Entrepreneurial Cognition and the Decision to Exploit a New Venture Creation Opportunity

Ву

INGRID LE ROUX

Submitted on partial fulfilment of the requirements for the degree of

PhD (ENTREPRENEURSHIP)

In the Faculty of Economic and Management Science

UNIVERSITY OF PRETORIA

STUDY LEADER: DR. M. PRETORIUS

March 2005

ACKNOWLEDGEMENTS

I am immensely indebted to the following people:

- My promoter and friend, Dr Marius Pretorius (UP) for his guidance and support. I really admire his patience and motivation as well as his ability to stretch across quadrants.
- Rina Owen for her wisdom and exceptional understanding of the statistical process.
- Sollie Millard for his statistical guidance.
- My family Lourens, Gerhard and Heinrich for their support, allowing me to fulfil a dream. I am extremely blessed to have three such men in my life.
- My mother, for believing in me all her life. Her passion for life and devotion to everybody around her makes her a living example of the Biblical woman referred to in Proverbs 31: 10 – 31.
- Last but not least to all my friends for their encouragement and support.

Above all I thank the almighty God for the privilege of good health and energy to complete the task.

Ingrid le Roux Pretoria, South Africa March 2005

By

Ingrid le Roux

Degree: PhD (Entrepreneurship) **Department:** Business management

Promoter: Dr. M. Pretorius

ABSTRACT

This study focuses on entrepreneurial cognition and the decision to start a new venture opportunity. The entrepreneurial process used has four broad phases namely; the intention to start, opportunity identification, taking the decision to exploit (start-up) and taking action to execute the venture. The focus of the study is on the decision to start. The study reports empirically the results from an experimentally designed case analysis.

An attempt is made to clarify if any of the following constructs under discussion namely: risk perception, illusion of control, misconceptions or self-efficacy acts as a heuristic or bias and therefore influences the decision to exploit the opportunity. Entrepreneurs and non-entrepreneurs do not differ in their risk propensity but differ in their cognitive perception of the viability of the venture.

A case study method that deals with the animal feed industry was used to eliminate possible familiarity with the industry. The case study was followed by an eight-page questionnaire, developed with structured questions to be completed by the respondents. The respondents varied over groups of students in entrepreneurship, general business management students, and well as humanities students. Managers and practicing entrepreneurs form the rest of the researched population.

The study concludes that misconceptions, illusion of control and business risk perception, but not self-efficacy, influence the decision to start a business.

TABLE OF CONTENTS

CHAPTER ONE: BACKGROUND AND ORIENTATION TO THE PROBLEM			
1.1 1.2 1.3 1.4 1.5	INTRODUCTION PROBLEM STATEMENT RESEARCH OBJECTIVES DEMARCATION AND SCOPE OF THE STUDY PROGRAMME OF INVESTIGATION ORGANISATION OF THE STUDY	2 10 10 12 13 13	
CHAPTER	R TWO: COGNITIVE STYLES AND THINKING PATTERNS	;	
2.1 2.2 2.3 2.3.1 2.3.2 2.4 2.4.1 2.4.2 2.4.3 2.4.3.1 2.4.3.2 2.4.3.3 2.4.3.4 2.5 2.5.1 2.5.2 2.5.2 2.5.2.1 2.5.2.2 2.5.2.3 2.5.3 2.5.4 2.6	INTRODUCTION COGNITIVE STYLE PATTERNING PATTERN RECOGNITION DE BONO ON PATTERNING HERRMANN'S WHOLE BRAAIN METAPHOR BACKGROUND PRINCIPLES OF THE HBDI DESCRIPTION OF THE FOUR QUADRANTS Quadrant A thinking Quadrant B thinking Quadrant C thinking Quadrant D thinking DIFFERENCES IN DOMINANCE SINGLE DOMINANCE THINKING DOUBLE DOMINANCE THINKING Double dominant thinking (same hemisphere) Double dominant in opposite quadrants TRIPLE DOMINANT THINKING QUADRUPLE DOMINANCE CONCLUSION	17 17 20 20 21 24 27 29 31 33 35 38 40 41 42 43 44 44 45	
CHAPTER THREE: COGNITION, HEURISTICS AND BIASES			
3.1 3.2	INTRODUCTION DEFINITIONS OF HERISTICS AND BIAS, COGNITION AND ENTREPRENEURSHIP	48 51	
3.2.1 3.2.1.1 3.2.1.2 3.2.2 3.2.3 3.2.4 3.3	HEURISTICS AND BIASES Heuristics Biases COGNITION AND COGNITION PSYCHOLOGY ENTREPRENEURSHIP ENTREPRENEURIAL COGNITION EXPLORING HEURISTICS AS A CONSTRUCT	51 51 52 52 53 53 56	
3.3.1 3.3.1.1 3.3.1.2	MAJOR TYPES OF HEURISTICS Availability heuristics	60 63 65	

3.3.1.3	Framing heuristic EXPLORING BIASES AS A CONSTRUCT	66 67
3.4		67
3.4.1	SPECIFIC BIASES	69
3.4.1.1	Overconfidence bias	69
3.4.1.2	The belief in the law of small numbers bias	71
3.4.1.3	Illusion of control bias	73
3.4.1.4	Planning fallacy bias	74
3.5	MISCONCEPTIONS	78
3.5.1	SPECIFIC MISCONCEPTIONS	79
3.5.1.1	Underestimating competitive response	80
3.5.1.2	Overestimating Demand	80
3.5.1.3	Misjudging the needs of complementary assets	82
3.5.1.4	Concept of fit	83
3.6	SELF-EFFICACY	85
3.7	RISK	87
3.7.1	TIME RISK	87
3.7.1	INVESTMENT RISK	87
	TECHNICAL RISK	88
3.7.3		
3.7.4	COMPETITIVE RISK	88
3.8	CONCLUSION	91
CHAPTER	R FOUR: ENTREPRENEURIAL PROCESS PERSPECTIVE	
4.1	INTRODUCTION	94
4.2	TWO MODELS OF RELEVANCE	97
4.3	ENTREPRENEURIAL PROCESS	101
4.3.1	ENTREPRENEURIAL INTENT TO START-UP	106
4.3.2	SEARCHING FOR AND DISCOVERING AND	109
	OPPORTUNITY	
4.3.3	DECISION TO EXPLOIT THE NEW VENTURE	112
4.3.3.1	Cognition and the entrepreneurial decision to exploit	113
4.3.3.2	Risk perception and making the decision to exploit	115
4.3.3.3	Misconceptions and making the decision to exploit	116
4.3.3.4	Self-efficacy and making the decision to exploit	117
	, , , , , , , , , , , , , , , , , , ,	
4.3.3.5	Illusion of control bias and decision-making	118
4.4	ENGAGING IN THE EXPLOITATION ACTIVITIES	121
4.5	CONCLUSION	124
CHAPTER	R FIVE: RESEARCH METHODOLOGY	400
5.1	INTRODUCTION	126 126
5.2	PROBLEM STATEMENT	128
5.3	HYPOTHESIS	129
5.4	RESEARCH METHODOLOGY	129
5.4.1	DATA COLLECTION METHODS	129
5.4.2	DATA COLLECTION METHODS	131
5.5	VALIDITY AND RELIABILITY	134
5.5.1	VALIDITY	134
5.5.2	RELIABILITY	135
5.6	STATISTICAL ANALYSIS	135
5.6.1	FACTOR ANALYSIS	136

5.6.2 5.6.2.1 5.6.2.2 5.7	STATISTICAL MODELLING Logistical regression approach Discriminant analysis OBJECTIVES, OUTCOMES AND CONTRIBUTIONS OF THE RESEARCH	138 138 139 139
5.7.1 5.7.2 5.8	OBJECTIVES AND OUTCOMES OF THE STUDY CONTRIBUTION OF STUDY CONCLUSION	139 140 141
CHAPTE	R SIX: FINDINGS	
6.1 6.2 6.2.1 6.2.2	INTRODUCTION FINDINGS RESPONSE RATE DEMOGRAPHICS	143 143 143 143
6.2.3 6.2.4 6.2.5	FACTOR ANALYSIS ANALYSIS OF VARIANCE FOR FACTORS RESULTS OF THE HBDI THINKING PREFERENCE ANALYSIS	147 152 165
6.2.5.1	Panel view on whether the opportunity was viable or not viable	167
6.2.5.2	Panel view on whether the opportunity was start business / sell concept	168
6.2.6 6.2.6.1 6.2.6.2 6.3	STATISTICAL MODELLING Linear discriminant analysis Logistical regression CONCLUSION	169 169 170 171
CHAPTE	R SEVEN: DISCUSSION OF FINDINGS	
7.1 7.2 7.3 7.3.1 7.3.2 7.3.3 7.3.4 7.3.5 7.3.6 7.3.7 7.3.8 7.4	INTRODUCTION HYPOTHESES EMPIRICAL RESULTS FACTOR ANALYSIS CORRELATION ANALYSIS FACTOR ANALYSIS FOR HBDI THE ANALYSIS OF VARIANCE APPROXIMATE LINE FOR THE VIABILITY THOUGHT LINEAR DISCRIMINANT ANALYSIS LOGISTICAL REGRESSION ANALYSIS REVISITING THE HYPTHESIS LIMITATIONS OF THE STUDY AND RECOMMENDATION	175 176 177 177 178 180 181 182 182 182
7.5	FINAL CONCLUSION	187

LIST OF TABLES

Table 1.1	Research question for the different domains	7
Table 2.1	The Key Holistic – Analytic Models of Cognitive Style (Brigham & De Castro)	19
Table 3.1	Overview of cognitive mechanisms potentially relevant to entrepreneurship	54
Table 3.2	Main reported Generic Types of Cognitive Heuristics	61
Table 6.1	Language distribution in the sample	143
Table 6.2	Gender distribution in the sample	144
Table 6.3	Education background in the sample	144
Table 6.4	Respondents own evaluation of previous business experience	144
Table 6.5	Desire to start own business in future	145
Table 6.6	Occupation as indicated by respondents	145
Table 6.7	Frequency table between viability evaluation and the desire to start own business	146
Table 6.8	Frequency able between the decision to start and the desire to start own business	146
Table 6.9	Change in Cronbach Coefficient Alpha with any one variable deleted	148
Table 6.10	Item analysis for the factors	149
Table 6.11	Spearman's rank correlation between factors and the decision to start the venture	151
Table 6.12	Analysis of variance for factor 1 – Misconceptions	152
Table 6.13	Analysis of variance for factor 2 – Business Risk Perception	153
Table 6.14	Analysis of variance factor 3 – Illusion of control	154
Table 6.15	Analysis of variance factor 4 – Self-efficacy	155
Table 6.16	Factor differences between means of respondents with or without previous business experience	156

Table 6.17	Mean for decision (standard deviation) for factors between respondents on the decision to start or not to start the venture based on the opportunity presented	157
Table 6.18	The means for the factors as determined by educational groups	158
Table 6.19	The means for the factors as determined by gender	159
Table 6.20	The means for the factors as determined by language	160
Table 6.21	The means for the factors as determined by occupation	161
Table 6.22	The approximate line where the thought occurred that the concept is viable	162
Table 6.23	Mean line of case study where first decision of viability was taken	162
Table 6.24	Reason for decision to start or not start the venture	163
Table 6.25	The first thought about viability by respondents	165
Table 6.26	Choice between not starting or starting the business	166
Table 6.27	Choice between selling or starting the business	166
Table 6.28	Discriminant analysis	166
Table 6.29	Classification matrix for linear discriminant analysis	169
Table 6.30	Frequency procedure for the logistical regression	170
Table 6.31	The classification matrix for logistical regression	170

LIST OF FIGURES

Figure 1.1	Conceptual Domain of Cognitive Psychology and Entrepreneurial Cognition	6
Figure 1.2	The focus of the study, the decision to exploit or start as the dependent variable and the independent variables investigated.	9
Figure 1.3	Scope of the study	12
Figure 2.1	Four wheels of Human Thinking	19
Figure 2.2	HBDI evolved from the metaphoric whole brain model, which is based on the four quadrants organizing principle of the physiological functioning of the human brain	30
Figure 2.3	A-only profile	32
Figure 2.4	B-only profile	34
Figure 2.5	C-only profile	37
Figure 2.6	D-only profile	39
Figure 2.7	Double Dominance	43
Figure 3.1	Findings made by Simon, Houghton & Aquino	76
Figure 4.1	Analysis of an opportunity	101
Figure 4.2	Driving forces for opportunity realisation	104
Figure 4.3	The Krueger model	108
Figure 4.4	Information processing model	114
Figure 5.1	Aim of the study	127
Figure 6.1	Relationships between factors	152