THE IMPACT OF EMPLOYEE VOICE ON INNOVATIVE BEHAVIOR MEDIATED BY AFFECTIVE COMMITMENT

Master thesis
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1. Introduction

The role of innovation in the long-term survival of organizations has received significant interest from social scientists and practitioners alike for a long time. Since it is people who "develop, carry, react to and modify ideas" (Van de Ven, 1986: 592), studying what motivates and enables individuals to present innovative behavior is of paramount importance (Scott & Bruce, 1994). As can be seen from the dates of the citations this idea is far from new, but the attention for innovative behavior has not let off and is currently as prevalent as ever.

Because the attention for innovative behavior has been prevalent for twenty years a lot off research has been done regarding this topic. The article of De Jong and Den Hartog (2010), however, showcases that the topic has all but been covered in this significant time span; a widely accepted operationalization for innovative behavior had not been found. Furthermore research has tried to determine the motivators and enablers of innovative behavior as discussed by Scott and Bruce (1984) and Van de Ven (1986), and has come a long way, but is far from finished.

One of the most interesting possible predictors of innovative behavior is commitment, which has seen a lot of work in recent years. The results indicate a positive relationship between certain types of commitment and innovative behavior (Xerri & Brunetto; 2013; Jafri, 2010). This research, however does not cover multiple commitment constructs or the effect of interaction between multiple commitment constructs. These multiple constructs within a broad commitment definition, and the importance of interaction between these constructs, was brought up by Meter and Allen (1997), but the effects of these interactions remain to be tested.

Furthermore employee involvement is often discussed in literature regarding the relationship between commitment and innovative behavior (e.g. Xerri & Brunetto, 2013; Jafri, 2010; Ramamoorthy et. al, 2005 and Janssen, 2003 & 2005). It can be expected that having a say in a company's affairs will make you feel more committed, and can facilitate innovative behavior. Empirical research on these relationships, however, also remains to be done.

This study was set up to do exactly that; test these relationships using existing data gathered by a PhD student within a number of new product development teams within the Netherlands. These development teams are interesting because innovative behavior is most expected and relevant in these types of employees (as also argued by Scott and Bruce, 1994).

This research sets out to answer three questions regarding the relations between employee voice, commitment and innovative behavior, which have not seen research to this date, namely:

- *What is the effect of interaction between multiple types of commitment on innovative behavior?*
- *Is employee voice a predictor of innovative behavior?*
- *Does employee voice affect innovative behavior through commitment?*

The results of this research should, thus, solidify the understanding of the effect commitment has on innovative behavior, and what role employee voice plays within this context. The present study further takes in to account possible distinctive factors (namely: age, sex and type of contract) that might be of paramount importance (Cuyper, Notelaers & Witte, 2009; Sharma, Durand, & Gur-arie, 1981).

2. Theoretical background

2.1 Innovative behavior

While innovation is a fairly hot topic (especially in business administration) scholars often use it without an exact description of its means. Other scholars describe the innovation construct more precisely and come to a number of different types and dimensions related to innovation (e.g. Garcia & Calantone, 2002).

To counteract this ambiguity I will first explain the concept of innovation on which the innovative behavior construct has been based. This concept stems from Kanter (1988), who defines innovation as a multi-stage process in which innovation is achieved.

Her model includes three stages; the first stage is problem recognition and the generation of ideas or solutions. In the second stage sponsorship for the idea is generated (in the form of a coalition and supporters). During the third, and final, stage the idea is completed by producing a prototype or model of the innovation. After this the innovation is ready for implementation.

Based on this multi-stage definition of innovation the concept of innovative behavior can be derived (Scott & Bruce, 1994). Because people are the innovators within companies it is clear that certain behavior is required for each of these stages to be successful: A problem cannot be recognized and ideas or solutions cannot be generated if employees do not show behavior related to problem recognition and idea generation. The same goes for the later stages where

sponsorship cannot be generated, or a prototype or model cannot be produced if employees do not show related behavior. The behavior related to the different stages, required but not sufficient for innovation, is dubbed “Innovative behavior” (Scott & Bruce, 1994).

The innovative behavior construct has obviously seen more attention since the years of Kanter (1988) and Scott & Bruce (1984). The work of De Jong and Den Hartog (2010) does a great job summarizing the work in this field. They base their work on the innovative behavior construct on the work of Scott and Bruce (1994) and (based on other research) add 2 notions to this:

- Firstly they argue that idea generation is rather broadly defined and can be split into idea exploration and idea generation because they rely on different cognitive abilities (e.g. Runco & Chand, 1994).
- Secondly they bring up the possibility of multi dimensionality (each of the steps having their own, related, dimension).

With that in mind the authors summarize the following 4 parts (or dimensions) of innovative behavior:

- Idea exploration: The start of an innovation is often based on chance; the discovery of an opportunity or a threat requiring immediate response. Idea exploration entails behavior to deal with this and includes looking for ways to improve current products, services or processes or thinking about them in a different way.
- Idea generation: This step covers the generation of ideas for new products, services or processes but also the entry into new markets. In more general terms: finding solutions to identified problems.
- Idea championing: The promotion of ideas within the company. This is required because new ideas often do not match what is currently used in a team or organization. Therefore it is uncertain whether the benefits outweigh the cost and resistance to change often occurs (Kanter, 1988). Idea championing (finding support, building coalitions, expressing enthusiasm and getting the right people involved) is required to overcome these issues.
- Idea implementation: This step includes making innovations part of the regular work processes, developing new products or work processes and testing and modifying them. This requires employees to put in considerable effort with a result-oriented attitude.

From all this it becomes clear that the basis of the innovative behavior construct still lies in the multi-step innovation model as described by Kanter (1988). Furthermore it should be noted

that De Jong and Den Hartog (2010) look at the measures for innovative behavior, and come to the conclusion that the method from Scott and Bruce (1994) still holds great value, clearly indicating the relevance of their work.

2.2 Commitment

Recent research regarding innovative behavior shows great interest for commitment as a possible predictor of innovative behavior (e.g. Xerri & Brunetto (2013) and Jafri (2010)). Before coming to the relationship between these constructs it is important to cover the commitment construct on its own.

As can be seen from the work of Xerri & Brunetto (2013) and Jafri (2010) commitment comes in different types and forms (affective commitment and continuance commitment are mentioned separately, and have different effects on innovative behavior).
This differentiation is not new as even around 1960 definitions already ranged from a 'psychological bond' between the employer and employee (Kelman, 1958), to a 'side bet theory' (Becker H., 1960) based on the nature of exchange in commitment.
The differences between these definitions can be pretty big at times, but they all rely on one underlying assumption, which is best captured by Meyer and Herscovitch (2001), who state that commitment is: "(a) a stabilizing or obliging force that (b) gives direction to behavior" (p.301).

Whilst this definition from Meyer and Herscovitch (2001) is clear and covers the concept of commitment used by the majority of authors it also has an important downside; the operationalization of this idea as one, single, construct is next to impossible.
In order to get insight into this broad commitment constructs some authors defined these different types of commitment in a multi-dimensional construct. A great example of such a model that combines these different types of commitment stems from Meyer & Allen (1997). These authors summarize three components of commitment (as summarized in the table below) that had previously arisen.

Affective orientation	Cost based / Continuance	Moral responsibility / Normative
Kanter, 1968	Kanter, 1968	Wiener & Gechman, 1977
Sheldon, 1971	Becker, 1960	Wiener, 1982,
Hall et al., 1970	Grebiniak & Alutto, 1972	Marsh & Mannari, 1977
Buchanan, 1974		
Mowday et al., 1982		

Table 1 – three components and relating authors (source: Meyer and Allen, 1997)

The model describes these three types of commitment as follows:

- Affective commitment: the emotional attachment to the entity.
- Continuance commitment: calculating and assessing the benefits of staying with the entity as compared to leaving the entity.
- Normative commitment: The moral attachment to the entity.

If one looks at these definitions (and also the previous research (Xerri & Brunetto, 2013; Jafri, 2010) it seems most likely that affective commitment (positively) affects innovative behavior. Affective commitment is, thus, the type of commitment which will be considered in this research.

This commitment can be directed at a number of different peers (Morin et al., 2009), 3 of which were included in the provided data: The organization, the (NPD-)team and the career. These commitment foci are all interesting and important foci for this research because all three foci of commitment have been shown to be related to work outcomes (e.g. Iverson, 1996; Bishop, Scott & Casino, 1997; Gardner, 1992) and have been discussed as important parts of a multi-commitment framework (Meyer & Allen, 1997).
It is important to note that the commitments to these different peers can co-exists and interact (Meyer & Allen, 1997, Baugh & Roberts, 1994). Therefore the interaction between multiple commitment constructs is of importance.

This work on the commitment construct, chosen because the existing operationalization is based on them, is relatively old. Fortunately the view on, and theory behind, commitment, have barely changed since the articles that Meyer and Allen have put out. Although their view on

multi-commitment has not found ground everywhere it still has its place in recent research (e.g. Culpepper, R. A. (2011)).

2.3 Commitment as a predictor of innovative behavior

As mentioned earlier recent research (e.g. Xerri & Brunetto (2013) and Jafri (2010)) shows great interest for the relationship between commitment and innovative behavior. This is not a strictly new phenomenon though; it already had its place (although not always explicitly) in older high performance practice models (e.g. Beer et. al) and the attention is also clear from a view of high involvement practices (e.g. Bessant, Caffyn 1997, Janssen, 2003 and Macky & Boxall, 2007). This widespread attention makes research regarding innovative behavior, and its predictors, all the more relevant, which is why it has been getting significant attention in recent years.

These (and other studies) have shown that organizational commitment predicts a number of important variables (e.g.: absenteeism, organizational citizenship, performance). As I mentioned before recent research has attention for innovative behavior, which allows for it to be added to the list of variables affected by commitment (Jafri, 2010; Xerri & Brunetto, 2013). This is hardly surprising because being able to act committed closely parallels the process of innovation (Jafri, 2010); every innovation requires actions (as described in section 2.1) as learning from others, challenging current expectations or taking risks to achieve changes. Committed people generally have characteristics that fit these requirements: they have an active curiosity, a passion for learning, a willingness to challenge the status quo and an eagerness to experiment with new methods and strategies (Jafri, 2010).

It is unsurprising, then, that recent research finds a strong relationship between commitment and innovative behavior. The work of Xerri and Brunetto (2013) is a great example of this research that highlights the relationship between commitment and innovative behavior. These authors find a positive relationship between affective commitment and innovative behavior. Another recent piece of work that shows this relation is that of Jafri (2010), where a positive relation is found between affective commitment and innovative behavior; furthermore a negative relation is found between continuance commitment and innovative behavior.

Further examples of research regarding this relation are those of Ramamoorthy and his colleagues (2005) and Janssen (2003 and 2005). It is thus, likely, that affective commitment is a predictor of innovative behavior, Based on the cited works of Xerri & Brunetto (2013)and Jafri (2010).

Based on this section we can come to the following hypotheses:

H1a: Affective organizational commitment positively affects innovative behaviour.
H1b: Affective team commitment positively affects innovative behaviour.
H1c: Affective career commitment positively affects innovative behaviour.

H2: The interaction between affective commitment to the organization, the team and career positively affects innovative behavior.

2.4 Employee voice

When one reads articles concerning innovative behavior (and the relationship between commitment and innovative behavior) one thing draws particular attention: A lot of authors (e.g. Ramamoorthy et. al (2005); Janssen (2003 and 2005); Xerri & Brunetto (2013), and Jafri (2010)) have attention for employee involvement (different constructs appear, but they are all in some way related to the effect an employee has on a company's affairs), and how this fosters innovative behavior.

Since employee voice was measured in the pre-existing data I will choose this construct as to measure the influence of employees on the company's affairs. This construct has received a lot of research attention as one of the "high performance management practices" (e.g. Arthur, 1992; Beer et al., 1984) that can lead to organizational effectiveness. Regardless of this attention, employee voice lacks a clear definition (Wilkinson & Fay, 2011; Dundon, Wilkinson, Marchington & Ackers, 2004). This lack of definition, however, has not hindered the concept to be accepted, operationalized and used fairly consistently (e.g. Employee voice special, Human Resource Management Journal, 2011) as a mechanism (or mechanisms) that increases employee influence by giving them a "voice" in the corporation's affairs (Beer et al., 1984).

This definition is, obviously, rather wide. Therefore some authors have made a number of distinctions within the concept. I will discuss the most used ones, but it is important to note that these branches of involvement cannot be seen as loose constructs because they are interwoven, and interact. (Poutsma et. Al, 2006, Kleiner and Lee, 1997)

With that in mind, the first distinction I want to discuss stems from Beer and his colleagues (1984). These authors make a division between two types of mechanisms: (1) Ones that aim at ensuring due process for employees who have grievances and (2) ones that enable employees to suggest changes and innovations in management practices, which will increase fair treatment or enhance efficiency. Furthermore, they argue that "employee voice mechanisms

can be seen as a way to balance the goals of justice and efficiency in the absence of (…) a union." (Beer et al., 1984, p.84). More recent work, however, includes this type of participation (through a union) in their employee voice construct as they make a second distinction between direct participation and indirect participation (e.g. Mayer & Schoorman, 1998; Poutsma et al., 2006).

In simple words direct participation is a situation which "allows employees to exercise influence over their work and over the conditions under which they work" (Pusic, Wilpert & Strauss, 1998, p. 15). Whereas indirect participation refers to representative participation through, for example, unions or work councils.

The construct as measured in this research (adopted from Geary & Roche, 2001) concerned the existence of a number of different HR voice practices, which can be found attached to this article. These different questions cover both ends of the distinctions I just covered; there are questions regarding grievances (through a company-confined grievance system) and suggested changes (through suggestion schemes). Questions also include direct participation (Through, for example, a formal open door policy) and indirect participation (in joint consultative committees/work councils).

Aside from the attention that authors have for employee voice, there is more indication of the relevance of employee voice when looking at the relationship between commitment and innovative behavior. Some of the statements/questions are so closely related to innovative behavior that one might even call them overlapping constructs. A great example is the statement regarding suggestion schemes that I mentioned earlier, which are basically innovative behavior at work; if employees suggest their ideas (or even as much as mention problems they encounter in their daily work) this is part of the first step of innovative behavior (problem recognition and idea generation). Furthermore statements regarding contact with managers or other higher-ups (a formal open-door policy, but also team briefings by line management) are likely to affect the affection one feels for the company/their team (and, thus, affective commitment) as well as foster an environment in which innovative behavior can shine (as argued by Scott and Bruce, 2001).

Based on these arguments one can come to 2 further hypotheses:

H3: Employee voice has a positive effect on innovative behavior.

H4a: Employee voice has a positive effect on affective organizational commitment.

H4b: Employee voice has a positive effect on affective team commitment.

H4c: Employee voice has a positive effect on affective career commitment.

2.5 model

Based on the 4 hypotheses that we have come to we can expect that employee voice leads to commitment (with its multiple dimensions, which interact and coexist) which may lead to innovative behavior. This has been represented in a visual model, which can be seen in figure 1.

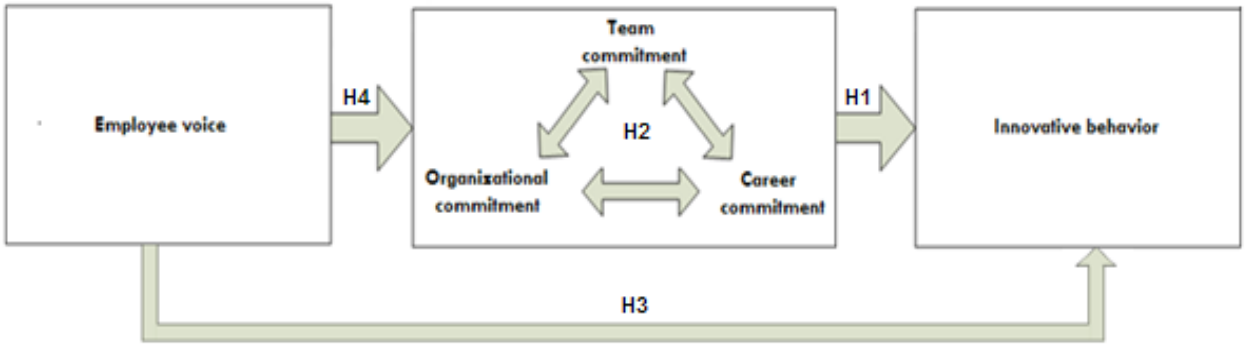

Figure 1: Model of the effect of employee voice on innovative behavior, mediated by multiple types of commitment.

3. Methods

3.1 Research design

In order to investigate the relationships between employee voice, affective commitment and innovative behavior, as outlined in the model in figure 1 and formulated in the hypotheses, data analysis was conducted with data from a previous questionnaire. This research design is considered suitable for questions regarding attitudes and behaviour, as required in this research (Sapsford, R., 1999). Furthermore this design provides the opportunity to test a relationship statistically, as to asses question regarding the strength and direction of these relationships.

3.2 Data origin

Pre-existing data, which was gathered by a PhD student from the University of Twente, was used. This data was gathered from a number of companies with special groups that were tasked

with new product development.

The selection of these groups was done based on a number of different criteria (ranging from the access to the teams, the team size, the location of the members, etc.). Based on these criteria the student chose a number of NPD groups with the intent to "help understand how human resource policies can influence multiple commitments in order to manage outcomes of a team member's commitment".

The intention of this selection obviously covers the same intent as the research at hand. Furthermore the study of NPD teams allows for commitment to be measured to its three different peers (notably team commitment is enabled, as this is not present within all employees) and is an environment in which innovative behavior is mostly expected, rewarded and relevant. The resulting sample, thus, is good ground for this research.

3.3 Procedure, sample and participants

The PhD student send out a questionnaire to each member of the NPD teams of the company's he established contact with (contact with these companies was not only used for these questionnaires, but also in a much broader context for setting up his research and for interviews). These questionnaires included a number of questions among which those relevant to, and used in, this research (as attached). The questionnaires were then filled out by the members of the NPD teams before being sent back to the PhD student, achieving a total sample size of 183 individuals. Whilst the response rate was not reported it can be assumed that through the close relations with these companies and their NPD groups a high response rate was achieved. Distribution amongst control variables can be found in table 2.

	# of respondents	% of respondents
Male	133	72.7
Female	50	27.3
Full-time employee	147	80.3
Part-time employee	20	10.9
External consultant	16	8.7
Age < 31	63	34.3
Age 31-37	55	30.3
Age > 37	65	35.4

Table 2: Distribution amongst control variables.

3.4 Measures and validity

Employee voice is measured with an eight item scale, adopted from Geary and Roche (2001). Items were indicated to either be present, or not present. Analysis of Chronbach's alpha gives .668 over the eight items, which improves to .759 after removing the "team briefings by line management" statement, which only showed a correlation of -0.19.

Innovative behavior consists of a six item scale (Scott & Bruce, 1994) which, as explained before, draws on the stages of innovation as put forward by Kanter (1988). Responses are ranked on a five-point Likert-type scale ranging from "not at all" to "to an exceptional degree". Chronbach's alpha of this scale was .735 in this research, but was found as high as .89 in the original research by Scott and Bruce (1994).

Commitment was split up into three different commitment constructs; the affective commitment to three different peers, namely the organization, team and career. Each of these different constructs was measured with a multiple item scale as originally developed by Meyer and Allen (1990, 1997). Each of these items was measured on a 5 point Likert-type scale, ranging from "not at all" to "to an exceptional degree". Chronbach's alpha for these constructs is summarized in table 3.

	Affective Organizational Commitment	Affective Team Commitment	Affective Career Commitment
Chronbach's alpha	.817	.687	.730

Table 3: Chronbach's alpha for each of the commitment constructs.

The covariates, namely: age, sex and type of job contract, were all measured with a single item. The full list of questions can also be found attached to this article.

3.5 Data analysis

The quantitative data that was the result of the questionnaire was provided in SPSS format, and the answer were coded based on the questionnaire. These results were then processed with SPSS. Correlations were calculated between each of the constructs. Regression analysis was

used to test the formulated hypotheses and the constructed model in a number of steps. First the effect of employee voice on the commitment constructs was tested by multiple regression in which the control variables and the other commitment constructs were included. Secondly the effects off employee voice and commitment on innovative behavior were then tested in a similar way. Finally the interaction between the commitment constructs was added to the previous model to test the effect of these interactions.

4. Results

4.1 Correlation results

Overall correlation table

	AOC	ATC	ACC	InnBehavior	Voice
AOC					
ATC	.345**				
ACC	.233**	.275*			
InnBehavior	.295**	.239 (.373)	.271**		
Voice	-.262**	N.R.	-.144 (.121)	-.115 (.216)	

*: p<0.05, **: p<0.01, N.R.=no relation (p>.45 and -.1<factor<.1) or (p>.25 and -.01<factor<.01)

Table 4: Full correlation results.

Correlations among the commitment constructs

The correlations between commitments have been listed in an extra table (table 5) to highlight these relations. They are of specific importance because of 2 reasons:

- The relations between employee voice and commitment, and commitment and innovative behaviour are tested per commitment construct – knowing how the commitment constructs interact allows one to establish possible indirect effects.
- The effect of these interactions on innovative behavior will be tested (4.3), making an insight into these interactions important.

	AOC	ATC	ACC
AOC			
ATC	.345**		
ACC	.233*	.275*	

*: p<0.05, **: p<0.01

Table 5: Correlations amongst commitment constructs.

A clear trend is visible in these findings, namely: all the correlations are positive, rather strong, and statistically relevant. This indicates that is very likely that employees who are affectively attached to their organization are also affectively attached to their team and career (and vice versa). This means that the interactions (as hypothesized in H2) exist, making the test of these interactions (4.3) all the more interesting.

4.2 Effect of employee voice on commitment

Determinants of affective organizational commitment

	Affective organizational commitment
Employee voice	-.238**
Affective team commitment	.134(.146)
Affective career commitment	.106(.254)
Gender	.085(.364)
Age	.210*
Type of job contract	-.103(.260)

*: p<0.05, **: p<0.01

Table 6: Regression results concerning the determinants of AOC

The model, of which the results are presented in table 6, proved to be statistically relevant with R^2=.167, F(6,109)=3.638 , p<.01. These results indicate that affective organizational commitment is negatively affected by employee voice at -.238** (and, as a control variable being positively affected by age (.210*)). The negative relationship means that employees who have more voice are less likely to be affectively committed to the organization. This result leads to a rejection of hypothesis 4a.

Determinants of affective team commitment.

	Affective team commitment
Employee voice	.133(.165)
Affective organizational commitment	.144(.146)
Affective career commitment	.198*
Gender	.045(.642)
Age	.101(.303)
Type of job contract	-.085(.369)

*: p<0.05

Table 7: Regression results concerning the determinants of ATC

This model did not proof to be statistically relevant with R^2=.101 F(6,109)=2.039 and p=.066. Furthermore all results within the model, apart from the effect of affective career commitment (.198*), were not found to be statistically relevant. No relation, thus, is found between employee voice and affective team commitment and this means that hypothesis 4b has to be rejected.

Determinants of affective career commitment

	Affective career commitment
Employee voice	-.110(.247)
Affective organizational commitment	.112(.254)
Affective team commitment	.194*
Gender	-.098(.311)
Age	-.158(.102)
Type of job contract	-.104(.267)

*: p<0.05

Table 8: Regression results concerning the determinants of ACC

While the model presented in table 8 proofed to be statistically relevant (R^2=.118 F(6,109)=2.424 and p<.05), only the effect of affective team commitment and affective career commitment is shown to be relevant (.194*). Furthermore the effect of employee voice on affective career commitment (while statistically irrelevant) is shown to be negative at -.110. Similar to the other commitment constructs no positive significant effect of employee voice is found. Because of this hypothesis 4c has to be rejected, and with that hypothesis 4 is fully

rejected meaning that no positive relation was found between employee voice and commitment.

4.3 Determinants of innovative behavior

Effects of control variables

	Innovative behavior
Gender	.164(.086)
Age	.069(.460)
Type of job contract	-.271**

**: P<0.01

Table 9: Regression results concerning the effects of control variables

As a first step only the control variables are considered as predictors, leading to the results presented in table 9 (R^2=.097, F(3,112)=4.004 and p<.01). The results indicate that full time employees are more likely to show innovative behavior, compared to part time employees or external consultants, as well as part time employees likely showing more innovative behavior compared to external consultants. Furthermore males seem to be more likely to show innovative behavior at .164(.086).

Effects of commitment constructs

	Innovative behavior
Employee voice	-.068(.482)
Affective organizational commitment	.154(.111)
Affective team commitment	.031(.738)
Affective career commitment	.167(.076)
Gender	.154(.107)
Age	.040(.671)
Type of job contract	-.229*

*: p<0.05

Table 10: Regression results concerning the effects of commitment on innovative behavior

To determine the effect of the commitment constructs on innovative behavior as well as the direct effect of employee voice on innovative behavior these variables were added to the model, which has been presented in table 10 (R^2=.178, F(7,108)=3.338 and p<.01).

These results cover two different hypothesized relationships.

Firstly the direct relationship between employee voice and innovative behavior is covered; an effect of -.068(.482) is found. This means that, in this research, employee voice was not found to effect innovative behavior positively. As a result H3 has to be rejected, in fact it should be noted that employee voice might negatively affect innovative behavior.

Secondly these results cover the effects of the commitment constructs on innovative behavior. These results are positive and close to statistical relevance for affective organizational commitment at .154(.111) and affective career commitment at .167(.076) but no relation was found for affective team commitment (.031(.738)). These results lead to rejection of H1b, but leaves room for H1a and H1c to be confirmed, although no statistical relevance was found in this model.

Effects of interaction between commitment constructs

	Innovative behavior
Employee voice	-.068(.482)
AOC*ATC	-.006(.951)
AOC*ACC	.075(.459)
ATC*ACC	-.245*
AOC*ATC*ACC	-.077(.418)
Affective organizational commitment	.160(.118)
Affective team commitment	.069(.474)
Affective career commitment	.262**
Gender	.154(.107)
Age	.089(.383)
Type of job contract	-.175(.070)

*: p<0.05, **: p<0.01

Table 11: Regression results concerning the effects of interaction between multiple commitments on innovative behavior

The final step, then, is to add the interaction between the different commitment constructs as possible predictors of innovative behavior, as hypothesized in H2. The results of the regression of this full model has been presented in table 11 (R^2=.255, F(10,105)=3.041 and p<.01).

This R^2 is higher compared to that of the model without interaction effects (from .178 to .255) meaning that the interaction effects cover a significant amount of variance in innovative behavior.

Furthermore, when looking at these results, one can see that 3 of the interactions (AOC*ATC, AOC*ACC and AOC*ATC*ACC) show no relevant effect on innovative behavior. The last interaction (ATC*ACC), however, shows a significant negative effect on innovative behavior at -.245*. This means that the interactions show no positive relation to innovative behavior, and H2 has to be rejected, but more interestingly this also means that the interaction between affective team commitment and affective career commitment has a negative influence on the amount of innovative behavior of employees. Apparently these two types of commitment cause some sort of conflict where the combined existence of ATC and ACC reduces the innovative behavior of employees, whereas an employee who is solely affectively committed to their career shows increased innovative behavior.

What should further be noted is that, in this new model, the result for affective career commitment gains significant relevance at .262**, confirming H1c. Other results stay approximately the same compared to the simpler models in table 9 and 10.

5. Discussion

In this study, a model was developed and tested which describes the effect of employee voice on innovative behavior, mediated by affective commitment to three different peers. Based on previous research positive relations were hypothesized between employee voice and commitment, employee voice and innovative behavior, and commitment and innovative behavior. Furthermore the different commitment constructs were hypothesized to interact; these interactions were further hypothesized to positively affect innovative behavior.

In regards to the effect of commitment on innovative behavior previous research had already shown a positive relation between affective commitment and innovative behavior in multiple cases. The results of this study show a positive relationship between affective career commitment and innovative behavior and a possible (albeit in this research statistically irrelevant) positive relationship between affective organizational commitment and innovative behavior. These results further confirm the previous results (whilst specifying that this affective commitment should be directed at the organization or career, not at the team) in a new context: that of the R&D team.

Furthermore the effect of interaction between these commitments had previously not been researched. This research tests these relationships and finds a negative relationship between the interaction of affective team commitment and affective career commitment. This means

that the presence of affective team commitment in employees who are also affectively committed to their career has a negative effect on innovative behavior.

Other relationships that were tested were previously unexplored; employee voice was argued to positively affect innovative behavior (possibly through commitment). The results did, however, not confirm these hypotheses; in fact the relationship between employee voice and affective organizational commitment is shown to be negative.
These results seem counter intuitive because it seems logical that employees who actually have a say in the procedures of their company, and the way they do their work would show more commitment and/or innovative behavior. Not only because this directly facilitates it (thinking of different ways to do your work **is** innovative behavior) but also because the effects this has on the way you work should allow you to work more efficiently (which, in the case of an NPD team also means: more innovative).
One might wonder, then, why the results in this research are different from this intuition. An important reason for this might be that the measurement of employee voice was done based on questions of existence (ex: "does your workplace have a formal open door policy?"). These questions give an indication of intent of the employer – where a higher result means that the employer has a clearer intent to make the employees experience voice. This intent, however, does not always convey to an actual experience of employee voice, or even an experience of these policies (which has become the most used way to measure employee voice, as I have discussed earlier).

Rather than interpreting these results as *"employee voice does not lead to innovative behavior or commitment, and might, in fact, be negatively related to these constructs".* It is fair to conclude that merely the existence of these policies is not sufficient to lead to commitment or innovative behavior; it is only when these policies are combined with other factors, such that the policies are experienced by employees, that it may lead to commitment and innovative behavior as has been shown in other research.

Implications

What this research adds to the field, then, is the knowledge that (in the context of NPD teams) affective commitment directed at the organization or career positively affects innovative behavior, whereas affective team commitment shows no positive effect. When affective team commitment is present in employees who are also affectively committed to their career the interaction between these commitments negatively affects innovative behavior. This fact, and

the fact that the model which comprises the interaction effect covers more of the variance in innovative behavior, means that, rather than looking at single commitment constructs it is advisable to look at a number of different commitment constructs and, more importantly, their interactions.

In regards to the role of employee voice in the context of commitment and innovative behavior it was argued that employee voice is likely to affect commitment (which in turn affects innovative behavior) as well as employee voice affecting innovative behavior directly. Whilst these relations were not found to be true in this research (H3 and H4a-c have all been rejected) the ideas and argumentation behind these relationships still hold strong, and warrants future research.

Limitations

The present research had a number of shortcomings in this area: Employee voice was measured with question of existence of practices, rather than the perception of these practices, and employee voice. Furthermore the sample size (N=183) is somewhat small and no attention was given to the "other factors" mentioned earlier, which foster the relation between voice and innovative behavior. Scott and Bruce (1994) capture an important notion in this regard; it is important that voice leads to a perception of the climate for innovation. Firstly this means that measurement has to be shift to perception, not only for the climate of innovation, but also for voice, as its predictor. Secondly, attention should be given to leader-member exchange (which covers the relationships between leaders and team members, and how these develop in unique ways). This is important because it is in this interaction that an employee really experiences employee voice, and can experience that their ideas are valued, fostering the climate for innovative behavior. If one takes these things into account future research can achieve a more thorough understanding of the role of employee voice in the context of commitment and innovative behavior.

6. Conclusion

The present study aims to strengthen the understanding of the relationship between commitment and innovative behavior and does so by introducing two elements that had not previously been researched.

Firstly affective commitment was split up into three different constructs, aimed at three different peers: the organization, the team and the career. Interactions between these constructs were also included. Results in this regard showed a positive effect of affective career

commitment on innovative behavior and a possible positive effect off affective organizational commitment on innovative behavior. Furthermore affective team commitment, when in the presence of affective career commitment, was shown to negatively affect innovative behavior. Indicating both the importance of commitment to achieve innovative behavior as well as the relevance of interactions between multiple commitment constructs when doing research concerning commitment.

The second addition lies in the role of employee voice in the context of commitment and innovative behavior, which was argued to positively affect innovative behavior (either directly or through commitment). Whilst the results in this research do not confirm the role of employee voice in this regard, the arguments hold strong and with the advice from the discussion section future research can further establish the role of employee voice.

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Attachment: Questions

Innovative behaviour

Please indicate to what extent you: (5 point Likert scale ranging from “not at all” to “to an exceptional degree”)

- Search out new technologies, processes, techniques, and/or product ideas;
- Generates creative ideas;
- Promote and champion ideas to others;
- Investigate and secures funds needed to implement new ideas;
- Develop adequate plans and schedules for the implementation of new ideas;
- Are innovative.

Employee voice:

Does your workplace have the following practices (yes/no):

- Formal open-door policy;
- Company-confined grievance system;
- Team briefing by line management;
- Attitude surveys;
- Quality circles;
- Employee involvement in ad hoc task forces;
- Suggestion schemes;
- Joint consultative committees/ works councils.

Commitment (all ranked on a 5 point likert scale ranging from –not at all† to –to an exceptional degree†)

Affective organizational commitment

Please indicate to what extent you agree with the following statements:

- I would be very happy to spend the rest of my career with this organization;
- I enjoy discussing my organization with people outside it;
- I really feel as if this organization's problems are my own;
- I think that I could easily become as attached to another organization as I am to this one (R);
- I do not feel like 'part of the family' at my organization (R);
- I do not feel 'emotionally attached' to this organization (R);
- This organization has a great deal of personal meaning for me;
- I do not feel a strong sense of belonging to my organization (R).

Affective team commitment

Please indicate to what extent you agree with the following statements:

- I feel at home among my team members;
- My team lies close to my heart;
- I am proud to work in my team;
- In my work, I let myself be guided by the goals of my team;
- If people talk negatively about my team, I feel bad;
- I feel responsible for my team;

Affective career commitment

Please indicate to what extent you agree to the following statements

- My career is one of the most important things in life;
- The ambitions in my life have mainly to do with my career;
- My career plays a central role in my life;
- I feel proud to work in my present profession;
- I have emotional attachment with my career.