate the creation and sharing of ideas, the more secure individuals feel about the success and the connected image of themselves within the group; the more likely they will be to communicate their ideas to the group (Bryk and Schneider, 1996; Olaisen and Revang, 2018).

### 2.3.2 *Culture resource*

Culture is the beliefs, identities, and behavioural norms of groups that direct their actions in daily life (Edward and McCarthy, 2004). Cultural resources are widely known within a community; they can be objects and other cultural products such as music, literature, and films (Edward and Gillham, 2013; Spier, 2017). The resources are widely available in each society; however, they are neither evenly distributed, nor generally available (Edward and McCarthy, 2004).

Organisational culture develops when there has been enough shared history within an organisation (Schein, 2004). Leaders are an essential part of this development since they create groups and organisations, and with it, they determine the culture (Schein, 2004). There is no right or wrong culture, nor is there a limited set of customs, nonetheless the nature of the organisational culture exerts a significant influence on how employees behave in the company (Lepak and Gowan, 2016). The corporate culture emphasises on mutual learning experiences within a group and turns this collective learning into a taken-for-granted underlying assumption held by all members of the organisation (Schein, 2004). Culture promotes a universal understanding of the organisational purpose and the expected behaviour of employees (Robbins and Barnwell, 2006). In all organisations, there are patterns of beliefs, assumptions, symbols, rituals, and practices that have evolved during the organisational lifespan (Robbins and Barnwell, 2006). Established beliefs and assumptions are rarely questioned or evaluated, and many may be unable to identify the beliefs and assumptions of the company they work for (Robbins and Barnwell, 2006). Culture offers a standard set of values, which facilitates understanding and stability among employees; this leads to a stable pattern of interaction between individuals (Robbins and Barnwell, 2006). Values offer a means to understand the organisational culture; they form the link between the core identity of a company and their outward manifestation of behaviour (Cameron and Green, 2015).

### 2.3.3 *Human resource*

The human resource is a resource that an individual can make accessible to a social movement; these include labour, experience, skills, expertise, and leadership (Edward and Gillham, 2013). A key issue with this resource is that a skilled participant can

enhance a movement when their knowledge fits with the movement's needs at a given time (Edward and Gillham, 2013).

As environments become more competitive than before, and products more complex, organisations need all the knowledge to survive in these rapidly changing markets (Robbins and Barnwell, 2006). Companies need to draw upon the expertise of individuals and turn it into collective knowledge (Robbins and Barnwell, 2006). By obtaining information, experience, skills and attitude, a person can gain knowledge (Van Dam and Marcus, 2012). Education must be continuously updated and replaced as it becomes obsolete over time (Robbins and Barnwell, 2006).

### 2.3.4 *Material resource*

The category of material resources combines financial and physical capital, including monetary resources, property, office space, equipment, and supplies (Spier, 2017). Fiscal resources are significantly valuable for a movement since they need to cover their expenditures, and money converts into other types of resources (Edward and Gillham, 2013). An organisation needs to establish a budget for the implementation of an innovation (Van Dam and Marcus, 2012).

### 2.3.5 *Social-organisational resource*

The social-organisational resource has three subdivisions distinguished by the way individuals gain access to them (Edward and McCarthy, 2004). The three divisions are infrastructures, social networks, and organisations (Edward and McCarthyGill, 2004). Infrastructure is primarily public goods with relatively open access to individuals (Edward and McCarthy, 2004). Social networks and organisations are exclusive resources where insiders can restrict access to these resources for outsiders (Edward and McCarthy, 2004). Consequently, insiders can hoard and deny these resources to outsiders, which increases the existing inequalities among groups in their ability to access and utilise these type of resources (Edward and McCarthy, 2004).

Social networks can have a positive influence on innovation by increased tacit knowledge sharing (Olaisen and Revang, 2018). Tacit knowledge is the skills, ideas, and experiences that individuals have but are not codified and may not necessarily easily express (Olaisen and Revang, 2018). Individuals are often not aware of the knowledge they possess, how it can be valuable for others, or how to convert this knowledge into an innovation (Olaisen and Revang, 2018). A well-established communication infrastructure helps with safeguarding the sharing of tacit knowledge, and that the proposed ideas from the work floor will get through the layers of the organisations (Baltezarevic et al., 2014).

Collaborating with other organisation to jointly work on innovation is also an effective way to exchange resources and share the risk of new development (Schilling, 2017). External sources of information are more likely to complement in-house research and development (Schilling, 2017).

## 2.4 Theoretical model

Figure 1 illustrates how all the resources contribute to the process of making an idea deriving from an employee into EDI in a formalised setting. With this concept, we hope to discover the resources that are necessary for transforming work floor ideas into innovation.

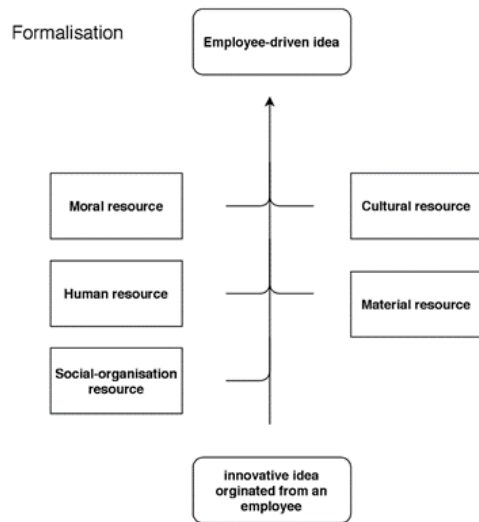


Figure 1: A conceptual model of the relationship between an employee's idea and how resources assist the approach towards EDI.

## 3. METHODOLOGY

### 3.1 Research design

With this research, we aim to obtain insight into resources that are necessary for stimulating EDI in a formalised setting. To uncover the resources, we adopt a qualitative research design, in which we choose to conduct a comparative case study with secondary data. By comparing two different organisations, we hope to discover the similarities and differences between the resources they use to stimulate innovation among their employees. Considering the disadvantages of secondary data regarding the lack of participating in the data collection, a careful reflection and critical evaluation of the data can avoid most limitations of secondary data analysis; and ensures a match between the data and research question (Johnson, 2014).

### 3.2 Components of analyses

We collected the data by analysing interviews of two studies done by researchers from the University of Twente. The reasons why we chose these studies were that: (1) Both researched highly formalised organisations, (2) both studies included employees from different layers of the organisation and (3) they investigated innovativeness among employees. The first case study is that of Bos-Nehles, Bondarouk, and Nijenhuis (2017) concerning innovative work behaviour in knowledge-intensive public sector organisations. The organisation they chose for their research was the Netherlands Fire Service (NFS). The NFS organisational structure is mechanistic, with high centralisation, standardisation, and a highly

formalised chain of command with an extensive network of rules and regulations. The researchers conducted the data through interviews at different levels of the organisation. Respondents were randomly selected from a national database to discover supervisor behaviour during the processes of innovative work behaviour experienced by project champions.

The second case study is from Renkema, Meijerink, & Bondarouk (2018) about routes of employee-driven innovation and how HRM supports emergence. The organisation they chose for their research was LabInc. LabInc runs test from blood samples of patients. The organisation has a formalised structure with standard procedures. For the study, the researchers randomly selected interviewees from different levels of the organisation at three different locations. Appendix 1 shows a summary of both studies, containing essential information about the two articles.

### 3.3 Operationalisation

To use the resource-mobilisation theory, we first needed to conceptualise the resources into usable assets so that it can be applied to businesses. We assigned keywords to the resources, a table of all the resources with the keywords is found in appendix 2.

#### 3.3.1 Conceptualising Moral resources

The RM theory explains the moral resource as legitimacy, integrity, solidarity support and sympatric support (Edward and McCarthy, 2004). For conceptualising the moral resources, we will define this resource as the mentality and atmosphere within the organisation. EDI needs an environment where the employees feel secure and feel connected within the group (Wang and Noe, 2010). The more connected and safe the employees feel, the more they will communicate their ideas towards the group (Bryk and Schneider, 1996; Olaisen and Revang, 2018). Therefore, we will define legitimacy as the quality of being reasonable and fair towards individuals. Being fair and honest towards your colleagues will help to develop a friendly environment where individuals share their problems and ideas (Olaisen and Revang, 2018). Furthermore, solidarity support measures the ability to pursue a shared organisational objective, regardless of personal interest (Goffee and Jones 1998). Individuals with a shared purpose are more prone to work together and help each other (Bryk and Schneider, 1996; Goffee and Jones 1998).

Additionally, sociability between employees is the degree to which people are friendly to each other and work towards a cohesion within the organisation (Goffee and Jones 1998). With sociability, we will be looking at the relationship between individuals. Moreover, we will add a reward system to this resource, since a reward is a tool that an organisation can use to motivate specific innovative behaviour among the employees (Steers et al. 2004). This motivation leads to a desired creative mindset within the organisation. To confirm, for the moral resources, we will be looking at the relationship between individuals and how they work atmosphere is within the organisation. Social support and trust within an organisation create an environment where

individuals feel safe and connected, this enables the employees to be more creative, and it enhances ideas sharing between individuals (Bryk and Schneider, 1996; Olaisen and Revang, 2018).

### 3.3.2 Conceptualising Culture resources

The organisational culture is an essential factor for stimulating EDI. A culture is a significant influence on how employees behave in the company; leaders are a vital part of developing the culture since they create the groups (Schein, 2004). With the cultural resource, we will be looking at how management is stimulating and supporting EDI. For EDI to happen, management must support their employees and assist them in their innovative behaviour; otherwise, the ideas will not be implemented (Høyrum, 2012). Management needs to provide a culture that promotes risk-taking behaviour, where failure is part of the innovation process (Robbins and Barnwell, 2006). If management does not accept failures, an employee will feel less secure to submit an idea.

Moreover, employees need a platform where they can openly share their problems and criticise the organisational plans. Management needs to tolerate conflict in order to create healthy discussions about ideas and problems within the organisation (Martins and Terblanche, 2003; Loewe and Dominiquine, 2006). Additionally, providing the employees with a degree of autonomy in their work enables them to find creative solutions to their problems (De Spiegelaere et al. 2014). Lastly, communicating the direction of the company toward the employees provides clarity of where the company is going and what goals they have established (Robbins and Barnwell, 2006). Communicating the vision and goals of the organisation creates a culture where employees feel involved, and where they can think with the organisation of what innovative ideas are needed to reach the goals (Robbins and Barnwell, 2006).

### 3.3.3 Conceptualising Human resources

Human resources are the resources that an individual can make accessible to an organisation; this includes labour, experience, skills, expertise, and leadership (Edward and McCarthy, 2004). Knowledge, skills, experience, and expertise are all essential employee values for an organisation, especially for creating innovative ideas. For this research, leadership is split into two styles based on the theory of Gaudet and Tremblay (2017). The theory divides leadership into consideration and initiations approach, where the consideration style is related to the satisfaction of employees, thus more suitable for the cultural resource. The initiation leadership style is focussed on performance and goal achievements and therefore, can get categorised under the human resource because the performance and goals of the employees are concerned with the personal development of individuals. The human resource will be focussed on the development of knowledge and skills of the employees. Learning opportunities and feedback sessions are critical for the continuous development of human knowledge. Knowledge and skills need to be continuously updated; otherwise, human resources will become obsolete over time (Robbins and Barnwell, 2006).

### 3.3.4 Conceptualising Material resources.

The material resources are a combination of financial and physical capital that is available for supporting employees in generating and implementing their innovative ideas.

### 3.3.5 Conceptualising Social-organisational resources.

The social-organisational resources concentrate on how communication flows through the company to get an understanding of the knowledge sharing and social infrastructure between individuals internally and externally. A respectable communication infrastructure helps to safeguard the sharing of tacit knowledge and ensures that the ideas proposed by employees will get through the different layers of the organisation (Baltezarevic et al., 2014).

## 3.4 Data analysis

For this research, we analysed a total of 15 interviews from the organisations: eight from NFS and seven from LabInc. We analysed the transcripts in three steps provided by Cobins and Strauss (1990). These steps are 1. Open coding, 2. Axial coding, and 3. Selective coding. However, instead of open coding, we will be using a deductive approach to coding the qualitative data (Vos, 2009). Using this approach, we formulated in the conceptualisation a pre-set coding system. The table with the pre-set coding scheme can be found in *appendix 2*. Before we started with the steps, we first printed the transcripts and scanned through the text. We appointed each resource a colour to categorise the codes with a colour so that we could indicate the resource the fragments belong to within the documents.

For the first step, we underlined all the text that corresponded with the keywords fitting to one of the resources. After coding a couple of transcripts, we performed a short evaluation of the keywords to ensure that the keywords structure for the resources was still appropriate. After underscoring all the fragments, we critically looked at the codes and marked them with the colour corresponding to their resource. After categorising all the data to their corresponding resources, we had a total of 28 pages with codes. *Appendix 3* shows a table with the total pages per resources. The second step we took to analyse the data was axial coding. During this step, we compared the different codes within each resource. We looked at the similarities and differences within each resource. Selective coding is the third and final step; by summarising the central theme and finding patterns within the data, we could begin to build on the ideas and designs to gain a more in-depth insight into the meaning of the data. We worked out the concepts to the theory and searched for exceptions through constantly comparing the codes.

## 4. FINDINGS

In this section, we present the findings of the five resources within the organisations.

### 4.1 Moral resource

Especially in the lower levels of both organisations, we noticed a high degree of *sociability* and

*legitimacy*. There were mutual trust and support among individual; this created an environment where the employees feel that they can share and discuss their ideas with their colleagues and get an honest response out of the interaction. These kinds of interactions support EDI because employees share their ideas more and develop confidence in their proposals by discussing it with their colleagues. Most employees at the work floor were glad to work for their company; they described the atmosphere in their team as friendly and warm. A firefighter even described the work environment as the feeling of being home. This feeling indicates a high level of *sociability* between employees because people are friendly to each other and work towards a cohesion within the organisation. Moreover, the *solidarity support* is also at a high degree within the lower levels of both organisations. There is a unity between individuals where they want to help each other. An employee indicated that her reason for innovating is to help the company stay healthy and well-running. The exceptional relationship between employee also shows in their willingness to help colleagues and even reward them for their support.

*“This is with colleagues, [...] If someone cannot make a shift, and he cannot get a replacement, and when finally, someone else takes his shift, then they sometimes give a piece of chocolate or something else.” (Analyst 3)*

However, even if the relationship between employees is excellent at the lower levels of the organisation, an unhealthy relationship at a higher level can interrupt the work environment. At LabInc, the workforce acknowledged that they feel the friction within the higher levels of the organisation. We analysed that within the more upper layers of LabInc, there is a low degree of both *solidarity* and *sociability* between managers. Management is not on the same wavelength; this results in miscommunication between the more upper layers of the organisation. Employees at the higher levels of the organisation acknowledge this friction and stated that there is no mutual trust between individuals at the higher levels and that they do not trust each other’s skills. There is even an unprofessional rivalry between managers. As a result, there is no feeling of unity within the company or between the different locations; every location has a different mentality. This differences in attitude display itself in the differences in the work environment, and the generation of innovative ideas among employees of the various locations.

*In the department, among colleagues is it good. However, there is sometimes friction on the upper layers; the higher level is not on the same wavelength. You notice it, and it affects the work floor. (Supervisor – LMLOC1)*

In both organisations, there was no established monetary *reward system* for encouraging innovative ideas from the employees. Some employees at NFS knew about a financial reward system within their organisation, and others did not know about it. A couple of employees stated that there is a system that rewards employees with a monthly surplus on their wages—however, only people who put a significant effort into standing out will receive a monetary reward. Additionally, employees can get rewarded a

position at the project group that follows their proposal, and in some cases, there is a possibility to get promoted. We analysed that both organisations reward their employees through appreciation. The organisations encourage the innovative behaviour of their employees through appreciation. This gratitude is expressed by telling people they did an excellent job and stressing the individual’s importance towards the organisation. Most firefighters stated that they are satisfied with getting the appreciation from their colleagues and that financial compensation does not fit with their team mentality.

*“Rather, like the way how it currently is done; appreciation displayed by the supervisor by taking the team out for lunch or doing things together. I value these things much more. So, I am happy with how I am rewarded” (Firefighter-PFF2SR3)*

At LabInc, most employees stated that they do not get gratitude from the higher layers of the organisation for doing a great job. We analysed low degrees of *solidarity* and *sociability* between the top layers at LabInc. These low degrees also affects the relationship between the higher and lower levels of the organisation. Management is too busy with their unprofessional rivalry that they forget the work floor, and this leads to employees feeling left out by their management team. Because the higher layers are more focusing on themselves and not on the lower layers, they forget to appreciate or *reward* the ideas that come from the work floor.

*“It would be nice if management would compliment us on our work effort. They do not have to compliment us all the time. However, it would be nice to hear something from them.” (Analyst 3)*

The NFS has an extra *reward system* for stimulating innovative behaviour among the employees. They organise a national initiative prize for the most creative ideas of the year. During the analyses, it became apparent that there are different opinions on the value of this type of reward system. On the one hand, some employees say that the award is an excellent initiative for spreading and sharing new ideas and innovations. These employees advocate organising more of such actions, where they can meet up with enthusiastic people from different regions. However, they do think that most of the innovations remain within their area and pity that the ideas are not shared or implemented nationally.

On the other hand, some employees question if a prize is the right way to motivate innovative behaviour. A worker argued that the organisation first needs to arrange innovation from below, picking up the signs and implementing the ideas from the lower levels. In their opinion, the prize is just a way of promoting and propaganda for boosting the organisation’s image. Both sides of the argument agree on the statement that the award stands far from the repressive side. Prevention-related projects are the dominant projects that get the most attention.

*“So, in my opinion, repressive related projects are not rewarded to a large extend anymore. It is considered as convenient rather than ground-breaking” (Station officer -DC3)*

## 4.2 Cultural resource

Employees at both companies stated that they experience some form of *autonomy* in their job. They

generally feel that they receive freedom and independence in their work from their supervisors. Employees at LabInc showed that autonomy in their profession meant that they could choose the order of finishing their daily work. At the fire station, there was some distinction between the different positions; firefighters indicated that at the repressive activities, there was less autonomy, and the leadership style was more directive in nature. Additionally, at the NFS, the direct supervisors are actively stimulating the employees to be innovative by giving them a problem and asking them for a solution. By giving employees the autonomy and opportunity to provide input creates an environment where employees feel valued by their supervisors, and they will be more inclined to help the organisation. These findings suggest that employees who work for a formalised organisation can experience freedom in their profession. We also analysed that the employees do not feel very restricted by the rules and procedures that are imposed on them by the organisation. A couple of employees indicated that they keep the rules and procedures in mind when they develop a solution or idea. Surprisingly, employees who have flexible working places stated that they want more routine in their job. Working in other cities for a couple of days hinders the creation of developing good relationships with colleagues. This will, in turn, hampers the idea sharing between employees.

*“I would stop the flexible working. Stop obliging people to work in other cities for a couple of days. Let them sit in their fire station; I like to have routine, and I like to develop a good relationship with my colleagues.” (PFF2SR3)*

Generally, employees at both companies feel that their direct supervisor or team leader *supports* them unconditionally regarding innovative ideas. This support from their immediate managers creates an environment where employees share their thoughts more frequently with their supervisor. Employees at both companies indicated that there is *tolerance of failure* from their supervisors and that they do not experience any risk for sharing an idea. Additionally, employees do not fear the risk of *conflict*. However, employees would like to explain their innovative idea in person and not having their direct supervisor do it for them. Tolerance of risk creates a safe working environment where employees can make mistakes, and this stimulates EDI. Moreover, at LabInc, the success of a proposal also depends on the relationship between the supervisor and the individual. Some managers would consider the person who submitted the plan and would not only look objectively to the submission.

*“If you have a good relationship with your supervisor and he is not all negative about your proposed idea, then the change of success is greater than when a colleague who works as good or even better than you, but he lacks in social skills.” (Analyst1)*

When it comes to upper management support towards innovation from the work floor, we noticed that the two organisations are entirely different from each other. On the one hand, in the NFS, employees indicate that management is forcing innovation too much. Forcing change creates pressure on employees. At the same time, it creates an aversion

against the word innovation. Firefighters signalled that they need an opportunity to get used to things and that they need time to learn to work with new tools. Changing and innovating continuously within the organisation does not provide opportunities or time for the employees to get acquainted with the change. Surprisingly, a few employees stated that innovation is issued more top-down- rather than bottom-up. An employee explained that the managers are too focussed on top-down innovation, that people on the floor who want to be innovative are ignored and not listened to by management.

*“Because the management of this fire department is too occupied with scoring through the implementation of innovative, ground-breaking things, they fail to be able to look at the working floor and retrieve the most important signs out of the people at the floor” (Head fire keeper operative, PFF3SR3)*

On the other hand, employees from LabInc feel that management does not always acknowledge their proposals. A couple of workers indicated that the higher levels of the company find it difficult to accept if someone proposed a better suggestion, especially if the idea comes from the lower levels of the organisation. The work floor feels forgotten by their management; they even stated that some managers have no idea how it works on the floor and makes decisions without the workers in mind. The workforce indicates the need for more engagement by their managers and feels that management should show themselves more frequently on the work floor to get a better understanding of what is happening at the lower layers of the organisations.

*“I think that management should walk through the lab to see what is happening. There is often much more going on than they think” (Analyst 4)*

We analysed a low degree of communicating the *direction of the company* towards the employees. In both organisations, most employees do not know the vision, mission, or plan the organisation is following. Management should provide this information to the employees so that they have more clarity on the situation within the organisation. One of the interviewees even called it the most significant problem he encounters, because not understanding why management takes decisions produces an environment with uncertainty and misunderstanding.

*“I think that is the main problem: that is what I miss. I have no clue where our management wants to go. They talk about a dot in the horizon; that says nothing to me.” (PFF4SR3)*

### 4.3 Human resource

After analysing both companies, we noticed that they offer *learning opportunities* to their employees. The organisations provide training focussed on improving and sustaining the quality of work the employees perform. Employees from LabInc alternated between workplace within the facility to maintain the knowledge on how to operate the different machines. A couple of times per year, the employees have a digital test about the diverse workplaces and how to manage them. The employees from LabInc stated that they appreciate the learning opportunities; the courses help them to gain more knowledge. This increased knowledge stimulates the



employees to apply it in practice and think differently towards problems and situations they encounter. The training courses are interactive; the employees can submit a topic and give feedback on the course. However, the intensity and quality of the training at LabInc have decreased because of monetary issues. Employees stated that educational topics are incorporated into their work meetings to sustain knowledge. Organising training sessions this way can reduce the quality of the learning experience because there is a limited amount of time dedicated to discussing the topics thoroughly.

*“In Principle, The company can count a theoretical discussion about a workplace during a meeting as schooling.” (Analyst 1)*

The NFS facilitates *learning opportunities* that are necessary to maintain a basic level and provides extra training when an employee desires further education. However, a supervisor stated that the person who wants to have additional training needs to be a suitable candidate for the sessions. Moreover, the knowledge of employees is also enhanced through seminars, presentations, and lectures. There are also books and magazines distributed, showing the latest development and innovation. These are all to improve the knowledge of the employees and stimulate their innovative thinking.

*“There are several people who travel throughout the county to give seminars, presentations and lectures and to teach people given things. Also, there are books and magazines distributed, showing the latest development and innovation.” (Fire station officer-DC3)*

We observed that both organisations have opportunities to discuss and evaluate employee’s *performances and the goals* they achieved. Performance and goals help employees to enhance and improve their skills. The NFS has more meetings per year for the employees to assess themselves than LabInc. The firefighters meet at the start, middle, and end of every year, in this meeting, they discuss the performance and goals set by the employee. This process leads to a precise performance and personal development plan for every individual, and therefore each employee knows what the company expects from them and what they need to improve or develop. Employees at LabInc get an annual evaluation meeting about themselves and their performances for the past year. During this yearly meeting, employees can submit the problems they have encountered during the year. A couple of workers were not positive about the feedback the annual meeting provides; the supervisor that delivers the input is not the person the employees work with on a daily basis. Not getting precise feedback on your performance will counter the purpose of an evaluation meeting of enhancing the skills and performance of an employee.

*“But I do not think of it as feedback, not positive feedback. Because it is with a supervisor where you do not work with.” (Analyst 2)*

#### 4.4 Material resource

At both organisations, we noticed that there was an absence in *financial capital* for further developing of

an innovative idea. A firefighter stated that money is a significant barrier to innovation. For the *physical capital*, we analysed a difference between the organisations. The NFS provides employees with physical capital to further develop and implement their innovative idea. Employees can experiment and develop prototypes in the workshops. A supervisor stated that when the proposal concerns something small which does not demand significant investments or an organisational change, it can be effortless to give support and facilitation. The organisation has a lot to offer; there are useful workshops, computers, data applications, and a lot of other facilities. However, a couple of employees were critical towards the available facilities; they stated that the facilities are not evenly distributed among the employees, and they were sometimes insufficient. An interviewee explained that before anyone receives facilitation, they first must argue and convince people that their idea has value.

*“You have to argue your intentions, however. You must convince the people that your idea has value and will bring value. So, it does not come by itself.” (Team leader - LMSR3)*

LabInc provides *physical capital* to further stimulate and submit innovative ideas in the form of an online suggestion box. Workers indicated that they find the procedure too inconvenient to use and that there is a high chance of not getting any feedback on the proposed idea. A couple of employees revealed that there were incidents where a colleague got the credits for working out the suggestion, while it was not that colleague’s initial idea. This inconvenience and discredit demotivate the employees to use the online form.

*“Yes, a suggestion form, however, a form to fill in. [...] It is too cumbersome for people to fill in.” (Supervisor-LMLOC1)*

#### 4.5 Social-organisational resource

Employees at both companies stated that the *communication flow* needs to be improved. Both top-down and bottom-up communication within the organisations needs to be enhanced. Employees reported that the communication speed is too slow; this slow communication discourages the employees from submitting their future innovative ideas. Additionally, employees want a better indication of what is happening with their idea. Employees indicated that waiting too long on a response on their creative submission creates a feeling that management does not value their input. Moreover, employees desire more clarity on where they need to submit their proposal, not knowing to whom you need to go to also creates a barrier for supplying an innovative idea.

*“Clear structure, of where to go with a comment. And that it goes to the right person, know that is not the cause. Now, you do not know where it goes.” (Manager-KC1)*

A couple of employees at the NFS revealed that there are cases in which individuals forgot to communicate changes towards individuals. The communication between the work floor and management at the NFS is sometimes insufficient; ideas do not always reach

the right places to become useful. Almost all employees indicated that communication within the organisation should be improved. A couple of employees stated that there are too many layers within the company; these layers decrease the communication speed. Although the long waiting time, the employees appreciate that most ideas complete the process successfully. Additionally, the employees stated that the intranet is too full of information, that is impossible to keep up with all the new messages.

*“Our intranet is full of information. It is so full of information that every day a full new page of new items is published.” (Firefighter-PFF2SR3)*

At LabInc, the workers indicated that the communication infrastructure is too widespread. Employees generally stated that there are too many layers within the organisation, with many individuals involved in the decision-making process. A supervisor noted that communication within the company is slow and inefficient. Employees stated that they do not always get information back on their proposal, or they must wait for a problematically long time. The unprofessional rivalry that we mentioned at the moral resource is also a reason for the postponement in communication. This delay in communication demotivates the employees to be innovative because it gives them the feeling that their ideas are not important enough for the company. A manager revealed that it is difficult to reach everyone; therefore, management provides all the information that was discussed in a management meeting in a transcript. Management assumes that the employees read these transcripts. However, we discovered that there is too much information lost due to the number of emails sent to employees. Employees do not have enough time to read everything. Additionally, employees stated that not all organisational announcements are provided at a similar time. Some location will hear the news earlier than other locations—this deviation in sharing leads to speculations and rumours that disturbs the unity of the organisation.

*“They (management) all have to tell the same story. And not three days earlier on one location, because then you are making speculations. At least, I do not find it very appropriate.” (Analyst 4)*

What we further analysed from the interview was that there is a lack of knowledge sharing and co-development within both organisations. Almost all employees indicated that the NFS is too fragmented; there is to some extended collaboration between the different regions. However, there is no national collaboration or knowledge sharing. There is also no good established relationship where they share information between the locations. On the other hand, an employee of NFS stated that, if a region contains universities, relatively more innovation was being done and ideas that were proposed were accepted more readily. The external exchange between firefighters from different countries was also precious in the transfer of knowledge. Lastly, LabInc also participated in valuable foreign knowledge exchange with their customers what resulted in useful knowledge sharing.

*“We discussed with a hospital, about the quality, how do you safeguard the quality of results.” (Analyst 4)*

In Table 1 below, we provided a summary of the findings on each resource splits in the two organisations.

	<b>NFS.</b>	<b>LabInc</b>
<i>Moral</i>	<ul style="list-style-type: none"> <li>- High levels of sociability and legitimacy among the employees.</li> <li>- At the lower layers, there is solidarity within the team, however not with other units.</li> <li>- No established monetary reward.</li> <li>- Reward through appreciation from colleagues and supervisor.</li> <li>- Change of getting promoted or joining a project group.</li> <li>- National prize</li> </ul>	<ul style="list-style-type: none"> <li>- High levels of sociability and legitimacy among the employees on the work floor.</li> <li>- At the lower layers, there is solidarity within the team.</li> <li>- Friction between the higher levels of the organisation.</li> <li>- No monetary reward.</li> <li>- Reward through appreciation from colleagues and direct supervisor – not from the more top layers.</li> </ul>
<i>Culture</i>	<ul style="list-style-type: none"> <li>- Autonomy - a distinction between the different positions.</li> <li>- Rules and procedures do not restrict innovative thinking.</li> <li>- Direct supervisors actively stimulate EDI.</li> <li>- Supervisors support them with their innovative idea.</li> <li>-Forcing innovation too much.</li> <li>-Too focussed on top-down innovation.</li> <li>- Most employees do not know the direction of the company.</li> </ul>	<ul style="list-style-type: none"> <li>- Autonomy - order of finishing their daily work.</li> <li>- Rules and procedures do not restrict innovative thinking.</li> <li>- Supervisors support the employees with their innovative idea.</li> <li>- Not acknowledging the ideas from the work floor.</li> <li>-Top-down innovation.</li> <li>-Feels forgotten by their management.</li> <li>- Most employees do not know the direction of the company.</li> </ul>
<i>Human</i>	<ul style="list-style-type: none"> <li>- Learning opportunities to maintain a basic level.</li> <li>-Provides extra training when employees desire this.</li> <li>- Seminars, presentations, and lectures.</li> </ul>	<ul style="list-style-type: none"> <li>- Learning opportunities to improve and sustain the quality of work.</li> <li>-Rotating between workplace to maintain knowledge.</li> </ul>

	<ul style="list-style-type: none"> <li>-Books and magazines.</li> <li>-3x meeting with accurate feedback and assessment on performances and goals.</li> </ul>	<ul style="list-style-type: none"> <li>-Knowledge stimulates to apply in practice.</li> <li>-Training sessions are interactive.</li> <li>- Annual evaluation meeting without precise feedback.</li> </ul>
<i>Material</i>	<ul style="list-style-type: none"> <li>- Insufficient amount of Financial capital.</li> <li>-Physical capital for further development of an innovative idea.</li> </ul>	<ul style="list-style-type: none"> <li>- Insufficient amount of Financial capital.</li> <li>- Physical capital for encouraging submitting innovative ideas.</li> </ul>
<i>Social-org.</i>	<ul style="list-style-type: none"> <li>- Communication within the company is slow and inefficient</li> <li>- A desire for more clarity on where they need to submit their idea.</li> <li>- Information back on their proposal.</li> <li>- The intranet is too full.</li> <li>- Lack of knowledge sharing.</li> <li>- Some extended collaboration between the different regions.</li> <li>- External exchange with different countries.</li> <li>- Universities increase innovation.</li> </ul>	<ul style="list-style-type: none"> <li>- Communication flow needs to be improved.</li> <li>- A desire for more clarity on where they need to submit their idea.</li> <li>- Communication speed is too slow.</li> <li>- Feedback time on the idea too long</li> <li>- Communication infrastructure is too widespread.</li> <li>- Too many emails with information.</li> <li>- Lack of knowledge sharing between locations</li> <li>- Communication is not provided at the same time.</li> </ul>

Table 1: comparison between the organisations and their resources.

## 5. CONCLUSION

This qualitative study aimed to answer the primary question of ‘**which resources are necessary for employee-driven innovation in a formalised setting**’. We found that EDI is a process that involves all the levels of the organisation and requires good communication between these levels. Friction in the higher layers of the organisation can impact the working environment throughout the company. A pleasant working environment, where employees feel safe and valued, increases the satisfaction and working ethic of the employees. A friendly and warm atmosphere creates a good relationship between individuals, where they support each other and share their ideas. Management is responsible for creating this friendly environment throughout the organisation; without their contribution there cannot be unity within the company.

Even in a formalised organisation managers can provide employees with some degree of autonomy. A degree of autonomy can be achieved in the form of letting the employees organise their daily tasks. The rules and procedures of an organisation are not a restraining factor for EDI. Employees understand the necessity of formalisation and will generate ideas that fall within the given set of rules and procedures.

Management needs to establish a well-structured communication network that goes top-down and bottom-up. In this structure, the supervisors can more easily communicate the feedback and decision to the employees. Communicating the goals, vision, decisions, and priorities of the organisations establish more understanding and stability among the employees. Because, employees want to know why management made specific decisions, this involvement of employees creates a support base where there is a higher success rate for implemented ideas. Moreover, a well-structured communication network also supports a faster flow of communication, and employees know where to go to with their plan or problem. Employees need to have feedback on their proposal or issue at a reasonable time. Otherwise, employees will feel left out and not valued by their managers; this demotivates the employees for future innovative projects or solutions.

A learning experience that generates new knowledge stimulates innovative thinking among the employees. Increased awareness helps with creating new thinking towards situations or problems and encourages to apply the newly found knowledge in practice.

Even if a company does not have the resources to provide physical capital for developing a prototype, the necessary thing is that the employees get the time to work on their idea.

## 6. CONTRIBUTION TO THE THEORY, PRACTICE AND LIMITATIONS.

With the results of this research, we can counter the notion that autonomy is not possible in a formalised organisation. Even if some rules and procedures restrict the manner of work, managers can still provide some degree of autonomy for their employees.

This research added to the statement made by Høyrup (2012) that EDI is a process that interacts with several people at different levels of the organisation. Every individual can stimulate or hinder the creation of EDI. EDI must be supported by the whole organisation to work. This study supports the notion of Chen et al. (2016) that employees’ satisfaction and EDI intertwined with each other and that employees need an organisation that provides a culture with trust, tolerance, openness, engagement, that there is a mentality to innovate and that mistakes are part of the innovation process. Moreover, we add to the study done by Baltezarevic et al. (2014), that established communication infrastructure is essential for the safeguarding of tacit knowledge sharing, and that proposed ideas from the employees will get through the layers of the organisation. This study contributes to the notion made by both Mattes, (2014) and Vough

et al. (2017) that formalisation and innovation can complement one another when there is a supportive environment within the organisation that stimulates innovative behaviour.

This study enriches the RM theory to grow into a method that can be applied to organisations. We found that the resources intertwine with each other in a corporate setting. An organisation can offer a resource that can stimulate employees in multiple aspects. For example, management can use an annual meeting as a human and social-organisational resource. During this meeting, a supervisor can give feedback that enhances the skills of an individual, and the meeting provides a situation where employees can share their knowledge. Moreover, the national prize at the NFS can be seen as a moral resource since it encourages innovative behaviour and it can be a social-organisational resource since the award is a tool for spreading and sharing new ideas and innovations through the organisation. However, establishing a national prize is not first thing an organisation has to worry about; they first need to arrange innovation from below and pick up the signs from the lower levels of the organisation.

The moral, cultural and social-organisational resources are more important for establishing a fundament for EDI. A friendly and warm atmosphere where employees feel part of a team creates an environment where employees share and discuss their ideas. Monetary rewards become less important to employees when innovation is more of a team effort. Because employees help each other to develop an idea further, this idea becomes more of a team effort, and therefore rewarding an individual becomes less desirable. The social-organisational resource provides well-functioning communication networks that create a system of knowledge sharing and ensures that ideas proposed by employees will get through the different layers of the organisation. The cultural resources, in other words, management, influences all these aspects. Problems within the higher layers of the company will negatively affect the stimulation of EDI. If there is a disturbance within the management team, the communication flow will be adversely affected. The speed of communication will slow down, and employees will feel discouraged because of the delayed feedback. Moreover, management is responsible for creating unity within the organisation, and they need to accept input from the lower levels of the organisation. Therefore, this study contributes that management is an essential role in the success of EDI.

Managers can get inspiration from this research on how to get more insight into stimulating employees to be innovative, and how all levels of the organisation influence the work environment within the company. All organisations can generate EDI, even formalised companies, if they are willing to listen and create an environment that stimulates EDI.

With the results of this research, we can add to a better understanding of EDI. This study had some implications because the analysing was done by comparing the two cases. Therefore, we should be

careful in generalising it, but we can apply this result for more than just these two specific cases.

## 7. RECOMMENDATIONS

Based on our findings, we can say that formalisation does not hinder EDI. On the contrary, formalisation can serve as a catalysator for creating a standardised process for applying, evaluating, and implementing innovative ideas proposed by employees. A clear formalised communication structure for innovative ideas ensures that there is a short communication route; this provides faster feedback responses to the employees. Moreover, A clear formalised communication structure also safeguards that the innovative proposals are reaching the right person to evaluate the innovative submissions. Additionally, with a clear structure, employees will know where to submit their proposals.

A team or department dedicated to handling all the innovative ideas might be a solution for establishing a clear structure. These departments can help to set up multidisciplinary teams with all levels of the organisation. They can assist with the evaluation of ideas and set up a business plan for the improvement and implementation of projects. We would recommend locating this department under the operations manager. Because this manager is responsible for the process of creating goods and services, this includes the logistics, production and purchasing. We recommend this location because most of the innovative ideas from the work floor related to these sections. If this is not a possibility, then we would recommend locating the department under financial management because they have insight into the budget and have a good overview of the costs. These departments will benefit both management and employees. It will take a portion of the workload of supervisors because they do not have to handle all the submissions. This decrease in workload will give them more time to manage the employees and make sure that the work environment is pleasant. These departments will also be beneficial to the employees because it will most likely lead to faster decision making, feedback time, knowledge sharing throughout the organisation, and a clear structure of where the employees can submit their idea or issue.

An improved communication structure will increase the motivation of employees to generate more innovative ideas. Communicating the goals, visions, and priorities of the organisation are essential for enabling the employee to create ideas that are more suitable to the company's needs. Additionally, it will create a feeling among the employees that the company listens to them and values their input.

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## 8. APPENDIX

### Appendix 1: A summary of both case studies.

Title	Routes of employee-driven innovation: how HRM supports emergence.	Innovative work behaviour in knowledge-intensive public sector organisations: the case of supervisors in the Netherlands fire services.
Authors	M. Renkema J. Meijerink, & T. Bondarouk	A. Bos-Nehles, T. Bondarouk & K. Nijenhuis.
Company	LabInc	Netherlands Fire Service
Type of research	Exploratory qualitative case study.	Exploratory qualitative case study.
Data Collection	Multiple data collection techniques, including document analysis, semi-structured interviews, and observations.	Multiple data collection, including document analysis, unstructured interactive and semi-structured interviews.
Hierarchical levels of respondents	Top management, department managers, supervisors, and support staff.	Firefighters, their direct supervisors, and district commanders
Number of interviews	40	36
Research period.	2018	2017

**Appendix 2: A table containing the different keywords for operationalising the resources.**

Moral	Culture	Human	Material	Social-organisational
Legitimacy	Autonomy	Learning opportunities	Physical capital	Communication network
Sociability	Management support	Focus on performance	Financial capital	Exchange with external parties
Solidarity	The direction of the company	Goal orientated		
Reward system	Integration	Feedback		
	Risk tolerance			
	Conflict tolerance			

**Appendix 3: An overview of the total pages of codes per resources.**

Moral resource	6 pages
Cultural resource	8,5 pages
Human resource	5,5 pages
Material resource	3 pages
Social-organisational resource	5 pages