NTNU – Trondheim
Norwegian University of
Science and Technology

17 Ways To Kill Ideas:

An Empirical Study of Termination Strategies
and Their Impact on Key Organizational
Outcome Variables

Marthe Prestegaard
Ingrid Solheim

Industrial Economics and Technology Management
Submission date: June 2013
Supervisor: Alf Steinar Sætre, IØT

Norwegian University of Science and Technology
Department of Industrial Economics and Technology Management

NTNU
Det skapende universitet

MASTERKONTRAKT
- uttak av masteroppgave

1. Studentens personalia

Etternavn, fornavn	Fødselsdato
Prestegaard, Marthe	**06. okt 1986**
E-post	Telefon
marthep@stud.ntnu.no	**93637590**

2. Studieopplysninger

Fakultet	
Fakultet for samfunnsvitenskap og teknologiledelse	
Institutt	
Institutt for industriell økonomi og teknologiledelse	
Studieprogram	Hovedprofil
Industriell økonomi og teknologiledelse	**Strategi og internasjonal forretningsutvikling**

3. Masteroppgave

Oppstartsdato	Innleveringsfrist
15. jan 2013	**11. jun 2013**
Oppgavens (foreløpige) tittel **17 Ways To Kill Ideas:** **An empirical study of termination strategies, and their impact on key organizational outcome variables**	
Oppgavetekst/Problembeskrivelse New ideas and innovation projects are crucial to the success of organizations. However, not all new ideas and projects are a good strategic fit. Thus, a critical ability is to identify and terminate the ideas the organization does not want to pursue. We want to investigate which termination strategies are most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating.	
Hovedveileder ved institutt	Medveileder(e) ved institutt
Professor Alf Steinar Sætre	
Merknader **1 uke ekstra p.g.a påske.**	

4. Underskrift

Student: Jeg erklærer herved at jeg har satt meg inn i gjeldende bestemmelser for mastergradsstudiet og at jeg oppfyller kravene for adgang til å påbegynne oppgaven, herunder eventuelle praksiskrav.

Partene er gjort kjent med avtalens vilkår, samt kapitlene i studiehåndboken om generelle regler og aktuell studieplan for masterstudiet.

Trondheim, 12.06.13
Sted og dato

Student **Hovedveileder**

Originalen lagres i NTNUs elektroniske arkiv. Kopi av avtalen sendes til instituttet og studenten.

NTNU
Det skapende universitet

MASTERKONTRAKT
- uttak av masteroppgave

1. Studentens personalia

Etternavn, fornavn	Fødselsdato
Solheim, Ingrid	**21. mai 1988**
E-post	Telefon
ingrsolh@stud.ntnu.no	**94437244**

2. Studieopplysninger

Fakultet	
Fakultet for samfunnsvitenskap og teknologiledelse	
Institutt	
Institutt for industriell økonomi og teknologiledelse	
Studieprogram	Hovedprofil
Industriell økonomi og teknologiledelse	**Strategi og internasjonal forretningsutvikling**

3. Masteroppgave

Oppstartsdato	Innleveringsfrist
15. jan 2013	**11. jun 2013**
Oppgavens (foreløpige) tittel **17 Ways To Kill Ideas:** **An empirical study of termination strategies, and their impact on key organizational outcome variables**	
Oppgavetekst/Problembeskrivelse New ideas and innovation projects are crucial to the success of organizations. However, not all new ideas and projects are a good strategic fit. Thus, a critical ability is to identify and terminate the ideas the organization does not want to pursue. We want to investigate which termination strategies are most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating.	
Hovedveileder ved institutt	Medveileder(e) ved institutt
Professor Alf Steinar Sætre	
Merknader **1 uke ekstra p.g.a påske.**	

4. Underskrift

Student: Jeg erklærer herved at jeg har satt meg inn i gjeldende bestemmelser for mastergradsstudiet og at jeg oppfyller kravene for adgang til å påbegynne oppgaven, herunder eventuelle praksiskrav.

Partene er gjort kjent med avtalens vilkår, samt kapitlene i studiehåndboken om generelle regler og aktuell studieplan for masterstudiet.

Trondheim, 12.06.13
Sted og dato

Ingrid Solheim
Student

Hovedveileder

Originalen lagres i NTNUs elektroniske arkiv. Kopi av avtalen sendes til instituttet og studenten.

Preface

This report is a master thesis written during the Spring semester of 2013, and constitutes the final work of the Master of Science program at the Norwegian University of Science and Technology (NTNU), at the Department of Industrial Economics and Technology Management. The thesis is written within the master specialization Strategy and International Business Development and focuses on the field of Corporate Innovation.

The main focus of the thesis is 17 termination strategies used by managers to terminate ideas or innovation projects. In particular, this thesis investigates which termination strategies are the most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating. This study is intriguing because it gives a more detailed insight into the termination strategies used by managers, and the effects on proponents and continued innovation in the organization.

We would like to thank our supervisor, Professor Alf Steinar Sætre, who has assisted us during our final year. We truly appreciate his time and guidance. We would also like to thank Professor John A. Daly for his assistance with the distribution of our survey in the United States.

Trondheim, June 29, 2013
Marthe Prestegaard and Ingrid Solheim

Abstract

This thesis investigates 17 termination strategies for terminating ideas and project initiatives, building on Daly, Sætre, and Brun's (2012) prior research. By surveying decision-makers and proponents in both Norwegian and U.S. companies, this thesis investigates which termination strategies are the most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating. The thesis employs Pearson's bivariate correlation analysis, multiple linear regression and structural equation modeling for the analysis of the survey data.

Out of the 17 investigated termination strategies, we find that the termination strategies Cost (63.6%) and Positive Regard (53.6%) are the most prevalent ones, followed by a group comprised of Low Priority (48.2%), Risk (45.7%), No Market (45.6%), Delay (44.1%), and Encourage Future Initiatives (39.2%). In terms of effectiveness, Negative Professional Consequences and Positive Regard are rated as the most effective termination strategies, followed by Cost, Tease & Humiliate, and Review Board.

The thesis defines two new constructs, Positive Termination Strategies and Negative Termination Strategies based on proponents motivation for coming back with new ideas and if they feel negatively valued after having their project terminated. We argue that the Positive and Negative Termination Strategies are likely to impact proponents in terms of how they affect the organizational climate for innovation, de-

fined by key organizational outcome variables: Psychological Safety (Edmondson, 1999), Flexibility (Patterson et al., 2005), Learning Behavior (Edmondson, 1999), Learning Capability (Hull & Covin, 2010), and Top Management's Risk Orientation (Im, Montoya, & Workman, 2012).

We find that Positive Termination Strategies, and particularly Positive Regard, have a positive impact on proponents' willingness to continue innovating, while Negative Termination Strategies, and particularly Delay and Negative Professional Consequences, have a negative impact on proponents' willingness to continue innovating. In addition, we expand Edmondson's (1999) model of team learning, and find that Psychological Safety has a significant mediating role in the relationship between the Positive and Negative Termination Strategies and key organizational outcome variables. The model also suggests that Flexibility has a mediating role between Psychological Safety, and Learning Behavior and Learning Capability.

The thesis contributes to a more detailed insight into the termination strategies used by managers to terminate ideas or project initiatives in the organization.

Sammendrag

Masteroppgaven undersøker 17 strategier for å stoppe videre arbeid med ideer og innovasjonsprosjekter i organisasjoner. Disse strategiene kalles termineringsstrategier. Oppgaven bygger pa på Daly, Sætre, og Bruns (2012) tidligere forskning. Ved å gjennomføre en spørreundersøkelse av beslutningstakere og idehavere i norske og amerikanske organisasjoner, undersøker denne oppgaven hvilke termineringsstrategier som er mest utbredt, hvor effektive de er i å stoppe innovasjonsprosjekter, og hvordan de påvirker idehavernes motivasjon til å fortsette med innovasjon. Oppgaven benytter Pearsons bivariat korrelasjonsanalyse, multippel lineær regresjon og strukturell ligningsmodellering i analysen av data fra undersøkelsen.

Avhandlingen finner at termineringsstrategiene Kostnad (63,6%) og Positiv Oppmerksomhet (53,6%) er de mest utbredte termineringsstrategiene, etterfulgt av en gruppe bestående av Lavt Rangert (48,2%), Risiko (45,7%), Manglende Marked (45,6%), Utsette (44,1%), og Oppmuntre til Videre Initiativer (39,2%). De mest effektive termineringsstrategiene er Negative Profesjonelle Konsekvenser og Positiv Betraktning, etterfulgt av Kostnad, Erting & Ydmykelse, og Uavhengig Utvalg.

Avhandlingen definerer to nye konstruksjoner, Positive Termineringsstrategier og Negative Termineringsstrategier. De er basert på idehavernes motivasjon for å komme tilbake med nye ideer og om de føler seg negativt verdsatt i organisasjonen etter å ha fått ideen sin avsluttet. De positive og negative termineringsstrategiene påvirker idehavere gjennom hvordan de påvirker det organisatoriske klimaet

for innovasjon, her definert av de organisatoriske utfallsvariablene: Psykologisk Sikkerhet (Edmondson, 1999), Fleksibilitet (Patterson et al, 2005), Læringsatferd (Edmondson, 1999), Læringsevne (Hull & Covin, 2010), og av toppledelsens risikoorientering (Im, Montoya, & Workman, 2012).

Avhandlingen finner at de positive termineringsstrategiene, og spesielt Positiv Betraktning, har en positiv innvirkning på idehavernes motivasjon til å fortsette med innovasjon, mens de negative termineringsstrategiene, og spesielt Utsettelse og Negative Profesjonelle Konsekvenser, har en negativ innvirkning på idehavernes motivasjon til å fortsette med innovasjon i organisasjonen. Avhandlingen utvider Edmondsons (1999) modell av gruppers læringsatferd, og foreslår at Psykologisk Sikkerhet har en betydelig formidlende rolle i forholdet mellom positive og negative termineringsstrategier og viktige organisatoriske utfallsvariabler. Modellen antyder også at Fleksibilitet har en formidlende rolle mellom Psykologisk Sikkerhet, og Læringsatferd og Læringsevne.

Oppgaven bidrar til en mer detaljert innsikt i lederes bruk av termineringsstrategier for å avslutte ideer eller innovasjonsprosjekter i organisasjoner.

Contents

List of Figures

List of Tables

Chapter 1

Introduction

The innovation process involves high degrees of uncertainty, ambiguity, and complexity for the organization. Killing undesired ideas or projects is often necessary in order to concentrate the organizational resources on the best ideas. Even the most recognized innovative organizations face the challenge of terminating innovation projects. Google terminated 90 of its 251 projects or add-ons between 1999 and 2011. In the same period, 8 of 22 major product launches did not succeed (Weber, 2011). The word termination stems from the Latin word "terminare" (n.d.), to limit or to end. In this study, termination is defined as effectively ending all activities linked to a specific innovative idea. Termination can also be associated with "terminus" (n.d.), the end of a transportation line. However, in our study, it is important that the termination of an idea or innovation project is not the end of a proponent's journey, say within the organization or of innovative activities. It merely represents an opportunity to revise the motivation for further innovative activities and to reflect and learn from the termination.

The managerial decision to terminate an innovation project is extremely difficult, since there is always the risk of losing out on a market opportunity (Balachandra, 1984; Corbett, Neck, & Detienne, 2007). The goal is therefore to invest in the ideas

best fitting the company's strategic direction and shift resources to more attractive opportunities (Corbett et al., 2007; Green et al., 2003; Schmidt & Calantone, 2002). A differentiating point of successful innovative organizations is therefore the ability to identify good ideas and quickly terminate the others (Khan & Katzenbach, 2009). An additional challenge of termination is that proponents are often deeply committed to an idea or project. Depending on how far the project has developed when terminated, proponents are likely to have dedicated much time, effort, and passion. As a consequence, they can be unable or unwilling to see that their projects are not the best fit for the organization. A proponent can then experience negative emotions as a reaction to the termination, which in turn can affect the feeling of accomplishment (Shepherd & Kuratko, 2009). Decision-makers should therefore try to minimize the human cost of innovation failure and maintain motivation and engagement within the organization.

We limit our focus to the action of terminating an idea. We intend to research the course of action and communication after the termination decision has been made, and until all involved parties have accepted the decision. The question of whether the idea is good or bad is not within the scope of this study. We refer to an "idea" as a thought or conception, resulting from mental activity. Within an organization, an idea can lead to an innovation project – which may or may not be terminated – which in turn, if successful, leads to an innovation. We use the terms idea, innovation project or project initiative interchangeably throughout this thesis.

Terminations are often labeled as failures (Shepherd, Covin, & Kuratko, 2009), which we also adopt, even though project terminations are not exclusively due to poor performance. Balachandra, Brockhoff, and Pearson (1996) found that project managers, their immediate supervisors, and project staff members were most frequently involved in monitoring innovation projects. We refer to a decision-maker as an individual with managerial responsibility for evaluating and making go or no-go decisions over the fate of innovation projects within an organization. We define "proponent" as someone who is actively working towards the success of a project initiative, i.e. a project leader, idea initiators or project members.

Daly, Sætre, and Brun (2012) have identified 17 termination strategies decision-makers use when terminating ideas or innovation projects. We want to contribute to their research by conducting a survey investigating which termination strategies are the most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating.

In the following sections, we take a closer look at the 17 termination strategies discovered by Daly, Sætre, and Brun (2012), and theory related to each of these. We define two new constructs, Positive Termination Strategies and Negative Termination Strategies, which serve as our independent variables in the process of answering the research question of how a termination strategy affects proponents' willingness to continue innovating. Based on the results from our survey, we will investigate which of the 17 termination strategies that fit into these two constructs. The Positive and Negative Termination Strategies are likely to impact proponents' willingness to continue innovating in terms of how they affect an organization's climate for innovation. We are therefore interested in finding out how the prevalence of Positive or Negative Termination Strategies correlate with established scales related to the organizational climate for innovation: Team Psychological Safety (Edmondson, 1999), Innovation & Flexibility (Patterson et al., 2005), Team Learning Behavior (Edmondson, 1999), Learning Capability (Hull & Covin, 2010), and Top Management's Risk Orientation (Im, Montoya, & Workman, 2012). We present ten hypotheses for the aforementioned key organizational outcome variables. The total impact on these variables constitutes proponents' willingness to continue innovating. We also look at two additional outcome variables, namely Organizational Performance (De Luca, Verona, & Vicari, 2010), and Job Satisfaction (Judge, Locke, Durham, & Kluger, 1998) to obtain a greater understanding of the effect of the termination strategies.

We perform a Pearson's correlation analysis, a multiple regression analysis, and a structural equation modeling to investigate the relationship between the termination strategies and the variables for the organizational climate for innovation.

Chapter 2

Theory

2.1 Preliminary Work

This thesis is written as part of a larger international research project by Alf Steinar Sætre and John A. Daly, focused on the termination of innovation projects. The data that forms the basis for our study is based on Daly, Sætre, and Brun's (2012) prior work, we will therefore briefly present it as an introduction to the work performed for this thesis.

As a first step in their research process, Daly, Sætre, and Brun (2012) met with senior leaders in a few major energy companies. The goal was to identify key informants in these organization, or in others, who had experience in dealing with large project decisions, and who could be interviewed. The organizations studied were chosen based on their perceived relevance for the research. Additionally, Daly and colleagues (2012) sought information rich cases, and chose the energy industry because of its notable size of many projects. In this industry, a bad project idea that is not terminated can be extremely expensive and also dangerous in terms of safety and the environment.

In total, 28 executives from 12 different national and global organizations were interviewed about behaviors used in their organization to terminate ideas or innovation projects. The sample was restricted to informants who currently resided in Norway and the United States, although many of the informants came from other cultures and had work experience from a variety of national cultures. Additionally, the informants came from various aspects of the energy industry - downstream and upstream, deep-water and land, R&D, and project management (Daly et al., 2012).

The next step was to discover and develop different categories of termination strategies based on the interviews. In their exploratory study, "Killing Mushrooms: The Realpolitik of Terminating Innovation Projects", Daly and colleagues (2012) present 7 major categories of termination behaviors used for terminating innovation projects: Criteria-Based, Punishing and Demeaning, Direct, Alternatives, Reorganization, Passive, and Implementation Challenges. They also found that each category varies in the degree to which they accommodate the concerns of the proponents (Daly et al., 2012).

After the exploratory study, Daly and Sætre's next goal was to identify unique termination strategies. The interview transcripts were also used to identify unique incidents of items that would terminate a project and that were sufficiently dissimilar to other incidents. As a result, a total of 100 items were identified, and a survey was created and distributed to 300 managers in the United States. Subsequently, the data from the survey were analyzed with a Principal Component Analysis with Varimax rotation, which resulted in 17 factors. Each factor represents a termination strategy, and the 17 termination strategies provide the basis for this thesis. **Table 2.1** shows the 17 termination strategies with their underlying items and factor loadings. We will further discuss each strategy in **Section 2.3**.

17 TERMINATION STRATEGIES WITH ITEMS	Loading
1. COST, α = .835	
1. Proponents are told that there is no money for the project.	0.825
2. Proponents are told that their idea costs too much.	0.786
3. Proponents are told that the implementation of their idea would be too costly.	0.731
4. Proponents are told that the budget does not permit their idea.	0.681
5. The budget on the project is eliminated.	0.604
2. DELAY, α = .530	
1. Management delays and postpones making decisions about the project.	0.792
2. Management finds ways of bureaucratically slowing down or blocking work on the project.	0.689
3. ENCOURAGE FUTURE INITIATIVES, α = .664	
1. Proponents are encouraged to continue working in the area even though their current proposal is not accepted.	0.817
2. Proponents are encouraged to continue pushing new ideas even though their present idea was terminated.	0.776
3. Proponents are told to continue to come up with new ideas even though the current idea is not going to be accepted.	0.691
4. INTRA-ORGANIZATIONAL PROBLEMS, α = .540	
1. Proponents are told that their ideas create too many "political" problems in the organization	0.751
2. Proponents are told that the idea will make other parts of their firm look bad.	0.722

Table 2.1 – Continued on next page

5. LOW PRIORITY, α = .725	
1. Proponents are told their project is ranked low in importance to the firm.	0.795
2. Proponents are told that the firm is already pursuing too many new initiatives to adopt another.	0.707
3. Proponents are told that the firm is overloaded with projects right now.	0.531
6. MISSING RESOURCES, α = .797	
1. Proponents are told that the organization does not have the know-how to develop the idea	0.736
2. Proponents are told that the firm does not have the technology to develop the idea.	0.714
3. Proponents are told that the organization does not have the sorts of people who can make the project a success.	0.705
4. Proponents are told that to develop the idea the firm would have to acquire or devise other new technologies first.	0.609
7. NEGATIVE PERSONAL CONSEQUENCES, α = .801	
1. Proponents are told that there will be serious negative professional consequences if they do not stop pushing their idea.	0.829
2. Proponents are told that continuing to push their idea will hurt their careers.	0.779
8. NO MARKET, α = .808	
1. Proponents are told that what they are proposing already exists in the market.	0.902
2. Proponents are told that what they are proposing has already been created or done in the firm.	0.829

Table 2.1 – Continued on next page

9. NOT YOUR JOB, $\alpha = .793$	
1. Proponents are told that what they are proposing is not part of their job.	0.742
2. Proponents are told that their idea steps on some other unit's area of responsibility.	0.729
3. Proponents are told that the project idea does not match what the unit's assigned functions and responsibilities are.	0.690
4. Proponents are told that what they are proposing is someone else's job.	0.592
10. PILOT FAILS, $\alpha = .508$	
1. Proponents are told their project will go through pilot tests, which managers believe will prove that the idea will not work.	0.738
2. Proponents are asked to create prototypes for their ideas in the hopes that the process will demonstrate how the ideas will not work.	0.615
11. POSITIVE REGARD, $\alpha = .880$	
1. Proponents are given a fair hearing about their idea before any decision is made.	.816
2. Before any final decision is made about rejecting a project, proponents get the chance to thoroughly explain their idea and their reasons behind it.	.791
3. Decision-makers make sure proponents understand the business or technical reasons why the idea was rejected.	.786
4. Decision-makers spend a good deal of time carefully listening to what proponents have in my mind before reaching a decision.	.776
5. Proponents are given thorough feedback about why the decision to curtail their project was made.	.729
6. Decision-makers take the proponents' idea very seriously.	.673
7. Proponents are shown personal respect when they propose their ideas.	.566

Table 2.1 – Continued on next page

12. QUIZZED AND CHALLENGED, $\alpha = .511$	
1. Proponents are quizzed about their idea at meetings until they see that the idea has little merit.	.740
2. We ask proponents questions about the potential problems involved in their project until they reach their own decision that the project should not go forward.	.732

13. REMOVE TALENT, $\alpha = .836$	
1. The corporate sponsor for the project moves to a different part of the organization.	.789
2. A corporate sponsor for the project leaves the organization.	.712
3. Proponents are reassigned to other projects.	.711
4. Vital team members on the project are transferred to other projects.	.663
5. Responsibility for the project is given to an executive who does not support it.	.641
6. Talent essential to the project is not assigned to the project.	.569

14. REVIEW BOARD, $\alpha = .689$	
1. Proposals are referred to a review board that independently says "no."	0.866
2. An independent internal review mechanism rejects the idea.	0.834

15. RISK, $\alpha = .686$	
1. Proponents are told that there are too many risks involved in the project.	0.838
2. Proponents are told that the chance of failure is too high to justify further exploration.	0.833

Table 2.1 – Continued on next page

16. SPIN-OUT, $\alpha = .539$	
1. Proponents are told if they want to complete the project they will have to do it outside of the company.	0.755
2. Proponents are told that they are free to sell the ideas to parties outside the organization.	0.753
17. TEASE & HUMILIATE, $\alpha = .787$	
1. Proponents are teased and belittled about their idea.	0.838
2. Proponents are humiliated in meetings about their idea.	0.826
3. The project is killed by attacking the proponents' motivations.	0.787

Table 2.1: The 17 Termination Strategies With Their Underlying Items, Factor Loadings, and Cronbach's Alpha, α

2.2 Proponents' Emotional Reaction To a Termination

Before going into more detail on the 17 termination strategies, it can be useful to understand the emotional reaction a proponent can experience subsequent to a termination. Regardless of the termination strategy used, the termination of a project initiative can greatly impact the proponents and team members involved. Depending on how far the project has evolved when terminated, proponents are likely to have dedicated much time, effort, and passion (Aasland, Skogstad, Notelaers, Nielsen, & Einarsen, 2009; Brun, Saetre, & Gjelsvik, 2009; Green, Welsh, & Dehler, 2003; Moenkemeyer, Hoegl, & Weiss, 2012; Schmidt & Calantone, 2002; Staw, 1981). They can therefore become unable or unwilling to see that their project initiatives are not the best ones for the organization to invest in. Accordingly, a termination can provoke new attitudes and behaviors, as well as creating a strong "negative emotional reaction", i.e. when an event causes an individual's core affect to become negative as a response to the event (Seo, Barrett, & Bartunek, 2004; Shepherd & Cardon, 2009). This negative emotional reaction can lead proponents to overestimate the likelihood of negative outcomes and underestimate the likelihood of positive outcomes for future innovative projects. Proponents can also feel slighted and do not want to be threated this way again by decision-makers. As such, proponents can become reluctant to come back with new ideas or work on future innovative projects in the organization. A negative emotional reaction can thus affect proponents' motivation and feeling of accomplishment within the organization. The negative emotional reaction will, however, vary depending on the proponent and the project in question (Moenkemeyer et al., 2012; Shepherd & Cardon, 2009).

In their study of negative emotions caused by project failure, Shepherd and Cardon (2009) claim that the intensity of a negative reaction is in part dependent on the extent to which proponents' needs for competence and autonomy are satisfied. When proponents are acknowledged for their great efforts at a task, such as an innovation project, their needs for competence are satisfied (Deci & Ryan, 2000; Shepherd & Cardon, 2009). In contrast, receiving feedback of poor performance at a task leaves this need unsatisfied. The need for autonomy is fulfilled when a proponent has

personal control over and can decide how a task is to be done. Innovation projects are likely to differ in what level they provide a proponent with autonomy, but one can expect that the more autonomy a proponent has in a project, the more valuable this project will be to the proponent (Shepherd & Cardon, 2009). Accordingly, a decision to terminate a project can thus be seen as a threat to proponents' sense of control. In sum, the more a project satisfy proponents' psychological needs for autonomy and competence, the more intense will the negative emotional reaction be, if the project is terminated, and the basis for fulfillment is removed (Shepherd & Cardon, 2009).

Some proponents are likely to get very attached to their ideas, e.g. their idea becoming their brainchild. We define brainchild as a proponent's creative work or thought. Proponents can feel that the brainchild represents a part of themselves, such as their creative abilities and competence. Proponents are thus likely to invest much time, effort, and passion, hoping that their brainchild will succeed. When the opposite happens, e.g. the brainchild is terminated; proponents can be reluctant to stop working on their idea. They can therefore start advocating, trying to convince the decision-makers to change their minds (Daly, 2011). It is important that decision-makers do not fall prey to such advocates and avoid wasted investments. However, it is also important to meet proponents' concerns when terminating a project, if you want them to contribute with innovative activities in the future (Daly et al., 2012; Moenkemeyer et al., 2012; Välikangas, Hoegl, & Gibbert, 2009). Daly and his associates (2012) refer to "accommodation" as a notion of how decision-makers can alleviate the trauma connected to a termination. They link accommodation with politeness, i.e. considering others' feelings, and the assumption that individuals have two core "face" needs: "positive face" and "negative face". Positive face is defined as "the desire to be positively evaluated, to maintain a positive self-image and to be accepted by others", while negative face is "the desire people have for autonomy, to not be imposed upon by others" (Brown & Levinson, 1978, 1987, as cited in Daly et al., 2012, p. 4). The challenge decision-makers face is thus to maintain a proponent's positive and negative face when terminating an innovation project.

2.3 17 Ways Of Terminating a Project Initiative

The goal of our follow-up survey is to investigate which termination strategies are the most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating. In this section, we will take a closer look at the 17 termination strategies discovered by Daly and Sætre, and theory related to each of these. The 17 termination strategies are likely to differ in how they affect the proponents involved, due to their distinct characteristics. The reason for a project termination will result in notable differences in the impact on the proponents and team members involved (Moenkemeyer et al., 2012; Weiner, 1985). Whether it is internal causes, such as lack of management support or causes related to the proponents, or more external causes, e.g. changes in top management or financial constraints; the reason communicated to proponents will have highly different consequences (Moenkemeyer et al., 2012; Weiner, 1985). Based on this knowledge, we divide the 17 termination strategies into two categories, namely criteria-based and management driven termination strategies.

2.3.1 Criteria-Based Termination Strategies

The strategies categorized as criteria-based are concerned with more external causes for the termination, having objective evaluation criteria and explanations that are likely to be non-related to the proponents. Because they are linking the termination to such external causes, it can be argued the strategies have less negative effect on proponents' beliefs in own capabilities and perception of self-worth (Weiner, 1985). However, external causes can still have detrimental effects, because they are likely to induce feelings of hopelessness and resignation when proponents are experiencing that performing well does not lead to goal achievement.

Criteria-based termination strategies evaluate ideas based on objective criteria, such as financial performance, market potential, or timing (Daly et al., 2012). The evaluation is often performed by a third party, e.g. other units within the organi-

zation, customers, or peer reviews. Corbett, Neck, and Detienne (2007) define this type of strategy as "Strategic termination", and apply performance measures such as revenue targets, technical progress, the ability to reach markets, and strategic fit with organizational goals. Criteria-based termination strategies can thus be easier to accept by proponents because it is very clear to them how their ideas or projects fail to meet objective evaluation criteria. This way, they can be seen as accommodating in that they preserve proponents' face-saving needs. In the study performed by Daly and his colleagues (2012), termination strategies with objective evaluation criteria were the most frequently mentioned strategies by managers. It was also claimed that these types of strategies were an effective and accepted way among proponents to terminate ideas or project initiatives. Out of the 17 termination strategies, we consider the following strategies to be criteria-based: Review Board, Cost, Missing Resources, Risk, No Market, and Spin-Out, see **Table 2.1**.

The termination strategy Review Board entails telling proponents that an independent review board has evaluated and rejected the project initiative (**Table 2.1**). Attribution theory (Kelley, 1967; Weiner, 1986) tells us that individuals have a tendency to internalize causes for success and externalize causes for failure. It can be easier to cope with a termination decision if it comes from an objective third-party, as an external source of rejection will reduce the risk of proponents experiencing a feeling of personal failure (Daly et al., 2012; Moenkemeyer et al., 2012; Weiner, 1985). Separating the responsibility of approving and evaluating projects will also reduce the risk of project escalations (Keil & Robey, 1999, 2001; Royer, 2003; Schmidt & Calantone, 2002; Staw, 1981). Accordingly, Keil and Robey (1999) emphasize the importance of stating resource limits and providing clarity around the organizational criteria for success or failure in order to achieve successful de-escalation of projects. As such, the termination strategy Cost communicates to proponents that there is no money for the project initiative or that the initiative is too costly. Similarly, Missing Resources tells proponents that the firm lacks the "know-how", the right people, or the technology to do the project initiative (**Table 2.1**). Both Cost and Missing Resources relate to typical limited resources that organizations must consider how to best allocate when managing a portfolio

of project initiatives (Balachandra 1984; Khan and Katzenbach, 2009). Creating performance measures with clear targets shows the organization that wasting time and resources on failing projects is not acceptable (Corbett et al., 2007).

The Risk strategy includes communicating to proponents that there are too many risks associated with the project initiative, or that the chances of failure are too high (**Table 2.1**). Further, the No Market strategy is relevant when a proposed idea already exists, has already been created, or when there is no demand in the market (**Table 2.1**). With a Spin-Out strategy, proponents are told that they can pursue the project initiative outside of the organization, or that they can try to convince an outside entity to pursue the idea (**Table 2.1**). It clearly states that the idea or project initiative is not a strategic fit for the organization; however, proponents are still given some time and choice as to how this termination decision will affect their career. In sum, the termination strategies categorized as criteria-based are all calling upon objective factors to explain the necessary termination of an idea or innovation project.

2.3.2 Management Driven Termination Strategies

Termination strategies that are driven by management behaviors are called management driven termination strategies. Decision-makers' use of these strategies is likely dependent on the interpersonal relationship to the proponent, and also the performance of the proponents. Management driven termination strategies can be either be supportive and positively affect proponents' motivation, or they can have more detrimental effects and negatively affect proponents' motivation. Consequently, we consider the management driven termination strategies to be either positive or negative, depending on how well they accommodate and meet the concerns of the proponents.

Positive Regard and Encourage Future Initiatives are considered as positive management driven termination strategies. Positive Regard includes giving proponents the opportunity to explain their project initiative as well as giving them a fair and

respectful hearing (**Table 2.1**). It also includes decision-makers to listen carefully and to offer thorough feedback explaining the business or technical reasons for why the project initiative is being terminated. It can be argued that the most important feature of Positive Regard is that proponents really feel like someone is listening to them, and take them and their ideas seriously. Bel (2010) accentuates that a good innovation leader should have the "ability to listen, understand, and show empathy for the individuals involved, as well as to show confidence in their ability to perform and meet challenges" (p. 52). If decision-makers are able to listen and show empathy, it can make the termination decision easier to accept for proponents. Such qualities can also be found in the strategy Encourage Future Initiatives, where proponents are encouraged to continue working and to come up with new project initiatives even though the one they are currently proposing is being terminated (**Table 2.1**). Common for the two termination strategies is having an open dialogue with the proponents. By giving them insight into the evaluation process, they can feel greater ownership to the termination decision, which can make it easier to accept. Creating a greater acceptance for terminations can thus be beneficial because it can lessen proponents' feeling of personal failure when faced with a termination. It is further suggested that the positive termination strategies can help create this acceptance, because they are accommodating and offers thorough feedback explaining the business or technical reason for a termination decision.

Negative management driven termination strategies on the other hand, show personal discouragement towards proponents as well as they blame the termination decision on poor performance. A likely consequence is that proponents perceive the termination as a personal failure. This can make them loose confidence in own abilities, which can affect their motivation for subsequent innovation projects. Out of the 17 termination strategies, we see the following strategies as being management driven and negatively oriented: Tease & Humiliate, Negative Professional Consequences, Delay, Remove Talent, Intra-Organizational Problems, Not Your Job, and Low Priority, see **Table 2.1**.

Daly and his colleagues (2012) found that in some organizations, the tactic of teasing and humiliating proponents, as well as attacking proponents' motivations

for pursuing a project initiative are used to terminate project initiatives (**Table 2.1**). Tease & Humiliate can be compared to "destructive leadership" (Aasland et al., 2009) or "abusive supervision" (Tepper, 2000), described as intimidating subordinates, belittling or humiliating them in public, exposing them to non-verbal aggression, rudeness, and inconsiderate actions. The characteristics of destructive leadership can also be linked to the strategy Negative Professional Consequences, in which proponents are told that continuing to push their project initiative would have negative consequences and affect their careers (**Table 2.1**). It is argued that the negative termination strategies are threatening proponents' both positive and negative face, who are likely to perceive the termination as a personal failure. Tepper (2000) also finds that individuals who perceive their leaders as abusive are more likely to leave the organization. Individuals staying with the organization, show signs of stress, and lower life and job satisfaction. The negative termination strategies are thus not likely to support the organizational climate for innovation.

Delay and Remove Talent can be described as "passive approaches", such as ignoring or delaying action until the idea becomes irrelevant, or in general not helping specific projects to progress (Daly et al., 2012). When using Delay management postpones decision-making or finds bureaucratic reasons for slowing down the project initiative. With Remove Talent, key talent related to the project initiative is not assigned, or is reassigned to other projects (**Table 2.1**). This strategy may also include that executive sponsors move or leave, or that the project initiative is given to executives who do not support it. The risk of taking a passive approach is that proponents' engagement and drive can run low in the lack of management support (Shepherd & Cardon, 2009). Proponents can experience feelings of hopelessness and resignation when they realize that their work is ignored or hindered. Delay and Remove Talent are thus considered as negative termination strategies, as they can have detrimental effects on proponents' motivation. Taking a passive leadership approach is similar to Skogstad and colleagues' (2007) "laissez-faire leadership", where "decisions are often delayed; feedback, rewards and involvement are absent; and there is no attempt to motivate followers or recognize and satisfy their needs" (p. 81). It is also showed that passive leadership is positively correlated with

role ambiguity, and conflicts with coworkers (Skogstad et al., 2007). A negative and passive termination strategy might incur the same problems. As such, it is assumed that negative management driven termination strategies negatively affect how proponents contribute to innovative activities in the organization.

A common denominator for the strategies Intra-Organizational Problems, Not Your Job, and Low Priority is that decision makers name criteria that are outside of proponents' influence and control, without offering any feedback regarding the quality of the project initiatives in question. This can be perceived as a lack of respect for the work and effort put into the initiatives, which in turn can damage proponents' motivation for future innovative work (Amabile, 1996; Daly et al., 2012; Shepherd & Cardon, 2009). Amabile and Gryskiewicz (1987) have identified that elements such as political problems, "turf battels," and competition within the organization are likely to undermine creativity and the organizational motivation for innovation. Such elements can also be recognized in the strategy Intra-Organizational Problems, where proponents are told that the project initiative will create problems between their unit and other units, or make other units look bad (**Table 2.1**). We also see these elements in Not Your Job, where proponents are told that the proposed initiative is not part of their job, steps on another unit's authority, or that it is someone else's responsibility (**Table 2.1**). The strategy Low Priority communicates to proponents that their project initiative has low priority, that the firm is already pursuing too many ideas, or that it is already overloaded with other project initiatives (**Table 2.1**). By using this strategy, the organization runs the risk of invoking competition within the organization. Accordingly, the three aforementioned strategies are likely to be perceived as negative among proponents, even though their reasoning may seem objective.

Pilot Fails and Quiz & Challenge are highly management driven at the same time as they have elements of the criteria-based termination strategies. The strategy of Pilot Fails allows proponents to create a pilot or a prototype that managers believe will fail and consequently prove to proponents that further work on the idea should stop (**Table 2.1**). To the extent that managers spend resources on proponents' limited testing for making them realize that further work should be stopped, it is

a leadership technique, i.e. management driven. However, when the pilot actually fails, the termination is more objective, i.e. criteria-based. As such, Pilot Fails can be viewed as a positive management driven termination strategy because it gives proponents the possibility of a one last go at their idea and a chance to prove their managers wrong. It should however be noticed that allowing further work on an idea can be seen as an escalation, and is thus contradictory to the importance of allocating scarce resources across the project portfolio (Balachandra, 1984; Khan & Katzenbach, 2009). In Daly and his colleagues' (2012) study, the decision-makers who used the Pilot Fails strategy, felt that it resulted in "potential benefits of learning, and potentially also satisfaction and increased organizational commitment" (p. 11). Accordingly, Pilot Fails can be beneficial for decision-makers and proponents, even though it must be managed carefully, so that the project initiative does not turn into an escalation.

Using the Quiz & Challenge strategy, proponents are quizzed about their project initiative until they give up or see why their idea is being terminated (**Table 2.1**). Active and open communication can be a good way of creating ownership to a decision and agreeing on a common outcome despite fundamental differences of opinion (Isaacs, 1993). As such, the Quiz & Challenge strategy can be seen as a positively oriented strategy. However, it can also be perceived as very negative, as its main goal is to make proponents give up on their ideas, and as the questioning can be quite uncomfortable for the proponents involved.

2.3.3 Positive and Negative Termination Strategies

For this thesis, we define two new constructs, namely "Positive Termination Strategies" and "Negative Termination Strategies" (**Table 2.2**). The definitions are as follows:

Positive Termination Strategies:
- A high likelihood of proponents to come back with other new ideas after having their idea terminated with this method, and - A low likelihood of negatively impacting how valued proponents feel in the unit
Negative Termination Strategies:
- A low likelihood of proponents to come back with other new ideas after having their idea terminated with this method, and - A high likelihood of negatively impacting how valued proponents feel in the unit

Table 2.2: Definition of Positive and Negative Termination Strategies

Based on the results from our survey, we will investigate which of the 17 termination strategies that fit into these two constructs. For the organization it is vital that proponents are willing to come back with new ideas. Continuous idea generation is important for an organization's competitive strength and for meeting a changing environment. From a proponent's perspective, idea generation expresses commitment to the organization and general job satisfaction. If an individual feels that its contribution to the organization is not valued, decision-makers have failed to accommodate proponents' face-saving needs in the termination process. Proponents can feel negatively valued in terms of own perceptions of competence and self-worth, as well as disappointment over the lack of respect for the work and effort put into the initiate. It follows that they can become reluctant to come back with new ideas. Consequently, our focus will be on the Positive and Negative Termination Strategies for the remaining part of this thesis.

2.4 The Organizational Climate for Innovation and Proponents' Willingness to Continue Innovating

The Positive and Negative Termination Strategies are likely to impact proponents' willingness to continue innovating in terms of how they affect the organizational climate for innovation. Amabile and colleagues (1996) have studied the organizational work environment for creativity, and confirm that the "psychological perceptions of innovation (the implementation of people's ideas) within an organization are likely to impact the motivation to generate new ideas" (p. 1155). Accordingly, we are interested in finding out how the prevalence of Positive or Negative Termination Strategies correlate with established scales related to the organizational climate for innovation (Amabile, 1996; Amabile et al., 1996; Edmondson, 1999; Im, Montoya, & Workman, 2012; Jaworski & Kohli, 1993; Patterson et al., 2005). We focus on the following scales: Team Psychological Safety (Edmondson, 1999), Innovation and Flexibility (Patterson et al., 2005), Team Learning Behavior (Edmondson, 1999), Learning Capability (Hull & Covin, 2010), and Top Management's Risk Orientation (Im et al., 2012).

2.4.1 Team Psychological Safety

An important part of innovation is having an interpersonally safe environment that nurtures creativity and learning. The construct of team psychological safety can be used to understand the factors that enable team learning and performance. Edmondson (1999) conceptualizes team psychological safety as a shared belief that a team is safe for interpersonal risk taking, i.e. "a sense of confidence that the team will not embarrass, reject, or punish a team member for speaking up" (p. 354), and where the confidence "stems from mutual respect and trust among team members" (p. 354). Team psychological safety can thus be seen as a team climate characterized by mutual trust and respect where proponents are comfortable being themselves, e.g. by promoting new ideas, experimenting, seeking feedback, asking for help, or

discussing errors.

In organizations where Negative Termination Strategies are used, it is likely that proponents become demotivated and feel negatively valued after having their idea or innovation project terminated. Accordingly, proponents can become reluctant to come back with new ideas because they are concerned about being humiliated or perceived incompetent among team members. Research has shown that "people value image and tacitly abide by social expectations to save their own and others' face" (Goffman, 1955, as cited in Edmondson, 1999, p. 352). Having their idea or innovation project terminated, proponents can feel that both their positive and negative face - such as keeping a positive self-image, being accepted by others, and keeping their autonomy - is threatened (Brown & Levinson, 1987; Daly et al., 2012). Additionally, admitting errors, asking for help, or seeking feedback may incur more tangible costs on the proponents if it creates unfavorable impressions with the decision-maker, who is likely to be in charge of project assignments, promotions, and bonuses (Edmondson, 1999; Goffman, 1959). This can further increase proponents' reluctance to come back with new ideas and participate in innovative activities. It can also allow proponents to ignore or discount the negative consequences of their silence at the expense of the team's performance (Edmondson, 1999; Goffman, 1959; Keil & Robey, 2001). Therefore, Negative Termination Strategies and their subsequent consequences are unlikely to support team psychological safety.

In organizations where Positive Termination Strategies are used, proponents are more likely to feel valued and appreciated. It can thus be assumed that the team psychological safety is higher than in organizations where Negative Termination Strategies occur. Research on distributive justice has shown that "people are very attentive to the tone and quality of social processes and are more willing to comply with these when they feel valued" (Tyler & Lind, 1992, as cited in Edmondson, 1999, p. 355). Amabile (1996) supports this view, and emphasizes the importance of placing value on creativity and innovation, and to take pride in team members and what they are capable of doing. In order to develop new ideas, the team must have open and "active communication of information and ideas; reward and recognition for creative work; and fair evaluation of work - including work that might

be perceived as a "failure""(Amabile, 1996, p. 8). Consequently, if proponents feel valued and appreciated by their team members, and feel confident that they will not be humiliated or placed at risk, the benefits of continue innovating are likely to be given more weight – also subsequent to a termination. We therefore argue that Positive Termination Strategies are likely to support team psychological safety, while Negative Termination Strategies are not. It is therefore hypothesized:

Hypothesis 1a (H1a): Positive Termination Strategies are positively correlated with Team Psychological Safety

Hypothesis 1b (H1b): Negative Termination Strategies are negatively correlated with Team Psychological Safety

2.4.2 Team Learning Behavior and Learning Capability

Innovation is closely related to organizational learning (Aiman-Smith, Goodrich, Roberts, & Scinta, 2005; Calantone, Cavusgil, & Zhao, 2002; Woodman, Sawyer, & Griffin, 1993). Organizational learning includes acquiring, distributing or interpreting information (Huber, 1991). According to Huber (1991) an organization learns if "through its processing of information, the range of its potential behaviors is changed" (p. 89). Further, Hull and Covin (2010) argue that an innovation-related learning capability is essential for the organizational success at developing new products and services. Learning capability is defined as an organization's ability to develop or acquire resources and skills for offering new and desired products (Hull & Covin, 2010). It follows that an organization's learning capability is dependent on the work environment for collaboration, information sharing, and learning in the organization.

Edmondson's (1999) research on organizational work teams shows that team psychological safety affects team learning behavior, which in turn affects team performance. Team learning behavior is defined as "activities carried out by team members through which a team obtains and processes data that allow it to adapt and improve"

(Edmondson, 1999, p. 351). Specifically, these activities include information sharing, experimenting, problem solving, and giving and receiving feedback and help. Through such activities an innovation team can obtain and share information about customer needs, market changes, and competitor actions (Aiman-Smith et al., 2005; Calantone et al., 2002; Edmondson, 1999). Additionally, it can "improve members' collective understanding of a situation, or discover unexpected consequences of their previous actions (Edmondson, 1999, p. 351). Edmondson (1999) further stresses the importance of discussing differences of opinions openly: "for a team to discover gaps in its plans and make changes accordingly, team members must test assumptions and discuss differences of opinion openly rather than privately or outside the group" (p. 353). However, Stasser and Titus' (1985) information-sampling model shows that group discussions often "fail to effectively pool their information" (p. 1467) because discussions are likely to be dominated by commonly held information and information that supports team members existing preferences. It is also confirmed that unshared information tends to be omitted from group discussions and has little effect on group members' preferences during discussion (Stasser & Titus, 1987). It is thus assumed that this is the case in organizations where Negative Termination Strategies occur, because proponents who are in a position to initiate learning behavior can feel that they are placing themselves at risk for speaking up, or for proposing new ideas. They may fear that there will be negative professional consequences if what they propose does not match the preferences of the decision-maker, who is likely to decide future project assignments and bonuses. As such, the fear is likely to cause proponents not to share uniquely held information or to come up with new proposals during team learning discussions. As emphasized earlier, a lack of team psychological safety can allow proponents to ignore or discount the negative consequences of their silence at the expense of the team's learning and performance. It is thus likely that useful outcomes from learning activities go unrealized in organizations where Negative Termination Strategies are prevalent.

In contrast, it is assumed that more learning is ensured in organizations where Positive Termination Strategies are used. Proponents are likely to feel trusted and recognized, and the interpersonal risk is perceived as sufficiently low so that they

are willing to discuss problems, admit errors, or promote new ideas during team learning activities. Edmondson's (1999) research confirms this assertion, and argues that "otherwise interpersonally threatening learning behavior" (p. 355), such as a termination, can occur if the team has a sufficiently safe environment. It should also be emphasized that decision-makers who use Positive Termination Strategies, are likely to contribute to a "safer" environment by giving proponents the chance to thoroughly explain their idea and their reasoning behind it. Useful learning outcomes are thus more likely to be realized in organizations where Positive Termination Strategies occur. It is therefore hypothesized:

Hypothesis 2a (H2a): Positive Termination Strategies is positively correlated with Team Learning Behavior

Hypothesis 2b (H2b): Negative Termination Strategies is negatively correlated with Team Learning Behavior

Hypothesis 3c (H3c): Positive Termination Strategies is positively correlated with Learning Capability

Hypothesis 3d (H3d): Negative Termination Strategies is negatively correlated with Learning Capability

2.4.3 Organizational Climate for Innovation and Flexibility

Organizational climate refers to organizational members' shared perceptions of organizational events, practices, and procedures (Patterson et al., 2005). Accordingly, the organizational climate can impact an organization's orientation towards innovation and flexibility. "Innovation" in this context measures the extent of encouragement and support for new ideas and innovative approaches, while "Flexibility" measures the organization's capacity to change and adapt to a challenging environment (Georgsdottir & Getz, 2004; Patterson et al., 2005). Flexibility can vary

from one person to another. Some individuals are able to change and to adapt even under the most difficult circumstances, whereas others are not. The same holds for organizations. Some find it difficult to react to a challenging environment, whereas others are able to do so quickly and easily (Georgsdottir & Getz, 2004). Being flexible can be beneficial for the organization in many ways, especially in terms of how it facilitates innovation. Flexibility allows team members to get out of impasses when they are solving problems. It also allows them to see problems from new and different perspectives. Additionally, it can lead to the identification of new problems to solve (Georgsdottir & Getz, 2004). Flexibility is thus influencing creativity in the idea generation phase of the innovation process. However, and maybe even more important in this setting, is the flexibility of the audience for the new ideas, i.e. the decision-makers. Georgsdottir and Getz (2004) emphasize that "the audience for ideas needs flexibility in order to be receptive, [and] to give new and unusual ideas a chance so that they can see the light and demonstrate their value" (p. 173). Amabile (1996) agrees with this view, and place value on the willingness of managers to change their ways of doing things in order for them to translate proponents' ideas into concrete business results.

As mentioned above, flexibility can be seen in terms of an organization's climate. Hisrich (1990) argues that the organizational climate can vary from being a more bureaucratic inflexible system to a more entrepreneurial flexible system. When the organizational system is rigid and inflexible, managers and decision-makers are likely to be risk averse and favor conservative decisions in addition to hindering the processing of creative ideas. Accordingly, Deci and Ryan (2000) shows that strong organizational directives, threats, and negative feedback can reduce proponents' intrinsic motivation because it can be perceived as controllers on their behavior (Deci & Ryan, 2000). Amabile (1983) also shows that task restraints limit proponents' choice of task strategies and redirect their attention away from the task, resulting in detrimental effects on creativity. Similar management techniques can also be found in the Negative Termination Strategies, where proponents can be humiliated for their idea proposals, or threatened with negative professional consequences if they defy decision-makers' decision to terminate a project initiative. Furthermore, pro-

ponents can also have their projects delayed with these types of strategies, which is likely to impact their ability and motivation for innovative work. Accordingly, it is assumed that organizations using Negative Termination Strategies have a lower acceptance of new and different ideas, and are hence less capable of meeting an ever-changing environment.

By contrast can flexible organizations with a relatively flat structure, open communication, and cooperation, facilitate the creation and processing of new ideas (Georgsdottir & Getz, 2004; Hisrich, 1990). In his study, Damanpour (1991) confirm that "[m]anagers' favorable attitude toward change leads to an internal climate conducive to innovation" (p. 558). As mentioned above, Amabile (1996) also stresses the importance of managers' willingness to change in order to translate proponents' ideas into concrete business results. Furthermore, Damanpour (1991) maintains that managers' support for innovation is especially important "in the implementation stage, when coordination and conflict resolution among individuals and units are essential" (p. 558). Cummings and O'Connell (1978) also emphasize that collegial structures that encourage risk-taking and a free exchange of ideas, that legitimize conflict and that rely on intrinsic rather than extrinsic rewards, should lead to a greater production of ideas. Additionally, Parnes and Meadow (1959) find that individuals are likely to produce more unusual and good quality ideas if they are allowed the risk and freedom to do so. Amabile (1983) also show that choice and flexibility regarding how to perform a task are likely to enhance proponents' intrinsic motivation, which has proven to be the most conducive motivation form to creativity. Accordingly, it is assumed that supportive and flexible structures can help proponents' production of new and good quality ideas. Open communication, collegial structures, and encouragement for innovation are also present in the Positive Termination Strategies. Hence, organizations using Positive Termination Strategies have a better organizational climate for innovation and flexibility. It is thus hypothesized:

Hypothesis 4a (H4a): Positive Termination Strategies is positively correlated with Innovation and Flexibility

Hypothesis 4b (H4b): Negative Termination Strategies is negatively correlated with Innovation and Flexibility

2.4.4 Top Management's Risk Orientation

An important aspect of innovation is an organization's orientation towards risk-taking versus maintaining status quo (Amabile, 1996; Jaworski & Kohli, 1993). Risk taking refers to "calculated actions to make effective decisions that promote goal attainment with the clear recognition of the potential of damage, setbacks, and other losses" (Tjosvold & Yu, 2007, p. 655). Responsiveness to a changing environment calls for the introduction of new products and services to meet the expectations of new customer demands. However, new products and services often run a high risk of failure and tend to be more vulnerable than established products (Jaworski & Kohli, 1993). Hence, the encouragement to take risks can be defined as the extent to which top management understands the risk and uncertainty associated with innovation, and expects and encourages proponents to take risks in their work (Amabile et al., 1996; Im et al., 2012; Parnes & Meadow, 1959). Top management plays a crucial role in an organization's innovation practices by setting the strategy for innovation and by allocating the necessary resources and talents to innovation projects. Im and colleagues (2012) support this view, and argue that top management's encouragement to take risks motivates divergent thinking, which helps proponents generate novel ideas. Additionally, Amabile (1996) argues that top management's support for risky innovation projects is critical to innovation success because it provides proponents with the necessary autonomy for generating ideas for new products and services. Consequently, it is important that managers encourage proponents to take risk in their work for the generation of novel and unique ideas.

Tjosvold and Yu's (2007) research shows that risk-taking promotes the recognition and recovery from mistakes. They argue that recovery from mistakes can help innovation teams marshal their resources and their confidence so that they innovate effectively. Still, proponents who have experienced one or several terminations can become risk-averse and fear future setbacks (Moenkemeyer et al., 2012; Shepherd

& Kuratko, 2009). In their study of a large-scale innovation project, Moenkemeyer and colleagues (2012) show that proponents became risk-averse after experiencing a termination with the lack of good management practices and communication: "I am open to risk something, but not for new projects. I would definitely check very carefully before I commit" (p. 643). It follows that the proponent is not willing to take risk in future innovative projects, due to the disappointment over the termination. However, Moenkemeyer and colleagues' (2012) findings show that decision-makers can restore a proponents' risk propensity level subsequent to a termination. By motivating the proponents for future commitments and by emphasizing a tolerance for mistakes, proponents may perceive the termination as less dramatic and the fear of future failures can be reduced. They further argue that proponents can even grow or thrive after a termination, as a termination can be an opportunity for learning if the "project failure" is turned into a "successful failure" (Moenkemeyer et al., 2012). In order to achieve this turnaround, decision-makers and proponents must be willing to learn and change from the termination (Corbett et al., 2007; Sitkin, 1992). A proponent's risk propensity level is thus dependent on contextual factors such as the team psychological safety (Edmondson, 1999) and the level of management support in the organization (Jaworski & Kohli, 1993).

Proponents are more likely to take risks for generating unique and novel ideas if top management encourages risk-taking and accept occasional failures as part of the "normal" innovation process (Amabile, 1996; Im et al., 2012; Jaworski & Kohli, 1993). Tjosvold and Yu (2007) support this view, and argue that teams who interact open-mindedly, are better able to take risks and that this risk taking is likely to turn into the development of innovative solutions and the ability to recover from mistakes. Transferring this to the organizations where Positive Termination Strategies occur, Daly et al. (2012) argue that there are open dialogues between decision-makers and proponents regarding the decision to terminate an idea or innovation project. They also suggest that there is a greater willingness to spend time listening to what proponents have in my mind before reaching a decision, to give thorough feedback, and to encourage future initiatives when faced with a termination (Daly et al., 2012). Tjosvold and Yu (2007) acknowledge these assertions, and

argue that innovation teams "are more likely to have the confidence and abilities to take risks when their members are able to discuss their opposing views directly and constructively" (p. 654). It can thus be assumed that in organizations using Positive Termination Strategies, there are open dialogues concerning the decision to terminate an idea or project. This can help proponents' understanding of why their idea was rejected, and it can also lessen the chance of becoming risk-averse and demotivated for future innovative work. Additionally, open communication can increase the psychological safety in the team and make it more apparent to proponents that there is a tolerance for failure in the organization. It is therefore proposed that Positive Termination Strategies can make proponents better able to take risks in future innovation projects.

In contrast, we assume that in organizations where Negative Termination Strategies occur, there is less tolerance for failure and ideas that go against the preferences of top management. Accordingly, Im et al. (2012) maintain that if top management is risk-averse and intolerant of failures, proponents "are less likely to generate new and distinct ideas that involve any appreciable financial risks" (Im et al., 2012, p. 175). Jaworski and Kohli (1993) support this assertion and state that "[i]n the absence of such a willingness to take calculated risks, employees in the lower levels of an organizational hierarchy are unlikely to want to respond to market developments with new products, services, or programs" (p. 64). This can be the case in organizations where Negative Termination Strategies occur, because proponents may fear that there will be negative consequences if their innovation projects "fail" and need to be terminated. Proponents of such organizations are thus likely to play it safe in their innovation teams, meaning that they are not willing to go for ideas with any chance of failure. As a consequence, they can be unable to respond to new marked developments. It can therefore be hypothesized:

Hypothesis 5a (H5a): Positive Termination Strategies are positively correlated with Top Management's Risk Orientation

Hypothesis 5b (H5b): Negative Termination Strategies are negatively correlated with Top Management's Risk Orientation

2.5 Summary of Theory Chapter

In this chapter we have presented Daly, Sætre, and Brun's (2012) prior work, and the 17 termination strategies they identified to be used by decision-makers to terminate ideas or innovation projects. We have categorized these as either criteria-based or management driven, to give a better understanding of how they impact the proponents involved in a termination. We have also explained the negative emotional reaction a proponent can experience subsequent to a termination.

Further, we have introduced two new constructs of termination strategies, namely Positive and Negative Termination Strategies, based on the likelihood of proponents to come back with other new ideas after having their idea terminated, and the likelihood of proponents feeling negatively valued in the unit. Based on the results from our survey, we will investigate which of the 17 termination strategies that fit into these two constructs.

We have also introduced ten hypotheses for finding out how the prevalence of Positive or Negative Termination Strategies correlate with established scales related to the organizational work environment for innovation. The elected areas of research are team psychological safety, team learning behavior, learning capability, innovation and flexibility, and top management's risk orientation.

The goal of our survey is to investigate which termination strategies are the most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating.

Chapter 3

Methodology

In this chapter, we discuss our data collection method, the variables included in our analyses, as well as the statistical methods applied.

3.1 Data Collection - Innovation Management Survey

The survey used in this thesis, "Innovation Management Survey" see **Appendix A**, was developed in cooperation with Alf Steinar Sætre[1] and John A. Daly[2]. The survey is focused on the 17 termination strategies and the impact of these strategies on the organizational climate for innovation. The 17 termination strategies have previously been presented in **Table 2.1** on **page 7**. For each termination strategy, we have been interested in its prevalence in respondents' units and its perceived effectiveness in ending innovation projects and ideas. We have also asked for the termination strategies' likely impact on proponents' motivation, i.e. if proponents

[1] Alf Steinar Sætre, Ph.D. Professor at the Department of Industrial Economics and Technology Management at The Norwegian University of Science and Technology in Trondheim, Norway.

[2] John A. Daly, Ph.D. Professor at the College of Communication at The University of Texas in Austin, United States.

would feel motivated to continue innovating after having their project terminated with any given method. Additionally, we have asked if being exposed to such a strategy will negatively affect how personally valued proponents feel in the unit. Further, the survey asks respondents to consider different organizational aspects important for an innovative climate, such as Team Psychological Safety (Edmondson, 1999), Innovation and Flexibility (Patterson et al., 2005), Team Learning Behavior (Edmondson, 1999), Learning Capability (Hull & Covin, 2010), and Top Management's Risk Orientation (Jaworski & Kohli, 1993), see **Section 3.3** on **page 46** for more details.

An online version of the survey was distributed directly to organizations in Norway, and through innovation forums on LinkedIn. A paper based version of the survey was given to managers at leadership seminars in the United States. With these distribution channels, we were able to reach out to individuals in different industries and countries.

Respondents were given the option to answer the survey in either English or Norwegian. This was meant to improve the quality of the responses as well as the response rate because respondents could use the language they felt most comfortable with (Harzing, 2000). We randomized the questions regarding the 17 termination strategies, so that the answers to these questions were not biased by the similarity of the questions or the order in the survey. Feedback during the formulation of the survey revealed a rather sensitive quality of the question regarding Tease & Humiliate, and it made some individuals wary of answering the rest of the survey. In order for respondents to not be put off by this question before being introduced to some of the other possible termination strategies, we consistently placed the question of Tease & Humiliate in the middle of the questions concerning the 17 termination strategies.

Because the survey was posted in online forums or distributed by contact persons through mailing lists in the cooperating organizations, we were unable to control or count how many individuals who actually received the link to the survey. We can however report that a total of 314 respondents started the survey, whereas

only 231 finished it (73.6%). For the paper based survey, 142 of 143, i.e. 99.3% of respondents completed the survey. Only 87 of 169 online responses were completed, i.e. 51.5%. The high completion rate for the paper based survey is due to the fact that respondents were given time during a seminar to answer the survey.

In order for our analysis to only contain relevant and valid data, we decided to filter the responses and delete incomplete answers. We filtered the responses based on respondents' innovation experience during the last 5 years, see Question 14 in the survey (**Appendix A**). As such, a respondent must either have been a leader or a member of a project team focusing on innovation during the last 5 years in order for their responses to be taken into account. Another criterion was to have completed almost all the questions in the survey. We did not use an ultimate response rate criterion to remove incomplete cases, but looked in general at each respondent. We were especially attentive towards short completion times, or succeeding missing answers. We felt that missing answers could reflect possible respondent's fatigue, which can influence how serious the questions in the later parts of the survey are answered. After deleting all invalid responses and leaving out those without innovation team experience, we were left with a total of 198 cases, i.e. 63.1% of the original 314 responses.

3.2 Independent Variables: Positive and Negative Termination Strategies

An independent variable is a variable that is used to try to predict values of another variable, known as a dependent variable (Field, 2009). The prevalence of the 17 termination strategies composes the input for the independent variables in this study.

We have defined two new constructs, Positive Termination Strategies and Negative Termination Strategies, which will serve as our independent variables when answering the research question of how a termination strategy affects proponents' willingness to continue innovating. We want to operationalize the constructs Positive Termination Strategies and Negative Termination Strategies, so we review their definitions in **Table 3.1**. The rationale behind these two constructs is to group the most extreme strategies in terms of positive and negative impact on continued innovation.

Positive Termination Strategies:
- A high likelihood of proponents to come back with other new ideas after having their idea terminated with this method, and - A low likelihood of negatively impacting how valued proponents feel in the unit after a termination with this method
Negative Termination Strategies:
- A low likelihood of proponents to come back with other new ideas after having their idea terminated with this method, and - A high likelihood of negatively impacting how valued proponents feel in the unit after a termination with this method

Table 3.1: Definition of Positive and Negative Termination Strategies

3.2.1 Variable: Idea Generation

The variable "Idea Generation" measures the likelihood of proponents to come back with other new ideas after having their idea terminated with a certain termination strategy. Continuous idea generation is important for an organization's competitive strength and for meeting a changing environment. For proponents, idea generation expresses their commitment to the organization and their general job satisfaction. **Figure 3.1** shows how respondents rated each termination strategy in terms of its impact on proponents' continued idea generation. A high score represents a high likelihood of coming back with new ideas after experiencing a termination strategy.

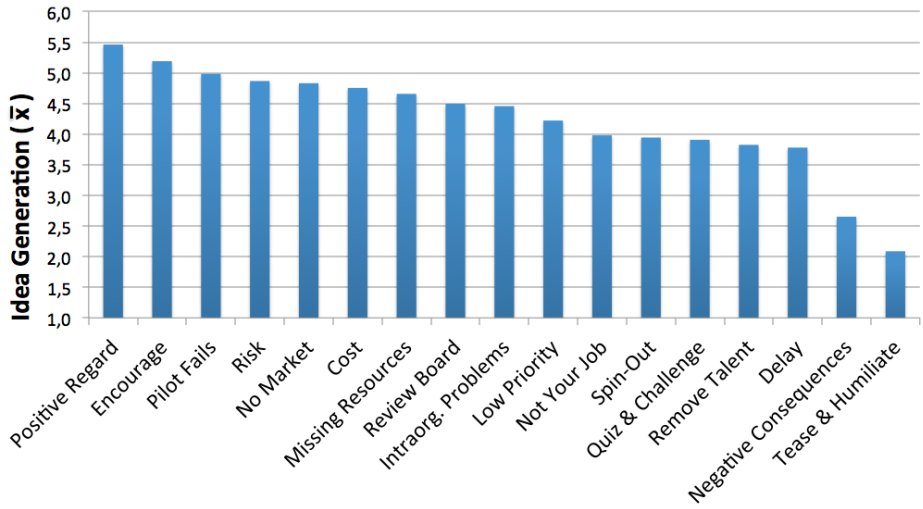


Figure 3.1: The 17 Termination Strategies' Influence on Idea Generation

Table 3.2 summarizes the descriptive statistics for the question. Both Positive Regard ($\bar{x} = 5.46$), Encourage Future Initiatives ($\bar{x} = 5.19$), and Pilot Fails ($\bar{x} = 4.98$) are rated high. Negative Professional Consequences ($\bar{x} = 2.09$), and Tease & Humiliate ($\bar{x} = 2.65$) are rated very low. Delay, Remove Talent, Quiz & Challenge, and Not Your Job receive scores right below 4.0, and are also considered unlikely to motivate proponents to come back with new ideas.

	$\bar{x}$	Median	SD
Positive Regard	5.46	6	1.49
Encourage Future Initiatives	5.19	5	1.48
Pilot Fails	4.98	5	1.53
Risk	4.87	5	1.37
No Market	4.83	5	1.44
Cost	4.75	5	1.44
Missing Resources	4.66	5	1.57
Review Board	4.49	5	1.53
Intra-Organizational Problems	4.46	5	1.44
Low Priority	4.22	5	1.52
Not Your Job	3.98	4	1.77
Spin-Out	3.94	4	1.63
Quiz & Challenge	3.91	4	1.67
Remove Talent	3.82	4	1.58
Delay	3.78	4	1.56
Negative Professional Consequences	2.65	2	1.55
Tease & Humiliate	2.09	1	1.56

Table 3.2: Descriptive Statistics of Idea Generation

3.2.2 Variable: Feeling Negatively Valued

The variable "Feeling Negatively Valued" measures the likelihood that a termination strategy negatively impacts how valued proponents feel in the unit. Anything that decreases an individual's well-being does not nurture creativity or innovation. If an individual feels that its contribution to the organization is not valued, decision-makers have failed to accommodate proponents' face-saving needs in the termination process. Feeling negatively valued will affect the organizational environment for innovation.

Figure 3.2 shows if respondents think a termination strategy will negatively impact how valued proponents feel in the unit. A high score represents a high likelihood of negative impact.

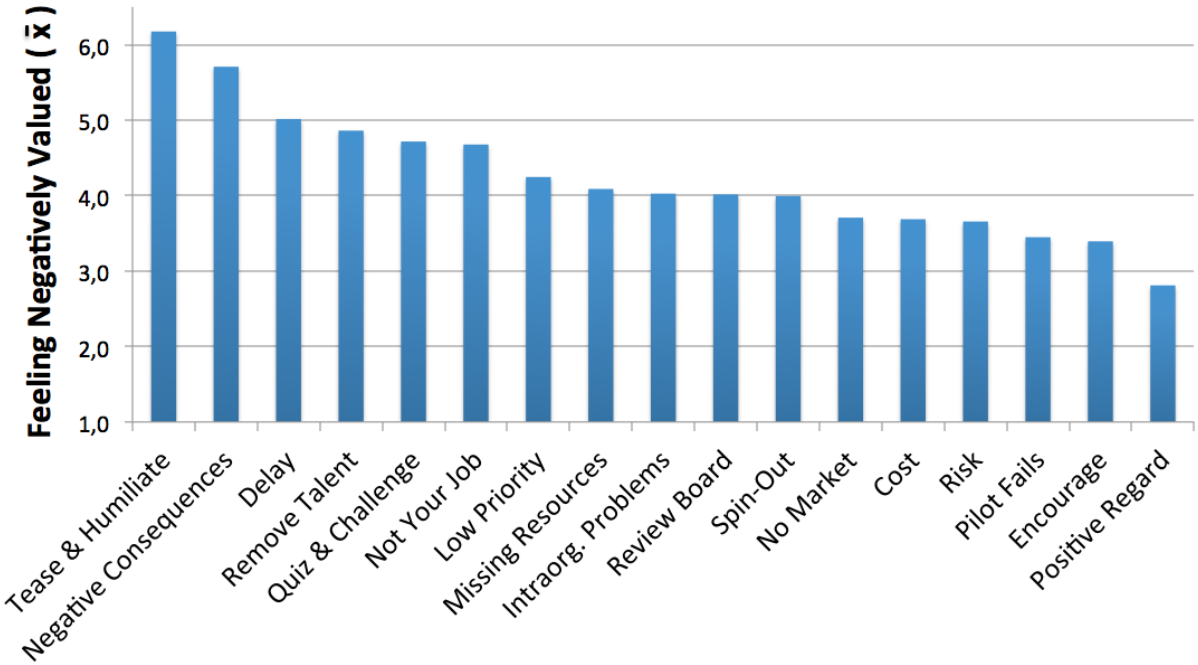


Figure 3.2: The 17 Termination Strategies' Impact on Feeling Negatively Valued

Table 3.3 summarizes the descriptive statistics for the variable Feeling Negatively Valued. Particularly Tease & Humiliate ($\bar{x} = 6.17$), and Negative Professional Consequences ($\bar{x} = 5.71$) are pointed out as very likely to have a negative impact. On the other hand, Positive Regard ($\bar{x} = 2.81$), Encourage Future Initiatives ($\bar{x} = 3.39$), and Pilot Fails ($\bar{x} = 3.45$) are rated as unlikely to provoke such a reaction.

	$\bar{x}$	**Median**	**SD**
Tease & Humiliate	6.17	7	1.44
Negative Professional Consequences	5.71	6	1.54
Delay	5.02	5	1.45
Remove Talent	4.86	5	1.52
Quiz & Challenge	4.72	5	1.53
Not Your Job	4.68	5	1.61
Low Priority	4.25	4	1.51
Missing Resources	4.09	4	1.54
Intra-Organizational Problems	4.03	4	1.51
Review Board	4.02	4	1.54
Spin-Out	3.99	4	1.65
No Market	3.71	4	1.49
Cost	3.69	4	1.56
Risk	3.66	4	1.41
Pilot Fails	3.45	3	1.63
Encourage Future Initiatives	3.39	3	1.61
Positive Regard	2.81	3	1.44

Table 3.3: Descriptive Statistics of Feeling Negatively Valued

3.2.3 Variable: Continued Innovation

If we combine Idea Generation and Feeling Negatively Valued, we can measure proponents' willingness to continue innovating after being subjected to a termination method, and we name this new variable "Continued Innovation". The statistics for this new variable is presented in **Figure 3.3** and **Table 3.4**.

The goal is to use the extreme mean values of Continued Innovation to determine which of the 17 termination strategies can be grouped to operationalize the constructs Positive Termination Strategies and Negative Termination Strategies.

	$\bar{x}$	Median	SD
Positive Regard	5.31	5.5	1.25
Encourage Future Initiatives	4.90	5.0	1.36
Pilot Fails	4.77	5.0	1.31
Risk	4.61	4.5	1.17
No Market	4.56	4.5	1.21
Cost	4.53	4.5	1.20
Missing Resources	4.29	4.5	1.26
Review Board	4.24	4.0	1.23
Intra-Organizational Problems	4.22	4.0	1.11
Low Priority	3.99	4.0	1.25
Spin-Out	3.97	4.0	1.29
Not Your Job	3.65	4.0	1.40
Quiz & Challenge	3.59	4.0	1.35
Remove Talent	3.48	3.5	1.22
Delay	3.39	3.5	1.19
Negative Professional Consequences	2.47	2.0	1.27
Tease & Humiliate	1.96	1.5	1.22

Table 3.4: Descriptive Statistics of Continued Innovation

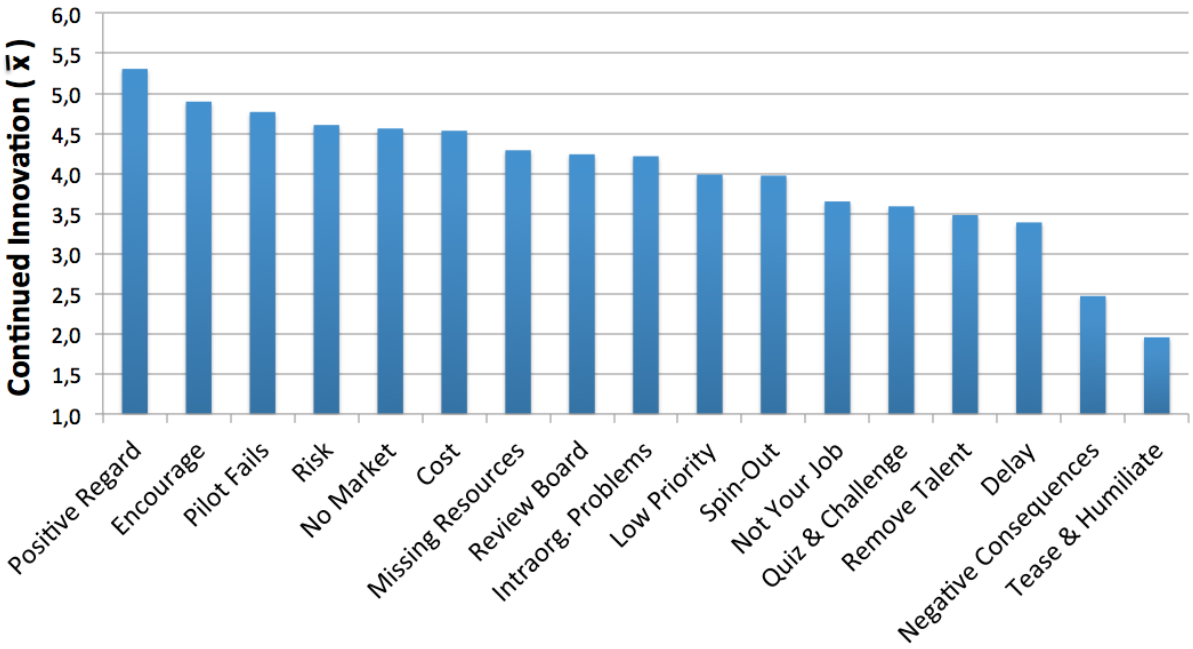


Figure 3.3: The 17 Termination Strategies' Influence on Continued Innovation

3.2.4 Positive Termination Strategies

The highest-scoring termination strategies for the variable Continued Innovation are Positive Regard ($\bar{x} = 5.31$) and Encourage Future Initiatives ($\bar{x} = 4.90$), as illustrated in **Figure 3.3**. Positive Regard and Encourage Future Initiatives are similar in that they show proponents empathy and emphasize their continued importance for the organization. Pilot Fails ($\bar{x} = 4.77$) is next on the list, but we consider this strategy conceptually different from Positive Regard and Encourage Future Initiatives. Pilot Fails allows proponents to create a pilot or a prototype that managers believe will fail and consequently prove to proponents that further work on the idea should stop. To the extent that managers spend resources on proponents' limited testing for making them realize that further work should be stopped, it is a leadership technique, i.e. management driven. However, when the pilot actually fails, the termination is more criteria-based. The strategy can thus be seen as both a management driven and a criteria-based termination strategy. We also note that there is a low prevalence of Pilot Fails in the surveyed organizations, making it a sort of outlier. Based on these arguments, we decide not to include Pilot Fails in the construct Positive Termination Strategies.

The next-ranking strategies on Continued Innovation are No Market, Risk, Cost, and Missing Resources. These are all conceptually similar to each other in that they are criteria-based, having objective evaluation criteria and explanations that are non-related to proponent. However, to effectively rule out their relevance for proponents' willingness to continue innovating, we group these strategies together as Criteria-Based Termination Strategies[3] and include them in our analysis. To conclude on the composite items for the new variable, Positive Termination Strategies, we only include Positive Regard and Encourage Future Initiatives (**Table 3.5**).

[3]For more details on these Criteria-based Termination Strategies, see Table 2.1 on page 7.

POSITIVE TERMINATION STRATEGIES
Positive Regard: The proponents explain the project initiative and are given a fair and respectful hearing. After decision-makers listen carefully they offer thorough feedback explaining the business or technical reasons why the project initiative is going to be stopped.
Encourage Future Initiatives: Proponents are encouraged to continue working and come up with new project initiatives even though the one they are currently proposing is terminated.

Table 3.5: Composites of the New Variable Positive Termination Strategies

3.2.5 Negative Termination Strategies

The lowest-scoring termination strategies for the variable Continued Innovation are Tease & Humiliate ($\bar{x} = 1.96$) and Negative Professional Consequences ($\bar{x} = 2.47$), as illustrated in **Figure 3.3**. Both strategies are considered as negative towards proponents in that they practice personal discouragement and attack proponents' motivation. Delay ($\bar{x} = 3.39$) and Remove Talent ($\bar{x} = 3.48$) also receive low scores. With Delay and Remove Talent, decision-makers are taking a passive approach and ignoring proponents or delaying action regardin the project initiative. The four strategies are all conceptually similar in terms of destructive or passive behavior and are thus grouped together as Negative Termination Strategies, see **Table 3.6**. We also note that Quiz & Challenge is on the lower end of the scale. This strategy is positive in that it encourages communication, but negative in that it urges proponents to give up. Based on this duality, we decide not to include it in the Negative Termination Strategies.

NEGATIVE TERMINATION STRATEGIES
Tease & Humiliate: Proponents are teased, humiliated, and their motivations for pursuing the project initiative are attacked.
Negative Consequences: Proponents are told that continuing to push their project initiative would negatively affect their careers or have negative consequences for them.
Delay: Management postpones decision-making or finds bureaucratic reasons for slowing down the project initiative.
Remove Talent: Key talent related to the project initiative is not assigned to the initiative, or is reassigned to other project initiatives; executive sponsors move or leave, or project initiative is given to executives who do not support the project initiative.

Table 3.6: Composites of the New Variable Negative Termination Strategies

3.2.6 Prevalence as a Basis For Hypothesis Testing

With the help of Continued Innovation, we have decided which termination strategies that classify as Positive and Negative Termination Strategies. However, Continued Innovation only measures the perceptions of the accommodative qualities of a termination strategy. For the purpose of our hypotheses testing, we want to measure the presence of the strategies in the surveyed units, as this is the only way to link the dependent innovation climate variables to the termination strategies. We must therefore compute the new variables Positive and Negative Termination Strategies from the question: "How likely are these methods to be used in your unit to terminate ideas?" (See Questions 15-31 in **Appendix A**). We use the arithmetic mean for this operation.

3.3 Dependent Variables: Innovation Climate Variables

A dependent variable is a variable that is affected by an independent variable (Bryman & Cramer, 2011). The dependent variables in this study are established scales borrowed from a number of articles in the field of work environment for innovation. The scales are Team Psychological Safety (Edmondson, 1999), Innovation and Flexibility (Patterson et al., 2005), Team Learning Behavior (Edmondson, 1999), Learning Capability (Hull & Covin, 2010), and Top Management's Risk Orientation (Im, Montoya, & Workman, 2012). We have also used the scales Organizational Performance (De Luca, Verona, & Vicari, 2010), and Job Satisfaction (Judge, Locke, Durham, & Kluger, 1998) for increased understanding of the effect of the termination strategies. To confirm the validity of these scales in regards to our sample, we have performed a Factor Analysis. We have further calculated Cronbach's alpha to confirm the reliability for the items belonging to each scale. After confirming their validity and reliability, the composite, dependent variables are created by computing the arithmetic mean of the respective items. The dependent variables are described in detail below.

3.3.1 Factor Analysis

Factor analysis is a variable reduction technique, which identifies the number of latent constructs and the underlying factor structure of a set of variables (Bryman & Cramer, 2011). The factor loading value is a measure of the correlation between the factor and the variable in question (Field, 2009), and is indicating the strength of the relationship between them. We have used Factor Analysis to control that the adapted scales are still valid factors.

We have performed the factor analyses with the extraction method principal-axis factoring, and the oblique rotation method direct oblimin. Principal-axis factoring can estimate the underlying factors, whereas the commonly used principal-component analysis only establishes the underlying linear components that exist within the

data (Field, 2009). Often, the two methods will provide the same results, but Stevens (2002, as cited in Field, 2009) finds that for an analysis with fewer than 20 variables, differences can occur. Since all of our factor analyses are performed with fewer than 20 variables, we apply the method of principal-axis factoring. Direct oblimin is a method of oblique rotation, and in contrast to an orthogonal rotation method, it allows the underlying factors to be correlated. We suspected any underlying factors to be correlated, and this proved to be the case. The significant correlations confirm that the oblique rotation method was the optimal one for our analysis, see Pattern Matrix 3.8, 3.11, 3.13, and 3.15 in the subsequent sections.

Because Principal Axis Factoring is not as commonly applied as Principal Component Analysis (PCA), it is difficult to find rule of thumbs to assess the factor loadings. We therefore needed to base our assessment of the resulting factors on the conceptual theory pertaining to the items (Field, 2009). In our analyses, none of the factor loadings were below 0.5. For PCA, Field (2009) recommends a cutoff criterion for cross-loadings of 0.364 for a sample size of 200. We note that our resulting factors do not have cross-loadings higher than this limit value, and conclude that this must be sufficient for the factor analysis. The significance of a factor loading will depend on the sample size (Field, 2009; Bryman & Cramer, 2011). Gorusch (1983, as cited in Bryman & Cramer) proposes a minimum of five participants per variable, and no less than 100 participants per analysis. These criteria are satisfied for our analyses (N=195) and we conclude that the resulting factor loadings are reliable. The rotated factor matrices can be found in the sections below.

3.3.2 Cronbach's Alpha, α

We test the internal reliability of the established scales and the resulting factors from the factor analyses with Cronbach's alpha. Internal reliability concerns whether a scale measures a single idea and whether the items are internally consistent (Bryman & Cramer, 2011). Cronbach's alpha values of 0.7 – 0.8 are considered acceptable, and the closer to 1, the better the internal reliability of the scale (Bryman & Cramer, 2011; Field, 2009). The Cronbach's alpha values for the resulting

dependent variables are presented together with each variable's composite items in the following subsections.

3.3.3 Psychological Safety

To measure Team Psychological Safety, we adopted Edmondson's (1999) seven-item scale of Team Psychological Safety, see **Table 3.7**. Edmondson (1999) conceptualizes team psychological safety as a shared belief that a team is safe for interpersonal risk taking, and there is mutual respect and trust among team members. According to Edmondson (1999), a mix of negatively and positively worded items are used to mitigate response set bias. We performed a Factor Analysis on the seven items, which resulted in one factor. We call this new variable "Psychological Safety" as we are measuring this variable a unit-level in the surveyed organizations. Note that we have consequently replaced "team" with "unit" in the items to better fit the intent of the survey. With only one factor, the solution cannot be rotated, and we are therefore unable to present a Pattern Matrix with the factor loadings of the items. We can however report the Cronbach's Alpha value of 0.77, $\bar{x} = 5.25$, and SD = 1.03. The statistics of Psychological Safety are also comparable to the values Edmondson (1999) identified ($\alpha = .82$; $\bar{x} = 5.25$; SD = 1.03), see **Table 3.7** below.

PSYCHOLOGICAL SAFETY ✣	$\alpha = .77$, $\bar{x} = 5.25$, and SD = 1.03
1. If you make a mistake in this unit it is often held against you. (R)	
2. Members of this unit are able to bring up problems and tough issues.	
3. People in this unit sometimes reject others for being different. (R)	
4. It is safe to take a risk in this unit.	
5. It is difficult to ask other people in this unit for help. (R)	
6. No one in this unit would deliberately act in a way that undermines my efforts.	
7. Working with people in this unit, my unique skills and talents are valued and utilized.	

✣ *Scale from 1 to 7, where 1 is "Very Inaccurate" and 7 is "Very Accurate"*
(R) - Reversed

Table 3.7: Psychological Safety

3.3.4 Learning

In order to assess the extent of a unit learning behavior, six items from Edmondson's (1999) 7-item scale of team learning behavior was adapted to our survey. Edmondson (1999) conceptualizes team learning behavior as "activities carried out by team members through which a team obtains and processes data that allow it to adapt and improve" (p. 351). We have also added Hull and Covin's (2010) 3-item scale of learning capability to our survey. Learning Capability measures an organization's ability to develop new knowledge-based resources and skills needed to offer desired new products (Hull & Covin, 2010). Because both scales pertain to learning, we wanted to investigate the underlying factor structure of these nine items with a Factor Analysis. The resulting factors are displayed in **Table 3.8** with their respective factor loadings. The low cross-loadings proof that these scales have divergence validity, i.e. they measure different things, and we use a cutoff value of 0.12.

The Factor Analysis in **Table 3.8** thus confirms the original established scales of Team Learning Behavior and Learning Capability adapted from Edmondson (1999) and Hull and Covin (2010) respectively. We have decided to name the factor representing the items from the "Team Learning Behavior"-scale as "Learning Behavior", as this variable is measuring of the surveyed units' learning bahavior. Learning Behavior has a Cronbach's Alpha of .84, $\bar{x} = 4.75$, and SD = 1.10, see **Table 3.9**. The statistics of Learning Behavior are thus comparable to the values Edmondson (1999) identified ($\alpha = .78$; $\bar{x} = 4.67$; SD = .93).

Learning Capability has a Cronbach's Alpha of .82, $\bar{x} = 3.30$, and SD = 0.85, see **Table 3.10**. The statistics are comparable to the values Hull and Covin (2010) identified ($\alpha = .82$; $\bar{x} = 2.28$; SD = .60). Note that we added "services" in each question on learning capability to cater to the different types of innovations respondents might take part in.

PATTERN MATRIX		
	Factor 1	**Factor 2**
Team Learning Behavior		
In our unit, someone always makes sure that we stop to reflect on the unit's work process.	**.716**	
People in this unit often speak up to test assumptions about issues under discussion.	**.709**	
We regularly take time to figure out ways to improve our unit's work processes.	**.697**	
This unit frequently seeks new information that leads us to make important changes.	**.687**	
People in our unit go out and get all the information they possibly can from others - such as customers, or other parts of the organization.	**.682**	.123
We invite people from outside the team to present information or have discussions with us.	**.655**	
Learning Capability		
The learning of new skills and the acquisition of new capabilities that enable the introduction of new products and services come easily to us.		**.866**
Whenever we have needed to develop new skills or technologies to offer new products and services, we have been able to do so quickly and easily.		**.779**
We are good at covering the distance between what we know or have and what we need to know or have, to develop desirable new products and services and bring them to market.	.175	**.650**

Table 3.8: Pattern Matrix for Team Learning Behavior and Learning Capability

LEARNING BEHAVIOR ✦,	α = .84, $\bar{x}$ = 4.75, and SD = 1.10

1. In our unit, someone always makes sure that we stop to reflect on the unit's work process.
2. People in this unit often speak up to test assumptions about issues under discussion.
3. We regularly take time to figure out ways to improve our unit's work processes.
4. This unit frequently seeks new information that leads us to make important changes.
5. People in our unit go out and get all the information they possibly can from others - such as customers, or other parts of the organization.
6. We invite people from outside the team to present information or have discussions with us.

✦ *Scale from 1 to 5, where 1 is "Strongly Disagree" and 5 is "Strongly Agree"*

Table 3.9: Learning Behavior

LEARNING CAPABILITY ❄,	α = .82, $\bar{x}$ = 3.30, and SD = 0.85

1. The learning of new skills and the acquisition of new capabilities that enable the introduction of new products and services come easily to us.

2. Whenever we have needed to develop new skills or technologies to offer new products and services, we have been able to do so quickly and easily.

3. We are good at covering the distance between what we know or have and what we need to know or have, to develop desirable new products and services and bring them to market.

❄ *Scale from 1 to 5, where 1 is "Strongly Disagree" and 5 is "Strongly Agree"*

Table 3.10: Learning Capability

3.3.5 Flexibility

To test the Innovation and Flexibility hypothesis, Patterson and colleagues' (2005) 6-item "Innovation & Flexibility"-scale was adapted to our survey. This scale is concerned with the organizational climate for innovation and flexibility, and tests an organization's orientation toward change and the extent of encouragement and support for new ideas and innovative approaches (Patterson et al., 2005). We also adapted a 4-item "Product Innovativeness"-scale from De Clercq and colleagues' (2011) study to our survey, see **Table 3.11**. Since we initially thought this scale was conceptually similar to Patterson and colleagues' (2005) "Innovation & Flexibility"-scale, we performed a Factor Analysis including items from both scales. The Factor Analysis resulted in two factors, thus confirming the original established scales see **Table 3.11**. We use a cutoff value of 0.19. The low cross-loadings proof that these scales have divergence validity, i.e. they measure different things. We decided to only use the "Innovation & Flexibility"-scale for further analysis and exclude the "Product Innovativeness"-scale, as our desired measure is the surveyed organizations' orientation towards change. In retrospect, we also realize that the items underlying the "Product Innovativeness"-scale are not the best fit for the surveyed organizations, as they mainly come from the Energy industry operating in global markets.

We have decided to name Factor 1 representing the items from the "Innovation & Flexibility"-scale as "Flexibility", as we consider this variable as a measure of the surveyed organization's orientation towards change. Flexibility has a Cronbach's Alpha of 0.86, $\bar{x} = 2.79$, and SD = .61, see see **Table 3.12**. We are unable to compare this to Patterson and colleagues' (2005) scale as they do not report these values. Note that we have consequently replaced "organization" with "unit" in the items to better fit the intent of the survey.

PATTERN MATRIX		
	Factor 1	**Factor 2**
Innovation & Flexibility		
This unit is very flexible; it can quickly change procedures to meet new conditions and solve problems as they arise.	**.839**	
This unit is quick to respond when changes need to be made.	**.793**	
Management here is quick to spot the need to do things differently.	**.767**	
New ideas are readily accepted here.	**.637**	
Assistance in developing new ideas is readily available.	**.567**	
People in this unit are always searching for new ways of looking at problems.	**.567**	.197
Product Innovativeness		
We focus on inventing new products and services.		**.869**
We commercialize products and services that are completely new to our company.		**.807**
We experiment with new products and services in our local market.		**.736**
Our company accepts demands that go beyond existing products and services.		**.606**

Table 3.11: Pattern Matrix for Innovation & Flexibility and Product Innovativeness

FLEXIBILITY ✢,	**α = .86, $\bar{x}$ = 2.79, and SD = .61**
1. This unit is very flexible; it can quickly change procedures to meet new conditions and solve problems as they arise.	
2. This unit is quick to respond when changes need to be made.	
3. Management here is quick to spot the need to do things differently.	
4. New ideas are readily accepted here.	
5. Assistance in developing new ideas is readily available.	
6. People in this unit are always searching for new ways of looking at problems.	

✢ *Scale from 1 to 4, where 1 is "Definitely False" and 4 is "Definitely True"*

Table 3.12: Flexibility

3.3.6 Top Management's Risk Orientation

Initially, we adapted the 4-item scale "Encouragement to take risks by top management" (Im et al., 2012)[4]. When performing a Factor Analysis on these four items, the analysis revealed that one item, "Top management encourages new product teams to play it safe in their new product projects" (reverse scored), should be removed see **Table 3.13**. The low cross-loadings proof divergence validity, i.e. the two factors measure different things, and we therefore remove this item. We have also used a cut-off value of 0.2.

The three remaining items from the Factor Analysis constitute the variable named "Top Management's Risk Orientation", and is outlined in **Table 3.14** below. The variable has a Cronbach's Alpha of .82, $\bar{x} = 3.03$, and SD = 0.91. The statistics are very similar to the values Im and colleagues (2012) identified ($\alpha = .76$; $\bar{x} = 3.02$; SD = 0.63).

PATTERN MATRIX

	Factor 1	Factor 2
Top management expects employees to take risks when they propose new ideas for new products.	**.820**	
Top management encourages the development of innovative marketing strategies, knowing well that some will fail.	**.750**	
Top management believes that the higher financial risks involved in new product projects are worth taking for higher rewards.	**.739**	
Top management encourages new product teams to play it safe in their new product projects. (Reversed)		**.443**

Table 3.13: Pattern Matrix for Top Management's Risk Orientation

[4]Im and colleagues (2012) originally adapted "Encouragement to take risks by top management" from Jaworski and Kohli's (1993) 6-item scale, "Top Management Risk Aversion"

TOP MANAGEMENT'S RISK ORIENTATION ✤ α =.82, $\bar{x}$ = 3.03, SD=.91
1. Top management expects employees to take risks when they propose new ideas for new products.
2. Top management encourages the development of innovative marketing strategies, knowing well that some will fail.
3. Top management believes that the higher financial risks involved in new product projects are worth taking for higher rewards.

✤ **Scale from 1 to 5, where 1 is "Definitely False" and 5 is "Definitely True"*

Table 3.14: Top Management's Risk Orientation

3.3.7 Organizational Performance

In order to assess the surveyed organization's performance, we adapted De Luca, Verona, and Vicari's (2010)[5] 3-item scale for assessing perceived organizational performance (subjective estimation). The survey also included an additional scale named "Subjective Performance of the Firm", composed of three items. Two of the items, respectively "Overall Financial Result" and "Return on Investment", were adapted from Dess and Robinson's (1984) study. The last item, "Growth in Sales" were adapted from Dawes' (1999) study.

There are several reasons for using subjective performance measures as opposed to objective performance measures. Actual performance data can be confidential and commercially sensitive for the organization, and some managers may therefore be reluctant to provide it (Dawes, 1999). Additionally, using profitability as a performance measure may not accurately indicate the underlying financial health of the organization. It can vary due to the level of investment in R&D and marketing activities that can have longer-term effects for the organization. Accurate estimates can also be hard to obtain by survey, due to differing accounting procedures of the participating organizations (Dess & Robinson, 2006).

Using subjective performance measures, respondents can assess the relative performance of their industry when giving their response. Subjective performance measures can also be more appropriate as opposed to objective measures, as the profit level can vary considerably across different industries. Additionally, Dawes (1999) has proved that there is a strong correlation between objective and subjective performance measures.

Because both scales included in our survey pertain to organizational performance, we wanted to investigate the underlying factor structure of the six items with a Factor Analysis. The two resulting factors are displayed in **Table 3.15** with the respective factor loadings, and we use a cut-off value of 0.30.

[5] De Luca, Verona, and Vicari (2010) originally adapted "Organizational Performance" from Jaworski and Kohli's (1993) 2-item scale, "Overall Performance".

PATTERN MATRIX

	Factor 1	Factor 2
Subjective Performance of the Firm		
Please rate the Overall Financial Result for your firm for the current year.	**.966**	
Please rate the Return on Investment or Return on Assets of your firm for the current year.	**.941**	
Please rate the Growth in Sales of your firm for the past two years.	**.714**	
Organizational Performance		
Rate your company or organization's overall performance in the last three years with respect to main competitor's performance.		**.959**
Rate your company or organization's overall performance in the last three years with respect to industry performance.		**.786**
Rate your company or organization's overall performance in the last three years with respect to its own stated objectives.	.316	**.520**

Table 3.15: Pattern Matrix for Subjective Performance of the Firm and Organizational Performance

Since we are investigating cross industries, we have decided to only use Factor 2, containing De Luca, Verona, and Vicari's (2010) three items for assessing perceived performance. The 3-item scale can be found in **Table 3.16**, and has a Cronbach's Alpha value of 0.84. The statistics of this variable are comparable to the values De Luca, Verona, and Vicari (2010) identified ($\alpha = .90$; $\bar{x} = 5.05$; SD $= 1.19$).

ORGANIZATIONAL PERFORMANCE ♦, $\alpha = .84$, $\bar{x} = 5.22$, SD = 1.24
1. Rate your company or organization's overall performance in the last three years with respect to main competitor's performance.
2. Rate your company or organization's overall performance in the last three years with respect to industry performance.
3. Rate your company or organization's overall performance in the last three years with respect to its own stated objectives.

♦ *Scale from 1 to 7, where 1 is "Very Poor" and 7 is "Very Good"*

Table 3.16: Organizational Performance

3.3.8 Job Satisfaction

Job Satisfaction is measured using Judge and colleagues (1998) 5-item scale of "Overall Job Satisfaction". Originally, Judge and colleagues (1998) adapted the items from Brayfield and Rothe's (1951) measure of job satisfaction. We performed a Factor Analysis on the five items, resulting in one factor. With only one factor, the solution cannot be rotated, and we are therefore unable to present a Pattern Matrix with the factor loadings of the items. We can however report their Cronbach's Alpha value of 0.85, which is very similar to the value Judge and colleagues (1998) identified ($\alpha = .88$). We call this variable "Job Satisfaction", and its items can be found in **Table 3.17** below.

JOB SATISFACTION ✪	$\alpha = .85$, $\bar{x} = 5.61$, and SD = 1.28
1. I feel fairly well satisfied with my present job.	
2. Most days I am enthusiastic about my work.	
3. Each day of work seems like it will never end (R).	
4. I find real enjoyment in my work.	
5. I consider my job rather unpleasant (R).	

✪ *Scale from 1 to 7, where 1 is "Strongly disagree" and 7 is "Strongly Agree"*
(R) - Reversed

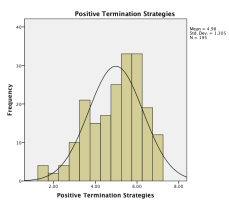
Table 3.17: Job Satisfaction

3.4 Statistical Methods

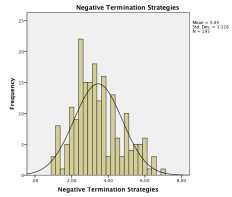
In this thesis, we have used a number of statistical methods, namely Pearson Correlation, Multiple Linear Regression, and Structural Equation Modeling.

3.4.1 Pearson Correlation

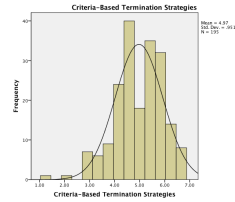
We have used a Pearson bivariate correlation analysis to measure the linear relationship between Positive and Negative Termination Strategies, and the group of innovation climate variables. With a correlation coefficient, the hypothesis can be tested that the correlation is different from zero, i.e. different from no relationship (Field, 2009). A positive correlation indicates that as one variable increases, so does the other, while a negative correlation indicates that as one variable increases, the other decreases (Pallant, 2010). Pearson's correlation coefficient is an accurate measure of the linear relationship between two variables. It requires that the data are interval. All of the original items constituting the variables used in our analyses are measured on Likert-scales of equal intervals, so the requirement is met. Additionally, the sampling distribution needs to be normally distributed and homoscedastic in order for the significance of Pearson's r to be reliable (Field, 2009). The input variables for the correlation analysis are all approximately normally distributed, as is illustrated in **Figure 3.4**. The test for heteroscedasticity is performed on **page 67** and indicates no severe cases of heteroscedasticity in the data. The sampling distribution is both approximately normally distributed and homoscedastic, and can thus be subjected to a Pearson correlation analysis.



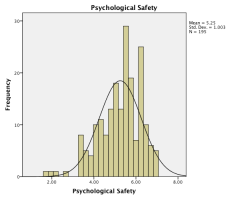
(a) Positive



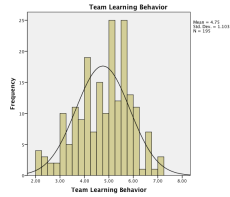
(b) Negative



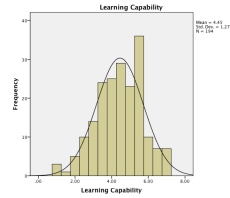
(c) Criteria-Based



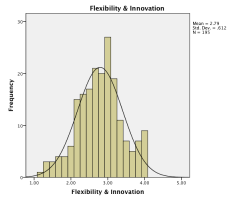
(d) Psychological Safety



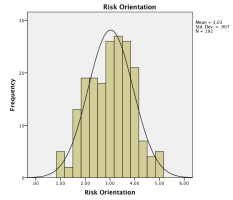
(e) Learning Behavior



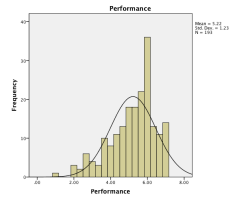
(f) Learning Capability



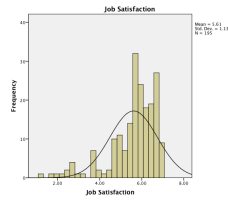
(g) Flexibility



(h) Risk



(i) Performance



(j) Job Satisfaction

Figure 3.4: Normal Distribution of Variables for Pearson Correlation Analysis: (a) Positive Termination Strategies; (b) Negative Termination Strategies; (c) Criteria-Based Termination Strategies;(d) Psychological Safety; (e) Learning Behavior; (f) Learning Capability; (g) Flexibility; (h) Top Management's Risk Orientation; (i) Organizational Performance; and (j) Job Satisfaction.

3.4.2 Multiple Linear Regression Analysis

Multiple linear regression is a more sophisticated extension of the correlation analysis and is used to explore the predictive ability of a set of independent variables on one dependent measure (Field, 2009). Multiple regression is used to establish the relative importance of a set of independent variables on one dependent variable (Bryman & Cramer, 2011; Field, 2009; Pallant, 2010). Each independent variable has a standardized regression coefficient or β associated with it that accounts for its relative importance in explaining the variance in the dependent variable. The variance explained by a model is expressed through R square (R^2).

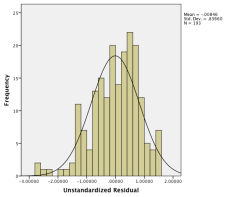
We use multiple linear regression analysis to determine the relative importance of Positive and Negative Termination Strategies in explaining the variance in the dependent innovation climate variables, by comparing β in the resulting models. To learn more about the relative importance of each of the termination strategies on the dependent innovation climate variables, we also perform a stepwise regression analysis with the 17 original strategies as input.

A stepwise regression is a sequential method for model selection and can help screen variables to determine which ones have a significant effect (Walpole, Myers, Myers & Ye, 1998). With stepwise regression, the independent variables are sequentially entered into the model one at a time, based on a statistical criterion. For each step, all the entered variables so far are reassessed to see whether they should be removed or kept in the model before moving on to the next step (Field, 2009; Walpole et al., 1998). This is to make sure that the final model does not contain variables that have been rendered unimportant or redundant because of its relationship with variables entered at a later stage. We use the p-value of F as the stepping method, 0.10 as entry limit, and 0.15 as removal limit.

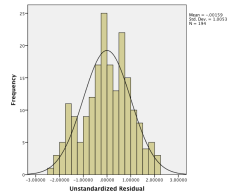
Prerequisites for Multiple Linear Regression Analysis

According to Eikemo and Clausen (2012), there are a number of prerequisites when applying linear regression, such as normally distributed residuals, lack of heteroscedasticity, lack of multicollinearity, no autocorrelation, non-linearity, and no influential points. Some slight violations to the prerequisites were identified for our data set, as detailed in the following sections. However, it is rare to meet all prerequisites perfectly when working with empirical data. The regression models seem overall adequate for further interpretation and discussion.

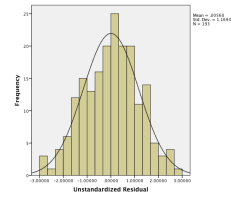
Normally Distributed Residuals A regression model's residuals must be normally distributed (Eikemo & Clausen, 2012). If the residuals deviate a lot from the normal distribution, it will affect the reliability of the t- and F-test in small sample sizes. As **Figure 3.5** illustrates, the dependent innovation climate variables have all approximately, normally distributed residuals. The residuals of Organizational Performance are also normally distributed. The only exception is the model for Job Satisfaction, where the residuals are left-skewed. According to Eikemo and Clausen (2012), the restriction of normally distributed residuals is only a prerequisite for small samples, so we assume that a sample of $N = 195$ is adequately large to void any influence on the reliability of the tests for the Job Satisfaction model.



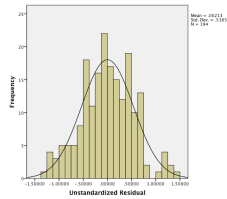
(a) Psychological Safety



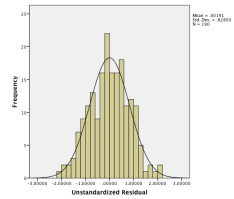
(b) Learning Behavior



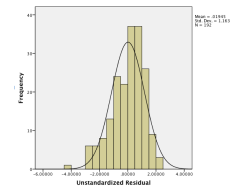
(c) Learning Capability



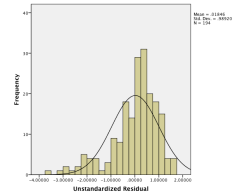
(d) Flexibility



(e) Risk



(f) Performance



(g) Job Satisfaction

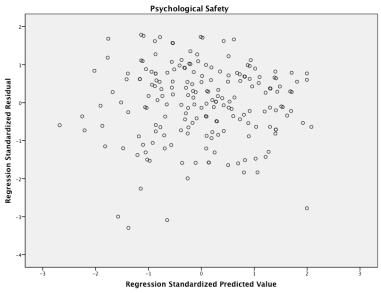
Figure 3.5: Histograms of Residual Distribution for Linear Regression Analysis of: (a) Psychological Safety; (b) Learning Behavior; (c) Learning Capability; (d) Flexibility; (e) Top Management's Risk Orientation; (f) Organizational Performance; and, (g) Job Satisfaction.

Absence of Heteroscedasticity The absence of heteroscedasticity is a prerequisite for the use of both Pearson's *r* and multiple linear regression analysis (Bryman & Cramer, 2011; Eikemo & Clausen, 2012). Heteroscedasticity is when residuals at each level of the predictor variables have unequal variances (Field, 2009).

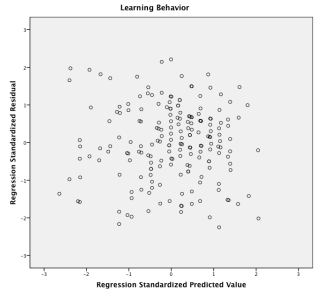
To determine whether the data is heteroscedastic for the regression models, the test by Breusch-Pagan or Koenker can be used (Baltagi, 2011). If the tests are non-significant, the null hypothesis of homoscedasticity cannot be rejected. As indicated in **Table 3.18**, the Koenker test is non-significant for all the dependent variables, except for Job Satisfaction ($p \prec .05$). The Breusch-Pagan test is non-significant for all the variables, except for Job Satisfaction ($p \prec .01$), and Psychological Safety ($p \prec .05$). However, together with the scatterplots of predicted versus residual values (**Figure 3.6**), we conclude that there are no severe cases of heteroscedasticity and that we can proceed with the regressions analysis.

	N	R^2	Df	Breusch χ^2	-Pagan Sig.	Koenker χ^2	Sig.
Psychological Safety	186	.12	17	27.88	.05	22.90	.15
Learning Behavior	186	.09	17	13.21	.72	16.98	.46
Learning Capability	186	.12	17	17.70	.41	22.85	.15
Flexibility	186	.09	17	16.60	.48	17.13	.45
Risk Orientation	186	.10	17	15.62	.55	18.05	.39
Org. Performance	186	.10	17	20.65	.24	17.97	.39
Job Satisfaction	186	.16	17	47.36	.00	29.57	.03

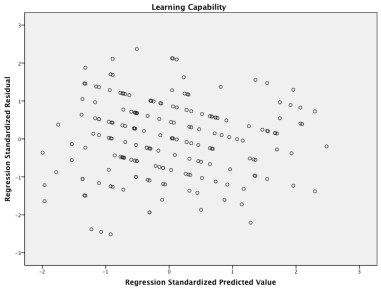
Table 3.18: Breusch-Pagan and Koenker Test for Heteroscedasticity



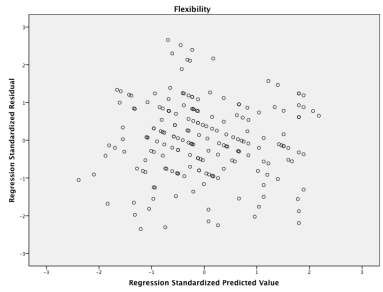
(a) Psychological Safety



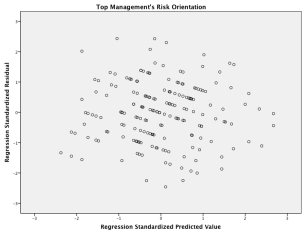
(b) Learning Behavior



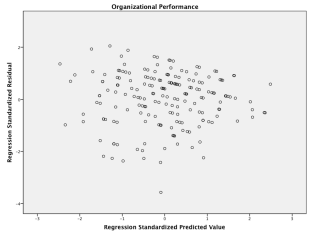
(c) Learning Capability



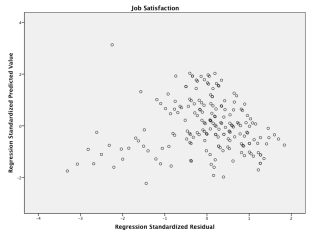
(d) Flexibility



(e) Risk



(f) Performance



(g) Job Satisfaction

Figure 3.6: Scatterplots of Predicted Versus Residual Values for: (a) Psychological Safety; (b) Learning Behavior; (c) Learning Capability; (d) Flexibility; (e) Top Management's Risk Orientation; (f) Organizational Performance; and (g) Job Satisfaction.

Multicollinearity Multicollinearity is correlation between the independent variables. With too large correlations, it will be difficult to discern the effects of the independent variables from each other (Eikemo & Clausen, 2012). A Pearson's *r* of 0.8 is considered an upper limit of collinearity concern (Bryman & Cramer, 2011; Eikemo & Clausen, 2012; Field, 2009). Additionally, the tolerance values and variance inflation factors (VIF) should be close to 1 (Eikemo & Clausen). The highest Pearson's *r* for the pairs of independent variables in our model is 0.42. Additionally, the tolerance values range from .84–1.00 and VIF from 1.00–1.31, both supporting that multicollinearity is unlikely. The statistics are summarized in **Table 3.19**.

Autocorrelation Autocorrelation is when the residuals of two observations in a model are correlated (Field, 2009). If there is autocorrelation, the variance and estimates of standard errors will increase. Autocorrelation can be detected with the Durbin-Watson test. According to Eikemo and Clausen (2012), the Durbin-Watson statistic for the regression should be close to 2.0, and according to Field (2009), it should lie between 1 and 3. For our models, the values for the Durbin-Watson test range from 1.88–2.24, so autocorrelation is not a problem.

Non-Linearity of Parameters We detect no non-linearity in our parameters and it is therefore not necessary to correct any of the regression equations with quadratic terms.

Influential Points (Outliers) We evaluated Cook's D, DfBetas, and Leverage values for the variables to detect any possible influential points (Eikemo & Clausen, 2012). Upon closer inspection, we removed some additional outliers, and were left with a sample size of $N = 195$ for the regression analysis.

	β	R^2	F	Sig.	Tolerance	VIF
Psychological Safety		.300	19.936	<.001		
Delay	-.305**				.892	1.122
Positive Regard	.194**				.939	1.065
Negative Conseq.	-.214**				.899	1.112
Encourage	.174**				.950	1.052
Learning Behavior		.174	13.106	<.001		
Delay	-.178**				.978	1.022
Positive Regard	.334**				.949	1.053
Spin-Out	.147*				.970	1.031
Learning Capability		.161	11.892	<.001		
Delay	-.311*				.933	1.071
Positive Regard	.143*				.971	1.030
Low Priority	.127*				.952	1.051
Flexibility		.248	20.588	<.001		
Delay	-.354**				.892	1.121
Positive Regard	.240*				.977	1.023
Negative Conseq.	-.110				.904	1.106
Risk Orientation		.172	12.754	<.001		
Delay	-.238**				.958	1.043
Pilot Fails	.271**				.997	1.003
Quiz & Challenge	-.184**				.960	1.042
Org. Performance		.133	7.116	<.001		
Delay	-.156*				.878	1.139
Low Priority	-.190**				.933	1.072
Negative Conseq.	.183*				.892	1.122
Pilot Fails	.124*				.966	1.035
Job Satisfaction		.247	12.134	<.001		
Delay	-.379**				.842	1.187
Positive Regard	.206**				.895	1.065
Pilot Fails	-.114*				.900	1.112
Negative Conseq.	-.160*				.790	1.266
Intra-Org P.	.138*				.761	1.315

Table 3.19: Tolerance and VIF Values for the Linear Regression Models

3.4.3 Structural Equation Modeling (SEM)

Structural equation modeling (SEM) is a statistical methodology where the causal processes are represented by structural (i.e. regression) equations, and where these equations are visualized in a model (Byrne, 2010). A structural equation is "an equation representing the size and direction of the relationship between two or more variables" (Bryman & Cramer, 2011, p. 361). With SEM, we can simultaneously investigate the relationships between several independent and dependent variables, which is an extension of the multiple regression analysis. The model is tested statistically "to determine the extent to which it is consistent with the data" (Byrne, 2010, p.3). The SEM analysis reports standardized regression weights (β), and the values for the squared multiple correlations (SMC). SMC compares to the value of R^2 we know from the regression analysis. The parameters are estimated with the method of maximum likelihood. "If goodness of fit is adequate, the model argues for the plausibility of postulated relations among variables" (Byrne, 2010, p.3). We measure the fit of the model to the data with the χ^2 test and the fit indices RMSEA[6], CFI[7], and GFI[8].

A non-significant p-value for the χ^2 test, a RMSEA below .05, and fit indices above .95 indicate a model of good fit (Browne & Cudeck, 1993; Hox & Bechger, 1998; Byrne, 2010). Browne and Cudeck (1993) also suggest that a RMSEA value of .08 or less would indicate a reasonable error of approximation, but do not recommend employing a model with a RMSEA greater than 0.1. It is also recommended to check the 90% confidence interval for RMSEA. Ideally, the lower value is close to zero, and the upper value not very large, i.e. less than .08. The test of close fit (pclose) provides the p-value for testing the null-hypothesis that the population RMSEA is no larger than .05. This p-value should be larger than .50 in order for the fit of the model to be "good" (Byrne, 2010).

We create a model with Positive and Negative Termination Strategies as indepen-

[6]RMSEA: Root mean square error of approximation
[7]CFI: Comparative Fit Index
[8]CFI: Goodness of Fit Index

dent variables. The theoretical reasoning for the model is outlined in the Results chapter, in **Section 4.7** on page 107.

Chapter 4

Results

The goal of our survey has been to investigate which termination strategies are the most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating. The discussion of the results is based on the literature review.

4.1 Sample Characteristics

The sample consists of 195 respondents, where 81% are male, and 19% female. 44.6% of the respondents are American, 11.3% Scandinavian, and the remaining 55.9% is composed of other various nationalities. 35.9% of the respondents are working in the energy industry. A majority of the respondents have completed higher education. 57% of the surveyed respondents hold a Master's Degree and 10% are PhDs, see **Table 4.1**.

	Frequency	Percent	Valid Percent
High School	3	1.5	1.6
Bachelor	61	31.3	31.8
Master	109	55.9	56.8
PhD	19	9.7	9.9

Table 4.1: Sample Characteristics of the Survey – Education Level

Respondents' average age is 40 years old, see **Table 4.2**. They have approximately 16 years of work experience, where 8.6 of those years are within their current organization. However, most respondents have only been 1-4 years in their current unit. **Table 4.2** shows that during the last 12 months, approximately 22 ideas were screened, while 6 ideas were developed in respondents' units. In addition, our survey reveals that the number of ideas screened and developed are highest in units with 10-24 members.

	$\bar{x}$	Median	Min	Max	SD	N
Age	39.8	38	22	70	10.3	190
Work Experience	16.3	15	0.5	45	9.9	194
Years in Current Organization	8.6	6	0	40	7.3	193
Years in Current Unit	4.8	3	0	35	5.3	193
Idea Screened	21.9	10	0	1000	78.9	176
Idea Developed	6.1	3.5	0	200	15.6	182

Table 4.2: Sample Characteristics of the Survey – Age and Work Experience

Most respondents work in smaller units with 1-9 members (42%) or 10-24 members (30%), see **Table 4.3**. 24% of respondents work in an R&D unit, 11% work in an Executive Office, and 14% work in Marketing and Sales units, see **Table 4.4**.

Unit Size	Frequency	Percent	Valid Percent
1-9	81	41.5	42.2
10-24	57	29.2	29.7
25-49	20	10.3	10.4
50-199	19	9.7	9.9
200-499	10	5.1	5.2
500-999	3	1.5	1.6
1000-2499	1	.5	.5
2500-4999	1	.5	.5

Table 4.3: Sample Characteristics of the Survey – Unit Size

	Frequency	Percent	Valid Percent
Executive Office	22	11.3	13.1
Marketing	16	8.2	9.5
Sales	12	6.2	7.1
Production	5	2.6	3
R&D	47	24.1	28
Finance	1	.5	.6
HR	1	.5	.6
PR/Public Affairs	1	.5	.6
Customer Support	3	1.5	1.8
Distribution	1	.5	.6
Operations	18	9.2	10.7
Other	36	18.5	21.4

Table 4.4: Sample Characteristics of the Survey – Function of Unit

After filtering for innovation experience, 99% of respondents have been a member of a project team that focused on innovation during the last 5 years. 74% of respondents have lead such a project team during the last 5 years.

4.2 Prevalence of Termination Strategies

The first part of our research question is concerned with investigating the prevalence of the 17 termination strategies. Respondents were asked to decide on the likelihood of occurrence for each termination strategy independently of the other strategies, and on a seven point Likert scale. We define prevalence as the percentage of respondents who answered that a certain strategy was "likely" or "very likely" to occur in their unit. **Figure 4.1** displays the prevalence of each termination strategy. **Table 4.5** summarizes the descriptive statistics of the variable Prevalence for each strategy. Sample means above 4.0 represent a higher likelihood of occurrence, whereas sample means below 4.0 represent a lower likelihood of occurrence. There is a higher prevalence of the strategies Cost (63.6%) and Positive Regard (53.6%), and a low prevalence of the strategies Tease & Humiliate (6.7%), Spin-Out (7.7%), and Negative Professional Consequences (16.9%).

Cost (63.6%) is the most prevalent termination strategy, see **Table 4.5**. Limited financial resources are a constraint in all organizations. It is therefore natural that a strategy naming cost as the reason for termination is frequently applied. The use of Cost can make the communication of the termination decision easier for managers. By pointing to an objective evaluation criterion, decision-makers can avoid having to explain other possible causes for termination that might affect proponents more, such as lack of management support for the idea, or in general poor performance of the proponents. We argue that proponents can more easily accept the use of Cost, because it clearly states how their ideas or project initiatives fail to meet certain cost criteria, and avoids a reasoning that could threaten their perceptions of own capabilities and self-worth. Cost is therefore a strategy that is likely to be accepted by both proponents and decision-makers, and it is also frequently applied in the surveyed organizations.

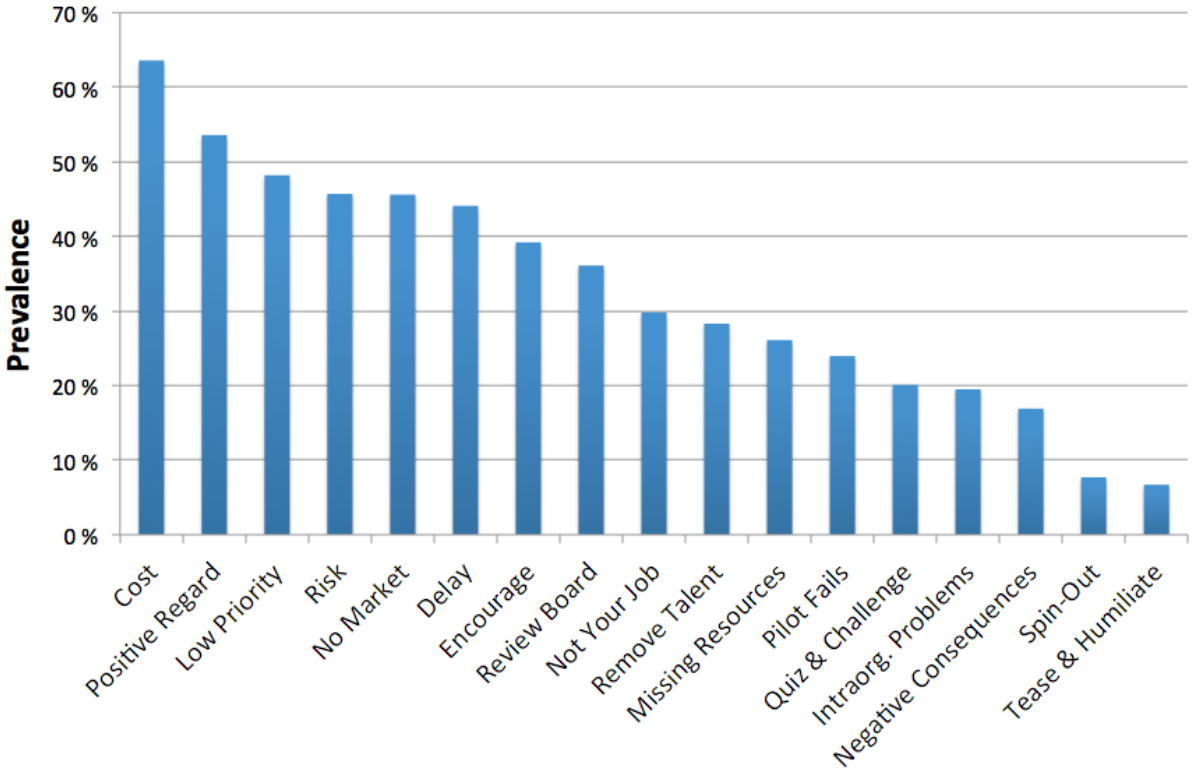


Figure 4.1: Prevalence of the 17 Termination Strategies

	Prevalence (%)	$\bar{x}$	Median	SD
Cost	63.6	5.54	6	1.43
Positive Regard	53.6	5.17	6	1.66
Low Priority	48.2	4.96	5	1.72
Risk	45.7	5.06	5	1.55
No Market	45.6	5.04	5	1.52
Delay	44.1	4.82	5	1.86
Encourage	39.2	4.80	5	1.69
Review Board	36.1	4.25	5	1.96
Not Your Job	29.8	4.08	5	1.90
Remove Talent	28.3	4.03	4	1.93
Missing Resources	26.1	3.95	4	1.87
Pilot Fails	24.0	3.75	4	1.95
Quiz & Challenge	20.1	3.85	4	1.79
Intra-Org. Problems	19.5	3.71	3	1.84
Negative Consequences	16.9	2.80	2	2.01
Spin-Out	7.70	2.62	2	1.61
Tease & Humiliate	6.70	2.12	1	1.74

Table 4.5: Descriptive Statistics of Prevalence

Positive Regard (53.6%) has the second highest prevalence of the 17 termination strategies (**Table 4.5**). Positive Regard offers proponents a fair and respectful hearing of their project initiative, followed by thorough feedback. Common for many large organizations are established procedures for performance assessment. Some of these features of Positive Regard can be an established part of the assessment practice in many organizations. Since this strategy also gives proponents a fair and respectful hearing, proponents are more prone to easily accept the termination decision, making the strategy easier to use for decision-makers. The prevalence of Positive Regard can thus be linked to an organization's general practice for performance assessment.

Low Priority (48.2%), Risk (45.7%), No Market (45.6%), and Delay (44.1%) are also prevalent in the surveyed units, see **Table 4.5**. Risk, and No Market are both categorized as Criteria-Based Termination Strategies, so their presence in organizations follows the same logic as that for Cost. Low Priority is also a consequence of the resource constraints that organizations face. Prioritizing between new ideas and project initiatives is a difficult, but necessary part of decision-makers' responsibilities, which may explain the relatively high prevalence of Low Priority. Decision-makers may think that an acceptable way of termination is telling proponents that a project initiative is ranked low, or that the organization is already pursuing too many ideas. However, if proponents suspect that the termination of their project initiative is due to political play in the organization, they may think that even more advocating and fighting for their idea is necessary for success. This can in turn make communicating termination decisions even more challenging for decision-makers in the future.

The relatively high prevalence of Delay (44.1%) is also interesting (**Table 4.5**). The underlying items of Delay are typical of passive or laissez-faire leadership, where management postpones decision-making or finds bureaucratic reasons for slowing down a project initiative. Such passive leadership behavior is positively correlated with role ambiguity, and conflicts with co-workers, and there is often no attempt to motivate proponents or satisfy their needs (Skogstad et al., 2007). Passive leadership is not recommended because proponents' engagement and drive will run low in lack of management support. The high prevalence of Delay is however not surprising. The delicate situation of terminating someone's brainchild, and the fear of threatening proponents' perceptions of own capabilities and self-worth, are typical reasons for such absent, or passive leadership. It follows that Delay can be seen as an easy and comfortable way of phasing out undesired project initiatives instead of communicating the actual reason for the termination decision. However, the consequences are significant, regardless of the intent behind its use. Aasland and colleagues (2010) find a prevalence of 21.2% of passive leadership behavior in Norwegian organizations. Leadership behavior encompasses termination strategies, however the prevalence of Delay that we identify is not directly comparable

to Aasland and colleagues' findings. We can only emphasize that a substantial prevalence of Delay is not unreasonable due to similar results in previous studies.

Encourage Future Initiatives (39.2%) has also a relatively high prevalence in the surveyed organizations (**Table 4.5**). Decision-makers using this strategy encourage proponents to continue working and to come up with new project initiatives even though the one they are currently proposing is terminated. Encourage Future Initiatives is thus likely to occur in organizations because decision-makers would want to keep proponents motivated to come back with new ideas and continue working for the organization. This strategy can also be easier for decision-makers to use if we compare it to Positive Regard. It does not require the same effort in terms of offering thorough feedback to proponents, or time in terms of listening to proponents explaining their idea before making a final decision. Additionally, Encourage Future Initiatives is unlikely to threaten proponents' negative or positive face (Brown & Levinson, 1987; Daly et al., 2012). In sum, Encourage Future Initiatives is a quick, positive and easy strategy for decision-makers to employ, which can explain its prevalence in the surveyed organizations.

Tease & Humiliate (6.7%) and Negative Professional Consequences (16.9%) are more unlikely to occur in organizations, see **Table 4.5**. Tease & Humiliate and Negative Professional Consequences are both negative termination strategies. Common for them are destructive and abusive leadership, as well as personal discouragement towards proponents. It follows that such behavior can be destructive for proponents, and can subsequently have detrimental effects for the organization and its competitive performance level. A reason for the low prevalence in organizations might be the common perception that this is unwanted and unproductive behavior. Aasland and colleagues (2010) have proved that such destructive behavior is present in organizations in the form of "tyrannical" (3.5%) or "derailed" (9%) leadership behavior, but with a low occurrence. Since these strategies are strongly management-driven, their occurrence might be more closely linked to particular individuals rather than an organizational culture as a whole.

Spin-Out (7.7%) is also very unlikely to occur (**Table 4.5**). With Spin-Out, proponents are told that they can pursue the project initiative outside of the organization, or that they can try to convince an outside entity to pursue the idea. There could be several reasons for this strategy's low prevalence. Firstly, pursuing an idea outside of the organization may not be possible if the organization is unwilling to give away or sell project initiatives of a potential value to either proponents or competitors. A second reason could be that decision-makers do not want to run the risk of proponents leaving the organization to work with the idea elsewhere.

To sum up, Cost (63.6%) and Positive Regard (53.6%) are the most prevalent termination strategies in this study. By contrast, Tease & Humiliate (6.7%), Spin-Out (7.7%), and Negative Professional Consequences (16.9%) are the least prevalent termination strategies.

4.3 Effectiveness of Termination Strategies

The second goal of our thesis has been to investigate the effectiveness of the 17 termination strategies. Respondents were asked to decide how likely a strategy is to actually stop proponents from continuing with their ideas on a seven point Likert scale. We define effectiveness from the sample mean of their responses. Sample means above 4.0 represent a higher likelihood of effectiveness, whereas sample means below 4.0 represent a lower likelihood of effectiveness. **Figure 4.2** displays the effectiveness of each termination strategy. **Table 4.6** summarizes the descriptive statistics of the variable Effectiveness for each strategy.

When asked to rate the likelihood of effectiveness, respondents have already been introduced to the purpose of each strategy as that of ending a project initiative. When rating each strategy's effectiveness with a sample mean above 4.0, as well as a median of 4 or higher, respondents confirm each strategy's ability to end project initiatives. This partially explains why there is relatively little difference in the strategies' perceived effectiveness. Another aspect of effectiveness is however whether the strategy will best make use of an organization's limited resources in the action of termination. This is a very complex question to answer, and it is possible that this aspect is not entirely reflected in respondents' answers. If respondents were taking this side of effectiveness into consideration, the strategies might have been more diversified on the effectiveness scale. To sum up, we interpret respondents' answer to this question to mean that all strategies are, on average, perceived as effective in actually achieving their goal of terminating a project initiative. Although the strategies are rated relatively close, some strategies stand out as more effective, and those are Negative Professional Consequences ($\bar{x} = 5.45$), Positive Regard ($\bar{x} = 5.36$), Cost ($\bar{x} = 5.15$), Tease & Humiliate ($\bar{x} = 5.14$), and Review Board ($\bar{x} = 5.04$).

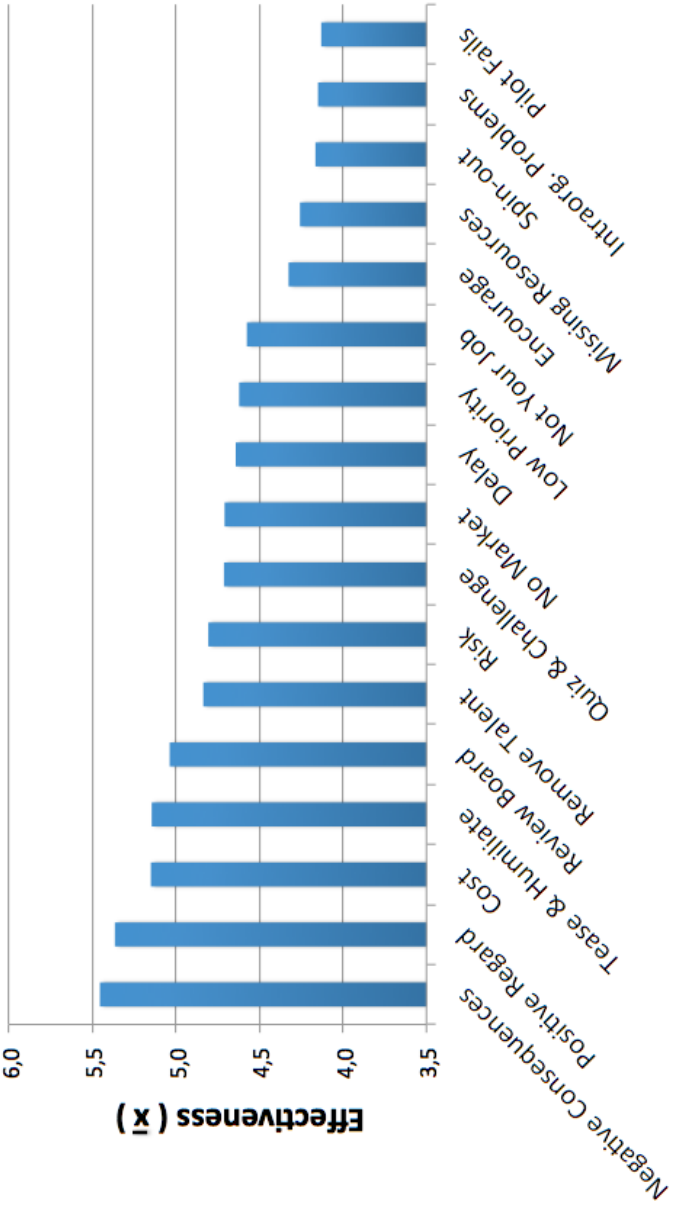


Figure 4.2: Effectiveness of the 17 Termination Strategies

	Effectiveness			Continued Innovation
	$\bar{x}$	Median	SD	$\bar{x}$
Negative Consequences	5.45	6	1.75	2.47
Positive Regard	5.36	6	1.74	5.31
Cost	5.15	5	1.46	4.53
Tease & Humiliate	5.14	6	2.02	1.96
Review Board	5.04	6	1.62	4.24
Remove Talent	4.84	5	1.52	3.48
Risk	4.81	5	1.49	4.61
Quiz & Challenge	4.71	5	1.59	3.59
No Market	4.71	5	1.51	4.56
Delay	4.64	5	1.67	3.39
Low Priority	4.62	5	1.56	3.99
Not Your Job	4.57	5	1.62	3.65
Encourage	4.32	5	1.68	4.90
Missing Resources	4.26	4	1.72	4.29
Spin-Out	4.16	4	1.76	3.97
Intra-Org. Problems	4.15	4	1.57	4.22
Pilot Fails	4.13	4	1.81	4.77

Table 4.6: Descriptive Statistics of Effectiveness

4.4 Continued Innovation Versus Effectiveness

To just look at how effective a termination strategy is at stopping project initiatives, holds little value without comparing it to the impact it has on proponents motivation for continued innovation. This is particularly true since all the termination strategies have been rated as effective ($\bar{x} > 4.0$). **Figure 4.3** shows a plot of Effectiveness against Continued Innovation, i.e. proponents' willingness to continue innovating after a termination.

We create a grid that nuances the picture of the termination strategies and gives better insight into each strategy's effectiveness and impact on proponents' willingness to continue innovating after a termination. Note that the x-axis measures the sample mean of Effectiveness, and starts with the value 4.0. The y-axis measures the sample mean of Continued Innovation and starts with the value 1.5. The Negative Termination Strategies are colored red and the Positive Termination Strategies are colored green. The size of the points represents the prevalence of each strategy. The vertical dotted line accentuates the more effective strategies to the right of the vertical line, and the horizontal dotted line accentuates the strategies more likely to positively influence proponents' continued innovation above the horizontal line. The most prominent strategies in **Figure 4.3** are the Positive and Negative Termination Strategies, as well as the cluster of criteria-based termination strategies in the cross-point of the dotted lines.

Managers will have to prioritize differently in the short-term versus the long-term perspective in order to maximize the outcome for the organization. In a long-term perspective, managers should emphasize proponents' willingness to continue innovating. This is the long-term value-creating asset, which will make out the organization's competitive advantage. In a short-term perspective, it can be more important for the organization to effectively end a project initiative than to accommodate all involved proponents. With an organization's limited amount of resources, it is important that undesired projects do not siphon off time, attention, and resources from the projects that are actively pursued. Termination then becomes an act of balancing the organization's short term needs for having projects terminated, and the organizations long term need to have organizational members continue to innovate.

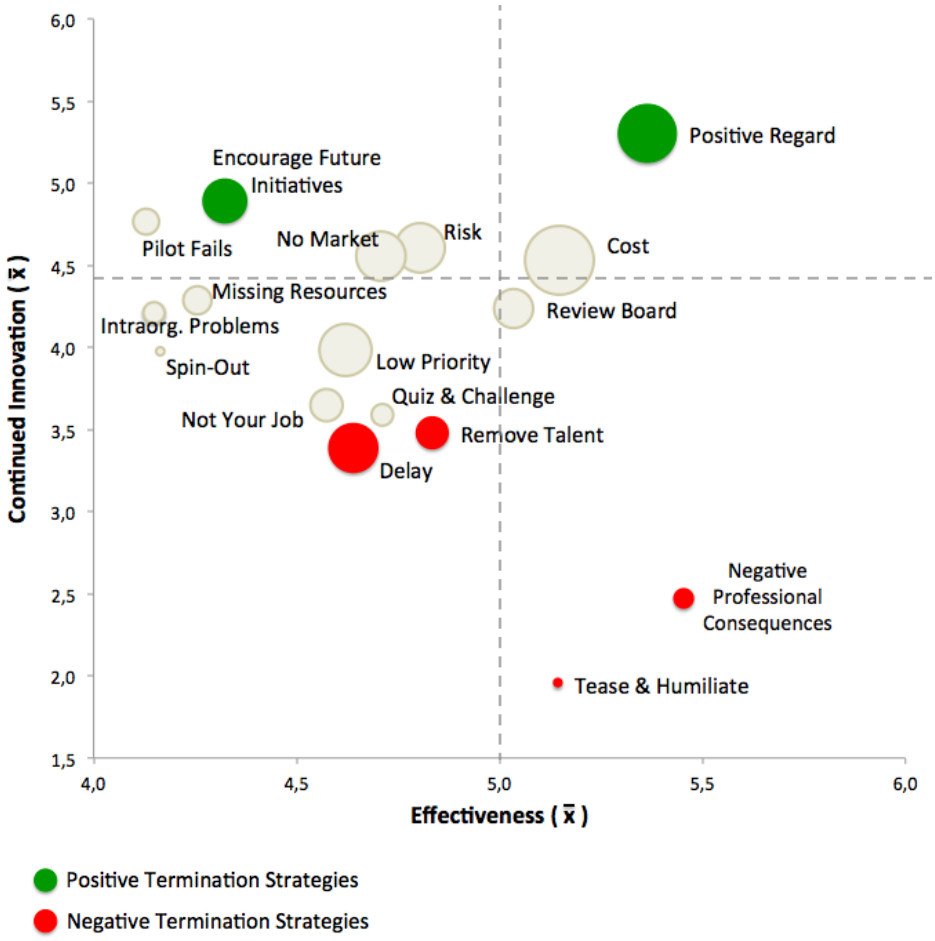


Figure 4.3: Termination Strategies: Continued Innovation versus Effectiveness

In **Figure 4.3**, the upper right quadrant represents the optimal combination of simultaneously high scores of Effectiveness and Continued Innovation. In this quadrant we identify Positive Regard and Cost. These strategies are considered optimal in terms of stopping proponents from working on undesired projects and keeping them motivated for continued innovation. We argue that these strategies are optimal both in the short- and long-term perspective, because they do not sacrifice either contin-

ued innovation or effectiveness at the expense of the other. The upper left quadrant is the second best combination. It upholds a high score of Continued Innovation, but is however less effective. In this quadrant, we identify Encourage Future Initiatives, Risk, No Market, and Pilot Fails. These termination strategies will be good in the long term, but they can be more challenging for effectively ending projects, which is a concern in the short term.

The lower right quadrant scores high on Effectiveness, but lower on Continued Innovation. We identify Tease & Humiliate, and Negative Professional Consequences, see **Figure 4.3**. Review Board is also positioned in this quadrant, however with a much higher value of Continued Innovation. These termination strategies will achieve the short-term goal of effectively ending projects, however some of them can seriously damage proponents' willingness to continue innovating in the organization.

The lower left quadrant is the least optimal combination of Effectiveness and Continued Innovation. We especially note the presence of Delay, Remove Talent, Quiz & Challenge, Not Your Job, and Low Priority. These termination strategies are neither capable of meeting the organization's short-term needs of having projects effectively ended, nor the long-term need to motivate proponents for continued innovation.

Respondents rate Positive Regard as the second most effective termination strategy. Positive Regard stands out as the most optimal combination of effectiveness and continued innovation, see **Figure 4.3**. The strategy offers proponents thorough feedback explaining the business or technical reasons for why their idea or project initiative is being terminated. Decision-makers' ability to listen as well as showing empathy can make the termination decision easier to accept for proponents. Proponents can obtain a better understanding of the termination decision if they are given insight into the evaluation process. It will give them a greater feeling of ownership to the termination decision, thus making it easier to accept and further resume work on other innovative projects. This is represented by Positive Regards' high score of both Continued Innovation and Effectiveness. It should also be noted that having an open dialogue supports the interpersonal relationship of mutual re-

spect between proponents and decision-makers. Consequently, proponents can be more prone to respect the termination decision, and less willing to go against it by continuing work on the project initiative. Positive Regard is thus beneficial in terms of terminating project initiatives and for keeping proponents motivated for continued innovation in the organization. We note that the other Positive Termination Strategy, Encourage Future Initiatives, is positioned in the upper left corner due to its lower effectiveness. Both strategies are likely to be used in respondents' units, as illustrated by the size of their respective points in the grid (**Figure 4.3**). The risk of Encourage Future Initiatives is that proponents can misinterpret the encouragement, and feel inspired to give their current idea another try. As such, it is not contradictory that Encourage Future Initiatives is less effective than Positive Regard. Encourage Future Initiatives also scores slightly lower than Positive Regard on continued innovation, as encouragement alone does not fulfill the need of being listened to and of processing the termination decision.

Figure 4.3 illustrates that there is a cluster of Criteria-Based Termination strategies in the cross-point of the quadrants. These are Cost, Review Board, Risk, and No Market. They all have medium scores of Effectiveness, which can be explained by their objective evaluation criteria, and their easy acceptance by proponents. Review Board entails telling proponents that an independent review board has evaluated and rejected the project initiative. In larger organizations, such independent review boards can be steering committees or management groups. An external review board can also apply the strategies of Cost, Risk and No Market in their communication of a termination decision. Proponents can be less willing to go against a termination decision if it originates from such an established authority in the organization. Because these Criteria-Based Termination Strategies link the termination decision to more external causes, such as resource constraints, rather more internal causes, such as lack of management support, we have earlier argued that they have less negative effect on proponents' beliefs in own capabilities and perceptions of self-worth (Weiner, 1986), helping their motivation for future innovative work. The scores of continued innovation can thus be seen in terms of the accommodating effects in preserving proponents' face-saving needs of being positively evaluated

and maintaining a positive self-image (Brown & Levinson, 1987). Consequently, using Cost, Review Board, Risk and No Market as termination strategies can be beneficial in terms of effectively ending ideas and project initiatives, while keeping proponents motivated for future innovative work. The strategies are likely to be used in respondents' units, as illustrated by the size of their respective points in the grid, see **Figure 4.3**.

The high effectiveness of Negative Professional Consequences and Tease & Humiliate can be explained by how these strategies attack proponents' motivation for a project initiative and threaten their confidence in own abilities. Most people have a low tolerance for humiliation, rudeness, and inconsiderate actions. If exposed to such behavior, proponents may lose the willingness to continue working on, or advocate for their ideas. This argument is clearly supported by Tease & Humiliate and Negative Professional Consequences' low score on Continued Innovation. However, some managers might argue that using Negative Professional Consequences can sometimes be necessary to effectively stop proponents from pushing forward with their ideas. Knowing that some proponents are almost unstoppable when it comes to their brainchild, and despite previous efforts of termination, directly threatening to hurt their career might feel like the only way to deter them. However, our analysis shows that Positive Regard is rated on the same level of effectiveness as Negative Professional Consequences. Additionally, the positive effects of Positive Regard on continued innovation are not achieved at the expense of effectiveness. There is thus no need to resort to Negative Professional Consequences instead of using Positive Regard for effectively ending project initiatives. We note that Negative Professional Consequences and Tease & Humiliate are not very likely to be used in respondents' units, as illustrated by the relative small size of their respective points in the grid (**Figure 4.3**). Regardless of their effectiveness or currently low presence in organizations, Tease & Humiliate and Negative Consequences are not beneficial for the organization, considering their impact on proponents, and on future innovative activities.

Delay is positioned in the lower left quadrant, and it represents the least optimal combination of effectiveness and continued innovation. Remove Talent is very closely positioned to Delay, also making it one of the less optimal strategies. Both Delay and Remove Talent are passive approaches. They represent absent or careless leadership, likely to create high levels of interpersonal stressors, role ambiguity, and conflicts (Skogstad et al., 2007). Additionally, they damage proponents' engagement and drive, which is detrimental for the organization's future innovation projects and idea generation. Delay and Remove Talent are therefore not recommended strategies. With this in mind, we especially accentuate the relatively large size of the point representing the prevalence of Delay in respondents' units.

We notice the cluster of Quiz & Challenge, Low Priority, and Not Your Job (**Figure 4.3**). They are positioned in the vicinity of Delay and Remove Talent, but they are not characterized as Negative Termination Strategies. All three of the strategies have certain dualities. Decision-makers might feel that they name objective criteria when they apply Not Your Job or Low Priority. Proponents are however likely to perceive these strategies in a more negative way, because they feel that their effort and commitment are not fully acknowledged. The relatively low score on continued innovation supports this argument. Low Priority can remind proponents of the political tug-of-war within organizations, where the right advocate for an idea can be more important than the actual quality of the idea itself (Daly, 2011). Proponents can thus perceive Low Priority in a more negative way, thinking that they could have done more in terms of advocating for their ideas themselves, or in terms of identifying and allying themselves with higher-ranking advocates for their ideas. If proponents feel that the termination decision is more due to political reasons than the quality of the idea, it may also make the termination decision more difficult to cope with. We point out the relatively high presence of Low Priority in respondents' units, as illustrated by the size of its point in the grid. With this possible negative side to it, managers should be more wary of using Low Priority. Quiz & Challenge is accommodating by inviting to an active dialogue. However, proponents can also perceive Quiz & Challenge as negative when they see that its main goal is to make them give up on their ideas, and as the questioning can be

quite uncomfortable. As is visible in **Figure 4.3**, there are other strategies than this cluster of dual strategies that are more optimal in terms of continued innovation and effectiveness.

Pilot Fails is rated as the least effective termination strategy, see **Figure 4.3**. It has also a relatively low prevalence in the surveyed organizations. When allowing proponents to continue working on their idea and creating a pilot or a prototype, decision-makers do not explicitly require activities related to the project to stop. We therefore did not expect Pilot Fails to be rated as effective compared to the other strategies. The Spin-Out strategy is also considered as less effective. The reason can be found in its characteristics of decision-makers telling proponents that they can pursue the project initiative outside of the organization. Since Spin-Out does not require the idea itself to be killed, we did not expect that respondents would rate this strategy as very effective either. The strategy is also unlikely to be used in the respondents' units.

To sum up, we find that Negative Professional Consequences ($\bar{x} = 5.45$), Positive Regard ($\bar{x} = 5.36$), Cost ($\bar{x} = 5.15$), Tease & Humiliate ($\bar{x} = 5.14$), and Review Board ($\bar{x} = 5.04$) are the most effective strategies in the surveyed organizations. Bearing in mind that only studying the termination strategies' effectiveness holds little value without comparing it to the impact it has on proponents' motivation for continued innovation, we compared the strategies in a grid of Effectiveness versus Continued Innovation. We find that Positive Regard and Cost have the most optimal combination of the two dimensions, and are recommendable both in the short- and long-term perspective. Negative Professional Consequences is very effective, but at the expense of proponents' willingness to continue innovating. Additionally, we accentuate Delay as the least optimal strategy, followed by Remove Talent, Tease & Humiliate, and Negative Professional Consequences.

4.5 Proponents' Willingness to Continue Innovating

In **Section 2.4** we argued that the Positive and Negative Termination Strategies are likely to impact proponents' willingness to continue innovating in terms of how they affect the organizational climate for innovation. In this section, we present the results from the correlation analysis between the Positive and Negative Termination Strategies respectively, and the innovation climate variables (dependent variables): Psychological Safety and Learning Behavior adapted from Edmondson (1999), Flexibility adapted from (Patterson et al., 2005), Learning Capability (Hull & Covin, 2010), and Top Management's Risk Orientation (Jaworski & Kohli, 1993). We also include the variables Criteria-Based Termination Strategies[1], Organizational Performance (De Luca, Verona, & Vicari, 2010), and Job Satisfaction (Judge, Locke, Durham, & Kluger, 1998) for additional insight.

Psychological safety is conceptualized as a shared belief that a team is safe for interpersonal risk taking, and that there is mutual respect and trust among team members (Edmondson, 1999). Flexibility measures an organization's orientation toward change and the extent of encouragement and support for new ideas and innovative approaches (Patterson et al., 2005). Learning behavior is defined as "activities carried out by team members through which a team obtains and processes data that allow it to adapt and improve" (Edmondson, 1999, p. 351). Learning capability measures an organization's ability to develop new knowledge-based resources and skills needed to offer desired new products (Hull & Covin, 2010). Top Management's Risk Orientation can be defined as the extent to which top management understands the risk and uncertainty associated with innovation, and expects and encourages proponents to take risks in their work (Amabile et al., 1996; Im et al., 2012; Parnes & Meadow, 1959).

The variables Positive and Negative Termination Strategies are the composite variables of groups of termination strategies as developed in **Section 3.2**. We repeat the composite items for these variables here in **Table 4.7**.

[1]The Criteria-Based Termination Strategies include the termination strategies Cost, Review Board, Risk, and No Market, see Section 3.2.

POSITIVE TERMINATION STRATEGIES
Positive Regard: The proponents explain the project initiative and are given a fair and respectful hearing. After decision-makers listen carefully they offer thorough feedback explaining the business or technical reasons why the project initiative is going to be stopped.
Encourage Future Initiatives: Proponents are encouraged to continue working and come up with new project initiatives even though the one they are currently proposing is terminated.
NEGATIVE TERMINATION STRATEGIES
Tease & Humiliate: Proponents are teased, humiliated, and their motivations for pursuing the project initiative are attacked.
Negative Consequences: Proponents are told that continuing to push their project initiative would negatively affect their careers or have negative consequences for them.
Delay: Management postpones decision-making or finds bureaucratic reasons for slowing down the project initiative.
Remove Talent: Key talent related to the project initiative is not assigned to the initiative, or is reassigned to other project initiatives; executive sponsors move or leave, or project initiative is given to executives who do not support the project initiative.

Table 4.7: The Composite Variables Positive and Negative Termination Strategies

The results of the Pearson correlation analysis (N = 195) are summarized in **Table 4.8**. Cronbach's alpha values for each variable is displayed on the diagonal in bold. In the following subsections, we will present the analyses in more detail.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Positive T. Strategies	4.98	1.31	**.36**									
2. Negative T. Strategies	3.44	1.32	-.18**	**.64**								
3. Criteria-Based T. S.	4.97	0.95	.12*	.27**	**.55**							
4. Psychological Safety	5.25	1.00	.33**	-.45**	-.05	**.55**						
5. Learning Behavior	4.75	1.10	.33**	-.20**	-.01	-.05	**.77**					
6. Learning Capability	4.45	1.28	.09	-.23**	-.11	.38**	.49**	**.82**				
7. Flexibility	2.79	0.61	.27**	-.36**	-.07	.63**	.62**	.61**	**.86**			
8. Risk Orientation	3.03	0.91	.15*	-.20**	-.01	.25**	.31**	.47**	.42**	**.81**		
9. Organizational Perf.	5.22	1.24	.14*	-.28**	-.10	.43**	.38**	.43**	.37**	.37**	**.84**	
10. Job Satisfaction	5.61	1.13	.24**	-.33**	.03	.50**	.44**	.32**	.49**	.19**	.32**	**.85**

**. Correlation is significant at the 0.01 level (1-tailed).
*. Correlation is significant at the 0.05 level (1-tailed).
Cronbach's alpha is displayed on the diagonal (bold).
N: Sample size varies from 192 to 195, according to the specific bivariate analysis.

Table 4.8: Hypotheses Testing: Pearson's Correlations

4.5.1 Correlation Analysis - Positive Termination Strategies

The Positive Termination Strategies have a significant, positive correlation with Psychological Safety ($r = .33$), Learning Behavior ($r = .33$), Flexibility ($r = .27$), and Top Management's Risk Orientation ($r = .15$) see **Table 4.8**. Note that all correlations are significant at the 0.05 level. This supports hypotheses H1a, H2a, H4a, and H5a. The correlation analysis also shows that the Positive Termination Strategies do not have a significant, positive correlation with Learning Capability ($r = .09$). Therefore, hypothesis H3a is not supported.

As indicated by the positive correlation with Psychological Safety, organizations using the Positive Termination Strategies are also likely to have an interpersonally safe environment where proponents are comfortable being themselves. This promotes new ideas, experimenting, and seeking feedback and help. The positive correlation with Learning Behavior indicates that learning is ensured in organizations where Positive Termination Strategies are used. Proponents are likely to feel trusted and recognized, and the interpersonal risk is perceived as sufficiently low so that they are willing to discuss problems, admit errors, or promote new ideas during team learning activities (Edmondson, 1999). We also argue that the positive correlation with Psychological Safety and Learning Behavior support our argument that the Positive Termination Strategies can create a tolerance for failure and terminations in the organization, helping proponents to overcome a termination.

We have earlier argued that being flexible can be beneficial for organizations, especially in terms of how it facilitates innovation. The positive correlation with Flexibility shows that organizations using the Positive Termination Strategies are capable to change and adapt in order to meet a challenging environment. The correlation also indicates that managers in such organizations are willing to change their ways of doing things for translating proponents' ideas into concrete business results.

The Positive Termination Strategies are not positively correlated with Learning Capability at a significant level. This is the only hypothesis that is not supported.

We note that the Negative Termination Strategies are negatively correlated with Learning Capability, and we thus propose that it is not the Positive Termination Strategies that promote Learning Capability, but the lack of the Negative Termination Strategies. We do however find it surprising that the hypothesis is not supported, especially when we find that Positive Termination Strategies and Learning Behavior are significantly correlated, as well as the fact that Learning Behavior and Learning Capability are significantly correlated. With the sample size of N = 195, we are careful to conclude on the lack of Learning Capability in organizations using Positive Termination Strategies, and propose to revisit this relationship with a larger sample.

In the theory chapter, we defined the encouragement to take risks as the extent to which top management understands the risk and uncertainty associated with innovation, and expects and encourages proponents to take risks in their work. The positive correlation with Top Managements' Risk Orientation indicate that in organizations where the Positive Termination Strategies are present, proponents are encouraged to take risk in their work, which further can help divergent thinking and the generation of novel ideas.

In sum, all the significant, positive correlations indicate that Positive Termination Strategies are present in organizations with a good climate for innovation. It also indicates that the strategies are less prevalent in organizations with a poor climate for innovation. The presence of both Positive Termination Strategies and a good innovation climate indicates that proponents are willing to continue innovating even after having their current project initiative terminated.

4.5.2 Correlation Analysis - Negative Termination Strategies

The Negative Termination Strategies show a significant, negative correlation with Psychological Safety (r = -.45), Learning Behavior (r = -.20), Learning Capability (r = -.23), Flexibility (r = -.36), and Top Management's Risk Orientation (r = -.20) see **Table 4.8**. Note that all correlations are significant at the 0.01 level. The

organizations using the Negative Termination Strategies have low a presence of the innovation climate variables. It should also be noted that the Negative Termination Strategies have relatively high correlations compared to the Positive Termination Strategies. Hypotheses H1b, H2b, H3b, H4b, and H5b are supported.

The significant, negative correlation with Psychological Safety indicates that organizations with a presence of the Negative Termination Strategies are less likely to have an interpersonally safe environment. Proponents in such organization can thus be reluctant to come back with new ideas after having their project initiative terminated because they are concerned about being humiliated or perceived incompetent among decision-makers and colleagues. The Negative Termination Strategies also have a negative correlation with both Learning Behavior and Learning Capability. As such, proponents can be reluctant to admit errors, ask for help, or seek feedback as they are afraid that it will create unfavorable impressions on decision-makers, who are likely to decide project assignments, promotions, and bonuses (Edmondson, 1999; Goffman, 1959). It follows that organizations using the Negative Termination Strategies are less able to learn new skills and develop new capabilities.

The negative correlation with Flexibility shows that organizations using the Negative Termination Strategies have a lower acceptance of new and different ideas, and are hence less capable of meeting an ever-changing environment. This can also be seen in terms of the negative correlation with top managements' willingness to take risk. Proponents may fear that there will be negative consequences if their innovation projects "fail" and need to be terminated. Proponents of such organizations are more likely to play it safe in their innovation teams, meaning that they are not willing to go for ideas with any chance of failure. The significant, negative correlations thus support our argument that the organizations using the Negative Termination Strategies have a lower tolerance for failure and terminations, not helping proponents' willingness to continue innovating.

In sum, the significant, negative correlations indicate that Negative Termination Strategies are present in organizations with a poor climate for innovation. It also indicates that the strategies are less prevalent in organizations with a good climate

for innovation. The presence of both Negative Termination Strategies and a poor innovation climate indicate that proponents are less willing to continue innovating after having their current project initiative terminated.

The Top Management's Risk Orientation variable has the lowest, significant correlation with the Positive and Negative Termination Strategies compared to the other innovation climate variables. This could be due to the fact that the items underlying this variable are concerned with measuring top management's risk orientation and not proponents' willingness to take risks. The other innovation climate variables are more concerned with proponents' role in the organization and interpersonal relationships. In retrospect, it would have been more ideal to adapt a scale that focused more on proponent's willingness to take risk. However, the current correlation coefficients are still significant, and the Top Management's Risk Orientation hypotheses are supported.

4.5.3 Correlation Analysis: Criteria-Based Termination Strategies

The group of Criteria-Based Termination Strategies does not show any significant correlations with the innovation climate variables. It should however be noted that the Criteria-Based Termination Strategies have a significant positive correlation with the Positive Termination Strategies ($r = .12$), and the Negative Termination Strategies ($r = .27$) see **Table 4.8**. The positive correlations show that Criteria-Based Termination Strategies are used together with both the Positive and Negative Termination Strategies. A reason for this is that the Criteria-Based Termination Strategies are likely to always occur in organizations, e.g. there will always be cost restraints and resource limitations hindering project initiatives. 63.6% of the respondents answered that the Criteria-Based Termination Strategy Cost was likely or very likely to occur in their units. Their wide presence would also explain the lack of a correlation between Criteria-Based Termination Strategies and the innovation climate variables.

4.5.4 Correlation Between Pairs of Dependent Variables

Several of the innovation climate variables (dependent variables) show significant, positive correlations with each other. In particular we have Flexibility and Psychological Safety (r = .63), Flexibility and Learning Behavior (r = .62), and Flexibility and Learning Capability (r = .61) see **Table 4.8**. Note that all correlations are significant at the 0.01 level. The relatively high correlations between these variables support our reasoning that these concepts belong together in an innovative climate. Specifically, they can express a relationship with proponents' willingness to continue innovating after a project initiative termination.

4.5.5 Organizational Performance and Job Satisfaction

The variables Organizational Performance and Job Satisfaction were added to the correlation analysis to gain additional insight about the termination strategies. We find a significant, positive, linear correlation between Positive Termination Strategies and Organizational Performance (r = .14), as well as a significant, negative linear correlation between the Negative Termination Strategies and Organizational Performance (r = -.28) see **Table 4.8**. Even though an organization's performance will depend on many organizational aspects, it is interesting that the Negative Termination Strategies have a relatively high, negative significant correlation with Organizational Performance. Knowing that the presence of Negative Termination Strategies also correlates with a poor climate for innovation, we postulate that these organizations are not capable of exploiting their potential and are thus performing poorer than their competitors. The correlative relationship is not as strong for the Positive Termination Strategies. It could be that the presence of Positive Termination Strategies and a good innovation climate is necessary for high performance, but is not automatically sufficient for achieving a competitive performance level.

Job Satisfaction shows a significant, positive, linear correlation with Positive Termination Strategies (r = .24), and a significant, negative linear correlation with Negative Termination Strategies (r = -.33) see **Table 4.8**. Encouraging and re-

spectful co-workers will induce higher levels of job satisfaction. In organizations where Positive Termination Strategies are prevalent, individuals are more satisfied with their jobs. However, being exposed to behavior such as bullying, humiliation and rudeness will make the work climate rather unpleasant. In organizations where Negative Termination Strategies are prevalent, individuals are less satisfied with their jobs. Job Satisfaction can also be interpreted in terms of a challenging and interesting work tasks. Being challenged to learn and develop new skills, proponents can experience greater levels of competence, also likely to increase their level of job satisfaction. We find significant, positive correlations between Job Satisfaction and the dependent variables Learning Behavior ($r = .44$), Learning Capability ($r = .32$), Flexibility ($r = .49$), and Psychological Safety ($r = .50$) see **Table 4.8**. All correlations are significant at the 0.01 level.

The results from the hypotheses testing are summarized in **Table 4.9**. Nine of the ten hypotheses are supported. Apart from Learning Capability's non-significant correlation with the Positive Termination Strategies, it is supported that there is a significant relationship between the innovation climate variables and the Positive and Negative Termination Strategies. To learn more about these relationships, a regression analysis is performed in order to establish causality.

Hypothesis	Dependent Variables	*r*	Supported?
H1a	Psychological Safety	.33**	Supported
H1b	Psychological Safety	-.45**	Supported
H2a	Learning Behavior	.33**	Supported
H2b	Learning Behavior	-.20**	Supported
H3a	Learning Capability	.09	Not Supported
H3b	Learning Capability	-.23**	Supported
H4a	Flexibility	.27**	Supported
H4b	Flexibility	-.36**	Supported
H5a	Top Management's Risk Orientation	.15*	Supported
H5b	Top Management's Risk Orientation	-.20**	Supported

**. Correlation is significant at the 0.01 level (1-tailed)
*. Correlation is significant at the 0.05 level (1-tailed)

Table 4.9: Summary of the Hypotheses Testing

4.6 Multiple Linear Regression Analysis

We perform a multiple, linear regression for each dependent innovation climate variable, as well as the additional outcome variables Job Satisfaction and Organizational Performance. Only dependent variables significant at the 0.1-level are included in the models. First, we perform a multiple linear regression analysis with Positive and Negative Termination Strategies as independent variables. The goal is to investigate if there is a causal relationship between Positive and Negative Termination Strategies and each of the dependent variables. The final models are summarized in **Table 4.10**. To increase the knowledge level of each specific termination strategy's importance in explaining the dependent variables, we also perform a step-wise multiple, linear regression analysis with the 17 original termination strategies as independent variables. The final models are summarized in **Table 4.11**. We only present the final models in this section, but for further details of the step-wise progression of the models and the F-statistic, see **Appendix B**.

	Psychological Safety	Learning Behavior	Learning Capability	Flexibility	Risk Orientation	Job Satisfaction	Org. Performance
R^2	.266	.126	.053	.172	.055	.140	.086
Adj. R^2	.258	.116	.043	.164	.045	.131	.077
Std. Error β	.864	1.037	1.248	.56	.886	1.054	1.190
Negative T.S.	-.399**	-.142*	-.215**	-.325**	-.183*	-.291**	-.263
Positive T.S.	.261**	.300**	(.054)	.205**	(.118)	.188**	(.092)

** β values are significant at the .01 level
* β values are significant at the .05 level
( ) β values are significant at the .10 level

Table 4.10: Multiple Linear Regression Analysis with Positive and Negative Termination Strategies: β Values

	Psychological Safety	Learning Behavior	Learning Capability	Flexibility	Risk Orientation	Job Satisfaction	Org. Performance
R^2	0.30	0.17	0.16	0.25	0.17	0.25	0.13
Adj. R^2	0.29	0.16	0.15	0.24	0.16	0.23	0.12
Std. Error β	0.85	1.01	1.19	0.53	0.84	0.10	1.17
Delay	-0.31**	-0.18**	-0.31**	-0.35**	-0.24**	-0.38**	-0.16*
Positive Regard	0.19**	0.33**	0.14*	0.24**		0.21**	
Negative Consequences	-0.21**			(-0.11)		-0.16*	-0.18*
Encourage	0.17**						
Spinout		0.15*					
Low Priority			(-0.13)				-0.19**
Pilot Fails					0.27**	-0.14*	(0.12)
Quiz & Challenge					-0.18**		
Intra-Org. Problems						(0.14)	

** β values are significant at the .01 level
* β values are significant at the .05 level
( ) β values are significant at the .10 level

Table 4.11: Step-Wise Multiple Linear Regression Analysis with Individual Termination Strategies: β Values

By expanding the model to include the 17 termination strategies, we note that the levels of R^2 increase. This indicates that the models at the level of individual strategies are better at explaining the variance in the dependent variables than the composite model with Positive and Negative Termination Strategies. The termination strategy Delay is significant for all of the dependent variables. Positive Regard and Negative Professional Consequences are only significant for some of the dependent variables see **Table 4.11**. We note that the strategies Delay and Negative Professional Consequences are composite items in the variable Negative Termination Strategies, and Positive Regard is an item in Positive Termination Strategies. However, the remaining composite items are not as significant. Encourage Future Initiatives is only significant for Psychological Safety. Remove Talent and Tease & Humiliate are not significant at all.

As can be seen in **Table 4.11**, Delay and Positive Regard are the most prominent strategies in the regression analysis. The two are also the most prevalent management driven termination strategies in the surveyed organizations. We thus urge managers to pay special attention to the use of these strategies as they greatly affect proponents' willingness to continue innovating. Once again, Delay is supported as a poor strategy for terminating project initiatives. As **Table 4.11** shows, it has negative beta values for all the innovation climate variables (dependent variables), and is thus not contributing to a good innovative climate. It follows that decision-makers show avoid using this strategy, for achieving a better innovative climate and subsequently competitive performance. The same holds for Negative Professional Consequences, which also show significant negative values for Psychological Safety, Organizational Performance, and Job Satisfaction.

The opposite is true for Positive Regard, which has significant, positive values for most of the organizational outcome variables. Positive Regard is thus positively contributing to the organizational climate for innovation, and is thus likely to have a positive effect on proponents' willingness to continue innovating. We also note that Encourage Future Initiatives has a positive significant value for Psychological Safety. This also supports our argument that the Positive Termination Strategies can help create an acceptance for failure and terminations, which can help propo-

nents to overcome negative emotions when faced with a termination. We therefore urge managers to use more of the Positive Termination Strategies, especially Positive Regard, as we consider them as the most beneficial termination strategies for terminating innovation projects and ideas.

4.7 Structural Equation Modeling (SEM)

We want to test if any of our variables have a mediating role in the relationship between the termination strategies and the other outcome variables in a Structural Equation Model (SEM). A variable is mediating if it accounts for the relation between the independent and dependent variable. "Mediators explain how external physical events take on internal psychological significance" (Baron & Kenny, 1986, p. 1176). Edmondson (1999) finds that team psychological safety has a mediating function between the antecedent factors in her study and team learning behavior. She also finds that team learning behavior mediates the relationship between team psychological safety and performance. As possible future research, she outlines testing specific leader behaviors as independent variables, and to investigate whether there are other factors influencing team learning behavior (Edmondson, 1999).

We replicate the mediating roles of Psychological Safety and Learning Behavior in a structural equation model with the Positive and Negative Termination Strategies as independent variables in order to test if the same relationships are true for our data. Flexibility is introduced as a mediating variable between Psychological Safety and the learning variables in our model. We argue that it is only through a sufficiently safe environment for interpersonal risk taking that an organization is able to meet a changing environment. The willingness to change and quickly adapt, i.e. flexibility, is reflected in the learning behavior and capabilities. We introduce Learning Capability side by side with Learning Behavior in the model, because both are concerned with an organization's orientation towards learning. Job Satisfaction and Organizational Performance are placed as organizational outcome variables in our model. We suggest that a safe and positive work climate, as well as challenging work tasks, will affect proponents' job satisfaction. We suggest that an organization's openness towards change and its ability to learn and adapt to changing conditions will affect its competitive performance level.

When creating the structural equation model, Baron and Kenny (1986) recommend testing all the possible relationships between the variables in the model. The direct relation between the independent and dependent variables should be reduced after controlling for the mediating variable (Baron & Kenny, 1986). We present a total of four structural equation models in **Figures 4.4 to 4.7**. After testing all possible relationships between the variables entered in the model, we remove the ones not significant at the .05-level, so that the models presented here only contain significant relationships. As Baron and Kenny (1986) outline, the direct relation between the Positive and Negative Termination Strategies and the dependent variables are reduced after controlling for the mediating variables. The values colored in black are the standardized regression weights (β), and the values colored in blue are the Squared Multiple Correlations (SMC). SMC is the R^2 we know from the regression analysis. The statistics for all four models are summarized in **Table 4.12**. The "Model of Good Fit" represents the required values for the structural equation model to be a good representation of the underlying data set.

	χ^2	p	RMSEA	RMSEA_LO	RMSEA_HI	pclose	CFI	GFI	AIC
Model 1	51.70	.000	.085	.055	.115	.030	.946	.944	97.679
Model 2	30.12	.017	.069	.028	.106	.191	.971	.962	70.124
Model 3	25.94	.055	.057	.000	.149	.344	.980	.965	65.937
Model 4	20.80	.142	.045	.000	.088	.521	.988	.974	62.829
Model of Good Fit		$\succ$.05	$\prec$.05	.00	.08	$\succ$.50	$\succ$.95	$\succ$.95	

Table 4.12: Model Fit Statistics for Structural Equation Models 1, 2, 3, and 4

Model 1, as illustrated in **Figure 4.4** is a pictorial representation of the outlined conceptual relationships. In this first model, we have also entered Top Management's Risk Orientation. However, as previously suggested, this variable is more concerned with measuring top management's risk orientation and not proponents' willingness to take risks. Top Management's Risk Orientation is therefore not concerned with proponents' role in the organization and interpersonal relationships in the same way as the other innovation climate variables. Since this model is not a good fit according to the model statistics, we remove Top Management's Risk Orientation from the succeeding structural equation models.

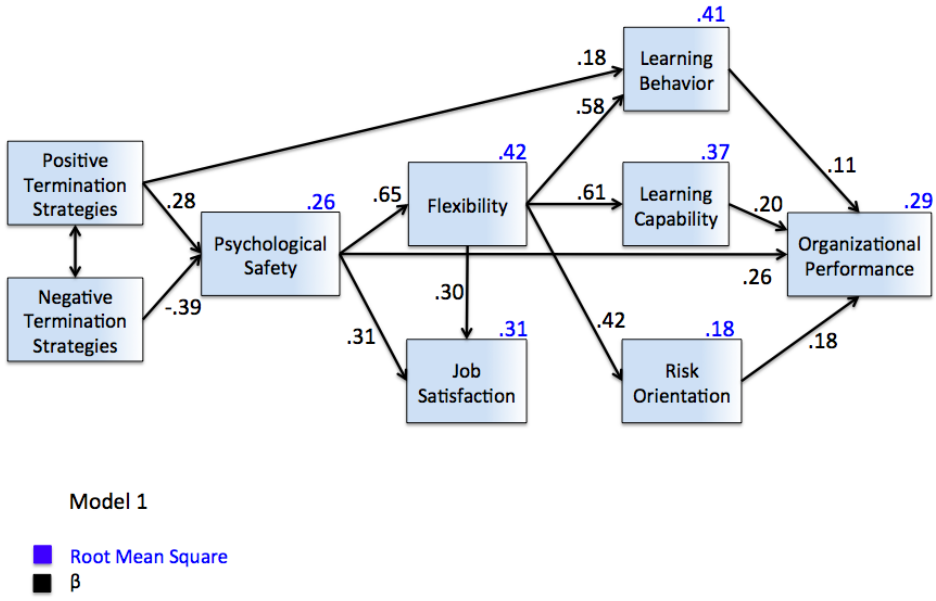


Figure 4.4: Structural Equation Model 1

In model 2, we have removed the variable Risk Orientation. Removing the variable does not impact the β values, and it only slightly decreases the variance explained for Organizational Performance. The overall model fit improves, as indicated by the lower RMSEA value and the higher values of CFI and GFI, however the model is

still not within the limits of a good fit.

The analysis of the structural equation model also produces a set of modification indices, which suggest ways to improve the fit of the model. In Model 3, we have replaced the direct relationship between Learning Behavior and Organizational Performance with one mediated by Learning Capability, as suggested by the modification indices. This improves the overall fit of the model, however, it does not yet meet the requirements of a good fit.

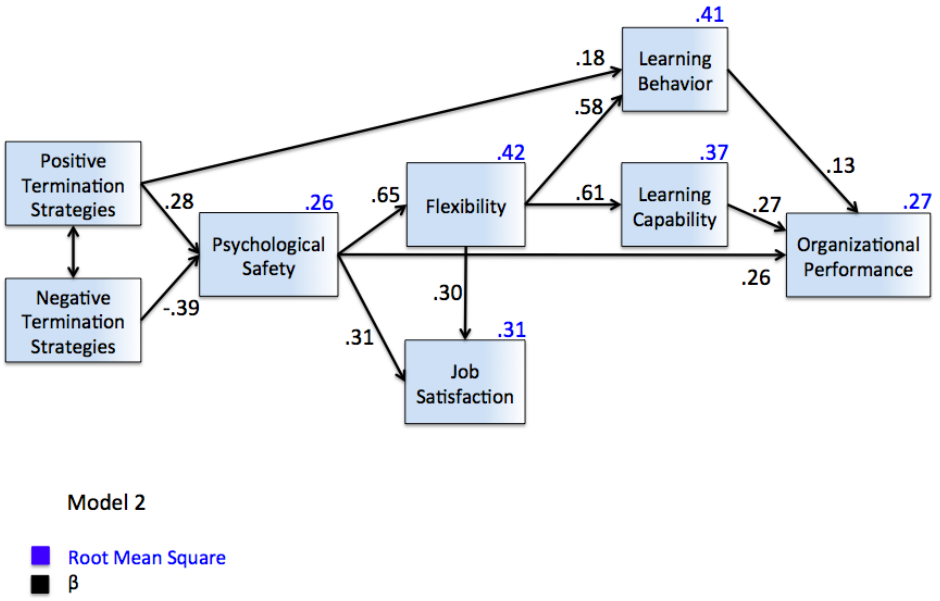


Figure 4.5: Structural Equation Model 2

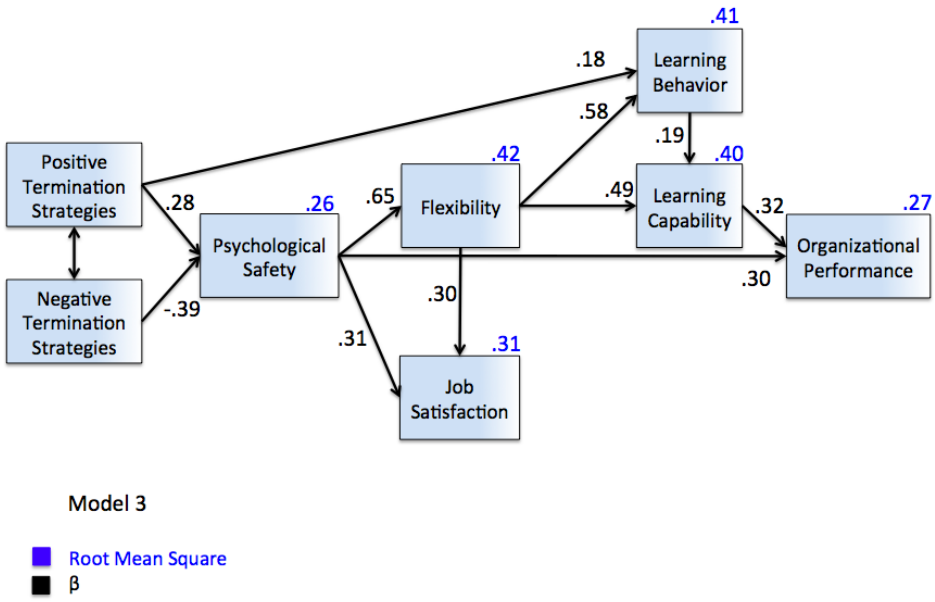


Figure 4.6: Structural Equation Model 3

In Model 4, we have tested for a relationship between the learning variables and Job Satisfaction. Only the connection between Learning Behavior and Job Satisfaction is significant. AIC is a comparative fit measure, and is used to compare different models with each other. The model with the lowest AIC value has the best fit. In our case, this is Model 4. Model 4 is also the only model that meets the requirements of a good or close model fit. It has a RMSEA value lower than .05, a non-significant p-value for the χ^2 test, as well as fit indices above .95, which all indicate a model of good fit (Brown & Cudeck, 1993; Byrne, 2010; Hox & Bechger, 1998). In adddition, the 90% confidence interval of RMSEA has a lower value of 0.00 and a higher value of .088, which is close to the recommended interval (Browne & Cudeck, 1993; Byrne, 2010). The test of close fit has a p-value of .521, which allows us to conclude that the model fit is "close" (Byrne, 2010). Since Model 4 is still within the frame of the conceptual model we outlined at the beginning of this section, we choose to adapt it as our final model.

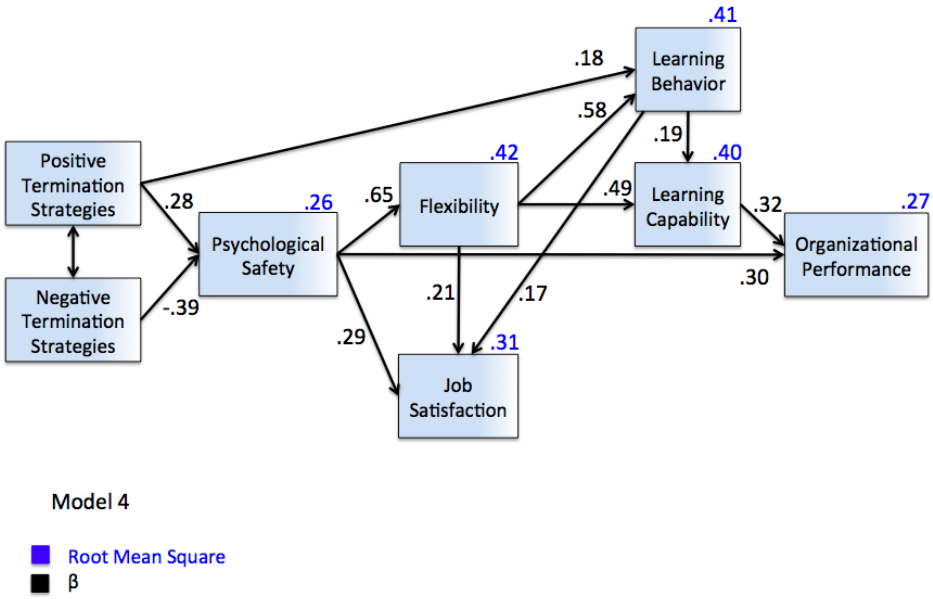


Figure 4.7: Structural Equation Model 4

4.7.1 The Mediating Roles of Psychological Safety and Flexibility

Our final model, as illustrated in **Figure 4.8**, suggests that Psychological Safety and Flexibility works as meditating variables between Positive and Negative Termination Strategies, Learning Behavior, Learning Capability, Job Satisfaction, and Organizational Performance. The model indicates that there is a positive relationship between Positive Termination Strategies and Psychological Safety, and a negative relationship between Negative Termination Strategies and Psychological Safety. Together, the Positive and Negative Termination Strategies explain 26% of the variance in Psychological Safety, and their relative importance, expressed by the beta weights, are respectively .28 and -.39. We argue that Positive Termination Strategies support an organization's psychological safety by giving thorough feedback and by listening to and showing respect for proponents' ideas and con-

tributions. Further, we argue that Negative Termination Strategies work against an organization's psychological safety with destructive and abusive behavior that threatens proponents' face-saving needs and their perceptions of own self-worth and capabilities.

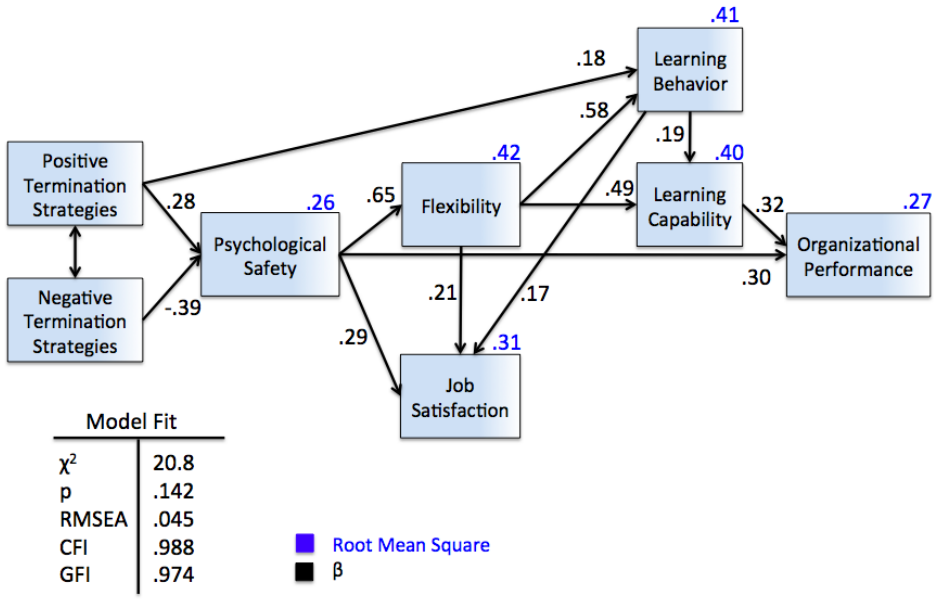


Figure 4.8: Structural Equation Model - Final Model

The relationship between the termination strategies and Flexibility is mediated by Psychological Safety, which explains 42% of the variance in Flexibility. Psychological Safety can support an organization's idea generation in being accepting towards different types of proponents and their respective unique skills and talents. In addition, Psychological Safety involves accepting that not all new ideas can be successes. Psychological Safety can also support quick changes because proponents feel safe to take the risks involved in challenging status quo and adapting to a changing environment.

The model indicates that Learning Behavior is not only mediated by Psychological Safety, which is an extension of Edmondson's (1999) model. The variance in Learning Behavior is explained by Flexibility ($\beta = .58$), as well as directly by the Positive Termination Strategies ($\beta = .18$). These relationships explain 41% of the variance in Learning Behavior. Learning Behavior is activities for obtaining and processing new information, so that the organization can adapt and improve. Being able and willing to meet a changing and challenging environment, i.e. to be flexible, requires the organization to constantly seek new information, challenge current work processes and take the time to reflect on the way to adapt and learn. The encouragement and positive feedback that is given directly from the Positive Termination Strategies can in addition strengthen the effort to seek out new information and improve. We therefore argue that the agile nature of Flexibility and the supportive nature of Positive Termination Strategies will positively influence Learning Behavior.

Learning Behavior ($\beta = .19$) and Flexibility ($\beta = .49$) explain 40% of the variance in Learning Capability. Being agile and placing value in actively seeking new information in order to improve, will allow the organization to develop new knowledge-based resources and skills. Having routines for continuous learning activities will make the organization better able to learn new skills and to develop new capabilities. We therefore argue that Flexibility and Learning Behavior will support Learning Capability.

Psychological Safety ($\beta = .29$), Flexibility ($\beta = .21$), and Learning Behavior ($\beta = .17$) explain 31% of the variance in Job Satisfaction. Having a sufficiently safe environment for interpersonal risk-taking, as well as having challenging tasks can positively influence proponents' job satisfaction. We also argue that collaboration with coworkers for learning and developing new skills are connected to job satisfaction.

Edmondson (1999) finds that team learning behavior mediates the relationship between team psychological safety and performance. We have not applied the same measures of performance as Edmondson, but for our adapted scale of Organizational

Performance (De Luca, Verona, & Vicari, 2010), we do not identify the same mediating role. Instead, we find that Learning Capability ($\beta = .32$), and Psychological Safety ($\beta = .30$) explain 27% of the variance in Organizational Performance. We argue that an organization's level of psychological safety will affect the organization's work processes, collaboration among proponents, the organization's ability to learn and develop new products and services, and as an outcome, the organization's competitive performance level.

We find that both Psychological Safety and Flexibility have significant mediating roles in the relationship between the termination strategies and the other variables. The fact that we introduce specific leadership behavior through the termination strategies, and that we find additional factors that influence learning behavior, is an extension of Edmondson's (1999) model along the lines that she proposes in her article. Even though the analysis indicates that our structural equation model is a good or close fit to the data, we cannot confirm the validity of any of the aforementioned relationships in the model (Brown & Cudeck, 1993; Byrne, 2010; Hox & Bechger, 1998). We can just argue that the model is plausible based on theories reviewed and respondents' answers. We emphasize that it is necessary to test the model with new and preferably larger samples before it can be concluded that it reflects a picture of reality.

Chapter 5

Discussion

This thesis investigates 17 termination strategies for terminating ideas and project initiatives, building on Daly, Sætre, and Brun's (2012) prior research. Our goal has been to investigate which termination strategies are the most prevalent, how effective they are in terminating innovation projects, and how they affect proponents' willingness to continue innovating.

We have surveyed decision-makers and proponents in both Norwegian and U.S. companies, and collected a total of 195 responses after filtering for innovation experience. We have performed a Pearson's bivariate correlation analysis, multiple step-wise linear regression and created a structural equation model in order to answer our research question and to learn more about the qualities of the 17 termination strategies. We find that Cost (63.6%) and Positive Regard (53.6%) are the most prevalent termination strategies, followed by a group comprised of Low Priority (48.2%), Risk (45.7%), No Market (45.6%), and Delay (44.1%). Further, we have investigated their effectiveness. Negative Professional Consequences ($\bar{x} = 5.45$), and Positive Regard ($\bar{x} = 5.36$) are rated as the most effective ones, followed by Cost ($\bar{x} = 5.15$), Tease & Humiliate ($\bar{x} = 5.14$), and Review Board ($\bar{x} = 5.04$).

We define two new constructs, Positive Termination Strategies and Negative Termination Strategies. They serve as independent variables in the process of answering the third part of our research question concerning proponents' willingness to continue innovating after a termination. We argue that the Positive and Negative Termination Strategies are likely to impact proponents in terms of how they affect the organizational climate for innovation, through the key organizational outcome variables: Psychological Safety (Edmondson, 1999), Flexibility (Patterson et al., 2005), Learning Behavior (Edmondson, 1999), Learning Capability (Hull & Covin, 2010), and Top Management's Risk Orientation (Im, Montoya, & Workman, 2012). We find that Positive Termination Strategies, and particularly Positive Regard, have a positive impact on proponents' willingness to continue innovating, while Negative Termination Strategies, and particularly Delay and Negative Professional Consequences, have a negative impact on proponents' willingness to continue innovating. In addition, we find that Psychological Safety and Flexibility have significant mediating roles in the relationship between the termination strategies and the other organizational outcome variables.

5.1 Managerial Implications

Killing undesired ideas or projects is often necessary in order to concentrate the organizational resources on the best ideas. However, the termination decision and how it is communicated can greatly impact the proponents involved, who are likely to have dedicated much time and effort to the project initiative. Creating a greater acceptance for terminations can thus be beneficial since it can lessen proponents' feeling of personal failure when faced with a termination. We suggest that Positive Regard can facilitate this acceptance. Positive Regard is accommodating because it offers thorough feedback, explaining the business or technical reason for the termination decision. Further, it also enables proponents to quicker resume work on other innovative projects, as indicated by its high score on continued innovation. We argue that the most important feature of Positive Regard is that it is the one termination strategy where people really sense that the decision-makers are lis-

tening to them, and are taking them and their ideas seriously. It follows that if proponents are seen and given personal respect, the termination decision can seem less devastating to the proponents since they are still heard and recognized in the organization. A climate with acceptance for termination can also make the communication of the termination decision easier, because decision-makers can be more confident that the decision will not traumatize the proponents. As such, they can shift the focus to a more fruitful locus, such as how much learning can be obtained from the terminated project. We thus urge managers to aspire to use more of the Positive Termination Strategies, since they actually strengthen an organization's innovative climate.

We recommend suppressing the use of Negative Termination Strategies, because they damage proponents' willingness to continue innovating. The Negative Termination Strategies vary in terms of how prevalent they are in the surveyed organizations, but they all have a negative effect on the organizational climate for innovation. Tease & Humiliate and Negative Professional Consequences are less prevalent in organizations. However, when they first occur, they are very destructive and abusive, and discourage proponents' motivation. It follows that such behavior can be destructive for proponents and subsequently have detrimental effects for the organization and its competitive performance level. A reason for their low prevalence in organizations might be the common perception that this is unwanted and unproductive behavior. Since these strategies are strongly management driven, we suggest that their occurrence is more closely linked to particular individuals rather than the organizational culture as a whole. We recommend that such destructive behavior is suppressed, and that particular individuals' behavior is not allowed to negatively impact the innovation climate, and subsequently the organization's competitive performance level.

We have earlier argued that using Negative Professional Consequences can sometimes be seen as necessary in order to effectively stop proponents from pushing forward with their ideas. Knowing that some proponents are unstoppable when it comes to their brainchild, despite previous efforts of termination, directly threatening to hurt their career might feel like the only way to stop them. However,

our analysis shows that Positive Regard is rated on the same level of effectiveness as Negative Professional Consequences, and that its positive effects on continued innovation are not achieved at the expense of effectiveness.

Delay is much more prevalent than the other Negative Termination Strategies. The delicate situation of terminating someone's brainchild, and the fear of threatening proponents' perceptions of own capabilities and self-worth, are typical reasons for such absent, or passive leadership. Although Delay is a more passive approach, the negative effects on the innovation climate prove to be even greater than those of Tease & Humiliate and Negative Professional Consequences. First of all, using Delay is likely to damage proponents' engagement and drive, which is detrimental for the organization's future innovation projects and idea generation. There is also the risk of losing valuable proponents, who are not willing to put up with this type of leadership behavior. Further, Delay can be an expensive way of terminating project initiatives, as it is unpredictable how long proponents will keep working on their ideas before they realize that their innovation projects are in the process of termination. Another concern is the decision-makers who use Delay because they are afraid to take action because of how it might hurt proponents. Such managers are likely to be concerned about how they are perceived in the organization. They do not want to threaten their positive face of being positively evaluated by proponents and keeping a positive image when terminating innovation projects. We argue that that using Delay can only weaken proponents' perceptions of managers. By delaying action until the idea becomes irrelevant, or in general not helping specific projects to progress, managers are likely to be perceived as poor leaders by proponents, unable to guide or take the necessary responsibility and action. Delay is not beneficial for proponents, decision-makers, or the organization as a whole. Thus, we urge managers to detect, handle, and avoid using the strategy of Delay in order to achieve a more competitive performance level.

Criteria-Based Termination Strategies are widely applied in the surveyed organizations, and they occur simultaneously with respectively Positive and Negative Termination Strategies. The Criteria-Based Termination Strategies are accepted strategies to apply because they do not influence the innovation climate negatively. However, they do not influence the innovation climate positively either. We therefore recommend that managers strive to actively show empathy, listen, and offer feedback, which can be achieved through the use of the Positive Termination Strategies.

5.2 Theoretical Implications

Through this study, we validate Daly and Sætre's (2012) 17 unique termination strategies by confirming their presence in the surveyed organizations. We also support the findings of Aasland and colleagues (2010), that there exists destructive leadership behavior, and that there is a surprisingly high presence of passive leadership behavior.

We extend the model for learning first proposed by Edmondson (1999). Edmondson emphasizes that the independent variables in her model "do not specify leader behaviors precisely" (p. 378). This is where our model offers an extension by adding the termination strategies as independent variables. The termination strategies clearly describe specific leadership behavior. Edmondson (1999) also emphasize that her study only provides "a limited exploration of factors that managers can influence in their efforts to promote team learning" (p. 378). We challenge the sole mediating role of psychological safety proposed by Edmondson, and find that flexibility (Patterson et. al, 2005) has an additional mediating function between psychological safety and learning behavior and learning capability. We do not find the same mediating role of learning behavior between psychological safety and performance as outlined by Edmondson (1999). We apply a different measure of performance than Edmondson, but for our adapted scale of organizational performance (De Luca, Verona, & Vicari, 2010), the relationship is more complex. The

most interesting of these relations is thus the direct one between psychological safety and organizational performance. We repeat the conceptual model of the relationships supported by our analysis in **Figure 5.1**.

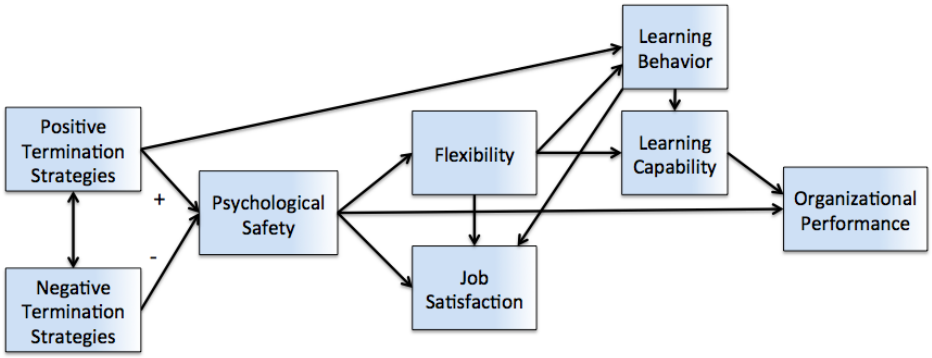


Figure 5.1: A Conceptual Model of the Relationship Between Termination Strategies and Key Organizational Outcome Variables

5.3 Limitations

It is not possible to paint the complete picture of the innovation climate in an organization with a set of variables. We have strived to find appropriate measures for the analysis; however, there could be other sets of variables, or additional ones, that would strengthen the model we outline. The particular operationalization of top management's risk orientation was in retrospect not the ideal one for the purpose of investigating continued innovation. Proponents', instead of top management's, willingness to take risk is a more suitable outcome variable for proponents' psychological safety, and consequently their willingness to continue innovating after a termination.

Further, we have only asked respondents to rate the likelihood of prevalence, effectiveness, and impact of the 17 termination strategies; hence, we only report respondents' perceptions. When we investigate the termination strategies, we do not control for the reason behind the termination decision. We can therefore only speculate whether the use of a strategy reflects the reason for the termination, such as the project initiative being too costly, or if the strategy is used in order to avoid the real reason, such as lack of management support or another idea being better advocated. However, it is difficult to control for intent. We have not consequently surveyed either decision-makers or proponents. The analyses do therefore not explicitly express the views of one role in the organization. Future studies should investigate the differences in the perceptions of termination behaviors between managers and proponents. We have a sample size of 195 cases after filtering for innovation experience. The sample size is adequate for the analyses performed, but a broader sample size would further improve the robustness of our results. We especially emphasize the importance of testing the structural equation model with a new and preferably larger sample size in order to better conclude on its fit with reality.

5.4 Future Research

The role termination strategies play in organizations' innovative activities is still an emerging field of research. We believe conducting a longitudinal study will obtain further insight into the influence of the use of the termination strategies on the innovation climate, and proponents' motivation for continued innovation over time, i.e. before, during, and after the termination of an innovation project. In particular, it would be interesting to investigate how the Positive Termination Strategies, Positive Regard and Encourage Future Initiatives, respectively influence proponents' development, growth, and learning after a termination. Learning more about how to best apply these strategies, managers can get practical guidelines on how to plan and execute terminations so as to minimize both the human and organizational costs of the project initiatives that are not a strategic fit with the organization.

To extend our research, it can be interesting for researchers to investigate the influence of the positive and negative termination strategies on the construct of Innovator Resilience Potential (IRP), developed by Moenkemeyer and colleagues (2012). IRP consists of six first order components that are all important to an individual's potential for future innovative functioning after experiencing a termination: self-efficacy, outcome expectancy, optimism, hope, self-esteem, and risk propensity. In order to obtain an even better understanding of the mechanisms behind proponents' willingness to continue innovating, we believe it can be insightful to investigate the impact of the Positive and Negative Termination Strategies on individuals' IRP before and after a termination. Investigating the influence on IRP, researchers can consider the variations in proponents' resilience and their role in the organization. As a result, practical guidelines for the termination process can be developed for managers.

Another aspect of the topic of termination strategies is managers' role in the termination. What really affects decision-makers' choice of a termination strategy? Is it organizational practices, the reason for the termination, previous experience, personality traits of managers, or does it vary with the proponents involved? Daly and his colleagues (2012) report that decision-makers can apply multiple strategies when terminating a project initiative. Managers can start very carefully to suggest that an idea should be terminated, and then move on to more direct, and possibly negative termination strategies if proponents do not stop working on their ideas. We also report from our analysis that multiple strategies occur in one unit, however we do not know how they are used together. This is another aspect that should be investigated.

5.5 A Concluding Remark

As a final remark, we emphasize managers' key challenge of terminating project initiatives. On the one hand, managers need to effectively terminate the initiatives that are not a good strategic fit for the organization. One the other hand, a termination is a blow to proponents' creative spirits. Managers will have to prioritize

differently in the short-term versus the long-term perspective in order to maximize the outcome for the organization. In a long-term perspective, managers should emphasize proponents' willingness to continue innovating. In a short-term perspective, it can be more important for the organization to effectively end a project initiative than to accommodate all involved proponents. With an organization's limited amount of resources, it is important that undesired projects do not siphon off time, attention, and resources from the projects that are actively pursued. Consequently, managers must carefully balance the interest of the organization against the needs of proponents when communicating a termination decision.

References

Aasland, M. S., Skogstad, A., Notelaers, G., Nielsen, M. B., & Einarsen, S. (2009). The prevalence of destructive leadership behaviour. British Journal of management, 21(2), 438-452.

Aiman-Smith, Lynda, Goodrich, Nina, Roberts, David, & Scinta, James. (2005). Assessing your organization's potential for value innovation. Research-Technology Management, 48(2), 37-42.

Amabile, Teresa M. (1983). The social psychology of creativity: A componential conceptualization. Journal of Personality and Social Psychology, 45(2), 357.

Amabile, Teresa M. (1996). Creativity and innovation in organizations: Harvard Business School.

Amabile, Teresa M., Conti, Regina, Coon, Heather, Lazenby, Jeffrey, & Herron, Michael. (1996). Assessing the work environment for creativity. Academy of Management Journal, 1154-1184.

Amabile, Teresa M., & Gryskiewicz, Stanley S. (1987). Creativity in the R&D Laboratory (Vol. 30): Center for Creative Leadership.

Balachandra, R. (1984). Critical signals for making go/nogo decisions in new product development. Journal of Product Innovation Management, 1(2), 92-100.

Balachandra, R., Brockhoff, K. K., & Pearson, A. W. (1996). R&D project termination decisions: processes, communication, and personnel changes. Journal of Product Innovation Management, 13(3), 245-256.

Baltagi, Badi H. (2011). Simple Linear Regression Econometrics (pp. 49-72): Springer Berlin Heidelberg.

Baron, Reuben M., & Kenny, David A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173-1182.

Bel, Roland. (2010). Leadership and innovation: Learning from the best. Global Business and Organizational Excellence, 29(2), 47-60.

Brayfield, Arthur H., & Rothe, Harold F. (1951). An index of job satisfaction. Journal of Applied Psychology, 35(5), 307.

Brown, P., & Levinson, S. C. (1987). Politeness: Some universals in language usage (Vol. 4): Cambridge University Press.

Browne, Michael W., Cudeck, Robert, Bollen, Kenneth A., & Long, J. Scott. (1993). Alternative ways of assessing model fit. Sage Focus Editions, 154, 136-136.

Bryman, Alan, & Cramer, Duncan. (2011). Quantitative data analysis with IBM SPSS 17, 18 & 19: A guide for social scientists: Routledge.

Byrne, Barbara M. (2010). Structural equation modeling with AMOS: Basic concepts, applications, and programming: Psychology Press.

Calantone, Roger J., Cavusgil, S. Tamer, & Zhao, Yushan. (2002). Learning orientation, firm innovation capability, and firm performance. Industrial marketing management, 31(6), 515-524.

Corbett, A. C., Neck, H. M., & Detienne, D. R. (2007). How corporate entrepreneurs learn from fledgling innovation initiatives: Cognition and the development of a termination script. Entrepreneurship: Theory and Practice, 31(6), 829-852.

Cummings, Larry L., & O'Connell, Michael J. (1978). Organizational innovation: A model and needed research. Journal of Business Research, 6(1), 33-50.

Daly, J. A. (2011). Advocacy : championing ideas and influencing others. New Haven, Conn.: Yale University Press.

Daly, J. A., Sætre, A. S., & Brun, E. (2012). Killing Mushrooms: The Realpolitik of Terminating Innovation Projects. International Journal of Innovation Management, 16(5).

Damanpour, Fariborz. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. Academy of Management Journal, 555-590.

Dawes, John. (1999). The relationship between subjective and objective company performance measures in market orientation research: further empirical evidence. Marketing Bulletin Department Of Marketing Massey University, 10, 65-75.

De Clercq, Dirk, Thongpapanl, Narongsak Tek, & Dimov, Dimo. (2011). A Closer Look at Cross Functional Collaboration and Product Innovativeness: Contingency Effects of Structural and Relational Context. Journal of Product Innovation Management, 28(5), 680-697.

De Luca, Luigi M., Verona, Gianmario, & Vicari, Salvio. (2010). Market orientation and R&D effectiveness in High Technology firms: An empirical investigation in the biotechnology industry. Journal of Product Innovation Management, 27(3), 299-320.

Deci, Edward L., & Ryan, Richard M. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemporary Educational Psychology, 25(1), 54-67.

Dess, Gregory G., & Robinson, Richard B. (2006). Measuring organizational performance in the absence of objective measures: the case of the privately held firm and conglomerate business unit. Strategic management journal, 5(3), 265-273.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. Administrative Science Quarterly, 44(2), 350-383.

Eikemo, Terje Andreas, & Clausen, Tommy Hoyvarde. (2012). Kvantitativ analyse med SPSS: en praktisk innforing i kvantitative analyseteknikker: Tapir Akademisk Forlag.

Ellinor, Linda, & Gerard, Glenna. (1998). Dialogue: Rediscover the transforming power of conversation: J. Wiley & Sons New York.

Field, Andy. (2009). Discovering statistics using SPSS: Sage Publications Limited.

Georgsdottir, Asta S., & Getz, Isaac. (2004). How Flexibility Facilitates Innovation and Ways to Manage it in Organizations. Creativity and Innovation Management, 13(3), 166-175.

Goetz, K. (2011). How 3M Gave Everyone Days Off and Created an Innovation Dynamo. Retrieved 09.11.2012, 2012, from http://www.fastcodesign.com/1663137/how-3m-gave-everyone-days-off-and-created-an-innovation-dynamo

Goffman, Erving. (1959). The presentation of self in everyday life.

Govindarajan, V., & Trimble, C. (2005). Building breakthrough businesses within established organizations. Harvard business review, 83(5), 58-68+152.

Green, Stephen G., Welsh, M. Ann, & Dehler, Gordon E. (2003). Advocacy, Performance, and Threshold Influences on Decisions to Terminate New Product Development. Academy of Management Journal, 46(4), 419-434.

Harzing, Anne-Wil. (2000). Cross-national industrial mail surveys: why do response rates differ between countries? Industrial marketing management, 29(3), 243-254.

Hisrich, Robert D. (1990). Entrepreneurship/intrapreneurship. American Psychologist, 45(2), 209.

Hox, Joop J., & Bechger, Timo M. (1998). An introduction to structural equation modeling.

Huber, George P. (1991). Organizational Learning: The Contributing Processes and the Literatures. Organization Science, 2(1), 88-115. doi: 10.2307/2634941

Hull, Clyde Eiríkur, & Covin, Jeffrey G. (2010). Learning Capability, Technological Parity, and Innovation Mode Use*. Journal of Product Innovation Management, 27(1), 97-114.

Idea. (n.d.). Dictionary.com. Retrieved December 17, 2012, from http://dictionary.reference.com/browse/idea?s=t

Im, Subin, Montoya, Mitzi M., & Workman, John P. (2012). Antecedents and Consequences of Creativity in Product Innovation Teams. Journal of Product Innovation Management.

Isaacs, William. (1993). Dialogue, collective thinking, and organizational learning. Organizational dynamics, 22(2), 24-39.

Jaworski, Bernard J., & Kohli, Ajay K. (1993). Market Orientation: Antecedents and Consequences. Journal of Marketing, 57(3), 53-70.

Judge, Timothy A., Locke, Edwin A., Durham, Cathy C., & Kluger, Avraham N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. Journal of Applied Psychology, 83(1), 17-34.

Keil, M., & Robey, D. (1999). Turning around troubled software projects: An exploratory study of the de-escalation of commitment to failing courses of action. Journal of Management Information Systems, 15(4), 63-87.

Keil, M., & Robey, D. (2001). Blowing the whistle on troubled software projects. Communications of the ACM, 44(4), 87-93.

Kelley, Harold H. (1967, 1967). Attribution theory in social psychology.

Khan, Z., & Katzenbach, J. (2009). The Innovators - Are You Killing Enough Ideas? Companies can improve their innovation performance by getting their formal and informal organizations in sync. Strategy and Business(56), 1-5.

Locke, Edwin A. (2004). Linking Goals to Monetary Incentives. The Academy of Management Executive (1993-2005), 18(4), 130-133.

Moenkemeyer, G., Hoegl, M., & Weiss, M. (2012). Innovator resilience potential: A process perspective of individual resilience as influenced by innovation project termination. Human Relations, 65(5), 627-655.

Pallant, Julie. (2010). SPSS survival manual: A step by step guide to data analysis using SPSS: Open University Press.

Parnes, Sidney J., & Meadow, Arnold. (1959). Effects of "brainstorming" instructions on creative problem solving by trained and untrained subjects. Journal of Educational Psychology, 50(4), 171-176.

Patterson, Malcolm G., West, Michael A., Shackleton, Viv J., Dawson, Jeremy F., Lawthom, Rebecca, Maitlis, Sally, Wallace, Alison M. (2005). Validating the organizational climate measure: links to managerial practices, productivity and innovation. Journal of organizational behavior, 26(4), 379-408.

Royer, I. (2003). Why bad projects are so hard to kill. Harvard business review, 81(2), 48-57.

Schmidt, J. B., & Calantone, R. J. (2002). Escalation of commitment during new product development. Journal of the Academy of Marketing Science, 30(2), 103-118.

Seo, Myeong-Gu, Barrett, Lisa Feldman, & Bartunek, Jean M. (2004). The Role of Affective Experience in Work Motivation. Academy of Management Review, 29(3), 423-439.

Shepherd, Dean A., & Cardon, Melissa S. (2009). Negative Emotional Reactions to Project Failure and the Self-Compassion to Learn from the Experience. Journal of Management Studies, 46(6), 923-949.

Shepherd, Dean A., Covin, Jeffrey G., & Kuratko, Donald F. (2009). Project failure from corporate entrepreneurship: Managing the grief process. Journal of Business Venturing, 24(6), 588-600.

Shepherd, Dean A., & Kuratko, Donald F. (2009). The death of an innovative project: How grief recovery enhances learning. Business Horizons, 52(5), 451-458.

Sitkin, S. B. (1992). Learning through failure: The strategy of small losses. Research in organizational behavior, 14, 231-266.

Skogstad, A., Einarsen, S., Torsheim, T., Aasland, M. S., & Hetland, H. (2007). The destructiveness of laissez-faire leadership behavior. Journal of Occupational Health Psychology, 12(1), 80.

Stasser, Garold, & Titus, William. (1985). Pooling of unshared information in group decision making: Biased information sampling during discussion. Journal of Personality and Social Psychology, 48(6), 1467-1478.

Stasser, Garold, & Titus, William. (1987). Effects of information load and percentage of shared information on the dissemination of unshared information during group discussion. Journal of Personality and Social Psychology, 53(1), 81.

Staw, Barry M. (1981). The Escalation of Commitment to a Course of Action. The Academy of Management Review, 6(4), 577-587.

Tepper, B. J. (2000). Consequences of abusive supervision. Academy of Management Journal, 43(2), 178-190.

Terminare. (n.d.). Online Etymology Dictionary. Retrieved December 17, 2012, from http://www.etymonline.com

Terminus. (n.d.). Merriam-Webster's online dictionary (11th ed.). Retrieved December 17, 2012, from http://www.merriam-webster.com/dictionary/terminus

Tjosvold, Dean, & Yu, Ziyou. (2007). Group Risk Taking: The Constructive Role of Controversy in China. Group & Organization Management, 32(6), 653-674.

Tyler, Tom R., & Lind, E. Allan. (1992). A relational model of authority in groups. Advances in experimental social psychology, 25, 115-191.

Verona, G. (1999). A Resource-Based View of Product Development. Academy of Management Review, 24(1), 132-142.

Walpole, Ronald E., Myers, Raymond H., Myers, Sharon L., & Ye, Keying. (1998). Probability and statistics for engineers and scientists (Vol. 8): Prentice Hall Upper Saddle River, NJ:.

Weber, H. (2011). Google Fails 36% Of The Time. Retrieved December 17, 2012, from http://thenextweb.com/google/2011/10/17/google-fails/

Weiner, Bernard. (1985). An attributional theory of achievement motivation and emotion. Psychological review, 92(4), 548-573.

Weiner, Bernard. (1986). An attributional theory of motivation and emotion: Springer-Verlag New York.

Woodman, Richard W., Sawyer, John E., & Griffin, Ricky W. (1993). Toward a Theory of Organizational Creativity. The Academy of Management Review, 18(2), 293-321.

Appendices

Appendix A

Innovation Management Survey

Innovation Management Survey

1. Industry

2. Company

3. Gender

- Female
- Male

4. Your Age

5. Your Nationality

6. Education Level

- High School
- Bachelor
- Master
- PhD

7. Your Job Title

8. Years of work experience?

9. Years with current company or organization?

10. Do you currently supervise people?

- Yes
- No

11. What is the function of your unit? (A unit can be a department, a team or a group.)

- Executive Office
- Finance
- Customer Support
- Marketing
- Accounting
- Distribution
- Sales
- HR
- Procurement
- Production
- PR/Public Affairs
- Operations
- R&D
- IT
- Other

12. How many years have you been a member of your unit?

13. How many people work in your unit?

14. Innovation Experience

	Yes	No
In the last **5 years** have you been a member of a project team that focused on innovation?	○	○
In the last **5 years** have you lead a project team that focused on innovation?	○	○

Organizations always need new ideas. These ideas can be called many things in different contexts: ideas, project ideas, new product development projects, innovations, or innovation projects, change initiatives, development ideas or projects or any number of other terms. We use the term **project initiative** as a common label for all of these.

Some project initiatives are not perceived by decision-makers as the right ideas for the organization and its units. In these cases, decision-makers may attempt to terminate the project initiatives. In this survey we are interested in how ideas are terminated in your **unit**. Questions 15-31 present different ways project initiatives might be terminated. For each **termination method**, we are interested in your general rating of each technique across different project initiatives:

- **Likelihood:** How likely is this method to **be used** in your unit to terminate project initiatives.
- **Effectiveness:** How likely would this method **actually stop** proponents from continuing with their project initiatives.
- **Impact:** How likely do you think proponents would be to **come back** with **new ideas** after having their project initiative terminated with this method.
- **Accommodation:** How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit.

A **proponent** is someone actively working towards the success of a project initiative, i.e. a project leader, idea initiator(s) or project members.

15. Termination Method:

Proponents are told the firm lacks the "know-how", the right people, or the technology to do the project initiative.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

16. Termination Method:

Proponents are told that there is no money for the project initiative or that the project initiative they are proposing is too costly.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

17. Termination Method:

Proponents are told that the proposed project initiative is not part of their job, steps on another unit's authority, or that it is someone else's responsibility.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

18. Termination Method:

Proponents are told that what they are proposing already exists in the market, has already been created, or that there is no demand for it in the market.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

19. Termination Method:

Proponents are told that their project initiative has low priority, that the firm is already pursuing too many ideas or is already overloaded with other project initiatives.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

20. Termination Method:

Proponents are encouraged to continue working and come up with new project initiatives even though the one they are currently proposing is terminated.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

21. Termination Method:

Proponents are told that continuing to push their project initiative would negatively affect their careers or have negative consequences for them.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

22. Termination Method:

Proponents are told that there are too many risks associated with the project initiative, or that the chance of failure is too high.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

23. Termination Method:

Proponents are told that an independent review board evaluated and rejected the project initiative.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

24. Termination Method:

Proponents are teased, humiliated, and their motivations for pursuing the project initiative are attacked.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

25. Termination Method:

Proponents are told that they can pursue the project initiative outside the company or that they can try to convince an outside entity to pursue the idea.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

26. Termination Method:

Proponents are told that the project initiative will create problems between their unit and other units, or make another unit look bad.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

27. Termination Method:

Management postpones decision-making or finds bureaucratic reasons for slowing down the project initiative.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

28. Termination Method:

Proponents are quizzed and challenged about their project initiative until they give up or see why their idea is being terminated.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

29. Termination Method:

Proponents are allowed to create a pilot or prototype which managers believe will prove that further work on the project initiative should stop.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

30. Termination Method:

The proponents explain the project initiative and are given a fair and respectful hearing. After decision-makers listen carefully they offer thorough feedback explaining the business or technical reasons why the project initiative is going to be stopped.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

31. Termination Method:

Key talent related to the project initiative is not assigned to the initiative, or is reassigned to other project initiatives; executive sponsors move or leave, or project initiative is given to executives who don't support the project initiative.

	Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Likely	Very Likely
How likely is this method to **be used** in your unit to terminate project initiatives?	○	○	○	○	○	○	○
How likely would this method **actually stop** proponents from continuing with their project initiatives?	○	○	○	○	○	○	○
How likely do you think proponents would be to **come back** with other **new ideas** after having their project initiative terminated with this method?	○	○	○	○	○	○	○
How likely would this termination method **negatively** affect how personally **valued** proponents feel in the unit?	○	○	○	○	○	○	○

Some jobs are more interesting and satisfying than others. We want to know how you feel about your job.

32. I feel fairly well satisfied with my present job.

Strongly disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

33. Most days I am enthusiastic about my work.

Strongly disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

34. Each day of work seems like it will never end.

Strongly disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

35. I find real enjoyment in my work.

Strongly disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

36. I consider my job rather unpleasant.

Strongly disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

37. To what extent would you say the following statements about <u>your unit</u> are accurate?

	Very Inaccurate	Inaccurate	Somewhat Inaccurate	Neither Accurate nor Inaccurate	Somewhat Accurate	Accurate	Very Accurate
If you make a mistake in this unit it is often held against you.	○	○	○	○	○	○	○
Members of this unit are able to bring up problems and tough issues.	○	○	○	○	○	○	○
People in this unit sometimes reject others for being different.	○	○	○	○	○	○	○
It is safe to take a risk in this unit.	○	○	○	○	○	○	○

38. To what extent would you say the following statements about <u>your unit</u> are accurate?

	Very Inaccurate	Inaccurate	Somewhat Inaccurate	Neither Accurate nor Inaccurate	Somewhat Accurate	Accurate	Very Accurate
It is difficult to ask other people in this unit for help.	○	○	○	○	○	○	○
No one in this unit would deliberately act in a way that undermines my efforts.	○	○	○	○	○	○	○
Working with people in this unit, my unique skills and talents are valued and utilized.	○	○	○	○	○	○	○

39. How many new ideas (approximately) has your <u>unit</u> evaluated at the initial screening over the past 12 months?

40. How many new ideas (approximately) in your unit have actually been put into development the past 12 months?

41. Below are 6 statements about innovation and flexibility. To what extent are these true or false for your unit?

	Definitely False	Mostly False	Mostly True	Definitely True
New ideas are readily accepted here.	○	○	○	○
This unit is quick to respond when changes need to be made.	○	○	○	○
Management here is quick to spot the need to do things differently.	○	○	○	○
This unit is very flexible; it can quickly change procedures to meet new conditions and solve problems as they arise.	○	○	○	○
Assistance in developing new ideas is readily available.	○	○	○	○
People in this unit are always searching for new ways of looking at problems.	○	○	○	○

Please rate your unit.

42. Whenever we have needed to develop new skills or technologies to offer new products and services, we have been able to do so quickly and easily.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

43. The learning of new skills and the acquisition of new capabilities that enable the introduction of new products and services come easily to us.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

44. We are good at covering the distance between what we know or have and what we need to know or have, to develop desirable new products and services and bring them to market.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

45. When redesigning products or services we maximize what employees have learned from their working experiences.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

46. One of our innovation practices is finding out how our customers really use our products and services.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Below are some statements about your unit. Please rate how accurate you feel these statements are in describing your unit.

47. We regularly take time to figure out ways to improve our unit's work processes.

Very Inaccurate	Inaccurate	Somewhat Inaccurate	Neither Accurate nor Inaccurate	Somewhat Accurate	Accurate	Very Accurate
○	○	○	○	○	○	○

48. In our unit, someone always makes sure that we stop to reflect on the unit's work process.

Very Inaccurate	Inaccurate	Somewhat Inaccurate	Neither Accurate nor Inaccurate	Somewhat Accurate	Accurate	Very Accurate
○	○	○	○	○	○	○

49. People in this unit often speak up to test assumptions about issues under discussion.

Very Inaccurate	Inaccurate	Somewhat Inaccurate	Neither Accurate nor Inaccurate	Somewhat Accurate	Accurate	Very Accurate
○	○	○	○	○	○	○

50. People in our unit go out and get all the information they possibly can from others - such as customers, or other parts of the organization.

Very Inaccurate	Inaccurate	Somewhat Inaccurate	Neither Accurate nor Inaccurate	Somewhat Accurate	Accurate	Very Accurate
○	○	○	○	○	○	○

51. We invite people from outside the team to present information or have discussions with us.

Very Inaccurate	Inaccurate	Somewhat Inaccurate	Neither Accurate nor Inaccurate	Somewhat Accurate	Accurate	Very Accurate
○	○	○	○	○	○	○

52. This unit frequently seeks new information that leads us to make important changes.

Very Inaccurate	Inaccurate	Somewhat Inaccurate	Neither Accurate nor Inaccurate	Somewhat Accurate	Accurate	Very Accurate
○	○	○	○	○	○	○

Until now we've asked about your unit. In the following we're asking questions about your company or organization.

53. Below are some statements about your company or organization's innovativeness.

	Never	Very Rarely	Rarely	Sometimes	Often	Very Often	Always
Our company accepts demands that go beyond existing products and services.	○	○	○	○	○	○	○
We focus on inventing new products and services.	○	○	○	○	○	○	○
We experiment with new products and services in our local market.	○	○	○	○	○	○	○
We commercialize products and services that are completely new to our company.	○	○	○	○	○	○	○

54. Please rate your company or organization's overall performance in the last three years with respect to:

	Very Poor	Poor	Mildly Poor	Neither good nor poor	Mildly good	Good	Very Good
Its own stated objectives.	○	○	○	○	○	○	○
Main competitor's performance.	○	○	○	○	○	○	○
Industry performance.	○	○	○	○	○	○	○

55. Please rate the overall financial result for your firm for the current year.

Terrible	Extremely poor	Very poor	Poor	Mildly poor	Neither good nor poor	Mildly good	Good	Very good	Extremely good	Absolutely outstanding
○	○	○	○	○	○	○	○	○	○	○

56. Please rate the Return on Investment or Return on Assets of your firm for the current year.

Terrible	Extremely poor	Very poor	Poor	Mildly poor	Neither good nor poor	Mildly good	Good	Very good	Extremely good	Absolutely outstanding
○	○	○	○	○	○	○	○	○	○	○

57. Please rate the Growth in Sales of your firm for the past two years.

	Terrible	Extremely poor	Very poor	Poor	Mildly poor	Neither good nor poor	Mildly good	Good	Very good	Extremely good	Absolutely outstanding
	○	○	○	○	○	○	○	○	○	○	○

58. To what extent are the following statements true for <u>your organization or company</u>?

	Definitely False	False	Neither True nor False	True	Definitely True
Top management encourages new product teams to play it safe in their new product projects.	○	○	○	○	○
Top management expects employees to take risks when they propose new ideas for new products.	○	○	○	○	○
Top management believes that the higher financial risks involved in new product projects are worth taking for higher rewards.	○	○	○	○	○
Top management encourages the development of innovative marketing strategies, knowing well that some will fail.	○	○	○	○	○

59. Please leave your comments here. Feel free to add any additional insights you might have, or share a termination story.

Thank you for taking the time to answer our survey. This is very important to us and we appreciate your time and effort. Thank you.

Appendix B

Stepwise Progression of The Multiple Linear Regression Models

Psychological Safety	β	p	R square	F	p
Model 1			.169	38.451	<.001
Delay	-.411	<.001			
Model 2			.225	27.257	<.001
Delay	-.377	<.001			
Positive Regard	.239	<.001			
Model 3			.271	23.225	<.001
Delay	-.308	<.001			
Positive Regard	.229	<.001			
Neg. Consequences	-.227	.001			
Model 4			.300	19.936	<.001
Delay	-.306	<.001			
Positive Regard	.194	.002			
Neg. Consequences	-.214	.001			
Encourage	.174	.006			

Table 1: Stepwise Progression of the Psychological Safety Regression Model

Learning Behavior	β	p	R square	F	p
Model 1			.130	28.211	<.001
Positive Regard	.360	<.001			
Model 2			.153	16.932	<.001
Positive Regard	.338	<.001			
Delay	-.152	.026			
Model 3			.174	13.106	<.001
Positive Regard	.334	<.001			
Delay	-.178	.010			
Spin-Out	.147	.030			

Table 2: Stepwise Progression of the Learning Behavior Regression Model

Learning Capability	β	p	R square	F	p
Model 1			.128	27.670	<.001
Delay	-.358	<.001			
Model 2			.145	15.919	<.001
Delay	-.139	<.001			
Positive Regard	.133	<.001			
Model 3			.161	11.892	<.001
Delay	-.311	<.001			
Positive Regard	.143	.037			
Low Priority	-.127	.066			

Table 3: Stepwise Progression of the Learning Capability Regression Model

Flexibility	β	p	R square	F	p
Model 1			.178	41.060	<.001
Delay	-.244	<.001			
Model 2			.237	29.241	<.001
Delay	-.387	<.001			
Positive Regard	.245	<.001			
Model 3			.248	20.588	<.001
Delay	-.354	<.001			
Positive Regard	.240	<.001			
Low Priority	-.110	.100			

Table 4: Stepwise Progression of the Regression Model for Flexibility

Risk Orientation	β	p	R square	F	p
Model 1			.069	13.708	<.001
Delay	-.262	<.001			
Model 2			.140	15.032	<.001
Delay	-.275	<.001			
Pilot Fails	.267	<.001			
Model 3			.172	11.892	<.001
Delay	-.238	.001			
Pilot Fails	.271	<.001			
Quiz & Challenge	-.184	.008			

Table 5: Stepwise Progression of the Regression Model for Top Management's Risk Orientation

Org. Performance	β	p	R square	F	p
Model 1			.060	11.930	.001
Delay	-.244	<.001			
Model 2			.093	9.535	<.001
Delay	-.206	.004			
Low Priority	-.185	.010			
Model 3			.119	8.339	<.001
Delay	-.156	.034			
Low Priority	-.172	.016			
Neg. Consequences	-.170	.020			
Model 4			.133	7.116	<.001
Delay	-.156	.033			
Low Priority	.190	.008			
Neg. Consequences	-.183	.013			
Pilot Fails	.124	.077			

Table 6: Stepwise Progression of the Regression Model for Organizational Performance

Job Satisfaction	β	p	R square	F	p
Model 1			.176	40.352	<.001
Delay	-.149	<.001			
Model 2			.202	23.786	<.001
Delay	-.396	<.001			
Positive Regard	.163	.014			
Model 3			.221	17.657	<.001
Delay	-.382	<.001			
Positive Regard	.201	.003			
Pilot Fails	-.142	.035			
Model 4			.233	14.086	<.001
Delay	-.349	<.001			
Positive Regard	.193	.005			
Pilot Fails	-.129	.057			
Neg. Consequences	-.115	.093			
Model 5			.247	12.134	<.001
Delay	-.379	<.001			
Positive Regard	.206	.003			
Pilot Fails	-.144	.034			
Neg. Consequences	-.160	.027			
Intra-Org. Problems	.138	.061			

Table 7: Stepwise Progression of the Regression Model for Job Satisfaction