The Influence of Intuitive Style on the Effect of Conflict on NPD Team Performance

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Conflict between NPD team members has been an issue as long as teams have existed. While it is usually believed that conflict affects the success of NPD teams negatively, literature has found that it does not necessarily cause the teams to be unsuccessful. In this paper, it was tested whether or not intuitive style of NPD project teams affected the relationship between team conflict and success of the project positively. To test this, firstly a literature review was done, resulting in the hypothesis to be tested. The hypothesis was "Intuitive style positively influences the relationship between team conflict and NPD project success." with the independent variable as "team conflict", the dependent variable as "NPD project success" and the moderator variable as "intuitive style". The samples included the answered surveys from various NPD teams of anonymous companies. The results of the crosstabulation of all three variables showed that the percentages of successful conflicting teams with intuitive style and successful conflicting teams with rational style were 66.7% and 60.9% respectively, which are very close to one another. The results of the regression analysis showed that with an R value of -0.054, the correlation between intuitive style of conflicting teams and success of the project is almost non-existent. With these results, the hypothesis was rejected. This showed that intuitive style did not have an effect of the relationship between team conflict and NPD project success. However, more research about this subject is suggested, as there were limitations to this research in terms of sample size, diversity and time.

Supervisors: Matthias de Visser

Keywords
NPD projects, NPD teams, team conflict, team characteristics, intuitive style, rational style

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1. INTRODUCTION

Conflict is unavoidable. In any part of any individual's life, there has been an issue involving conflict. It can be between anyone and about anything, from children arguing over toys, to adults arguing over evolution and creationism, conflict has been everywhere in every form. A broad definition of conflict is the awareness of the parties involved that there are discrepancies, or incompatible wishes or desires present (Boulding 1957, Deutsch 1973, 1990, Regnet 2001). Conflicts can either be avoided, solved or remain unsolved which affects the relationship between the conflicting parties negatively.

One of the many environments a conflict can take place, is the team environment. Teams in companies complete projects that benefit their companies. While there are many types of teams in companies, this paper focuses on New Product Development (NPD) teams. The paper of Ebrahim, Ahmed &Taha (2009) describe NPD teams as integral components of firms that develop, manufacture, and sell technological offerings (Ebrahim, Ahmed & Taha, 2009).

5.1 Problem

Literature has shown that conflict usually affects the team badly, which in some cases hinder the success of the project (Wall et.al 1995). However because of this, team members might be inclined to think that if their team goes through large amounts of, or heavy and heated conflicts, their project might not be successful. This can turn into a self-fulfilling prophecy. Self-fulfilling prophecy means a false belief that leads to its own fulfillment (Madon, Willard, Guyll & Scherr, 2011). In other terms, self-fulfilling prophecy happens when Person A believes his or her Theory X is going to happen. However, even though Theory X was not going to happen before, since Person A acts as though it will happen, eventually Theory X indeed happens. When self-fulfilling prophecy is applied to team conflict and success of the project, this might be the result: When there is conflict in the team, the team members might feel disheartened, angry and hurt at one another. After this they might feel that the team will not be able to complete the project successfully, because they do not get along. When the team members do not think they will succeed, they will not put as much effort into their work, causing the project to actually fail.

On a different perspective, team members might try to avoid conflict if they think that conflict reduces the success chance of their project. But if team members avoid conflict, they might not be able to state their opinions, or object to the ones of others. This might in the end affect the success of the project badly, because if there were mistakes in the beginning and none of the team members stated their opinions on the matter, then the project might fail.

Avoiding conflicts, as well as having negative possible consequences, is a difficult task for team members if there are any questions remaining in their heads. While conflict can indeed affect the success of the project negatively, this paper believes there are some teams that can solve their conflict, and perform even better than they would before the conflict had happened.

The characteristics of the teams as a whole in themselves can be a moderator in the relationship between team conflict and the success of NPD projects. Because, for example, if a team is more intuitive, then that team might find coping with conflict and reaching success easier than a rational team. This is because an intuitive team might not rely on rules as much as a rational team and therefore in times of stress, the rules can be broken in order to form new rules that adapt better to the new team environment.

While there are numerous articles in literature that talks about the relationship between team conflict and success of NPD projects, as far as the research done by the author of this paper shows, the relationship has not been tested with an additional moderator variable what is intuitive style yet. It is important to address this gap in the literature, because if this paper proves that there is a correlation between intuitive style of conflicting teams and the success of the NPD project, NPD teams from all over the world can benefit from it in terms of their structure of the team and to what degree they can turn conflict into success. In addition to that, this research can be a big benefit to the literature, because it can be used as a source of information and ideas for future research. Therefore, this paper wants to test the effects intuitive style of the team have on the relationship between conflict and the NPD team performance, which will be measured as the success of the NPD project. Thus, the research question of this paper is "*How does the intuitive style of an NPD team influence the relationship between conflict and team performance?".*

The following section in this paper is the Theoretical Background and Literature Review. After that, the Methodology is explained, followed by the Results of the hypothesis testing. A Discussion section of the results will be included in the results, ending the paper with the Conclusion, (including limitations and directions for future research), References and Appendix.

2. THEORETICAL BACKGROUND AND LITERATURE REVIEW

In order to study how the team characteristics affect the relationship between conflict and project success, I will be first doing a literature review to understand how other authors interpret the subject and view the matter. Written literature about the "relationship between team conflict and the success of the NPD project", and "the description of intuitive style" will be compared and discussed. These articles were found by using different search engines, mainly University of Twente Library, scopus.com, google.com and Google Scholar. The main keywords used to search for the literature were "conflict", "NPD teams", "project success" and "NPD team characteristics". The relevance of the articles was determined by reading the "abstract" and "conclusion" sections of each article and those with content that contribute to this paper were selected.

2.1 The Description of Intuitive Style: How can it be more Effective than Rational Style in times of Conflict?

The aim of this paper is to explain whether team characteristics affect the relationship between NPD team conflicts and the success of their project. However, team characteristics are a very broad concept to do research on, which is why the variable "team characteristics" was narrowed down into "intuitive style". In this section of "Theoretical Background and Literature Review", the variable "intuitive style" will be described, explained, be compared to rational style and finally, it will be explained why this paper chose to use "intuitive style" as the "team characteristic".

Intuitive style is defined as an unconscious procedure of thought. In this procedure, fast solutions and information are created. (Evans, 2008). Intuitive style uses the previous experience and the knowledge of the person, unlike rational style with the use of analytics. Which means that while rational style is associated with cause-and-effect relationships, intuitive

style is associated with previous experience. (Evans, 2008; Hammond, 1996; Hogarth, 2005; Kahneman, 2003; Kahneman & Frederick, 2002; Sloman, 1996; Stanovich & West, 2000).

In their paper, Armstrong & Priola (2001) define an intuitive person in a work context as "nonconformist, preferring to take a broad perspective on a problem using open-ended approaches to decision making. He or she would tend to work best on problems favoring a holistic approach, relying on random methods of exploration before reaching conclusions fairly rapidly" (Armstrong & Priola, 2001). On the other hand, they define a rational person in a work context as "compliant, preferring a logical, structured, step-by-step approach to decision making, applying systematic methods of investigation" (Armstrong & Priola, 2001).
In a sense, some might think of intuitive style as unreliable, and they are somewhat correct. Intuitive style is not optimal for every situation, but in a situation where there needs to be adaptation, intuitive style can be more effective than rational style.

In his study concerning dual-process theories, Epstein (1990) clarified the difference between intuitive and rational styles. Intuitive style was described as preconscious, closely associated with affect, fast, and operating in an automatic, holistic manner while rational style was described as slow, deliberative, rule-governed, primarily verbal and conscious (Epstein, 1990).

In their paper, Witteman, van den Bercken, Claes & Godoy (2009) express that "when tasks cannot be performed through analysis, for example, when they require pattern recognition or when they are complex and time pressure is high, intuition may be the more advantageous thinking style" (Witteman, van den Bercken, Claes & Godoy, 2009; De Vries, Holland & Witteman, 2008; Wilson, 2002). This can mean that at times of stress, having an intuitive style can be more advantageous than having a rational style. Conflict is also a source of stress, which can apply this finding of Witteman, van den Bercken & Claes et al., (2009) to this paper. This finding helps support choosing "intuitive style" as the moderator variable for this paper. Also, Armstrong & Priola (2001) state that a rational person prefers a logical, structured, step by step approach (Armstrong & Priola, 2001). But this approach can easily collapse in times of conflict, when the orderly and analytical style of rational individuals are lost in the chaos that has taken over. This also shows that "intuitive style" is a better choice as the moderator variable.

2.2 The Relationship Between Team Conflict and Success of NPD Projects

2.2.1 Is there a Relationship between Team Conflict and Success of NPD Projects?

In this section of "Theoretical Background and Literature Review", the relationship between the dependent and independent variables of the research question of this paper is discussed. Using the existing literature, the relationship between conflict and success of NPD projects, without the effect of the moderator variable will be explained in this section.

A project is seen as a complex transaction which is concerned about a different set of products, services and work being designed so that it allows the employees in charge to create an asset over a certain period of time that can be delivered to its clients or customers (Mele 2011). In this perspective, in order to create a project, it is important to understand the value of project networks as it can allow a team to have a good set of inter organizational, as well as interpersonal relationships (Manning, 2005). As Mele suggests, project networks are seen to be structures of exchange relationships among business actors, firms as well as individuals which emerge, evolve and dissolve over time (Artto and Wilström, 2005 and Skaates et al., 2002). The main task of the project group is not to create value for the customer but rather to co-create value with the involvement of the customers (Mele 2011). Therefore it is important to have a clear communicational network hence the advantage of having a good project network. Mele (2011) also points out the importance of project networks as it proceeds from multilevel activities between individuals, teams and organizations where multilateral relationships exist (Mele 2011).
In order to create a successful team, it is important that the communication and understanding between the different parties within the team as well as the organization and the project is good. The failure to do so can create potential threats, conflict and stress which disrupts the flow of the project due to the failure to manage the relationship between the different parties thus leading to conflict and in worse cases can halt projects (Vaaland & Hakansson, 2003).
The term conflict comes from the Latin word of conflictus which is translated into clash (Mele 2011). The presence of conflict in organizations and project groups are therefore a sign of clash between divergent perspectives regarding the projects, interests, objectives and or behaviors (Mele 2011). The importance of having shared vision and perspective, interests and objectives can allow the different members of the project teams to work well thus avoiding conflicts. A dissatisfied group of people working towards a common goal can create negative consequences and thus impact the project negatively if not managed correctly. From this amount of information from the literature, it can be said that a relationship between conflict and the success of the project exists.

2.2.2 What Kind of Relationship is between Team Conflict and Success of NPD Projects?

Secondly an important factor that needs to be taken into account when dealing with conflict is the difference in culture and background of the employees working in the NPD groups (Ma, Lin & Tanev, 2012). Due to the increase in globalization and integration of companies over the world in the past decade, the increase in multi-cultural teams working towards a common goal in NPD has increased.
Extending on the cultural factor, one of the common conflicts in New Product development groups that is becoming increasingly common is due to geographical dispersion which is resulted by the fact that the groups are from different cultures, working in different time zones and the distance (Barczak & Wilemon, 1992). The conflict that arises from geographical dispersion can have a negative impact however, if it is managed correctly, it can be the source of competitive advantage thus leading to success.
Mele (2011) points out that one of the problems with the literature in presence today's literature is their failure to understand the conflicts are not always negative (Mele 2011). A definition given by Wall et.al (1995) defines conflicts as "a process in which one party perceives that interests are being opposed or negatively affected by another party" (Wall et.al 1995). This definition leaves no room for the positivity that may arise from the existence of conflicts in project teams. Some forms of conflicts can results in debate therefore increasing the perspective on the project and hence increasing creativity and increase knowledge (Mele 2011). However the perspective on whether conflict is positive or negative can only be judged depending on the outcome of the project. It can be therefore

understood from this section that although conflict and the success of the project is usually expected to have a negative relationship, it is possible that they might have a positive relationship too. However this depends on the way conflict is managed.

According to Gummesson (2006), a conflict is seen to be positive or creates an advantage to a project if it has the win-win situation between the different stakeholders rather than win-lose situation where one party benefits but the other has not (Gummesson , 2006). This is important and can only be created if the management of the conflict within the organization or the project group exists. Having a conflict resolution will allow the project groups to follow certain steps that can be used to solve the problem creating a win-win situation where the perceptions, interests, objectives and behaviors of each party within the project group to be taken into account therefore creating a successful projects while managing the conflicts.

Another important view on conflict is given by Amason (1996) who puts conflicts as being either cognitive conflicts or affective conflicts (Amason, 1996). The difference between the 2 types of conflicts can be understood in terms of the effect it has on the project. Cognitive conflicts are positive as it is functional therefore is task oriented and focuses on the differences in judgment regarding how to best achieve the common objectives between the parties in the conflict. However, the affective conflict is described as being negative as it is dysfunctional because it is based on personal factors such as emotional or personal incompatibility or disputes (Amason, 1996).

One of the vital points given by Mele (2011) was that conflicts are not always negative and these was further explained by the extended view by Gummensson et al (2002) and Amason (1996). Extending on the view of differentiating the difference in conflicts. Abraham et.al 2012 points out the conflicts are everywhere and thus inevitable. One of the main problems of conflicts is not their presence but rather the way it is managed. Many people including those at work environment tend to avoid conflicts due to fear of how others will react (Abraham et.al 2012). However, avoiding conflict does not mean that it is managed and therefore will not be present in the future. Therefore conflicts need to be resolved in a positive way otherwise there will be no progress on the project (Abrahamet.al 2012). Thus conflict management can lead to positivity in the future if managed correctly therefore leading to success. Abraham also extends on Mele's point of the fact that managing conflict allows project groups to increase debate and creativity whereas Abraham suggests that conflict management require us to engage in moments of dialogue in a profound and meaningful ways. There is no single way to deal with conflict but the way conflicts are managed depends on the nature of the conflict and the environment in which it is present therefore managers need to find a way to effectively and efficiently manage conflicts.

2.2.3 Concluding Remarks

To conclude this section of "Theoretical Framework and Literature Review", it can be said that the different authors recommend people to view conflicts as positive rather than negative. This is the common vision and opinion about conflict by the general public. The different authors also distinguish the difference between the types of conflicts and which ones can lead to successful projects where some other types of conflicts needs to be managed and maintained. Even the conflicts that are seen to be positive needs to be managed effectively and efficiently by the managers of the group projects in order to result in a successful project.

Therefore, it can be said that there is a clear relationship between conflicts and success in projects group. However the latter depends on the type of conflicts and how it is managed by the managers in order to create something successful from it. It is also important to understand that conflicts are not always negative and therefore individuals in project groups should not try to avoid conflicts as a project that becomes successful may be more successful than those projects that avoided conflicts at all costs.

2.3 Hypothesis Building

In this section of the paper, a hypothesis will be developed. To find the answer to the research question, the hypothesis derived from the research question will be tested, using the sample data obtained (More about this is explained in the Methodology section).

It was seen from the literature that conflict does not necessarily hinder the success of the projects, it can even be turned into a source of success (Mele, 2011). For it to be a source of success, the moderator variable chosen for this paper was "intuitive style". Intuitive style was chosen because at times of stress, having an intuitive style was found to be more useful and advantageous for the team rather than having a rational style (Witteman, van den Bercken, Claes & Godoy, 2009; De Vries, Holland & Witteman, 2008; Wilson, 2002). Therefore, building on the research question a hypothesis was made.

The hypothesis to be tested is: *Intuitive style positively influences the relationship between team conflict and NPD project success*.

In this hypothesis, the independent variable is "team conflict", the dependent variable is "NPD project success" and the moderator variable is "intuitive style". Figure 1 shows the model of the hypothesis.

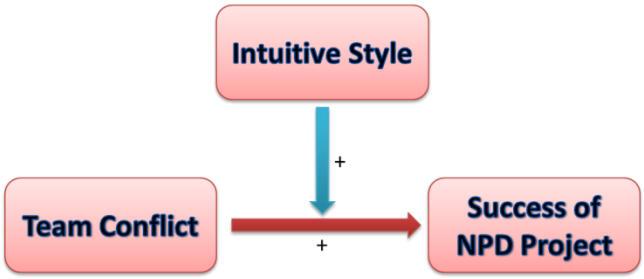

Figure 1. The model of the hypothesis

3. METHODOLOGY

In this section of the paper, the methods that will be used in order to perform the research and conclude this paper, is explained.

3.1 Sample and Data Collection

The quantitative section in this paper tests and shows the results of the sample research data that will be used to base conclusions from. As the main tool of quantitative research methods in this paper, surveys are selected. Surveys created by Prof. Matthias de Visser are sent out and filled by each member of selected NPD project teams in selected companies. The names of these companies will be held anonymous in order to maintain the privacy of the companies and their employees.

The companies that were used in order to collect the sample data for this paper, varies in terms of their industry. For this paper, the sample data gathered from five companies was used.

The industries of these companies range from energy, textile and automobile to electronics and plastic. Four of these companies are located in the Netherlands, and one of them is located in Turkey.

The teams that were used as samples consisted of between 2 and 10 members each. Some members worked in several projects with different teams in the same company. For these members, the surveys 1 and 3 (see Appendix) only had to filled out once, since these surveys were about the person's cognitive style, while survey 2 (see Appendix) was about the performance of the team and outcome of the project.

3.2 Measurement and Data Analysis

SPSS and Excel are the primary tools for analyzing the quantitative data that is extracted from the surveys filled. Survey 1 (Appendix) and Survey 3 (Appendix) measure the cognitive style of the participants, while Survey B (Appendix) measures the project activities, cooperation (with other departments/companies/organizations), overall project performance, operational project performance, project phase (the projects selected for this paper are all finished projects), individual project time, and project typification.

The dependent variable of this hypothesis is "NPD project success". To measure this variable, the answers for the question OV1, "Going by the status of the project, it can be regarded as successful", from Survey 2 were used (Appendix, Survey 2). The respondents gave their answers ranging from 1(strongly disagree) to 5(strongly agree). The answers for each individual in a team were summed and the team mean was determined in order to reach the team average for each team regarding project success. This means that the more the team average is closer to 5, the more successful the NPD project.

The independent variable of the hypothesis is "team conflict". This variable was measured by using the question CSI14, "To be successful in my work, I find that it is important to avoid hurting other people's feelings.", from Survey 1 (Appendix, Survey 1). While this question does not directly answer whether or not there were conflicts, it is used in this paper as a proxy to represent conflict. It is assumed that if the teams are heterogeneous within themselves, with regard to the team members' answers to this question, they are likely to have conflict. The reason for this is that the members disagree on how team members should act toward one another during the preparation of the project. Since there is heterogeneity inside the team, the members that answered this question with "False", which in terms of numbers is equal to "0", can hurt the feelings of members that answered this question with "True", which is equal to "2", which can eventually cause uneasiness and conflict within the team. In order to determine the conflicting teams in the sample, the answers of the team members were reviewed. If there existed both the answers "0" and "2" in the team, that was accepted as a sign of heterogeneity, and therefore the team was marked "conflicting team".

The moderator variable chosen for this hypothesis is "intuitive style". In order to measure this variable, the answers for the question CSI1, "In my experience, rational thought is the only realistic basis for making", from Survey 1 were used (Appendix, Survey 1). The respondents were to choose between True(2), Uncertain(1) and False(0). The same way it was done with the dependent variable, the means of the teams were determined in order to perform the test using "team averages". In this case, if the team average is closer to 2, this means that the team is more rational and if the team average is closer to 0, the team is more intuitive.

In order to test the hypothesis, the samples of the three variables are put in two different quantitative analysis tools. Along with the tools, a reliability test using SPSS is also performed.

The first tool used on the independent, dependent and moderator variables is the cross table from descriptive statistics. This cross table contains all three variables, in a big table that crosses the variables and shows their frequencies under each condition. The main aim of this table is to compare the percentages of successful conflicting teams with intuitive style to successful conflicting teams with rational style. This table was created by recoding two of the three variables into nominal variables. The variable "Success" had too many values ranging from (2.33-5), therefore a new variable was created. This variable had two values, "unsuccessful" (1) and "successful" (2). The new value "unsuccessful" contained the old values (1-3.5) and the new value "successful" contained the old values (3.501-5). A similar recoding was done to the variable "intuitive style". It was coded into a new variable, which had new values. The new value "intuitive" (1) contained the old values (0-1) and the new value "rational" (2) contained the old values (1.01-2). Decoding was not done to the variable "conflict" because it already had two values, "yes" and "no". With the decoding of these variables, it became possible to create a simple cross table with three variables.

The second tool that is used on the variables of the hypothesis is a regression analysis, using a scatter plot to test the correlation between intuitive style and success of project on conflicting teams. For this analysis, only two variables were used: the moderator and the dependent variables, to get accurate results. Since the aim of this paper is to find whether intuitive style has a positive effect on success on *conflicting* teams, the sample data only contained the conflicting teams for this analysis. With this test, it will be clear if there is any sort of correlation between intuitive style and the success of project of conflicting teams. To understand this, the R value will be investigated. Using SPSS, the R value will be generated along with the scatter plot. The R value shows the correlation between two variables. It varies between -1 and 1. If it is -1, this means that the two variables are perfectly negatively correlated and if it is 1, this means that the two variables are perfectly positively correlated. If the R value is close to 0, then it is not likely that there is a correlation between the two variables. In the case of intuitive style and success of project of conflicting teams, in line of the hypothesis, the R value is expected to be at least smaller than -0.4, to show some correlation. The reason it is expected to be negative, rather than positive is that during the coding of the questionnaires, rational style was given the number (2) while intuitive style was given the number (0). This would mean that if the R value is positive, then the rational style would increase the chance of success of project in

conflicting teams. Since this paper's aim is to prove the exact opposite argument, the expected R value is negative. Which means that a negative R value that is less than -0.4, would mean a positive correlation between intuitive style of conflicting teams and project success.

4. RESULTS AND DISCUSSION

The "Results" section in this paper contains the results of the samples used in order to test the hypothesis, and the description of the steps in this process. Looking at the hypothesis of this paper again, which is "*Intuitive style positively influences the relationship between team conflict and NPD project success*.", it can be seen that there are three variables: an independent, a dependent and a moderator variable. The reliability test done in SPSS gave the result of Cronbach's Alpha higher than 0.7.

To test the hypothesis, the first step was to make a cross table using the three variables. As mentioned in the "Methodology" section of this paper, the main aim of this table is to compare the percentages of successful conflicting teams with intuitive style to successful conflicting teams with rational style. The cross table in Table 1 shows that the percentage of successful conflicting teams with intuitive style, compared to unsuccessful conflicting teams with intuitive style (33.3%), is 66.7%. In comparison, the percentage of successful conflicting teams with rational style, compared to the unsuccessful conflicting teams with rational style (39.1%), is 60.9%.

To determine the strength of these two cells, the percentage differences between successful conflicting teams with intuitive style (for ease, this will be called SI), and unsuccessful conflicting teams with intuitive style (UI) will be calculated. After that, the same will be done for successful conflicting

Table 1.Conflict * Success * Intuitive style Crosstabulation

				Success		
Intuitive style				Unsuccessful	Successful	Total
Intuitive	Conflict	No	Count	5	6	11
			% within Conflict	45.5%	54.5%	100.0%
			% of Total	15.6%	18.8%	34.4%
		Yes	Count	7	14	21
			% within Conflict	33.3%	66.7%	100.0%
			% of Total	21.9%	43.8%	65.6%
	Total		Count	12	20	32
			% within Conflict	37.5%	62.5%	100.0%
			% of Total	37.5%	62.5%	100.0%
Rational	Conflict	No	Count	2	5	7
			% within Conflict	28.6%	71.4%	100.0%
			% of Total	6.7%	16.7%	23.3%
		Yes	Count	9	14	23
			% within Conflict	39.1%	60.9%	100.0%
			% of Total	30.0%	46.7%	76.7%
	Total		Count	11	19	30
			% within Conflict	36.7%	63.3%	100.0%
			% of Total	36.7%	63.3%	100.0%
Total	Conflict	No	Count	7	11	18
			% within Conflict	38.9%	61.1%	100.0%
			% of Total	11.3%	17.7%	29.0%
		Yes	Count	16	28	44
			% within Conflict	36.4%	63.6%	100.0%
			% of Total	25.8%	45.2%	71.0%
	Total		Count	23	39	62
			% within Conflict	37.1%	62.9%	100.0%
			% of Total	37.1%	62.9%	100.0%

Each subscript letter denotes a subset of Success categories whose column proportions do not differ significantly from each other at the .05 level.

teams with rational style (SR), and unsuccessful conflicting teams with rational style (UR). The strength of E_{SIUI} will then be 66.7% - 33.3% = 33.4%. The strength of E_{SRUR} will then be 60.9% - 39.1% = 21.8%. Since N=62, E_{crit} is 20. The significance of E_{SIUI} is 33.4 – 20 = 13.4 > 0. This shows that the strength of successful conflicting teams with intuitive style is significant. The significance of E_{SRUR} is 21.8 – 20 = 1.8 > 0. This shows that the strength of successful conflicting teams with rational style is significant as well.

From Table 1 it can be seen that the success percentages of conflicting teams of rational and intuitive styles do not have much of a difference between them. There is only a 5.8% difference between their percentages. This shows that there might not be a correlation between intuitive style and success of the project of conflicting teams. The reason behind this line of thought is that the percentages of conflicting teams of rational and intuitive styles are roughly the same. If a positive correlation between intuitive style of conflicting teams and success of project is expected, then the correlation between rational style of conflicting teams and success of project should be negative. However as the percentages are similar and high, which shows that both intuitive and rational style in conflicting teams might be positively correlated with success of the project. As explained, it is not possible for both intuitive and rational style to be positively correlated to success, which is why it is assumed that there is little to no correlation between intuitive style of conflicting teams and success of the project.

In order to find a clear answer to the correlation issue, a correlation test was done. A regression analysis, along with a scatter plot, as explained in the "Methodology" section were created. Figure 2 shows the scatter plot, which shows the effect of intuitive style of conflicting teams on project success. The rows show the success of the project, while the columns show level of intuit and rational style. The closer the dots are to (0), the more intuitive they are and the closer they are to (2), the more rational they are. Upon looking at the scatter plot, it is not possible to see a certain linear pattern, neither positive nor negative. It is seen that in all parts of the graph (more intuitive part, more rational part and the middle part), the success of project roughly differs the same between (2.33) and (5). In order to have a better understanding of the correlation, the R value is checked. Looking at Table 2, it can be seen that the Pearson Correlation, R, between intuitive style of conflicting teams and the success of project is -0.054. In the "Methodology" section, it was mentioned that if there exists a correlation, it is expected to be less than -0.4. However, the results from the regression analysis show that the real R value is higher than the expected R value. While the real R value is negative, it is very close to 0. In this case, it does not make a difference if the value is negative or positive, because the value is so close to 0 that there is almost no possibility that there is any sort of a correlation between the two variables.

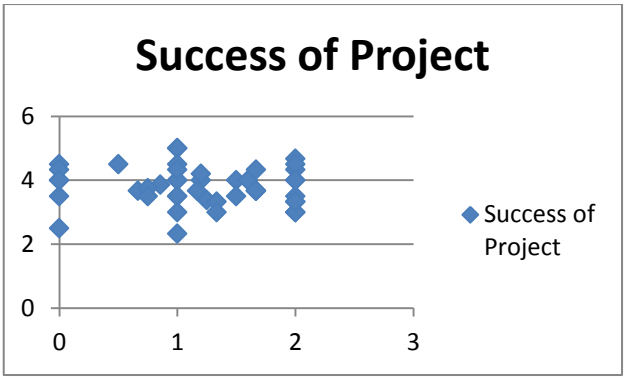

Figure 2. The effect of intuitive style on project success on conflicting teams. In this table, the columns numbered from 0-3 show the intuitiveness of the team. The rows numbered from 0-6 show the success of the projects.

Table 2. Correlations

		Success	Intuitive
Pearson Correlation	Success	1.000	-.054
	Intuitive	-.054	1.000
Sig. (1-tailed)	Success	.	.363
	Intuitive	.363	.
N	Success	44	44
	Intuitive	44	44

The hypothesis that was tested, was "*Intuitive style positively influences the relationship between team conflict and NPD project success*.". The results of the tests have shown that the percentages of successful conflicting teams with intuitive style and successful conflicting teams with rational style are roughly the same. This shows that intuitive style does not make a significant difference for the relationship between conflict and success of the project, because having a rational style approximately gives the same percentage. The results have also shown that there is almost no correlation between the intuitive style of conflicting teams and the success of the project. Depending on the answers of the tests performed, the hypothesis is rejected. Which means that, intuitive style does not positively influence the relationship between team conflict and NPD project success.

After rejecting the hypothesis, there are minor additional details that will be added. From the cross table in Table 1 it can also be seen that the percentage of successful *non*-conflicting teams with rational style is 16.9% higher than the percentage of successful *non*-conflicting teams with intuitive style. However, upon looking at the percentages of successful conflicting teams with rational style and successful conflicting teams with intuitive style, it can be seen that their percentages are 60.9% and 66.7% respectively. The success chance decreased by 10.5% when there were conflicts for teams with rational style. On the other hand, success chance increased by 12.2% when there were conflicts for teams with intuitive style. This shows that according to the sample that at times of conflict, rational style teams regress in terms of success, while intuitive style teams progress. But since the possibility of a correlation between intuitive style of conflicting teams and the success of the NPD

project was rejected, it is not possible to say that this finding has any significance.

5. CONCLUSION

This paper talked about the conflicts in new product development teams, and how the intuitive style of teams affected the relationship between conflict and project success. The research question generated was "*How does the intuitive style of an NPD team influence the relationship between conflict and team performance?"* In order to answer the research question, firstly a literature review has been done. In this literature review, the "intuitive style" was defined and compared to "rational style", and it was explained why "intuitive style" was chosen as the moderator variable for this paper. The relationship between team conflict and success in NPD teams was also explained with the help of literature in the literature review. The section ended with the generation of the hypothesis to be tested, which was "*Intuitive style positively influences the relationship between team conflict and NPD project success*.". This hypothesis was tested with the samples and methods described in the "Methodology" section, and it was rejected in the "Results and Discussion" section. The results of the cross table and the scatter plot made showed that there is little to no correlation between intuitive style of conflicting teams and the success of the NPD project. With these results, the answer to the research question of this paper would be: intuitive style of an NPD team does not have a significant positive or negative influence on the relationship between conflict and team performance.

This paper was written in a limited amount of time with limited resources. The first limitation that might have affected the end result of the test, was the sample size. Even though many valuable team members answered the surveys provided, the number of the sample teams used for this research was 62, and without the non-conflicting teams involved, 44. If the sample size was more than 200-300 teams, the results might have been more reliable. The second limitation that might have affected the end result of the test was the lack of diversity. As stated before on this paper, 4 of the 5 companies used to obtain sample data were from the Netherlands, and only 1 company from Turkey. In order to get a result that applies to teams universally, the sample data should have been collected from different countries from all over the world.

After the result of this paper, a few recommendations for future research can be given. The first recommendation would be to perform the same tests as on this paper on a larger sized and more diverse sample. The results from this paper can be used to compare the results of the future research. The second recommendation is based on the additional finding that was on Table 2. Those findings suggested that there might be an increase in the success of intuitive teams when there are conflicts, and a decrease in the success of rational teams when there are conflicts. Since this study focused only on comparing the intuitive and rational style of *conflicting* teams, focus was not given to that finding. Therefore for future research, the comparison between decrease/increase of success in times of conflict for intuitive and rational styles can be recommended.

Thus, this research discovered the information that according to the results of the sample data used for this paper, intuitive style of conflicting teams does not have an effect on the success of the NPD project. It has contributed to the literature in terms of providing future research directions and ideas.

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8. APPENDIX

8.1 Survey 1

COGNITIVE STYLE INDEX

NAME RESPNAME.....(XXXXXXX).....
.....
AGE AGE.....(####)....
OCCUPATION OCCUPATION.....(XXXXXXX).....
SEX SEX.....(m/f).....

People differ in the way they think about problems. Below are 38 statements designed to identify your own approach. If you believe that a statement is true about you, answer **T**. If you believe that it is false about you, answer **F**. If you are uncertain whether it is true or false, answer **?.** This is not a test of your ability, and there are no right or wrong answers. Simply choose the one response which comes closest to your own opinion. Work quickly, giving your first reaction in each case, and make sure that you respond to every statement. Indicate your answer by completely filling in the appropriate oval opposite the statement:

T True ? Uncertain F False

CSI1
In my experience, rational thought is the only realistic basis for making decisions.
T(2) ?(1) F (0)

CSI2
To solve a problem, I have to study each part of it in detail.
T(2) ?(1) F (0)

CSI3
I am most effective when my work involves a clear sequence of tasks to be performed.
T(2) ?(1) F (0)

CSI4
I have difficulty working with people who 'dive in at the deep end' without considering the finer aspects of the problem.
T(2) ?(1) F (0)

CSI5
I am careful to follow rules and regulations at work.
T(2) ?(1) F (0)

CSI6
I avoid taking a course of action if the odds are against its success.
T(2) ?(1) F (0)

CSI7
I am inclined to scan through reports rather than read them in detail.
T(2) ?(1) F (0)

CSI8
My understanding of a problem tends to come more fr om thorough analysis than flashes of insight.
T(2) ?(1) F (0)

CSI9
I try to keep to a regular routine in my work.
T(2) ?(1) F (0)

CSI10
The kind of work I like best is that which requires a logical, step-by-step approach.
T(2) ?(1) F (0)

CSI11
I rarely make 'off the top of the head' decisions.
T(2) ?(1) F (0)

CSI12
I prefer chaotic action to orderly inaction.
T(2) ?(1) F (0)

CSI13
Given enough time, I would consider every situation from all angles.
T(2) ?(1) F (0)

CSI14
To be successful in my work, I find that it is important to avoid hurting other people's feelings.

T(2) ?(1) F (0)

CSI15
The best way for me to understand a problem is to break it down into its constituent parts.
T(2) ?(1) F (0)

CSI16
I find that to adopt a careful, analytical approach to making decisions takes too long.
T(2) ?(1) F (0)

CSI17
I make most progress when I take calculated risks.
T(2) ?(1) F (0)

CSI18
I find that it is possible to be too organised when performing certain kinds of task.
T(2) ?(1) F (0)

CSI19
I always pay attention to detail before I reach a conclusion.
T(2) ?(1) F (0)

CSI20
I make many of my decisions on the basis of intuition.
T(2) ?(1) F (0)

CSI21
My philosophy is that it is better to be safe than risk being sorry.
T(2) ?(1) F (0)

CSI22
When making a decision, I take my time and thoroughly consider all relevant factors.
T(2) ?(1) F (0)

CSI23
I get on best with quiet, thoughtful people.
T(2) ?(1) F (0)

CSI24
I would rather that my life was unpredictable than that it followed a regular pattern.
T(2) ?(1) F (0)

CSI25
Most people regard me as a logical thinker.
T(2) ?(1) F (0)

CSI26
To fully understand the facts I need a good theory.
T(2) ?(1) F (0)

CSI27
I work best with people who are spontaneous.
T(2) ?(1) F (0)

CSI28
I find detailed, methodical work satisfying.
T(2) ?(1) F (0)

CSI29
My approach to solving a problem is to focus on one part at a time.
T(2) ?(1) F (0)

CSI30
I am constantly on the lookout for new experiences.
T(2) ?(1) F (0)

CSI31
In meetings, I have more to say than most.
T(2) ?(1) F (0)

CSI32
My 'gut feeling' is just as good a basis for decision making as careful analysis.
T(2) ?(1) F (0)

CSI33
I am the kind of person who casts caution to the wind.
T(2) ?(1) F (0)

CSI34
I make decisions and get on with things rather than analyse every last detail.
T(2) ?(1) F (0)

CSI35
I am always prepared to take a gamble.
T(2) ?(1) F (0)

CSI36
Formal plans are more of a hindrance than a help in my work.
T(2) ?(1) F (0)

CSI37
I am more at home with ideas rather than facts and figures.
T(2) ?(1) F (0)

CSI38
I find that 'too much analysis results in paralysis'.
T(2) ?(1) F (0)

8.2 Survey 2

PNUMBER Project number (#####) / **PNAME** Project name (XXXXX) / **PDATE** Project start date (00-00-00)

Project activities

How was the total amount of project time allocated to the next two types of activities?

EXPLOR 1) Explorative activities such as fundamental research, ...

(0-100)%

EXPLOIT 2) Exploitative activities such as standardization, ...

(0-100)%

Cooperation

CO1 Did collaboration take place with other XXX's departments within the framework of this this project?

Yes (1) ☐ ☐ no (0)

CO2 If yes, how intense was this collaboration?

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

very intensive not intensive

CO3 Did collaboration take place with other companies /organizations within the framework project?

Yes (1) ☐ ☐ no (0)

CO4 If yes, how intensive was this collaboration?

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

very intensive not intensive

Overall project performance (Hoegl et al., 2004)

OV1 Going by the status of the project, it can be regarded as successful

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

strongly disagree strongly agree

OV2 Going by the status of the project, all project goals have been achieved

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

strongly disagree strongly agree

OV3 Going by the status of the project, the output of the project is of high quality

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

strongly disagree strongly agree

OV4 Going by the status of the project, the team, which is responsible for this project, is satisfied with its performance

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

strongly disagree strongly agree

OV5 Going by the status of the project, our top management can be fully satisfied with the progress of this project

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

strongly disagree strongly agree

Operational project performance (Griffin & Page, 1996)

OPER1 Going by the status of the project, the project expenditures are on budget

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

strongly disagree strongly agree

OPER2 Going by the status of the project, the project duration is on schedule

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

strongly disagree strongly agree

OPER3 Going by the status of the project, the project meets quality specifications

(1) (2) (3) (4) (5)

☐ ☐ ☐ ☐ ☐

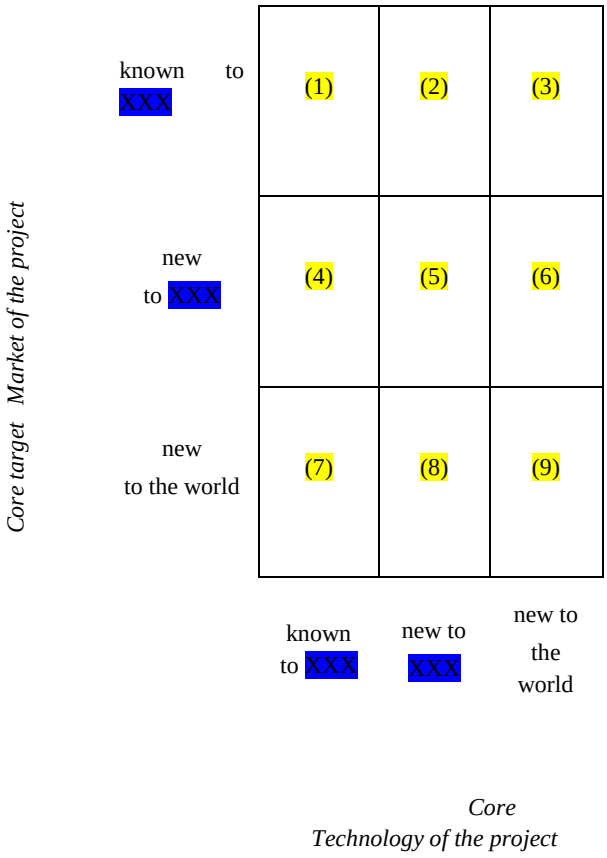
strongly disagree strongly agree

Project typification (Roussel)

PTYPE Please put a mark in the table on the right;

Where would you position this particular project in the matrix?

Individual project time (Cooper & Kleinschmidt, 1997)



How was your <u>individual</u> project time allocated to the following project phases in this project?

PHASETIM1 1 Ideation

…… % (0-100)

PHASETIM2 2 Investigation

…… % (0-100)

PHASETIM3 3 Development

…… % (0-100)

PHASETIM4 4 Testing and validation

…… % (0-100)

PHASETIM5 5 Production and market launch

…… % (0-100)

100 %

Project phase PROPHASE (Cooper & Kleinschmidt, 1997)

What is the current project phase of this project?

1 Ideation	☐	(1)
2 Investigation	☐	(2)
3 Development	☐	(3)
4 Testing and validation	☐	(4)
5 Production and market launch	☐	(5)

8.3 Survey 3

NAME Name:

Below we list some personality characteristics. Please circle the number next to each statement that best represents your degree of disagreement or agreement (where 1=Strongly Disagree; 4=Neutral; 7=Strongly Agree; and numbers between 1 and 7 represent the varying degrees).

Strongly disagree Neutral Strongly agree

2 3 4 5 6 7

1 I like to rely on my intuitive impressions. **EP1**

☐ ☐ ☐ ☐ ☐ ☐

2 Using my gut feeling usually works well for me in figuring out problems in my life. **EP2**

☐ ☐ ☐ ☐ ☐ ☐

3 I believe in trusting my hunches. **EP3**

☐ ☐ ☐ ☐ ☐ ☐

4 Intuition can be a very useful way to solve problems. **EP4**

☐ ☐ ☐ ☐ ☐ ☐

5 I often go by my instincts when deciding on a course of action. **EP5**

☐ ☐ ☐ ☐ ☐ ☐

6 I try to avoid situations that require thinking in depth about something. **EP6**

☐ ☐ ☐ ☐ ☐ ☐

7 I enjoy solving problems that require hard thinking. **EP7**

☐ ☐ ☐ ☐ ☐ ☐

8 I am much better at figuring things out logically than most people. **EP8**

☐ ☐ ☐ ☐ ☐ ☐

9 I have a logical mind. **EP9**

☐ ☐ ☐ ☐ ☐ ☐

10 I don't reason well under pressure. **EP10**

☐ ☐ ☐ ☐ ☐ ☐