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The influence of leadership on the prevention of safety incidents: on risk reduction, leadership, safety principles and practices

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The influence of leadership on the prevention of safety incidents

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The influence of leadership on the prevention of safety incidents

On leadership, risk reduction, safety principles and practices

PROEFSCHRIFT

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Victor Roggeveen

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in 1949

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To all people exposed to safety hazards and their leaders

Preface

It was September 2013 when Ferdinand Mertens asked, “Victor, how are you progressing with the writing of your book...?” When I replied rather negatively, he said, “The reason there is no book yet is that you haven’t set a concrete goal! Why not work towards a PhD?” Bart van den Reek then challenged me: “Yeah, why not? Do it!” After pondering on this for a few days, and having received heartfelt support from Riet de Haan, I took the plunge and reported to Adriaan in ’t Groen, who admitted me as a candidate at the Dual PhD Centre. I am grateful to you all for your encouragement.

The subject of the present study is occupational safety and the involvement of leaders at every organisational level, from frontline supervisors to CEOs. As I believe that followers’ behaviours are shaped by the behaviour of their leaders, my objective was to discover how the former perceive the influence of the latter. It took me more than eight years to find what I was looking for. The material costs were affordable and the immaterial gains were priceless. In addition to my academic findings, I found that obtaining a PhD degree requires teamwork; it is impossible to complete one without the help of others. In my case, many were anonymous, some were unwitting, and several were indispensable. I would like to express my appreciation to one and all.

Yolanda de Graaf was my co-pilot and academic mentor from the project’s conception. She advised me on structure, design, style, language, and many other aspects. She joined me in conducting (at least) 75 interviews and numerous presentations across the country. She read every letter I wrote, suggesting how I might re-phrase things and approving my drafts. Without her creative and committed support, this dissertation would have never existed. Yolanda, thank you so much!

I am grateful to my contacts in 33 organisations who persuaded 4,561 of their colleagues to complete my prospective survey questionnaires. No respondents, no research! This also applies to the Tripodian incident investigators and the professional risk analysis experts who anonymously shared their knowledge and experience with me to find the retrospective data I needed. I would like to thank Geesje Saijs, Linda Drupsteen, and Mark Van Houdenhoven, who convinced me that my crazy plan was a good idea and helped me kickstart it. Viola van Guldener, Frank Guldenmund, Harold Janssen, Ed Janssen, Jakko van Kampen, Geert Lentz, Roger van Meer, Ronald Pijtak, Francien Rense, Jan Treffers, Koos Visser, Marith de Vos, and Jakob van der Wal kept me on track during my journey, and Herman de Bruine made an important contribution by deep digging discussions and exposing me to his critical students.

I am indebted to Dion Woestenburg, who played a key role in generating the statistics I used to arrive at my conclusions; Steven de Bie, who advised me on how to structure the retrospective section and distil 240 pages into just seven; eagle-eyed Christiaan Verwer, who scrutinized most of the text and corrected my many language errors; Bart Kelderman, who did the beautiful oil painting on the cover of this book; and Erwin Muller, Jop Groeneweg, and the staff of the Dual PhD Centre for their inspirational guidance and support. A special thank you is reserved for my personal coach Mark Dechesne, who spent many hours trying to help me understand what writing a dissertation actually means and guiding me through the academic maze to obtain my PhD.

Also, I am grateful to Jeroen, Lars, Bianca, Janine, Lou, Guillaume and Lot for giving me time to work on this thesis by allowing me limited presence on so many family occasions.

Last but not least, I am beholden to Riet for her tireless listening to my 'daily progress reports'. She acted as a sounding board from the initial design of the survey questionnaire until the drawing up of the final conclusions and recommendations. She reflected on my many dilemmas and ever-changing conceptual developments. Her unlimited support during the entire development of this thesis can't be appreciated enough.

To all of my family I apologise for limited attention I have given them during this project – I promise I will never do it again!

Risk is a reflection of what we feel.

PAUL SLOVIC

Table of contents

	List of figures	xviii
	List of tables	xx
	List of bar charts	xxi
	Glossary	xxii
	Reading guide	xxiii
1	Introduction	1
2	Theory, concepts and context	5
2.1	Safety	5
2.1.1	Defining safety	6
2.1.2	Safety theories	9
2.1.2.1	Domino theory and accident pyramid	9
2.1.2.2	Normal Accident Theory	10
2.1.2.3	Murphy margin	11
2.1.2.4	Disaster Incubation Theory	12
2.1.2.5	High Reliable Organizing	13
2.1.2.6	Resilience engineering	14
2.1.2.7	Safety I versus Safety II	15
2.1.3	Personal safety versus process safety	16
2.2	Risk management	17
2.2.1	Defining risk	17
2.2.2	Risk management theories	19
2.2.3	International principles and guidelines (ISO 31000)	22
2.2.3.1	Risk assessment	23
2.2.3.1.1	Risk identification	24
2.2.3.1.2	Risk analysis	28
2.2.3.1.3	Risk evaluation	35
2.2.4	Vulnerability; an alternative view	36
2.2.5	Discussion	39
2.2.6	Risk management concepts	45
2.2.6.1	DuPont	46
2.2.6.2	'Swiss Cheese' Model	46
2.2.6.3	Barrier-based risk management	47

2.2.6.4	Dynamic Safety Model	49
2.2.7	Risk reduction	50
2.2.7.1	Risk reduction process	50
2.2.7.2	Theory of planned behaviour (Ajzen)	50
2.2.7.3	Behavioural Change model (Balm)	52
2.2.7.4	Courage to intervene (Moral courage)	54
2.2.8	Discussion	55
2.3	Leadership	56
2.3.1	Defining leadership	56
2.3.2	Leadership as social construct	57
2.3.3	Levels in leadership	58
2.3.4	The leadership process	59
2.3.4.1	The Leadership Moment	59
2.3.4.2	Causal relationships in leadership processes	63
2.3.5	Behavioural motives	65
2.3.5.1	Gap-Outcome-Power Model (Leiden University)	65
2.3.5.2	Achievement Motivation Theory (Atkinson)	67
2.3.5.3	Human Motivation Theory (McClelland)	68
2.3.5.4	Motivational Leadership model (Winter)	70
2.3.5.5	Leadership psychophysiology (Post)	72
2.3.6	Profiling leaders	76
2.3.6.1	Task-oriented leaders	78
2.3.6.2	Relation-oriented leaders	82
2.3.6.3	Self-oriented leaders	85
2.3.7	Summary	88
2.4	Operational context	89
2.4.1	Organisational frameworks	89
2.4.1.1	The legal framework	89
2.4.1.2	The operational framework	96
2.4.1.3	The primary process	98
2.4.1.4	Examples of derailed primary processes	99
3	Empirical research	105
3.1	Scope of the study	105
3.2	Basic assumption	106
3.3	Research enquiries	106
3.3.1	Principal research query	107
3.3.2	Research questions	107
3.4	Research design	107
3.5	Methodology	108
3.5.1	Prospective study	108
3.5.2	Retrospective views	108

4	Safety Leadership Model	111
4.1	Safety Leadership Model Version I	111
4.2	Characteristics	112
4.2.1	Safety characteristics	112
4.2.1.1	Event History	113
4.2.1.2	Sense of Safety	114
4.2.1.3	Safety Risk Potential	115
4.2.2	Risk Management characteristics	115
4.2.2.1	Risk Reduction Cycle	115
4.2.2.1.1	Recognition of risks	116
4.2.2.1.2	Ability to intervene	116
4.2.2.1.3	Motivation to intervene	116
4.2.2.1.4	Courage to intervene	117
4.2.2.1.5	Remedial Action	117
4.2.3	Leadership characteristics	118
4.2.3.1	Task-oriented leaders	119
4.2.3.2	Relation-oriented leaders	119
4.2.3.3	Self-oriented leaders	119
4.3	Safety Leadership Model Version II	119
4.3.1	From Risk Management to Risk Reduction Capacity	119
4.3.2	From Leaders' Behaviours to Safety Leadership	120
4.3.3	Safety Leadership Model Version II	120
5	Prospective study (pilot survey)	123
5.1	Pilot survey (design)	123
5.2	Pilot survey (conduct)	124
5.2.1	Demography	124
5.2.2	Data acquisition	125
5.3	Pilot survey (results)	125
5.3.1	Mean scores in pilot survey	125
5.3.1.1	Safety Leadership in pilot survey	126
5.3.1.2	Risk Reduction Capacity in pilot survey	128
5.3.2	Correlating Safety Leadership and Risk Reduction Capacity in pilot survey	130
5.3.2.1	Classification of identified values	131
5.3.2.2	Observations and interpretation of identified correlations	131
5.3.3	Construct validity of draft survey questionnaire	132
5.4	Improving survey questionnaire design	132
5.5	Pilot survey conclusions	133
6	Extended prospective research	135
6.1	Survey design	135

6.2	Survey Organisation	136
6.2.1	Survey reference	136
6.2.2	Selection criteria	137
6.2.3	Demography	138
6.3	Survey conduct	140
6.4	Survey results (primary analysis)	140
6.4.1	Mean scores	141
6.4.1.1	Safety Leadership orientations	141
6.4.1.1.1	General mean scores for Safety Leadership orientations	142
6.4.1.1.2	Safety Leadership orientations per business sector	143
6.4.1.2	Risk Reduction Capacity	144
6.4.1.2.1	General mean scores for Risk Reduction Capacity	144
6.4.1.2.2	Risk Reduction Capacity per business sector	145
6.4.2	Safety	147
6.4.2.1	General mean scores for safety	147
6.4.2.2	Safety per business sector	149
6.4.3	Correlation and regression analysis	150
6.4.3.1	Classification of identified values	150
6.4.3.2	Correlation analysis	150
6.4.3.2.1	Interpretation of correlation analysis	151
6.4.3.2.2	Table of correlation coefficients	151
6.4.3.2.3	Correlation between Safety Leadership and Risk Reduction Capacity	151
6.4.3.2.4	Correlation between Risk Reduction Capacity and Safety	152
6.4.3.2.5	Correlation between Safety Leadership and Safety	152
6.4.3.3	Regression analyses	153
6.4.3.3.1	Interpretation of regression analysis	153
6.4.3.3.2	Table of regression coefficients	154
6.4.3.3.3	Influence of Safety Leadership on Risk Reduction Capacity	154
6.4.3.3.4	Influence of Risk Reduction Capacity on Safety	155
6.4.3.3.5	Influence of Safety Leadership on Safety	156
6.4.3.4	Evaluation of correlation and regression analyses	156
6.5	Summary	157
6.5.1	Mean scores	157
6.5.2	Correlation analysis	158
6.5.3	Regression analysis	159
6.6	Conclusions of extended prospective research	159
6.7	Reflections by senior leaders	160
6.7.1	Design of the reflection process	161
6.7.2	Acquired reflections	161
6.7.3	Summary of reflections	170
6.8	Contradictions emerged	171

7	Reconsideration of primary prospective analysis	173
7.1	Reconsideration strategy	173
7.2	Task orientation-related contradiction	174
7.2.1	Contradiction #1	175
7.2.2	Factor analyses	175
7.2.2.1	Exploratory Factor Analysis (EFA)	176
7.2.3	Reconsideration of the leadership orientations	177
7.2.3.1	Production-oriented leaders	178
7.2.3.2	Process-oriented leaders	178
7.2.3.3	Confirmatory Factor Analysis (CFA)	179
7.2.3.4	Internal consistency of leadership orientations	179
7.2.4	Explaining Contradiction #1	179
7.2.5	Conclusion on Contradiction #1	181
7.3	Recognition-related contradiction	181
7.3.1	Contradiction #2	181
7.3.2	Explaining Contradiction #2	181
7.3.3	Conclusion on Contradiction #2	185
7.4	Concluding taxonomy of classification of leadership indicators	186
7.5	Safety Leadership Model Version III	187
7.6	Summary	188
7.7	Conclusions	189
8	Prospective survey results	191
8.1	Introduction	191
8.2	General mean outcomes	191
8.2.1	Safety Leadership orientations	192
8.2.1.1	Safety Leadership: General mean scores	192
8.2.1.2	Safety Leadership: Mean scores per business sector	192
8.2.2	Risk Reduction Capacity	193
8.2.2.1	Risk Reduction Capacity: General mean scores	193
8.2.2.2	Risk Reduction Capacity: Mean scores per business sector	194
8.2.3	Safety	194
8.2.3.1	Safety: General mean scores	194
8.2.3.2	Safety: Mean scores per business sector	195
8.2.4	Summary	195
8.3	Outcomes by additional moderator variables	196
8.3.1	Summary	196
8.3.1.1	Mean scores by gender of supervisor	198
8.3.1.2	Mean scores by hierarchical position	200
8.3.1.3	Mean scores by age	202
8.3.1.4	Mean scores by vocational experience	203
8.3.1.5	Mean scores by safety incident history	205

8.4	Structural Equation Modelling (SEM) path analysis	206
8.4.1	Recognition-related effects	208
8.4.2	Ability-related effects	210
8.4.3	Motivation-related effects	212
8.4.4	Courage related effects	214
8.4.5	Action related effects.	216
9	Retrospective views	219
9.1	The view of incident investigators	219
9.2	The view of risk analysis experts	220
9.3	The view of the Dutch Safety Board	222
9.4	Summary	226
10	Valorisation	229
10.1	Findings	230
10.1.1	Safety	230
10.1.2	Risk Reduction	230
10.1.3	Safety Leadership	231
10.2	Resolution of research questions	232
10.2.1	Does risk reduction relate to safety in organisations?	233
10.2.2	Do the behavioural orientations of leaders relate to risk reduction?	234
10.2.3	Do leaders' orientations therefore relate to safety in organisations?	235
10.2.4	Summarized resolution of research questions	238
10.3	What do these findings mean?	238
10.3.1	Roles of the five risk reduction phases	239
10.3.1.1	Salient findings in risk reduction	239
10.3.1.2	Differentiation by business sector	241
10.3.2	Influences of Safety Leadership on Safety	242
10.3.3	Operational applicability of the Safety Leadership Survey	244
11	Conclusions and recommendations	245
11.1	Conclusions	245
11.1.1	Known-knowns	245
11.1.2	Unknowns revealed	246
11.1.2.1	Risk Reduction Capacity	246
11.1.2.2	Leaders' influences on safety	247
11.1.2.3	Resolution of principal research query	248
11.2	Recommendations	248
11.2.1	Fostering Process-oriented Safety Leadership: the academic approach	249
11.2.1.1	High Reliable Organizing	249
11.2.1.2	Psychological Safety	251
11.2.1.3	Growth Mindset	252

11.2.1.4	Transformational Leadership	253
11.2.1.5	Summary of Academic Safety Leadership Practices	254
11.2.2	Fostering Process-oriented Safety Leadership: an operational approach	256
11.2.2.1	Management influence on safety (Flin)	258
11.2.2.2	Effective intervention strategies (Hale et al.)	258
11.2.2.3	Proposed Process-oriented Safety Leadership Principles (Board room reality)	259
11.2.3	Recommendations for external parties	262
11.2.3.1	Governmental Inspectorates	263
11.2.3.2	Certifying bodies	265
11.2.3.3	Safety training institutes	267
11.2.4	From principles to practices	268
11.2.5	Summary	269
11.2.6	Still unknowns (further research required)	270
11.2.7	Limitations	270
11.2.8	Coda	271
12	Summary	273
12.1	Summary in English	273
12.2	Samenvatting (Nederlandse vertaling)	283
13	Author index	295
14	References	299
15	Appendices	311
15.1	Qualification info of incident investigators	311
15.2	Guideline for incident investigators	312
15.3	Survey questionnaire used in pilot survey	317
15.4	Correlational effect size benchmarks (Bosco et al.)	318
15.5	Online prospective survey questionnaire	319
15.6	General mean scores	326
15.7	Mean scores for additional moderator variables	332
15.8	Conversation guide for reflection by senior leaders	347
15.9	Effects of Safety Leadership on risk reduction phases	348
15.10	Mediating effects of risk reduction phases on Safety.	349
15.11	Direct and indirect influences of Safety Leadership on Safety	350
15.12	Sources versus Process-oriented Safety Leadership Principles	351

List of figures

Figure 1	Trends in risk management (Groeneweg, 1992)	11
Figure 2	Disaster Incubation Theory	12
Figure 3	Risk management cycle (Ale, 2012)	21
Figure 4	Risk management process (ISO 31000: 2009)	22
Figure 5	Risk assessment core of ISO 31000	24
Figure 6	Knowledge/Awareness matrix (Gowland, 2011)	26
Figure 7	Risk Analysis Matrix (Numerical rating)	32
Figure 8	ALARP/ALARA Risk analysis method	34
Figure 9	Sources of uncertainty (Van Asselt, 2000)	37
Figure 10	Affect Heuristic (Slovic, 2004)	42
Figure 11	'Swiss Cheese' model (Reason 1987)	47
Figure 12	Bowtie diagram including controls and defences	48
Figure 13	Dynamic Safety model (Cook and Rasmussen)	49
Figure 14	Theory of Reasoned Action (A) and Theory of Planned Behaviour (B)	51
Figure 15	Behavioural Change model (Balm, 2002)	53
Figure 16	The Leadership Moment model (Ladkin)	60
Figure 17	Causal relationships among the primary types of leadership processes (Yukl)	64
Figure 18	Causal relationships by leaders' influence on prevention of safety incidents	65
Figure 19	Gap-Outcome-Power Model (Leiden University)	66
Figure 20	Word-use of risk management related terms in literature	92
Figure 21	Safety Leadership Model Version I	111
Figure 22	Risk Reduction Cycle	118
Figure 23	Safety Leadership Model Version II	121
Figure 24	Single and double loop learning (Argyris)	174
Figure 25	Leadership indicator taxonomy and factor loadings by leadership orientation	187
Figure 26	Safety Leadership Model Final Version III	188
Figure 27	Significant effects (mediator: Recognition)	209
Figure 28	Significant effects (mediator: Ability)	211
Figure 29	Significant effects (mediator: Motivation)	213
Figure 30	Significant effects (mediator: Courage)	215
Figure 31	Significant effects (mediator: Action)	217
Figure 32	Direct and indirect influences on Safety	232
Figure 33	Three relational levels of the Safety Leadership Model	233

- Figure 34 Influences of the risk reduction phases on safety 233
- Figure 35 Influences of Safety Leadership orientations on risk reduction 234
- Figure 36 Mediated influences of leaders' orientations on safety 236
- Figure 37 Direct influences of leaders' orientations on safety 237

List of tables

Table 1	Comparison of leadership characteristics versus motivational drives	77
Table 2	Risk Reduction Capacity (pilot survey)	129
Table 3	Safety Leadership correlation matrix safety experts	131
Table 4	Hierarchical positions of respondents' direct supervisors	139
Table 5	Distribution of respondents over business sectors	141
Table 6	Safety Leadership orientations by all general employees (N=3332)	142
Table 7	Risk Reduction Capacity of all general employees	144
Table 8	Safety as reported by general employees	147
Table 9	Safety Leadership correlation matrix (N=3332)	151
Table 10	Safety Leadership regression matrix (N=3322)	154
Table 11	Leadership orientations consultation: results of incident investigators	180
Table 12	Distribution of respondents over business sectors	193
Table 13	Gender of respondents' direct supervisors	199
Table 14	Leadership effects (mediator: Recognition)	208
Table 15	Leadership effects (mediator: Ability)	210
Table 16	Leadership effects (mediator: Motivation)	212
Table 17	Leadership effects (mediator: Courage)	214
Table 18	Leadership effects (mediator: Action)	216
Table 19	Ranking risk reduction phases per business sector	241
Table 20	Qualifications of incident investigators	311
Table 21	Correlational effect size benchmarks	318
Table 22	Safety Leadership orientations as reported by general employees	326
Table 23	Risk Reduction Capacity as reported by general employees	328
Table 24	Safety as reported by general employees	330
Table 25	Genders of respondents' direct supervisors	332
Table 26	Hierarchical positions of respondents	335
Table 27	Standardised regression coefficients of effects of Safety Leadership on Risk Reduction	348
Table 28	Standardised regression coefficients of effects of risk reduction phases on Safety	349
Table 29	Standardised regression coefficients of influences of Safety Leadership on Safety	350
Table 30	Sources of Process-oriented Safety Leadership Principles	354

List of bar charts

Bar Chart 1	General Safety Leadership Profile (pilot survey)	126
Bar Chart 2	Safety Leadership per business sector (pilot survey)	127
Bar Chart 3	General Risk Reduction Capacity (pilot survey)	128
Bar Chart 4	Risk Reduction Capacity per business sector (pilot survey)	129
Bar Chart 5	Potential severity of incidents	138
Bar Chart 6	General Safety Leadership profile by all general employees	142
Bar Chart 7	Safety Leadership per business sector	143
Bar Chart 8	Risk Reduction Capacity of all general employees	145
Bar Chart 9	Risk Reduction Capacity per business sector	146
Bar Chart 10	Safety of all general employees	148
Bar Chart 11	Safety per business sector	149
Bar Chart 12	General Safety Leadership profile of all employees	326
Bar Chart 13	Safety Leadership per business sector	327
Bar Chart 14	Risk Reduction Capacity as reported by all employees	328
Bar Chart 15	Risk Reduction Capacity per business sector	329
Bar Chart 16	General safety as reported by general employees	330
Bar Chart 17	Safety per business sector	331
Bar Chart 18	Safety Leadership by gender of direct supervisors	332
Bar Chart 19	Risk Reduction Capacity by gender of direct supervisors	333
Bar Chart 20	Safety by gender of direct supervisors	334
Bar Chart 21	Safety Leadership by hierarchical positions	335
Bar Chart 22	Risk Reduction Capacity by hierarchical positions	336
Bar Chart 23	Safety by hierarchical positions	337
Bar Chart 24	Safety Leadership by age	338
Bar Chart 25	Risk Reduction Capacity by age	339
Bar Chart 26	Safety by age	340
Bar Chart 27	Safety Leadership by vocational experience	341
Bar Chart 28	Risk Reduction Capacity by vocational experience	342
Bar Chart 29	Safety by vocational experience	343
Bar Chart 30	Safety Leadership by safety incident history	344
Bar Chart 31	Risk Reduction Capacity by safety incident history	345
Bar Chart 32	Safety by incident history	346

Glossary

Ability	Opportunity, knowledge and skills to intervene to reduce risk.
Action	Remedial action required to reduce identified risk.
Courage	Courage to put safety first if needed to intervene to reduce risk.
Dominance-oriented	Self-centred, sometimes even narcissistic behaviour, person who is only interested in his personal priorities.
Event History	Indication by survey respondents about what has gone wrong in the field of safety within an organisation in the past year.
HSEQ	Health, Safety, Environment, Quality
Intervention	Intervening act to manage risk (may imply cease of primary process)
KPI	Key Performance Indicator
Leadership orientation	Characteristic of a leader's behaviour.
Motivation	Internal will to intervene to reduce risk.
P&ID	Piping and Instrumentation Diagram
Primary process	The process by which an organisation produces its added value (also 'Risk Generator').
Process-oriented	Behaviour focused on improvement of processes with fundamental respect for quality and safety related aspects of the primary process.
Production-oriented	Behaviour primarily focused at meeting production targets.
Recognition	Awareness and acknowledgement of risks.
Relation-oriented	Behaviour that values interpersonal relationships and cares for the social climate at the work place.
Remedial Action	See Action
Risk Potential	Indication by survey respondents about the potential risk of accidents
Risk Reduction Capacity	The aggregated scores of the five phases of the Risk Reduction Cycle.
Risk Reduction Cycle	A five-phase model to measure the ability of an organisation to reduce safety risks.
Safety Leadership	The aspects of leadership focused on risk reduction
Safety Leadership Model	A model displaying the hypothesized relationships between leaders' behaviours, risk management and safety.
Sense of Safety	Indication by survey respondents how safe they feel in their organisation.

All descriptions are not equal; some seem accurate and informative while others are fanciful or absurd.

KENNETH GERGEN, 2009

Reading guide

The objective of this research is to discover the relationship between leadership characteristics and the occurrence of safety incidents. Chapter 1 (Introduction) is the introduction to this research. The core of this dissertation are the relationships between 'safety', 'risk management' and 'leadership'. In Chapter 2 (Theory, Concepts and Context) we discuss the relevant theory, concepts and operational context. In Chapter 3 (Empirical Research), we describe the scope of the research, our basic assumptions, the research questions and the methodology. The research takes two approaches, following a prospective path and a retrospective path. The prospective study is described in Chapter 4 (Safety Leadership Model). Here the core notions (safety, risk management and leadership) are synthesised into a 'Safety Leadership Model', which specifies the interrelationship between leadership characteristics, risk management and the prevention of safety incidents. The core notions are also complemented in this chapter by specific characteristics (i.e., the behavioural orientations of leaders, risk reduction phases and safety characteristics), and then these characteristics are included in the Safety Leadership Model. Chapter 5 (Prospective Study (pilot survey)) describes the design, procedure, materials and results of a prospective pilot survey. Chapter 6 (Extended Prospective Research) covers the design, procedure and materials, results and the statistical analysis of the follow-up to the pilot survey, the extended prospective survey. Chapter 7 (Reconsideration of Primary Prospective Analysis) presents the reconsidered results of the prospective survey and the concluding taxonomy of survey indicators, as well as the Safety Leadership Model, as modified on the basis of the reconsidered analysis. The results of the prospective survey are presented in Chapter 8 (Prospective Survey Results). Chapter 9 (Retrospective Views) contains information about the retrospective approach. The views of incident investigators, risk analysis experts and the Dutch Safety Board are reported here. Finally, the findings of this research study are interpreted, the research queries resolved, and the meaning of these findings discussed in Chapter 10 (Valorisation). Our final conclusions and recommendations are provided in Chapter 11 (Conclusions and Recommendations). Chapter 12 (Summary) is a summary of this research (in the English and Dutch language). The Author index, References and Appendices are located in Chapters 13, 14 and 15.

