Improving employees’ innovative work behaviour

The impact of goal orientation on innovative work behaviour and the role of organizational learning from error’s culture on that relation

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Abstract

The turbulent environment of organizations requires constant developing and learning to succeed in the globalized, highly competitive markets. Therefore, innovative work behaviour of employees is important as well as knowledge about innovative work behaviour and what affects innovative behaviour of employees. This research adds knowledge about it as it investigated how goal orientations influences innovative work behaviour and whether organizational learning from error’s culture moderates this relationship. A survey (187 respondents) spread in a cancer centre, has been used to answer the research questions. The statistical analysis revealed that goal orientations influences innovative work behaviour by a performance-prove goal orientation or a performance-avoidance goal orientation. Evidence is found that gender and tenure influence the relations of goal orientation with innovative work behaviour. Based on these results, organizations should realize that goal orientation of employees can help them to act innovatively. To what extent organizational learning from error’s culture impacts the relation between goal orientation and innovative work behaviour cannot be answered based on this research, but further research with respect to this is recommended.
1. Introduction

1.1 Introduction and problem statement

Organizations are faced with the challenge of constantly developing and learning if they want to succeed in the globalized and highly competitive markets of the present and future (Kalyar & Rafi, 2013). The increasingly turbulent environment of organizations is the reason that innovation becomes part of every employee’s job description (Kheng & Mahmood, 2013). Because of the importance of individual innovation organizations want to gather knowledge about the role of the employee, the dynamics what drive them, and what affects the employees’ innovative work behaviour. Innovative work behaviour refers to seeking out new technologies, recommending new strategies to achieve goals, applying new work methods and procuring support and resources to implement novelty ideas (Kheng & Mahmood, 2013). Janssen (2000) conceptualized innovative work behaviour as comprising idea generation, promotion and realization. Studies have shown that innovative work behaviour and goal orientation are related in the sense that engagement in innovation is influenced by the level of target specificity (Messman & Mulder, 2014) and the innovation behaviour is stronger with a higher goal orientation (Montani, Odoardi, & Battistelli, 2014). The latter study is specific on learning goal orientation, but according to Janssen and Prins (2007), goal orientation consists of learning goal orientation and performance goal orientation.

The studies of Dyck, Frese, Baer, & Sonnentag (2005) and Putz, Schilling Kluge, & Stangenberg (2013) suggest that organizational learning from error’s culture relates to goal orientation as it affects firms performances and there is some evidence that organizational learning from error’s culture can lead to improvements (Dyck et al., 2005). This culture is, according to Dyck et al. (2005), common shared believes and norms of organizations and Schein (1990) describes this culture more comprehensive as he adds to this that climate is a surface manifestation of this culture.

Organizational learning from error’s culture has been studied in relation to goals and improvements and relations are found. Also goal orientations and innovative behaviour are related. However, the role of organizational learning from error’s culture on the relation between goal orientation and innovative work behaviour has not been investigated thoroughly up to now.

Therefore, the following research question is formulated:
How does goal orientation influence innovative work behaviour and to what extent does organizational learning from error’s culture impact the relationship between goal orientation and innovative work behaviour?

1.2 Research method

To answer the research question, the concepts and the relationship between the concepts are studied in literature. The literature research led to a conceptual model. This conceptual model is the basis of a
survey that consists of questionnaires, which are spread in a cancer centre at a university medical centre in the Netherlands. This centre exists of several departments with approximately 500 employees in total. Reporting errors are considered very important in this centre, because making faults can be disastrous for individual patients, groups and the whole organization. The existing system for reporting critical situations (error and risk of error) show the occurrence of errors and error prone situations per department. Employees of the centre are highly educated professionals (professors, doctors, scientists), administrative personnel with several levels of education, and trained nurses. The cancer centre is part of a university medical centre and most of the constantly changing staff is therefore always in training.

Data is gathered with an online questionnaire, which includes questions from validated questionnaires. The formulated questions are based on the research question and literature. Relevant control variables are included. Through ‘EBSCO Host all databases’ literature is explored to operationalize the concepts to find the relation between the concepts formulated above. The focus is on scholarly articles with full texts available. Used keywords are: goal orientation, innovative work behaviour, organizational learning. Based on the literature review hypotheses are formulated and an explanatory research is performed.

1.3 Scientific and practical relevance

The moderating role of organizational learning from error’s culture on the relation of learning-, and performance goal orientation and innovative work behaviour has not been investigated thoroughly in literature. This research will therefore give more insight in organizational learning from error’s culture and could add new information in the way innovative work behaviour can be enhanced. For organizations this research can give direction to enhance innovative work behaviour of employees.
2. Theoretical framework

2.1 Innovative Work Behaviour

Abstein and Spieth (2014) describe innovative work behaviour as a multistage process comprising of different behaviours that can be linked to three distinct stages of the innovation process. These stages are: idea generation, e.g. developing novel ideas; idea promotion, e.g. obtaining external support; and idea application, e.g. producing a model or prototype of the idea (cf. Janssen, 2000; Radaelli, Lettieri, Mura, & Spiller, 2014). Janssen (2000) and Kheng & Mahmood (2013) describe innovative work behaviour as an action to generate, apply, and implement novelty ideas at work.

Innovative behaviour is influenced by formal work related incentives (Park, Shin, Lee, & No, 2015). For example in human resource management, when the focus is on employees’ personal strengths and respect of individual differences and employee engagement is valued (Abstein & Spieth, 2014). Style of management also influences innovative work behaviour as Riaz, Riaz, & Batool (2014) show in their research, that a formal rational management style relates negatively to innovative work behaviour. Innovative work behaviour is not only related to formal incentives but also with informal, work related and personal incentives. These informal work related incentives are e.g. an intuitive or spontaneous management style, which is positive related to innovative work behaviour of employees (Riaz et al., 2014). An informal personal incentive on innovative work behaviour is sharing knowledge: by CEO’s (Park et al., 2015) and by employees (Radaelli et al., 2014).

Innovative work behaviour is related to goal orientation in the sense that engagement in innovation is influenced by the level of target specificity (Messman, & Mulder, 2014) and the innovation behaviour is stronger with a higher goal orientation (Montani et al., 2014). Innovative work behaviour is related to organizational learning from error’s culture and as well as it can lead to improvements (Dyck et al., 2005).

Putting this together, innovative work behaviour is idea generation, idea promotion and idea application. These three distinct stages are influenced by management style and personal incentives, which can be formal or informal. Knowledge sharing, as an informal personal incentive, enhances innovative work behaviour also positively. In section 2.4 sharing knowledge is discussed as part of seeking feedback behaviour as the latter emphasizes others to share knowledge. Innovative work behaviour is related to organizational learning from error’s culture and is related to goal orientation by target specificity and the strength of innovative behaviour. In next section goal orientation is discussed.

2.2 Goal Orientation

Goal orientation describes a personal’s disposition to set certain type of goals in achievement-related settings. Individual’s disposition, or tendency to act or think in patterns (Button, Mathieu, & Zajac, 1996), is thereby an important driver of goal orientation. It sets certain types of goals in achievement-related setting (Hendricks & Payne, 2007). These goals that employees have to achieve can be
innovative, as Kheng & Mahmood (2013) discuss that innovative behaviour refers to e.g. applying new work methods.

Different types of goals are distinguished, i.e.: specific, general, learning and performance goals. The difference between specific and general goals is that people can try to get an A on an exam (specific goal) or a good note (general goal) (Spector, 2006). The difference between learning goals and performance goals (Vandewalle, 2001; Hendricks & Payne, 2007; Heidemeier & Bittner 2012; Mesa, 2012) will be described more comprehensively, as these goals are expected to be related to innovative work behaviour.

Individuals with a dominant learning goal orientation want to develop competence (Rijt, Bossch, Wiel, Segers, & Gijselaers, 2012) and they want to acquire new skills, master new situation and work hard (Rijt et al., 2012). This learning goal orientation can be divided in a learning-approach orientation meaning a focus on gaining competence and mastering tasks, and a learning-avoidance orientation to avoid losing skills or leaving tasks incomplete or un-mastered (Elliot & McGregor, 2001). With respect to innovative work behaviour one could imagine that learning-approach goal orientation is positively influencing innovative work behaviour as employees are driven to gain competence and probably are more creative and want to succeed in learning new things, e.g. new work methods. Learning-avoidance goal orientation will probably negatively influence innovative work behaviour as employees who want to avoid losing skills or leaving tasks incomplete or un-mastered, are focussing on existing methods and processes and not on innovation.

Individuals with a dominant performance goal orientation will demonstrate their competence (VandeWalle & Cummings, 1997; Rijt et al., 2012) and gain positive judgements (VandeWalle & Cummings, 1997). This performance goal orientation can be divided in a performance-prove and a performance-avoidance dimension (Hendricks & Payne, 2007; Dyck, Hooft, Gilder & Liesveld, 2010). Performance-prove goal orientation focuses on showing competence and performance-avoidance goal orientation focuses on avoiding inferior competence and negative judgement about achievements (VandeWalle & Cummings, 1997). With respect to innovative work behaviour performance-prove goal orientation could have a positive influence because employees want to show competence. They are not eager to take the risk to create new things but they will have to take this risk from time to time showing their competence. Employees who have a dominant performance-avoidance goal orientation don’t want to look incompetent and avoid negative judgement. For that reason a negative influence could exist on innovative work behaviour.

Goal orientation affects what type of feedback is sought and how feedback is interpreted (Butler, 1993). Feedback is important, as it is difficult for goals to direct behaviour unless the person receives feedback (Spector, 2006). Feedback without goals has little effect, so seeking feedback behaviour depends on goal setting (Locke & Latham, 1990). Seeking feedback behaviour allows people to know whether or not their behaviour is moving them towards or away from their goals (Locke & Latham, 1990) on individual, group and organizational level (Locke & Latham, 1990).
So differences in goal orientation determine what behaviour is exhibited. Getting feedback is important as is helps to reach goals. However, goal orientation determines what type of feedback is sought. Differences in this seeking feedback behaviour is based on learning goal orientation (approach or avoidance) and performance goal orientation (prove or avoidance). Literature study on goal orientation reveals that employees have a learning goal orientation or performance goal orientation. Both can be divided in two types, namely learning-approach and learning-avoidance for learning goal orientation and performance-prove and performance-avoidance orientation for performance goal orientation. Learning-approach and performance-prove are expected to positively relate to innovative work behaviour as gaining competence or driven to show competence are expected to be related positively to these goal orientations. Learning-avoidance and performance-avoidance learning are expected to negatively relate to innovative behaviour as focus on existing process and prevention of looking incompetent are expected to be related negatively to these goal orientations. Therefore it is hypothesized that:

\[ H1a: \text{ Learning-approach goal orientation positively impacts innovative work behaviour.} \]
\[ H1b: \text{ Learning-avoidance goal orientation negatively impacts to innovative work behaviour.} \]
\[ H1c: \text{ Performance-prove goal orientation positively impacts to innovative work behaviour.} \]
\[ H1d: \text{ Performance-avoidance goal orientation negatively impacts to innovative work behaviour.} \]

2.3 Organizational learning from error’s culture

Organizational learning from error’s culture is, according to Dyck et al. (2005), related to learning goal orientation and performance goal orientation and section 2.1 implies a relation with innovative work behaviour as it can lead to improvement. In this section organizational learning from error’s culture is explored and it is displayed what an open and a closed learning from error’s culture is.

Putz et al. (2013) defines organizational learning from errors as the recognition of error occurrences by organizational members, their accounting for the responsibility and active coping with the emotional distress caused by this attribution, a systematic analysis and removal of error causes and consequences and the interpersonal exchange of learning experiences. As culture defines commonly shared believes and norms (Dyck et al., 2005), in this study the organizational learning from error’s culture is the commonly shared believes and norms about organizational learning from errors. This should not be confused with climate, a surface manifestation of this culture (Schein, 1990).

Dyck et al. (2005) highlights the importance of organizations opening up communication channels to allow for the discussion of errors, documenting errors, and using errors strategically as potential learning opportunities. They discuss the difference between an open error culture and a closed error culture e.g. error-aversion culture. The difference is respectively a culture in which errors are communicated and shared (open), and a culture in which errors are avoided and hidden to prevent blame and punishment (closed). The study of Gold, Gronewold, & Salterio (2014) reveals that the error learning culture will be discouraged in an error blame climate. Openness and willingness to learn
from errors, however, enhances reporting of errors and organizational learning from errors (Gold et al., 2014).

Organizational learning from error’s culture is related to goal orientations, as errors are deviations from goals, that are potentially avoidable (Heimbeck, Frese, Sonnentag, & Keith, 2003). It is also related to innovative work behaviour as organizations which learn from errors will be more profitable in the long run, because these organizations and their personnel are more apt to experiment, and are more likely to innovate (Dyck et al., 2005).

Summarizing above, organizational learning from error’s culture is operationalized by measuring how employees perceive their work environment with respect to error handling. The distinction is for openness and closeness. In an open organizational learning from error’s culture learning from errors is enhanced and in a closed organizational learning from error’s culture learning from errors is discouraged. Organizational learning from error’s culture is related to goal orientation, as errors are deviations from goals, and to innovative work behaviour, as personnel will experiment more. Therefore it is expected that organizational learning from error’s culture influences the relation between the four goal orientations and innovative work behaviour. It is expected than an open organizational learning from error’s culture influences this relation positively, as employees are more confident to set innovative goals in an open organizational learning from error’s culture. So, an open organizational learning from error’s culture strengthens a positive relation between goal orientation and innovative work behaviour, and weakens a negative relation between goal orientation and innovative work behaviour. Therefore it is hypothesized that:

\[ H2: \text{The more open the organizational learning from error’s culture is, the stronger the positive and the weaker the negative relations between goal orientations and innovative work behaviour.} \]

2.4 Seeking feedback behaviour

Spector (2006) and Locke & Latham (1990) discuss that feedback is important to reach goals but the goal orientation determines the type of seeking feedback behaviour (Butler, 1993). This suggest that the type of seeking feedback behaviour depends on the goal orientation. In literature sharing knowledge is found to be important as an incentive for innovative work behaviour (Park et al. 2015; Radaelli et al., 2014) and it plays a role in organizational learning from error’s culture (Dyck et al., 2005). Sharing knowledge and seeking feedback behaviour are closely related as explained further in this section.

Seeking feedback behaviour in an organization is self-initiated requested feedback from colleagues or supervisors (Rijt et al., 2012). Seeking feedback can be obtained directly by asking others or by observing environment and others (VandeWalle & Cummings, 1997). So seeking feedback behaviour is a way of getting knowledge from others by observing and by asking others to share knowledge. The latter is found to be an incentive for innovative work behaviour (Park et al. 2015; Radaelli et al., 2014).
Tuckey, Brewer, & Williamson (2002) show, that individuals with a learning goal orientation are more likely to seek feedback than individuals with a performance goal orientation. The reasoning is that individuals with a learning goal orientation want feedback for self-improvement, to improve and master situations (learning-approach goal orientation) or want to avoid losing skills (learning-avoidance goal orientation). Individuals with a performance goal orientation want feedback for self-validation to demonstrate competence (performance-prove feedback) or to prevent to look incompetent when they fear failure (performance-avoidance) (Janssen, 2000). Janssen & Prins (2007), subsequently, show that seeking feedback behaviour for self-improvement is positive related to learning-approach and performance-avoidance and negatively related to performance-prove. Same researchers show that self-validation negatively relates to learning-approach and positively to performance-avoidance. For learning-avoidance no relation exists for self-improvement or self-validation according to same researchers. Janssen & Prins (2007) conclude that the fear of failure (performance-avoidance) is stronger than the desire to show superior competence (performance-prove). Furthermore, the fear of performing worse than others motivate employees to show seeking feedback behaviour for improving achievements which results in a positive relation with performance avoidance. An overview of the relations described by Janssen & Prins (2007) is presented in Table 1.

<table>
<thead>
<tr>
<th>Various Learning Goal Orientations</th>
<th>Seeking Feedback Behaviour for self-improvement</th>
<th>Seeking Feedback Behaviour for self-validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning-approach</td>
<td>Positive related, p &lt; .001</td>
<td>Negative related, p &lt; .05</td>
</tr>
<tr>
<td>Learning-avoidance</td>
<td>Not related, p &gt; .05</td>
<td>Not related, p &gt; .05</td>
</tr>
<tr>
<td>Performance-prove</td>
<td>Negative related, p &lt; .05</td>
<td>Not related, p &gt; .05</td>
</tr>
<tr>
<td>Performance-avoidance</td>
<td>Positive related, p &lt; .05</td>
<td>Positive related, p &lt; .001</td>
</tr>
</tbody>
</table>

*measured for two-tailed significance

Summarizing, seeking feedback behaviour, a way of inviting others to share knowledge, is an incentive for innovative work behaviour. Seeking feedback behaviour helps individuals to reach various goals, but the type of the feedback sought out depends on the type of individual’s goal orientation. Individuals with a learning goal orientation (learning-approach and learning-avoidance) show more often seeking feedback behaviour than individuals with a performance orientation (performance-prove and performance-avoidance). It appears that seeking feedback behaviour for self-improvement will be positively affected by learning-approach and performance-avoidance, and negatively by performance-prove. Seeking feedback behaviour for self-validation is positively related to performance-avoidance and negatively related to learning-approach. As seeking feedback behaviour is an incentive for innovative work behaviour it is expected that seeking feedback behaviour is positively related to innovative work behaviour. Seeking feedback behaviour for self-improvement or for self-validation depends on the type of goal orientation.
Based on the literature review seeking feedback behaviour relates to innovative work behaviour positively, as sharing knowledge is an incentive for innovative work behaviour. Therefore, it is hypothesized that:

**H3a**: *Seeking feedback behaviour for self-improvement impacts innovative work behaviour positive.*  
**H3b**: *Seeking feedback behaviour for self-validation impacts innovative work behaviour positive.*

Literature research revealed that the type of goal orientation determines the type of feedback behaviour (for self-improvement or for self-validation). It is expected that seeking feedback behaviour weakens or strengthen some of the relationships between goal orientations and innovative work behaviour. These expectations are based on the relationships between different goal orientations and seeking feedback behaviour for self-improvement or for self-validation, as found by Janssen & Prins (2007), and presented in Table 1.

For learning-approach goal orientation it is expected that seeking feedback behaviour for self-improvement strengthens the relationship with innovative work behaviour. For performance-avoidance goal orientation the same is expected. For learning-approach goal orientation it is expected that seeking feedback behaviour for self-validation weakens the relationship with innovative work behaviour. For performance-prove goal orientation it is expected that seeking feedback behaviour for self-improvement weakens the relationship with innovative work behaviour. For performance-avoidance goal orientation it is expected that seeking feedback behaviour for self-validation strengthens the relationship with innovative work behaviour. Based on before, it is hypothesized that:

**H4a**: *Seeking feedback behaviour for self-improvement mediates the positive relationship between learning-approach goal orientation and innovative work behaviour.*  
**H4b**: *Seeking feedback behaviour for self-validation mediates the negative relationship between learning-approach goal orientation and innovative work behaviour.*  
**H4c**: *Seeking feedback behaviour for self-improvement mediates the negative relationship between performance-prove goal orientation and innovative work behaviour.*  
**H4d**: *Seeking feedback behaviour for self-improvement mediates the positive relationship between performance-avoidance goal orientation and innovative work behaviour.*  
**H4e**: *Seeking feedback behaviour for self-validation mediates the positive relationship between performance-avoidance goal orientation and innovative work behaviour.*

### 2.5 Towards the research model

To give a clear overview on the theoretical assumptions made, the main idea of the research model is now shortly summed up. The designed research model proposes a relationship between the variables in question. Firstly, it is expected that learning-approach and performance-prove goal orientations impacts innovative work behaviour positively and that learning-avoidance and performance-avoidance goal orientations impacts innovative work behaviour negatively.
Secondly, it is stated that a more open organizational learning from error’s culture, affects a positive relation between goal orientation and innovative work behaviour stronger and a more closed organizational learning from error’s culture affects a negative relation between goal orientation and innovative work behaviour stronger. Thirdly, it is expected that seeking feedback behaviour for self-improvement or self-validation impacts innovative work behaviour positively. In addition, this research examines a mediation effect of these seeking feedback behaviour on the relationship of the four goal orientations and innovative work behaviour.

2.6 Control variables

The control variables capture the aspects that are not directly integrated in the hypotheses but might influence the hypothesized relationship. In this work five control variables have been considered. These variables and their possible connection with the proposed hypotheses will be discussed in the following. In a comprehensive research, Button et al. (1996) found no relation of gender to performance goal orientation and learning goal orientation in all sub-studies. However, they found in one sub-study evidence that women show more performance goal orientation than men. Elliot & McGregor (2001) found evidence that gender is a predictor for goals as well, as women are more likely to adopt goals. Besides gender, Button et al. (1996) found evidence that learning goal orientation correlates positive with age and performance goal orientation correlates negative. For innovative work behaviour, Janssen (2000) found that higher educated employees with high levels of control in the job act more innovative than lower educated employees. Therefore, the control variables gender, age, and education have been added to the questionnaire. Finally, two other control variables are added to the questionnaire: department and tenure. Consequently, in this work it will be controlled for the effect of gender, age, education, department and tenure on the proposed hypotheses. The influence of the control variables will be tested on the hypotheses. The hypotheses presented in the section ‘Theoretical Framework’ are summed up in Figure 1 to provide a clear overview on how the research question of this thesis is approached.

Figure 1: Improving Employees Work Behaviour: a research model
3. Research Method

3.1 Procedure
To test the hypotheses and eventually answer the research question, a quantitative research is conducted by using a questionnaire with questions from validated scales. In line with the ambition of the studied organization to work paperless, an online questionnaire is developed, which is an easy way to reach respondents and invite them personally to join the research. ThesisTools is used to construct the online questionnaire.

3.2 Selection of Respondents
The research is done in a field study among employees in a Dutch university hospital. The hospital has about 12,000 employees and with 1,300 beds is it one of the largest hospitals in The Netherlands. The hospital cooperates with the faculty of medical sciences of the university to which it is related, and takes a leading role in scientific research and the development of new treatments and forms of care. The sample of respondents is employed in the cancer centre and respondents have to perform in complex situations in a rapid changing environment, as cancer treatment is changing rapidly. These changes require a constant focus on how to work efficient and new innovative ideas are welcome to get the work done and improve care. The cancer centre exists of a business office, a medical oncology department, a haematology department and a radiotherapy department (see organogram in Appendix 1). In September 2016 in total 585 employees are on the payroll. An internal e-mail group list of the cancer centre is selected via the internal Outlook of the organization. This comprehensive list \( n = 697 \) includes not only the employees who are on the payroll but also personnel, which has an unpaid employment and mostly work somewhere else. These employees have access to the computer, but do not actually join the workforce at site. As they are not familiar with the contemporary situation in the centre, not on the payroll and probably hardly motivated to fill in the questionnaire, these employees \( n = 112 \) are removed from the e-mail list. Doing so, the e-mail list for the questionnaire is cleared and only existing, employed and paid personnel \( n = 585 \) are invited to fill in the questionnaire.

3.3 Data gathering procedure
In an introduction e-mail respondents are introduced into the goal of the research and asked to fill in the questionnaire within two weeks. In this e-mail a link to the questionnaire is added. It takes about ten minutes to fill in the complete questionnaire. Once started with the questionnaire it has to be filled in completely. It is only possible to stop and continue when the program is not interrupted. All data is saved automatically in an online database. When respondents interrupt the program before the questionnaire is completed, incomplete data is saved. The database is protected by a password and no one except the researcher has access to that database. To motivate employees to fill in and complete the questionnaire, five vouchers of € 20 are raffled. Although the questionnaire can be filled in anonymously, in order to qualify for a voucher, respondents have to leave their e-mail address behind. Data and e-mail address are detached before analysing the
data starts, to protect anonymity. To select the winners of a voucher, a colleague is asked to call five numbers between 0 and highest the number of respondents. The records, which correspond with the numbers, are selected as winners of the voucher.

The managing director and the department managers are personally informed about the purpose of the study and requested to motivate their employees to fill in the questionnaire.

3.4 Development of the questionnaire

Valid scales were selected for most of the concepts in the research model. Selection was based on the operationalization of each concept (see section 2). Because most employees in the cancer centre are familiar with the Dutch language, valid scales with questions in Dutch were selected, if available. The organizational learning from errors questionnaire was available in Dutch, incorporated in an article of Dyck (2000). For innovative work behaviour three different researchers were requested for a Dutch questionnaire used in scientific articles. The questionnaire of Janssen (2000) was valid and in Dutch. For learning goal orientation two researchers were asked whether they would provide a questionnaire. The questionnaire from Janssen & Prins (2007) is validated in Dutch and suitable for the purpose of this study. In the same study of Janssen & Prins (2007) a questionnaire for seeking feedback behaviour was used. This questionnaire was translated in Dutch and approved by having it translated back in English by a high school teacher. In Appendix 2 the selection of scales will be described to more extent. In the next section the scales per concept in the research model will be elaborated.

Control variables were selected based on the research question. Appendix 3 presents the entire online questionnaire.

3.4.1 Scales per concept

Innovative Work Behaviour

Innovative work behaviour is operationalized by three variables, which were found to be important, in the literature study: idea generation, idea promotion and idea application. Janssen (2000) measured innovative work behaviour on these three variables on a nine-item scale, based on Scott and Bruce’s (1994) scale for individual innovative behaviour in the workplace. The scale is incorporated in the questionnaire and respondents provide self-reports. Janssen (2000) also measured observer-scores but for this study the focus is on self-perception of employees and observer-scores are not measured.

Three sample questions on innovative work behaviour are ‘How often do you perform each of the following work behaviour: Creating new ideas for difficult issues’ (idea generation), ‘How often do you perform each of the following work behaviour: Mobilizing support for innovative ideas’ (idea promotion) and ‘How often do you perform each of the following work behaviour: Transforming innovative ideas into useful applications’ (idea realization). The response is measured on a seven-point scale ranging from 1 (never) till 7 (always). An overall scale of innovative behaviour was measured for idea generation, idea promotion and idea realization. Cronbach’s alpha of the scale of Janssen (2000) is .95.
Goal Orientation

Employees’ learning and performance goal orientations are assessed on a 20-item validated scale of Janssen & Prins (2007). This scale was developed by Biemond and Van Yperen and is based on measures developed by Elliot and McGregor and Van Yperen and Janssen (in: Janssen & Prins, 2007).

Respondents have to indicate how important performance-approach, performance-avoidance, learning-approach and learning-avoidance goal orientations are to them. All four dimensions have five questions and are measured on a seven-point scale ranging from 1 (not at all important) to 7 (very important). Internal reliability for the original scales of Janssen & Prins (2007) is .91 for performance-approach goal orientation, .78 for performance-avoidance goal orientation, .84 for learning-approach goal orientation and .71 for learning-avoidance goal orientation.

Sample questions are: for performance approach goal orientation ‘In my job it is important that I am the best’, for performance-avoidance goal orientation ‘In my job it is important that I do not look incompetent to others.’, for learning approach goal orientation ‘In my job it is important that I feel I am improving.’ and for learning-avoidance goal orientation ‘In my job it is important that I do not make mistakes.’

Organizational Learning from Error’s Culture

To measure the organizational learning from error’s culture, the ‘Organizational Error Management Culture-questionnaire of Dyck et al. (2005) is used. This questionnaire is based on the original Error Orientation Questionnaire of Rybowiak, Garst, Frese & Batinic (1999), which was about individuals. Dyck et al. (2005) adjusted the questionnaire to organisation level. Culture was measured by instructing participants to rate the extent to which each statement applied to the people in their organization in general. Originally three dimensions were measured: openness, consciousness and closeness to errors. In line with Rybowiak et al. (1999), Dyck et al. (2005) chose not to use consciousness for their analyses as explained variance (79.4%) is better without this dimension. Based on this earlier research this study will measure only openness and closeness, (Cronbach’s α respectively .92 and .88). The questionnaire contained 17 statements for openness. A sample statement is: ‘When an error is made, it is corrected right away’. For closeness 11 statements were included and a sample statement is: ‘It can be useful to cover up mistakes’. All statements are measured on a five-point scale ranging from 1 (does not apply at all) to 5 (applies completely).

Seeking Feedback Behaviour

Seeking feedback behaviour is operationalized by drivers, which were found to be important, in the literature study: self-improvement and self-validation. To determine the seeking feedback behaviour of employees, a questionnaire of Janssen and Prins (2007) is used, a ten item scale which was developed for that specific study. Respondents indicated the extent to which they agreed or disagreed with five statements about the seeking of self-improvement feedback information and five statements about the seeking of self-validation feedback information from others. Sample statements are ‘I ask for feedback: To get information about how I can solve problems’ (self-improvement) and ‘To reassure everything goes well’ (self-validation). Respondents scored on a five-point scale, ranging from 1 (}
strongly disagree, to (5) strongly agree. Janssen and Prins (2007) found a Cronbach’s alpha of .73 for seeking of self-improvement information, and .86 for the seeking of self-validation information.

Control variables

For the analysis of the research model, five control variables have been chosen. These variables are: gender (1 – men; 2 – women; 3 – unspecified), age, education (1 – lower, vocational, education; 2 – secondary, vocational, education; 3 – higher, vocational, education; 4 – university education), department (1 – business office; 2 – haematology department; 3 – medical oncology department; 4 – radiotherapy department) and tenure (1 – < 6 months; 2 – 6 till 12 month; 3 – 1 till 2 years; 4 – 3 till 5 years; 5 – 6 till 10 years; 6 – > 10 years).

3.4.2 Design of questionnaire and pilot

Based on Baarda & Goede (2006) the questionnaire is constructed, starting with general questions. The questions from the learning goal orientation scale are first interrogated into the questionnaire, thereafter subsequently the questions from innovative work behaviour, organizational learning from error’s culture and seeking feedback behaviour. Doing so the questionnaire started with simple questions (control variables and learning goal orientation). Thereafter the questions concerning innovative work behaviour are interrogated. These questions are formulated short and simple, have a normal length. Then statements regarding organizational learning from errors are included, which are less simple to answer. Finally, short and easy to answer questions, regarding seeking feedback behaviour, are included. Questions with free text were offered in the questionnaire as well as multiple-choice questions. Learning goal orientation is represented by ten questions about learning (number 9-11-13-15-16-18-20-21-24-25) and ten questions about performance (number 6-7-8-10-12-14-17-19-22-23). Innovative work behaviour is represented by question numbers 26 until 34 and to gather information about organizational learning from error’s culture the statements of 35 until 61 are used. Finally, statements 62 until 71 represent seeking feedback behaviour. An overview of the concepts with the questions per concept is provided in Appendix 3.

Before the questionnaire is set out a pilot was done to test the questionnaire. In this pilot six people from outside the organization are asked to fill in the questionnaire online, independently, and give comments: a teacher (university education), a caregiver (secondary, vocational, education), a manager (higher profession education), a financial officer (secondary, vocational, education), a pedicure (secondary, vocational, education) and a student (lower, vocational, education). No further information is given. After completing the questionnaire, they are asked whether they got in to problems answering the questions. Based on their comments, no changes are necessary.

3.5 Data analysis

Collected data are automatically recorded in an excel file and copied to SPSS to do the statistical calculations by means of SPSS. Questions are all coded with identification numbers before the analysing process starts. Descriptive statistics, correlation analysis, as well as regression analysis is
used to analyse the data. Homogeneity of scales were determined through item analysis to find whether group of questions measured the same or not (Cronbach’s alpha 0 means no consistency and Cronbach’s alpha 1 means full consistency). Standard deviation and mean is calculated.

The questionnaire was sent to 585 employees in total and 164 (28%) of them were men and 421 (72%) were women. 106 (65%) of the men did not respond and 252 (60%) of the women did not respond. The non-response of the business office was 50% and the non-response of the other departments was between 62% and 65%. Education level, tenure and age of the non-respondents are not available.
4. Results

The results of the statistical analysis will be presented in the following section. First of all, the response is analysed, including non-response and missing data. Then, subsequently, the means, standard deviations and correlations are presented, followed by an overview of scales, internal consistency, the reliability of the scales, and the correlations. Finally, this section focuses on the results of the regression analysis by which the hypotheses have been tested.

4.1 Response analyses

The survey is dispersed via the researcher by regular email to 585 employees, all on the payroll on the cancer centre of the hospital in September 2016. In total 227 employees started to fill in the questionnaire. Forty respondents only answered the general questions and the data of these respondents is not captured for analyses (18%). From the remaining 187 (82%) respondents, 55 (29%) respondents did not answer all the questions. To be able to include them in the analyses, missing data are replaced using multiple imputation. Doing so data is retained for analyses and chosen technique is proven to be suitable (Haukoos & Newgard, 2007).

The missing data is analysed to see whether there are patterns and to evaluate the missing values. Minimum missing of variables to be displayed is set on 0.01. This way small data missing is also in the evaluation. Although 55 (29%) out of 187 respondents have missing data, the missing data is spread over 57 (80%) of the 71 variables. The number of missing data increases half way the questionnaire, after answering the questions about goal orientation and innovative work behaviour. From the questions of organizational learning from error’s culture 5,6% is missing and this percentage for seeking feedback behaviour 8,2%. Analysis reveals that the most common pattern is no missing data and some data is missing across the variables.

Of the 187 respondents, 48 are male (25.7%), 138 female (73.8%) and one respondent chose ‘not applicable’. Minimum age of the respondents is 20 and maximum age 66 years (mean age 38.8 years, SD 11.07). Education is interrogated as an ordinal variable, whereby 26 respondents scored for secondary (vocational) education (13,9%), 94 respondents scored for higher (profession) education (50,3%) and 67 respondents scored for university education (35,8%). Of the 187 respondents nine (4,8%) work at the business office of the cancer centre, 50 (26,7%) respondents work at the haematology department, 52 (27,8%) respondents work at the medical oncology department and 76 (40,6%) at the radiology department. The spread of the respondents per department corresponds fairly well with the distribution of employees across the departments. The tenure of the 187 respondents is as follows: 18 (9,6%) works less than six month in the department, 15 (8,0%) between six month and one year, 19 (10,2%) one till two years, 41 (21,9%) three till five years, 43 (23,0%) six till ten years and 51 (27,3%) more than ten years. In Table 2 the statistics of control variables are added, exclusive the respondent who chose no gender. This respondent has to be excluded for analyses when gender is involved, as it is unclear in how far it will affect the data for analyses.
Table 2 – Specification of control variables specified for department and gender

<table>
<thead>
<tr>
<th>Department</th>
<th>Gender</th>
<th>Mean</th>
<th>Count</th>
<th>Count</th>
<th>Count</th>
<th>Count</th>
<th>Count</th>
<th>Count</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business office</td>
<td>Man</td>
<td>40</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>53</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Haematology department</td>
<td>Man</td>
<td>39</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>40</td>
<td>0</td>
<td>6</td>
<td>16</td>
<td>12</td>
<td>4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Medical oncology department</td>
<td>Man</td>
<td>36</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>36</td>
<td>0</td>
<td>8</td>
<td>19</td>
<td>15</td>
<td>3</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Radiotherapy department</td>
<td>Man</td>
<td>41</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>38</td>
<td>0</td>
<td>8</td>
<td>37</td>
<td>11</td>
<td>4</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

1= lower (vocational) education, 2= secondary (vocational) education, 3= higher (vocational) education, 4= university education; A= < 6 months, B= 6-12 months, C= 1-2 years, D= 3-5 years, E= 6-10 years, F= <10 years; n=186

4.2 Reliability of scales

After having analysed the missing data the reliability of the scales is calculated. Internal consistency is sufficient and in line with findings in literature. An overview is given in Table 3.

Table 3: Cronbach’s alpha of the concepts: current study versus previous studies

<table>
<thead>
<tr>
<th>Concept</th>
<th>Cronbach’s alpha current study</th>
<th>Cronbach’s alpha previous study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning-approach goal orientation</td>
<td>0.85</td>
<td>0.84</td>
</tr>
<tr>
<td>Learning-avoidance goal orientation</td>
<td>0.79</td>
<td>0.71</td>
</tr>
<tr>
<td>Performance-prove goal orientation</td>
<td>0.93</td>
<td>0.91</td>
</tr>
<tr>
<td>Performance-avoidance goal orientation</td>
<td>0.85</td>
<td>0.78</td>
</tr>
<tr>
<td>Innovative work behaviour</td>
<td>0.93</td>
<td>0.88</td>
</tr>
<tr>
<td>Open organizational learning from error’s culture</td>
<td>0.90</td>
<td>0.94</td>
</tr>
<tr>
<td>Closed organizational learning from error’s culture</td>
<td>0.84</td>
<td>0.62</td>
</tr>
<tr>
<td>Seeking feedback behaviour for self-improvement</td>
<td>0.88</td>
<td>0.73</td>
</tr>
<tr>
<td>Seeking feedback behaviour for self-validation</td>
<td>0.92</td>
<td>0.86</td>
</tr>
</tbody>
</table>

4.3 Means, Standard Deviations and Correlations

The means, standard deviations and Pearson correlations of the variables that are used, are summed up in Table 4. For goal orientations mean is calculated with a minimum score of five and a maximum score of 35, as the different goal orientations all consists of five questions which could be answered on a 7-point scale. For innovative work behaviour mean is calculated with a minimum score of nine and a maximum score of 63, as for this concept has nine questions, which could be answered on a 7-point scale. The mean of open organizational learning from error’s culture is calculated with a minimum score of 17 and a maximum score of 85 (17 questions on a 5-point scale) and the mean of closed organisational learning from error’s culture is calculated with a minimum score of 10 and a maximum score of 50 (ten questions on a 5-point scale). The mean of seeking feedback behaviour for self-improvement and for self-validation are both calculated with a minimum of 5 and a maximum score of
25, as both concepts consists of five questions on a five-point scale. For this study correlation is significant at 0.05 level Pearson correlation. All measures for significance are 2-tailed and with Pearson correlation at 0.05 level.

The correlation analysis reveals that the correlation of learning-approach goal orientation and innovative work behaviour is not significant (r = .12, p = n.s.). The correlation of learning-avoidance goal orientation and innovative work behaviour is not significant (r = -.08, p = n.s.) as well as the correlation between performance-avoidance goal orientation and innovative work behaviour (r = -.01, p = n.s.). The correlation of performance-prove goal orientation and innovative work behaviour is, however, significant (r = .22, p < .01). Furthermore, the correlation of gender and innovative work behaviour is significant (r = -.18, p < .05), which indicates that women are more innovative than men. Adding to this, the correlation of gender and learning-avoidance goal orientation is significant (r = .16, p < .05), which indicates that learning-avoidance goal orientation is stronger for men.

The correlation of open organizational learning from error’s culture and the four goal orientations is not significant (r = ranging from -.07 to .15, p = n.s.). Furthermore, no significant relation is found for seeking feedback behaviour for improvement and innovative work behaviour (r = .10, p = n.s.), and for seeking feedback behaviour for validation and innovative work behaviour (r = .04, p = n.s.). A noticeable significant correlation is between education level and age (r = -.20, p < .01), which indicates that ‘education level’ of older employees is lower than education level of younger employees. Seeking feedback behaviour for improvement correlates significant with gender (r = .29, p < .01), learning-approach goal orientation (r = .31, p < .01) and open organizational learning from error’s culture (r = .27, p < .01). The correlation of seeking feedback behaviour for validation and performance-approach goal orientation is significant (r = .25, p < .01), as well as the relations with performance-avoidance goal orientation (r = .27, p < .01) and learning-avoidance goal orientation (r = .22, p < .01). Furthermore, seeking feedback behaviour for validation correlates significant with open organizational learning from error’s culture (r = .22, p < .01).
<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD***</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<tbody>
<tr>
<td>1 Gender</td>
<td>1.74</td>
<td>0.44</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2 Age</td>
<td>38.73</td>
<td>11.69</td>
<td>0.034</td>
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<td></td>
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<tr>
<td>3 Education</td>
<td>3.23</td>
<td>0.67</td>
<td>-0.243</td>
<td>-0.196</td>
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<tr>
<td>4 Department</td>
<td>3.04</td>
<td>0.93</td>
<td>0.054</td>
<td>-0.119</td>
<td>-0.146</td>
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<tr>
<td>5 Tenure</td>
<td>4.23</td>
<td>1.61</td>
<td>0.085</td>
<td>0.411</td>
<td>-0.160</td>
<td>-0.209</td>
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<td></td>
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<tr>
<td>6 Performance-prove goal orientation</td>
<td>16.98</td>
<td>6.22</td>
<td>-0.120</td>
<td>-0.044</td>
<td>0.146</td>
<td>-0.026</td>
<td>-0.009</td>
<td>1</td>
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<tr>
<td>7 Performance-avoidance goal orientation</td>
<td>22.68</td>
<td>5.62</td>
<td>0.100</td>
<td>-0.103</td>
<td>0.070</td>
<td>0.060</td>
<td>-0.025</td>
<td>0.563</td>
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<td></td>
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<tr>
<td>8 Learning-approach goal orientation</td>
<td>29.92</td>
<td>3.17</td>
<td>-0.030</td>
<td>-0.178</td>
<td>-0.274</td>
<td>-0.171</td>
<td>-0.264</td>
<td>0.125</td>
<td>0.183</td>
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<tr>
<td>9 Learning-avoidance goal orientation</td>
<td>21.48</td>
<td>5.30</td>
<td>0.164</td>
<td>0.152</td>
<td>-0.351</td>
<td>0.097</td>
<td>0.079</td>
<td>0.199</td>
<td>0.276</td>
<td>0.014</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Innovative work behaviour</td>
<td>39.66</td>
<td>9.11</td>
<td>-0.118</td>
<td>0.032</td>
<td>0.098</td>
<td>-0.104</td>
<td>0.133</td>
<td>0.215</td>
<td>-0.012</td>
<td>0.124</td>
<td>-0.081</td>
<td>1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11 Open organisational learning from error's culture</td>
<td>60.37</td>
<td>8.30</td>
<td>0.017</td>
<td>0.109</td>
<td>-0.115</td>
<td>0.263</td>
<td>0.154</td>
<td>-0.066</td>
<td>0.047</td>
<td>0.071</td>
<td>0.139</td>
<td>0.012</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Closed organisational learning from error's culture</td>
<td>23.75</td>
<td>5.87</td>
<td>0.013</td>
<td>-0.061</td>
<td>0.073</td>
<td>-0.291</td>
<td>-0.105</td>
<td>0.126</td>
<td>0.155</td>
<td>0.106</td>
<td>0.069</td>
<td>0.058</td>
<td>-0.363</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Seeking feedback for self-improvement</td>
<td>20.24</td>
<td>2.98</td>
<td>0.287</td>
<td>-0.006</td>
<td>-0.041</td>
<td>-0.069</td>
<td>-0.115</td>
<td>-0.128</td>
<td>-0.057</td>
<td>0.312</td>
<td>0.136</td>
<td>0.097</td>
<td>-0.270</td>
<td>0.068</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>14 Seeking feedback for self-validation</td>
<td>15.51</td>
<td>4.48</td>
<td>0.143</td>
<td>-0.107</td>
<td>0.061</td>
<td>-0.030</td>
<td>-0.142</td>
<td>0.254</td>
<td>0.274</td>
<td>0.122</td>
<td>0.223</td>
<td>0.038</td>
<td>0.223</td>
<td>0.001</td>
<td>0.262</td>
<td>1</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
*** Imputed original data
4.4 Regression Analysis

To test the hypotheses of this study, a linear regression analysis has been executed. Hypothesis 1a proposes that learning-approach goal orientation positively impacts innovative work behaviour, hypothesis 1b proposes that learning-avoidance goal orientation negatively impacts innovative work behaviour, hypothesis 1c proposes that performance-prove goal orientation positively impacts innovative work behaviour and hypothesis 1d proposes that performance-avoidance goal orientation negatively impacts innovative work behaviour. Hereafter, for testing hypothesis 2, it needs to be analysed if a more open organizational learning from error’s culture moderates a positive relations between the goal orientations and innovative work behaviour. The third hypotheses are tested by analysing the positive impact of seeking feedback behaviour for self-improvement on innovative work behaviour and the positive impact of seeking feedback behaviour for self-validation on innovative work behaviour. Finally, the fourth hypotheses are tested to start with analysing the mediating effect of seeking feedback behaviour for self-improvement on the relation of learning-approach goal orientation and innovative work behaviour (hypothesis 4a). Thereafter, the mediating effect of seeking feedback behaviour for self-validation on the relation of learning-approach goal orientation and innovative work behaviour (hypothesis 4b) is analysed. Then the mediating effect of seeking feedback behaviour for self-improvement on the relation of performance-prove goal orientation and innovative work behaviour (hypothesis 4c) is analysed. Thereafter the mediating effect of seeking feedback behaviour for self-validation on the relation of performance-avoidance goal orientation and innovative work behaviour (hypothesis 4d) is analysed. Finally, the mediating effect of seeking feedback behaviour for self-validation on the relation between performance-avoidance goal orientation and innovative work behaviour (hypothesis 4e) is analysed.

The significant and not significant results of the regression analysis are presented in Figure 2. The black arrows represent the significant hypotheses. The grey arrows represent the not significant hypotheses. In Figure 2 the significant and the not significant results are presented. The analysis reveals that hypothesis 1c and 1d, performance-prove and performance-avoidance goal orientations have a significant regression (respectively $\beta = .47, p < .00$ and $\beta = -.31, p = .03$). As the regression is positive for performance-prove and negative for performance-avoidance, hypotheses 1c and 1d can be confirmed. The hypothesized positive influence of learning-approach goal orientation on innovative work behaviour (hypothesis 1a) proved to be not significant ($\beta = .34, p = n.s.$). The same is the case for hypothesis 1b, learning-avoidance goal orientation negatively affects innovative work behaviour ($\beta = -.16, p = n.s.$). So, both hypotheses for learning goal orientation - H1a and H1b - must be rejected. The moderation of an open organizational learning from error’s culture is investigated with new predictors, made of all four (centralized) goal orientations separately with organizational learning from error’s culture. Subsequently, linear regression is performed with the new independent variables and innovative work behaviour as dependent variable. No support is found for a moderation of open organizational learning from error’s culture, as linear regression for an open organizational learning from error’s culture and performance-prove goal orientation ($\beta = .01, p = .39$), performance-avoidance goal orientation ($\beta = -.02, p = .30$), learning-approach goal orientation ($\beta = .05, p = .06$) and learning-
avoidance goal orientation ($\beta = -0.03$, $p = 0.082$) are all not significant (Table 5). Hypothesis two is rejected.

Table 5: Linear regression analysis for moderation of an open organizational learning from error’s culture

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>B</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance-prove goal orientations</td>
<td>0.014</td>
<td>0.392</td>
</tr>
<tr>
<td>Performance-avoidance goal orientation</td>
<td>-0.018</td>
<td>0.293</td>
</tr>
<tr>
<td>Learning-approach goal orientation</td>
<td>0.050</td>
<td>0.064</td>
</tr>
<tr>
<td>Learning-avoidance goal orientation</td>
<td>-0.025</td>
<td>0.082</td>
</tr>
</tbody>
</table>

Dependent variable: innovative work behaviour

Hypotheses three (3a and 3b) are not supported as after regression seeking feedback behaviour for self-improvement, hypothesis 3a, ($\beta = 0.25$, $p = n.s.$) and seeking feedback for self-validation, hypothesis 3b, ($\beta = 0.05$, $p = n.s.$) do not impact innovative work behaviour significantly.

To test whether seeking feedback behaviour for self-improvement or self-validation does mediate the relationship of the various goal orientations (independent variables) to innovative work behaviour (dependent variable), a simple linear regression is done, including descriptive statistics. The correlation between learning-approach goal orientation and innovative work behaviour is significant ($p = 0.05$), however ANOVA and Beta weight are not significant. Therefore no mediation can exist on that relation by seeking feedback behaviour for self-improvement (hypothesis 4a) or seeking feedback behaviour for self-validation (hypothesis 4b). For the relation between performance-prove goal orientation and innovative work behaviour, the correlation is significant after a simple linear regression, as well as ANOVA and Beta weight. However, when the same model is rerun with seeking feedback behaviour for self-improvement included as an independent variable, the new predictor is not significant. Hypothesis 4c is therefore not confirmed. The correlation between performance-avoidance goal orientation and innovative work behaviour is after a simple linear regression not significant and ANOVA is also not significant. Therefore, no mediation can exist and hypothesis 4d, seeking feedback behaviour for self-improvement mediates the relationship between performance-avoidance goal orientation and innovative work behaviour positive, can be rejected. Hypothesis 4e is rejected for the same reason, as seeking feedback behaviour for self-validation cannot be a mediator when the relation between performance-avoidance goal orientation and innovative work behaviour is not significant. Conclusively, no support is found that seeking feedback behaviour for self-improvement or self-validation does mediate the relationship of the various goal orientations to innovative work behaviour. An overview of the data is given in Table 6 and based on the findings the results are added in the model (Figure 2).
Table 6: Overview seeking feedback behaviour mediating for goal orientations

<table>
<thead>
<tr>
<th>Original predictor</th>
<th>Correlation between original predictor and innovative work behaviour</th>
<th>ANOVA significance ranging for original and 5 imputed data sets between</th>
<th>Significance of β weight</th>
<th>Potential mediator to be added in the model</th>
<th>New significance of β for original predictor</th>
<th>Significance of β for potential mediator</th>
<th>Mediation yes or no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning-approach goal orientation</td>
<td>.045</td>
<td>.062 till .114</td>
<td>.088</td>
<td>Not applicable</td>
<td>-</td>
<td>-</td>
<td>No</td>
</tr>
<tr>
<td>Performance -prove goal orientation</td>
<td>.002</td>
<td>.003 till .008</td>
<td>.003</td>
<td>Seeking feedback behaviour for self-improvement</td>
<td>.001</td>
<td>.076</td>
<td>No</td>
</tr>
<tr>
<td>Performance -avoidance goal orientation</td>
<td>.424</td>
<td>.744 till .933</td>
<td>.847</td>
<td>Seeking feedback behaviour for self-improvement</td>
<td>-</td>
<td>-</td>
<td>No</td>
</tr>
<tr>
<td>Performance -avoidance goal orientation</td>
<td>.424</td>
<td>.744 till .933</td>
<td>.847</td>
<td>Seeking feedback behaviour for self-validation</td>
<td>-</td>
<td>-</td>
<td>No</td>
</tr>
</tbody>
</table>

General linear model regression with univariate analysis has been executed to determine the effect of the control variables on the proposed hypotheses. At first, the control variables and the goal orientations are added in the regression with seeking feedback behaviour for improvement as independent variable. It is noticeable that only one of the control variables, gender, influences the proposed hypotheses significantly (p < .00). Next, the control variables and the goal orientations are added in the regression with seeking feedback behaviour for validation as independent variable. None of the control variables influences the proposed hypotheses significantly. The control variables and the seeking feedback behaviour for improvement and validation are added in the regression with innovative work behaviour as dependent variable. In this model a significance is found for gender (p = .01) and tenure (p = .04) on this relation, meaning that women influence the relation more than men and the longer employees work in the organization the higher the influence on the relation. Finally, the control variables and the four goal orientations are added in the regression with innovative work behaviour as dependent variable. In this model a significance is found for gender (p = .05) and tenure (p = .02), meaning women influence the relation more than men and the longer employees work in the organization the higher the influence on the relation. The results of the control variables on the proposed hypotheses can be found in Appendix 4 – Table 7, 8, 9 and 10.
Figure 2: Improving Employees Work Behaviour: results of the regression analysis
5. Conclusion, discussion and recommendations

5.1 General review

The aim of this thesis was to find out how goal orientation influences innovative work behaviour and to what extent organizational 'learning from error’s culture impacts the relation between goal orientations and innovative work behaviour.

Innovative work behaviour is measured as idea generation, promotion and realization in this research. Two types of goal orientations are measured in this research, e.g. learning goal orientation and performance goal orientation, which both have a positive and a negative dimension. Goal orientation is therefore measured by learning-approach, learning-avoidance, performance-prove and performance-avoidance goal orientation. Organizational learning from error’s culture is about whether an organization learns from error’s and it is measured for an open and for a closed culture.

Seeking feedback behaviour is added to the research as it is an incentive for innovative work behaviour and it helps individuals to reach goals. Therefore, the mediating effect of seeking feedback behaviour for self-improvement or self-validation on the relationship of goal orientation and innovative work behaviour has been proposed. The research question can be answered with help of this research.

It is found that performance-prove goal orientation relates to innovative work behaviour positively and performance-avoidance goal orientation influences innovative work behaviour negatively. Organizational learning from error’s culture does not impact the relationship of goal orientations and innovative work behaviour. With statistical analyses some of the hypotheses are confirmed: hypotheses 1c and 1d. Hypotheses 1a-b, 2, 3a-b and 4a-e are not confirmed in this study. The results will be discussed more comprehensively below.

Hypothesis 1a states that learning-approach goal orientation is positively related to innovative work behaviour and hypothesis 1b states that learning-avoidance goal orientation relates negatively to innovative work behaviour. These two statements cannot be confirmed. It is possible that no relation could be confirmed because of the following reasons. Although, based on literature, innovation is measured by creativity, it is probably not the right aspect to measure. For learning-approach goal orientation to innovative work behaviour (hypothesis 1a) the creativity measured was probably only the creativity in the way of learning. Future research could focus on learning-approach goal orientation and the nature of creativity to sort this out. For learning-avoidance goal orientation (hypothesis 1b) a negative relation with innovative work behaviour was expected. A negative relation is found, what indicates that the higher the avoidance goal orientation the less innovative behaviour is shown, but this relation is not significant. This insignificance, found for learning-avoidance goal orientation with innovative work behaviour, could be caused by social desirable answers, as all questions were based on self-reports. Despite the fact that supervisor-reports might be biased due to their overall, holistic view of the capabilities and performance level of a particular employee (Jong & Hartog, 2010), one
could consider to combine self-reports and supervisor-reports to measure innovative work behaviour in future studies.

Hypothesis 1c states that performance-prove goal orientation is positive related to innovative work behaviour. This hypothesis can be confirmed. It is shown by the data that employees who have a performance-prove goal orientation show significantly more innovative work behaviour. This result indicates that performance-prove goal orientation is positive for innovative work behaviour. A negative relation is found for performance-avoidance goal orientation and innovative work behaviour (1d). This hypothesis is confirmed. Employees who have a performance-avoidance goal orientation show significantly less innovative work behaviour. Conclusively, goal orientation influences innovative work behaviour by performance-prove positively and by performance-avoidance negatively.

Hypothesis 2 states that the positive relation between a goal orientation and innovative work behaviour is stronger by an open organizational learning from error’s culture and the negative relation is weaker. Hypothesis 2 could not be confirmed. An explanation of this deviant result is that the relation between learning-approach and learning-avoidance goal orientation to innovative work behaviour is not significant. Therefore, a moderating effect cannot exist. For performance-prove and performance-avoidance goal orientation a significant relation is found with innovative work behaviour. However no moderating effect was confirmed for an open organizational learning from error’s culture. An explanation of this deviant result is that the culture (open or closed) is perceived as equal to the respondents. This could also explain the limited spread of the data for open and closed organizational learning from error’s culture. As this research is carried out in one organization, in future research it would be advisable to test in two different organizations. Conclusively, an open organizational learning from error’s culture does not impact the relation between learning-, and performance goal orientations and innovative work behaviour.

Hypotheses 3a and 3b state that seeking feedback behaviour for self-improvement or self-validation impacts innovative work behaviour positively. However, hypothesis 3a and 3b cannot be confirmed by the statistical analysis of this study, as there is no significant relation to innovative work behaviour. This means that seeking feedback behaviour for self-improvement or self-validation does not influence innovative work behaviour in a positive manner. This is unexpected, as the reasoning was that seeking feedback behaviour is a way of asking others to share knowledge, which in turn is an incentive for innovative work behaviour. An explanation for the deviant results might be that seeking feedback behaviour is less about sharing knowledge than expected and more about learning new things and find confirmation that work is done well. Another explanation is that commitment from others is required to get the information wanted (Geddes, 2009; Ashford and Ashford & Cummings in: Choi, Moon, & Nae, 2014) and this may not be obvious. In future studies it would be advisable to devote attention to this aspect. Conclusively, seeking feedback behaviour for self-improvement or self-validation does not impact innovative work behaviour positively.
Hypothesis 4a states that seeking feedback behaviour for self-improvement mediates the relationship between learning-approach goal orientation and innovative work behaviour positively. The relationship between innovative work behaviour and learning-approach goal orientation is significant, but the relation between original predictor and dependent variable not. Therefore, hypothesis 4a has to be rejected. Hypothesis 4b, seeking feedback behaviour for self-validation mediates the relationship between learning-approach goal orientation and innovative work behaviour negatively, has to be rejected for the same reason. The relation between performance-prove goal orientation and innovative work behaviour is significant, but no mediating effect of seeking feedback behaviour for self-improvement exists. Hypothesis 4c is, therefore, not confirmed. The assumption that sharing knowledge to improve is a stronger predictor than showing competence in relation to innovative work behaviour could not be proven. An explanation for this deviant result might be that the employees’ ability and opportunity, relevant for knowledge sharing, affects innovative work behaviour. When employees are not able or capable to share knowledge this reduces innovative behaviour (Radaelli et al., 2014).

Hypothesis 4d and 4e state that respectively seeking feedback behaviour for self-improvement and seeking feedback behaviour for self-validation mediates for performance-avoidance goal orientation and innovative work behaviour. However, due to a not significant correlation between performance-avoidance goal orientation and innovative work behaviour, hypothesis 4d and 4e are rejected. Conclusively, seeking feedback behaviour for self-improvement or self-validation does not mediate the relation between goal orientations and innovative work behaviour positive or negative.

The conducted research revealed that goal orientations influences innovative work behaviour by a performance-prove goal orientation or a performance-avoidance goal orientation. So a drive to show competence or avoid to look incompetent influences innovative work behaviour. These relations are not mediated by seeking feedback behaviour for self-improvement or self-validation. To what extent organizational learning from error’s culture impacts the relation between goal orientation and innovative work behaviour cannot be answered based on this research.

5.2 Discussion and recommendations for further research

Even though this research has been set-up carefully, the study design had some limitations, which should be discussed shortly. First of all, it is possible that data is biased by e.g. only employees of a certain age responded or respondents with certain length of employment are missing. It is also possible that a part of the personnel (university educated) did not join the research, because they are not native Dutch and do not master the Dutch language well enough to join this research and fill in the Dutch questionnaire. The questionnaire was only offered in Dutch to prevent biases, which have occurred was the questionnaire translated into English as well but this choice probably created other biases. Furthermore, the selected organization might also have biased the results due to education level, which as the results did not include employees with a low (vocational) education level. Due to limited data, a comprehensive non-response analysis on the limitations before, and for control variables in total, is not possible.
A limitation of the study is that respondents answered all questions of goal orientations, whether they had a learning-, or a performance goal orientation. It should also be noted that this study was performed in a university hospital, in itself a learning environment and a non-profit organization. Therefore, it was assumed that performance-prove goal orientation enhances innovation (confirmed in this research) based on a study of Vandewalle & Cummings (1997), performed in a learning environment as well. This could bias the results.

Another point to consider is that the creativity measured as part of innovative work behaviour, probably measured the creativity in the way of learning instead of creating something new and creativity might not be the most suitable way to measure innovative work behaviour because of that. The nature of creativity towards learning-approach goal orientation could be more important than the creativity needed for innovative work behaviour. The innovative work behaviour in other organizations might also differ widely, which makes it hard to generalize the results of this study.

The research has contributed to the existing theory by researching in more detail what influences innovative work behaviour. Furthermore, this research provides new insights in the interaction of goal orientation and seeking feedback behaviour.

This study was controlled for gender, age, education, department and tenure. A correlation for gender was found with learning-avoidance goal orientation, innovative work behaviour and seeking feedback for improvement. A significance for gender on the relation between seeking feedback behaviour for improvement and goal orientations is confirmed. Gender is also significant for the relationship between the four goal orientations and innovative work behaviour. In literature, Button et al. (1996) found no significant results for gender with respect to learning and performance goals in different studies. However, in one study Button et al. (1996) confirmed a significant correlation of women to performance goals. An explanation for the defiant results in studies could be that results for gender are influenced by other factors, which are not included in this research. Culture can be of influence on gender results, as a culture in which women are considered to be equal to men, one could imagine that differences in response to the questions will be limited.

Although a significant correlation for age was found with education and learning goal orientations, age was not found to be significant in relation to the hypotheses. As many of the respondents were between 30 and 40 years it is hard to make conclusions on this fact, but it can be of interest for future research.

No significance for education is found for the hypotheses. An explanation that education is not influencing the hypotheses might be that the a high level of control in the job is missing for the high educated respondents in this study or their level of control in the job is not distinctive for all respondents. This reasoning is based on research of Janssen (2000), which revealed that higher educated employees with high levels of control in the job act more innovative than lower educated employees.

This research controlled for department, but due to the difference in group size of the departments and the different percentages of response, the analyses are done for the whole group. Culture differences for organizational learning from errors could probably exist between the departments, but has not
been proven in this research. So same size of departments and including variance analyses between these departments could lead to different outcome between departments.

This study also controlled for tenure, which correlates with age, education and department. Tenure influences the relation between goal orientations and innovative work behaviour. In total, 50% of the respondents work more than 6 years at the organization and due to the spread of tenure no conclusions are made.

Research of Janssen (2000) show that higher educated employees act more innovative. So the results of this study might not be translated into an organization in which respondents with low (vocational) educated employees are included or in which low (vocational) educated employees dominate. For generalization a spread of education level in the research group is necessary.

For future research it is recommended to have representative data of non-respondence present. It might also be of interest to repeat this research with data, which include low (vocational) employees. A significance for gender is found on the relation between seeking feedback behaviour for improvement and validation, and innovative work behaviour. Further research is necessary to find an explanation. Future research could also focus on gender effects in relation to the organizational learning from error’s culture. Besides that it is recommended to choose departments of same size and include variance analyses between departments when organizational learning from error’s culture is studied in only one organization.

This research is performed in a non-profit organization. It is recommended to research if the positive relation between performance-prove goal orientation and innovative work behaviour can also be found in a profit organization.

For future research it is advisable to test the nature of creativity, to get insight in the nature of creativity towards learning-approach goal orientation and innovative work behaviour.

The influence of management style was not included in the research model as this research focuses on the effect of goal orientations on innovative work behaviour. As style of management is also of influence on innovative work behaviour (Riaz et al., 2014), further research could incorporate management style in the model to research what the effect of management style is for employees with a performance goal orientation and learning goal orientation.

5.3 Practical implications

Organizations, which work with employees who have to perform in complex situations in a rapid changing environment, with a continuous focus on how to work efficient and how to improve care, can use the results of this research in the following ways. First of all, the organizations should ensure that part of their staff are performance driven when innovative work behaviour is important. Part of the employees should have a performance-prove goal orientation, as those employees have a focus on showing competence and gain positive judgement, which relates positive to innovative work behaviour. Second, it has become clear that learning goal orientation will not lead to innovative work
behaviour of employees naturally. Third, organizations could consider to implement incentives to stimulate employees to show competence and enhance innovative work behaviour that way.

5.4 Conclusion

Summarizing the whole research project, it can be stated, that the author’s research objectives have been met. The literature review and questionnaire complemented each other and created a clearer picture on innovative work behaviour. The research positively contributes to the theory on this topic and also delivers practical advises. Thanks to the research methods and analyses, the research question can mostly be answered.

It becomes clear, that performance-prove goal orientation influences innovative work behaviour of employees positively and performance-avoidance goal orientation influences innovative work behaviour of employees negatively. Gender and tenure seems to be of importance within relations with innovative work behaviour. Based on the results, organizations should realize that goal orientation of employees can help them to act innovatively. It is also noticeable that gender and tenure are of influence. Moderation of an organizational learning from error’s culture on this relation could not be detected in this work, probably due to the nature of the research population. It would be an interesting addition for this project if the role of an organizational learning from error’s culture is tested in different organizations.


Images. (called on 13 November 2016). Opgeroepen op called on 13 November 2016, van www.bing.com:

http://www.bing.com/images/search?q=innovatie&view=detailv2&id=0B519406C381ACBE6934FFFD8D748F41A4ACA29&selectedIndex=188&ccid=es1rks1l&simid=608000480807685756&thid=OIP.M7acd6b92cd657d84a72c0ee63b0ac963o0&ajaxhist=0


Appendix 1: Organization chart
## Appendix 2: Scales and the concepts

<table>
<thead>
<tr>
<th>Concept</th>
<th>Author</th>
<th>Scale</th>
<th>Operationalization</th>
<th>Motivation of choices</th>
<th>Cronbach alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 male</td>
<td></td>
<td></td>
<td>Gender (q1)</td>
<td>Measure differences for gender. Unspecified is included for transgender and intersex</td>
<td></td>
</tr>
<tr>
<td>0 female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 unspecified</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ year</td>
<td></td>
<td></td>
<td>Age (q2)</td>
<td>Differences can be observed in age</td>
<td></td>
</tr>
<tr>
<td>0 lower (vocational)</td>
<td></td>
<td></td>
<td>Education (q3)</td>
<td>Differences in education might have impact. Choice of four distinguished levels</td>
<td></td>
</tr>
<tr>
<td>education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 secondary (vocational)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 higher (vocational)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 university education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 Business Office CCC</td>
<td></td>
<td></td>
<td>Department (q4)</td>
<td>Culture might differ of departments within CCC and this may have an impact on the data</td>
<td></td>
</tr>
<tr>
<td>0 Haematology Department</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 Medical Oncology Department</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 Radiotherapy Department</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 Less than 6 months</td>
<td></td>
<td></td>
<td>Tenure (q5)</td>
<td>A distinction, a distinction might be taken out of data based on tenure.</td>
<td></td>
</tr>
<tr>
<td>0 6 – 12 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 1 – 2 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 3 – 5 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 6 – 10 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 More than 10 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Goal Orientation</strong></td>
<td>Janssen &amp; Prins (2007)</td>
<td>7-point Likert scale</td>
<td>Performance-prove (q6-q17-q12-q22-q8)</td>
<td>Literature reveal that goal orientation has two dimensions: performance and learning. Both dimensions consists of a positive and a negative side. This questionnaire is consistent with that. The Dutch questionnaire is validated. The chosen scale is based on the research of Janssen &amp; Prins (2007).</td>
<td>Performance-prove 0.91</td>
</tr>
<tr>
<td>1 = totally unimportant</td>
<td>recommended this questionnaire.</td>
<td></td>
<td>Performance-avoidance (q14-q7-q19-q10-q23)</td>
<td></td>
<td>Performance-avoidance 0.78</td>
</tr>
<tr>
<td>2 = unimportant</td>
<td>That questionnaire has been used in a learning context and can be used for this research. Dutch questionnaire was sent by him.</td>
<td></td>
<td>Learning-approach (q16-q20-q9-q15-q25)</td>
<td></td>
<td>Learning-approach 0.84</td>
</tr>
<tr>
<td>3 = a bit unimportant/ not important</td>
<td></td>
<td></td>
<td>Learning-avoidance (q21-q11-q18-q13-q24)</td>
<td></td>
<td>Learning-avoidance 0.71</td>
</tr>
<tr>
<td>4 = not unimportant/ not important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = a bit important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 = important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 = very important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Innovative Work Behaviour</strong></td>
<td>Janssen (2000)</td>
<td>7-point Likert scale</td>
<td>Idea generation (q26-q28)</td>
<td>A questionnaire of a master-student was received. It is not obvious whether this is a validated one. Dr. J. de Jong sent a questionnaire used by De Jong &amp; Den Hartog (2005)</td>
<td>0.95</td>
</tr>
<tr>
<td>1 = never</td>
<td>Validated Dutch questionnaire received.</td>
<td></td>
<td>Idea promotion (q29-q31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 = sporadic</td>
<td></td>
<td></td>
<td>Idea realization (q32-q34)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 = occasionally</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 = regular</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = often</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 = very often</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 = always</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
and De Jong (2010). Dr. De Jong does not have the questionnaire in Dutch anymore. The English questionnaire looks like the one of Janssen (2000). The questionnaire of Janssen (2000) is validated in Dutch, is short and clear. Therefore, that questionnaire is chosen for this research.

<table>
<thead>
<tr>
<th>Organizational Learning from Errors</th>
<th>Van Dyck et al. (2000)</th>
<th>5-point Likert scale 1 = totally disagreed 2 = disagreed 3 = not disagreed/not agreed 4 = agreed 5 = fully agreed</th>
<th>Openness (q35-q51) Closeness (q52-q61)</th>
<th>An unvalidated Dutch questionnaire of a master student was received. Van Dyck et al. (2000) includes in an article a Dutch questionnaire, which is consistent with this research and validated. Therefore this questionnaire is chosen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeking Feedback Behaviour</td>
<td>Janssen &amp; Prins (2007)</td>
<td>5-point Likert scale 1 = totally disagreed 2 = disagreed 3 = not disagreed/not agreed 4 = agreed 5 = fully agreed</td>
<td>Self-improvement (q62-q66) Self-validation (q67-q71)</td>
<td>A questionnaire of De Rooij (2006) was received from PhD M. Moorkamp. A comprehensive list. The questionnaire of prof. O. Janssen is compact and easy. The questionnaire is used before.</td>
</tr>
</tbody>
</table>
Appendix 3: Concepts and Questions

Goal orientation

In mijn werk vind ik het belangrijk dat

6. Ik beter presteer dan anderen
7. Ik niet afga in het bijzijn van anderen
8. Ik de beste ben.
9. Ik mijzelf kan ontwikkelen.
10. Anderen niet denken dat ik slecht in mijn werk ben.
11. Ik taken doe die ik helemaal beheers.
12. Ik een hoger niveau heb dan anderen.
13. Ik taken heb te doen die ik gemakkelijk aankan.
15. Ik bij mezelf vooruitgang ervaar.
16. Ik zo veel mogelijk kan leren.
17. Ik een betere beoordeling krijg dan anderen.
18. Ik een taak voor me heb die ik zeker aankan
19. Ik ten opzicht van anderen niet ondeskundig lijk.
20. Ik deskundigheid op kan bouwen.
21. Ik taken doe waarbij de kans op fouten klein is.
22. Ik in vergelijking met anderen deskundiger ben.
23. Anderen niet denken dat ik een lager niveau heb dan hen.
24. Ik geen fouten maak.
25. Ik iets doe waar ik veel van kan leren.

Innovative work behaviour

Hoe vaak komt het voor dat u in uw werk......

27. Nieuwe werkwijzen, technieken of instrumenten bedenkt.
28. Met originele oplossingen komt voor werkproblemen.
29. Steun mobiliseert voor vernieuwend ideeën.
30. Bijval oogst voor vernieuwend ideeën.
31. Sleutelfiguren enthousiast maakt voor vernieuwend ideeën.
32. Vernieuwend ideeën uitwerkt tot werkbare toepassingen.
33. Vernieuwend ideeën planmatig invoert.
34. De invoering van vernieuwend ideeën grondig evaluateert.
Organizational learning from error’s culture

35. Wanneer een fout zich heeft voorgedaan, weten we gewoonlijk hoe we dit moeten rechtzetten.
36. Wanneer een fout is gemaakt, wordt deze meteen gecorrigeerd.
37. Als een fout te herstellen is, weten we meestal hoe dit te doen.
38. Ondanks dat we fouten maken, laten we ons niet van ons uiteindelijke doel afbrengen.
39. Voor ons zijn fouten erg nuttig om het werkproces te verbeteren.
40. Een fout geeft belangrijke informatie voor de voortgang van het werk.
41. Onze fouten wijzen ons op wat we kunnen verbeteren.
42. Tijdens het volbrengen van een taak kunnen mensen veel leren van hun fouten.
43. Na het maken van een fout proberen mensen te analyseren wat dit heeft veroorzaakt.
44. In deze organisatie denken mensen veel na over hoe fouten voorkomen hadden kunnen worden.
45. Wanneer er iets verkeerd gaat, nemen mensen de tijd om dit te overdenken.
46. Na een fout denken mensen na over hoe ze deze kunnen corrigeren.
47. Nadat een fout zich heeft voorgedaan wordt dit grondig geanalyseerd.
48. Wanneer iemand een fout maakt, deelt hij/zij dit met anderen zodat zij niet dezelfde fout zullen maken.
49. Wanneer mensen niet in staat zijn de fout te corrigeren, richten zij zich tot hun collega’s.
50. Als mensen niet in staat zijn hun werk voort te zetten na een fout, kunnen zij vertrouwen op anderen.
51. Wanneer mensen iets verkeerd doen, kunnen zij anderen om advies vragen over hoe verder te gaan.
52. In deze organisatie ergeren mensen zich wanneer ze fouten maken.
53. Mensen in deze organisatie zijn vaak bang om fouten te maken.
54. Over het algemeen schamen mensen zich na het maken van een fout.
55. Wanneer een fout zich voordoet raken mensen overstuur en geïrriteerd.
56. Tijdens hun werk maken mensen zich vaak zorgen over dat er fouten gemaakt zouden kunnen worden.
57. Ons motto is: “Waarom een fout toegeven als niemand het zal ontdekken?”
58. Het kan nadelig zijn om je fouten aan anderen bekend te maken.
59. Het heeft geen nut om fouten met anderen te bespreken.
60. Het is voordelig om fouten te verbergen.
61. Mensen in deze organisatie houden het liefst hun fouten voor zichzelf.

Feedback seeking behaviour

Ik vraag terugkoppeling (van collega’s of leidinggevende) om informatie te krijgen hoe ik een probleem oplos:
62. om te leren hoe ik een taak uitvoer
63. om te leren hoe ik mijn werk beter kan uitvoeren
64. om informatie te krijgen hoe ik problemen kan oplossen
65. om mijn kennis en geschiktheid te verbeteren
66. om geschiktere persoonlijke doelen te stellen

Ik vraag terugkoppeling (van collega's of leidinggevende) om gerustgesteld te worden dat ik het goed doe

67. om te horen dat ik mijn werk/training goed doe
68. om van anderen te horen dat ik het goed doe
69. om complimenten te krijgen zodat ik me goed gevoel
70. om zekerheid te krijgen dat alles goed gaat
71. om mijn zelfvertrouwen te vergroten
Appendix 4: Regression tables with control variables

Table 7: Regression analysis with seeking feedback for improvement as dependent variable

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>8.407</td>
<td>0.000</td>
</tr>
<tr>
<td>Education level</td>
<td>0.016</td>
<td>0.984</td>
</tr>
<tr>
<td>Department</td>
<td>0.218</td>
<td>0.883</td>
</tr>
<tr>
<td>Tenure</td>
<td>1.719</td>
<td>0.134</td>
</tr>
<tr>
<td>Age</td>
<td>0.001</td>
<td>0.973</td>
</tr>
<tr>
<td>Performance-prove goal orientation</td>
<td>2.745</td>
<td>0.100</td>
</tr>
<tr>
<td>Performance-avoidance goal orientation</td>
<td>0.570</td>
<td>0.451</td>
</tr>
<tr>
<td>Learning-approach goal orientation</td>
<td>21.651</td>
<td>0.000</td>
</tr>
<tr>
<td>Learning-avoidance goal orientation</td>
<td>1.876</td>
<td>0.173</td>
</tr>
</tbody>
</table>

R Squared = .310 (Adjusted R Squared = .223)

Table 8: Regression analysis with seeking feedback for validation as dependent variable

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
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<td>2.259</td>
<td>0.108</td>
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<tr>
<td>Education level</td>
<td>1.343</td>
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<tr>
<td>Department</td>
<td>0.653</td>
<td>0.582</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.867</td>
<td>0.505</td>
</tr>
<tr>
<td>Age</td>
<td>0.000</td>
<td>0.997</td>
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<tr>
<td>Performance-prove goal orientation</td>
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<tr>
<td>Performance-avoidance goal orientation</td>
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<td>0.283</td>
</tr>
<tr>
<td>Learning-approach goal orientation</td>
<td>0.003</td>
<td>0.956</td>
</tr>
<tr>
<td>Learning-avoidance goal orientation</td>
<td>5.970</td>
<td>0.016</td>
</tr>
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</table>

R Squared = .232 (Adjusted R Squared = .137)

Table 9: Regression analysis with innovative work behaviour as dependent variable

<table>
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</tr>
</thead>
<tbody>
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<tr>
<td>Education</td>
<td>1.105</td>
<td>0.334</td>
</tr>
<tr>
<td>Department</td>
<td>2.205</td>
<td>0.090</td>
</tr>
<tr>
<td>Tenure</td>
<td>2.408</td>
<td>0.039</td>
</tr>
<tr>
<td>Age</td>
<td>0.117</td>
<td>0.733</td>
</tr>
<tr>
<td>Seeking feedback for improvement</td>
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<tr>
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<td>0.551</td>
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</tbody>
</table>

R Squared = .182 (Adjusted R Squared = .095)
Table 10: Regression analysis with innovative work behaviour as dependent variable

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
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<td>0.710</td>
</tr>
<tr>
<td>Performance-prove goal orientation</td>
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<td>0.073</td>
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<tr>
<td>Performance-avoidance goal orientation</td>
<td>0.011</td>
<td>0.915</td>
</tr>
<tr>
<td>Learning-approach goal orientation</td>
<td>5.868</td>
<td>0.017</td>
</tr>
<tr>
<td>Learning-avoidance goal orientation</td>
<td>0.969</td>
<td>0.326</td>
</tr>
</tbody>
</table>

R Squared = .201 (Adjusted R Squared = .108)