

APPENDIX H 1 REPGRID CONSTRUCT ANALYSIS RELIABILITY TEST

Constructs	Elicited Constructs													Supplied Constructs			
	Need for control	Actual Control Achieved	Actual Control Potential	Freedom of Choice	Actual Cost	Return on cost	Potential Riskiness	Consensus	Resources	Knowledge	Term of risk	Techniques	Style and Approach	Total	Overall lower source of potential risk	Overall risk is managed well	Grand Total
Need for control	25					1	1							27			
Actual Control Achieved	5	27	5				1		1		1			40			
Actual Control Potential		5	26											31			
Freedom of Choice				3										3			
Actual Cost	1				10									11			
Return on cost						7								7			
Potential Riskiness	1						18	1						20			
Consensus								2						2			
Resources									8					8			
Knowledge									2	13				15			
Term of risk											6			6			
Techniques									1			3		4			
Style and Approach									1				5	6			
Miscellaneous				1										1			
Overall lower source of risk															19		
Overall risk is managed well																5	
Total Number of Constructs																	205
Total Supplied Constructs																	24
Total Elicited Constructs																	183

APPENDIX H 2 REPGRID CONSTRUCT ANALYSIS RELIABILITY TEST

Constructs	Elicited Constructs													Supplied			Grand Total
	Need for control	Actual Control Achieved	Actual Control Potential	Freedom of Choice	Actual Cost	Return on cost	Potential Riskiness	Consensus	Resources	Knowledge	Term of risk	Techniques	Style and Approach	Total	Overall lower source of risk	Overall risk is managed well	
Need for control	27													27			
Actual Control Achieved		29												39			
Actual Control Potential			32											32			
Freedom of Choice				5										5			
Actual Cost					11									11			
Return on cost						8								8			
Potential Riskiness							20							20			
Consensus								2						2			
Resources									11					11			
Knowledge										13				13			
Term of risk											6			6			
Techniques												4		4			
Style and Approach													5	5			
Overall lower source of risk														19			
Overall risk is managed well															5		
Total* Number of Constructs																	207
Total Supplied Constructs																	24
Total* Elicited Constructs								268									183

* 1 Construct was placed in the Miscellaneous Category, and excluded from the rest of the study. This resulted in 183 elicited constructs being used in this research (after excluding the 24 supplied constructs).

APPENDIX H 3 SUMMARISED RESULTS FROM THE REPERTORY GRID INTERVIEWS

Actual Control Achieved			
BINS		QD	
Construct	ID	Construct	ID
Low level of Board attention	BC.5	Good management of this risk	QGR.3
Board willing to delegate risk	BD.8	We have a realistic view of this risk	QGR.4
Passive response to risk	BN.2	Follow procedures regarding risk in all respects	QGR.6
Risk is under our control	BN.4	QD responds pro-actively to management of this risk	QN.3
Receives a high degree of Board attention	BP.6	Board has a clear understanding of these risks	QR.9
Lesser degree of control in managing risk	BA.2	More effective at managing this risk	QGF.4
Open discussion across company in managing risk	BA.10	Right people in place to manage this risk	QGR.8
Managing less in a defined process/method	BC.3	Overall QD less effective at managing risk issues	QGW.2
High involvement by the Board	BD.3	We have a high tolerance for this risk	QP.13
Badly managed risk due to inexperience	BG.3	Board has more control of these risks	QGF.2
Board sees this as a priority due to low complexity	BROB.5	We spend a lot of time focussing on this risk	QGK.8
More systematic approach to risk	BROB.7	We evaluate all the different risk scenarios	QGK.11
Sound contingency and succession plan in managing risk	BROB.12	We are highly capable at managing this risk	QP.5
Control over risk	BT.12	We do not have to rely on a Plan B to manage this risk	QR.7
Risk is managed the way it should be managed	BN.3		
Lesser consistent approach to risk	BA.5		
High management involvement due to high predictability	BB.6		
Low CEO involvement in risk	BB.11		
Board does not involve senior management in risk control	BG.7		
Greater level of control over risk	BP.8		
High locus of control in managing risk (high concentration)	BR.2		
More management time spent on risk mitigation	BR.11		
High involvement of management in dealing with this risk	BROB.11		
Board clearly sees risks for what they are	BS.8		
Deal with risks effectively	BT.7		
Total Number of BINS Constructs	25	Total Number of QD Constructs	14

Actual Control Potential			
BINS		QD	
Construct	ID	Construct	ID
Easy to foresee and control risks	BS.2	It is easy to get the facts to mitigate the risk	QGF.9
Low degree of risk concentration	BS.4	We have the level of skill to deal with this risk	QGK.4
Easy to diversify risk	BS.5	Easy to predict this risk	QGW.5
Risks are not tangible/identifiable	BT.4	An intangible unassessable risk	QN.4
High degree of predictability of risk	BB.7	QD has a low degree of predictability in managing this risk	QGK.9
Highly stable source of risk	BP.3	People responsible for this risk do not understand other risks as well	QGR.7
Lot of knowledge/exp to draw on in managing risk	BP.11	We don't have the skills to deal with this risk	QGW.6
High interdependence of risks with other risks	BR.8	Easy to put in place an ERM strategy with quick results	QJ.5
High level of identification and reporting	BROB.8	Not a high degree of interdependence of risks with other risks	QJ.10
High degree of controllability of risk	BB.8	Potentially out of our control	QR.2
Risks are defined/tangible	BC.2	Highly unpredictable form of risk	QGF.7
Low degree of risk manageability	BD.7	Highly uncontrollable risk element	QN.2
Predictable costs of mitigating risks	BD.9	Is highly dependent on one or more of the other risk elements	QN.10
Low degree of risk variability	BS.7	Highly certain cost of managing this risk	QP.4
Resources available to manage this risk	BS.9		
High degree of dependence on other risk elements	BS.10		
Ability to understand the true risks	BT.5		
Risks are standalone	BT.8		
Total Number of BINS Constructs	18	Total Number of QD Constructs	14

APPENDIX H 4 SUMMARISED RESULTS FROM THE REPERTORY GRID INTERVIEWS

Category Need for Control				
BINS		QD		
Construct	ID	Construct	ID	
High degree of proactivity required to manage risk	BD.4	Does not need a high level of skills at Board level to manage this risk	QGK.3	
Requires implementation of strategic plan to manage risk	BT.9	Does not need a high ddegree of constructive engagement to manage this risk	QGK.7	
Overly optimistic view of this risk (3 =realistic, 2= over opt)	BA.7	High priority risk needs focus	QR.3	
Low degree of strategic insight required	BB.4	Board does not need to have more control over these risks	QGF.3	
Requires a proactive approach	BT.10	We do learn from our past mistakes	QGW.7	
Managing risk issues	BT.3	Does not require a highly autocratic style to manage risk	QJ.3	
High degree of skill necessary to identify and manage risk	BP.9	Does not need a highly conservative approach to manage risk	QJ.9	
Board has a blind spot to this risk	BG.5	Does need a high degree of management time/input	QGK.6	
Have lost little so less wary	BROB.6	Highly dependent on key individuals to manage risk	QR.8	
		Staff imbalance does not add to additional risks in this area	QGR.11	
		High degree of information security protocol (internal confidentiality)	QP.7	
		Needs a high level of Board involvement	QGR.2	
		Needs high level Board attention	QJ.4	
		Needs a highly diversified set of skills to manage this risk	QJ.6	
		Does not need a high degree of Board member input	QN.6	
		Highly in tune with this risk	QGW.3	
		Would not create a highly stable internal environment	QN.11	
		We do not need to re-engineer our Board to deal with this risk	QGW.10	
Total Number of BINS Constructs		9	Total Number of QD Constructs	
		9	18	

Potential Riskiness				
BINS		QD		
Construct	ID	Construct	ID	
Low concentration of financial risk	BB.2	Could have a low potential impact on our business	QGK.10	
Low potential impact on finances/cash of the business	BP.5	This risk will not destroy our business	QGW.8	
High potential financial impact on business	BR.5	Growth of QD will not exacerbate this risk	QGW.11	
High level of reputational risk	BROB.9	Does not inhibit QD's ability to grow the business organically	QN.8	
Positive impact on finances of business	BT.11	Does not have a high impact on profitability	QP.2	
Low impact on business if it happens	BB.10	Low potential shock to our business	QGF.10	
High potential for unexpected surprises	BC.8	Does not have an immediate impact on QD's bottom line	QN.12	
Experience concentrated in hands of few	BD.5	This risk is high priority	QP.8	
Low impact on business due to this risk	BN.6	High risk in resource investment (concentration of risk)	QP.9	
Low scope for unexpected surprises	BR.10	Does not add disproportionately to risk	QR.5	
Total Number of BINS Constructs		10	Total Number of QD Constructs	
		10	10	

Knowledge				
BINS		QD		
Construct	ID	Construct	ID	
Don't need to understand the market to manage risk	BG.4	Needs high degree of insight into the external environment to manage this risk	QJ.8	
Risks are internal	BN.5	Higher risk from this source if we embrace change in ther market	QGR.5	
Risk not created by environment	BT.2	Our risk is highly dependent on external factors	QGK.2	
Risk not reduced by understanding market factors	BA.4	Our competitors handle this risk the same way	QGK.13	
External risks	BC.4	Our competitors handle this risk worse than QD	QGK.14	
Risk source is external	BG.2			
External risks/less control over risks	BROB.2			
Needs a close and careful understanding of the market	BROB.4			
Total Number of BINS Constructs		8	Total Number of QD Constructs	
		8	5	

Actual Cost				
BINS		QD		
Construct		Construct		

APPENDIX H 5 SUMMARISED RESULTS FROM THE REPERTORY GRID INTERVIEWS

Resources				
BINS			QD	
Construct	ID	Construct	ID	
Low degree of operational management required to manage risk	BB.3	Lack of technical skills does not add to risks in this area		QGR.12
High focus on operational issues when strategising on risk	BG.11	Poor management of our operations/production increases our risk in this area		QR.11
High system/process complexity required to manage risk	BR.7	Risk element does not need highly skilled staff to manage		QN.5
Can reduce risk through better procedures and controls	BS.3	Does not require highly technical assessment structure		QN.9
		Does not need more highly qualified staff to manage risk		QP.3
		Not dependent on business processes		QP.12
		QD risk is highly dependent on internal systems		QR.10
Total Number of BINS Constructs	4	Total Number of QD Constructs	7	

Return on Cost				
BINS			QD	
Construct	ID	Construct	ID	
Low return on spend in managing risk	BA.9	If we manage this risk well we will not grow our business		QGF.6
Low return on managing risk	BB.5	This risk exposure should be avoided where possible		QGW.9
Gets co towards it goal	BT.6			
High return on managing risk	BR.9			
Low return on cost mitigation	BS.6			
High return on expenditure in terms of risk management	BC.7			
Total Number of BINS Constructs	6	Total Number of QD Constructs	2	

Term of risk				
BINS			QD	
Construct	ID	Construct	ID	
Risk impact over long term	BC.9	We take a long term view of this risk		QP.6
Risk is short term	BN.11			
Risk impact felt over a long period	BROB.10			
Will have long term impact	BS.11			
Requires long range planning	BS.12			
Total Number of BINS Constructs	5	Total Number of QD Constructs	1	

Freedom of Choice				
BINS			QD	
Construct	ID	Construct	ID	
Easy to subcontract out the management of the risk	BD.10	Much lower risk if we export		QP.10
More latitude in determining how to manage risk	BP.10	Shifting our business towards distribution and away from manufacturing would		QJ.13
High degree of choice in how risk is managed	BD.2			
Total Number of BINS Constructs	3	Total Number of QD Constructs	2	

Style and Approach				
BINS			QD	
Construct	ID	Construct	ID	
		To manage this risk well we need a less creative team		QGF.5
		Lack of passion by our staff adds to this risk		QR.13
		Lack of team work does not add to risk in this area		QGR.9
		Lack of discipline does not add to an increase of risk in this area		QGR.10
		Needs high degree of team spirit to manage this risk		QJ.7
Total Number of BINS Constructs	0	Total Number of QD Constructs	5	

**APPENDIX H 6 TEST OF HYPOTHESES ABOUT DIFFERENCE
IN POPULATION PROPORTIONS AND ASSOCIATION BETWEEN COMPANIES**

Category	Total Constructs			Z* test			χ ² test		
	BINS	QD	VGOLD	Ho:B=Q H ₁ :B≠Q	Ho:Q=V H ₁ :Q≠V	Ho:B=V H ₁ :B≠V	Ho:B=Q df=8	Ho:Q=V df=3	Ho:B=V df=3
Need For Control	9	18	4	2.16	0.89	2.51	3.79	0.38	0.08
Actual Control Achieved	25	14	12	1.64	2.72	1.48	2.13	6.06	1.53
Actual Control Potential	18	14	3	0.47	0.82	0.48	0.08	0.27	0.71
Freedom of Choice	3	2	0	0.34	0.84	0.37	0.01	0.00	0.09
Actual Cost	3	8	3	1.73	0.13	1.93	2.00	0.05	1.11
Return on Cost	6	2	1	1.31	0.31	1.17	0.89	0.13	0.02
Potential Riskiness	10	10	4	0.23	0.27	0.23	0.00	0.00	0.01
Consensus	2	0	0	1.35	**	1.13	0.41		
Resources	4	7	0	1.10	1.60	1.49	0.63	1.34	0.29
Knowledge	8	5	1	0.68	0.52	0.68	0.15	0.00	0.27
Term of Risk	5	1	2	1.54	1.65	1.20	1.26	0.96	0.02
Techniques	3	1	0	0.91	0.59	0.88	0.17	0.31	0.09
Style and Approach	0	5	0	2.38	1.34	**	3.72	0.67	
Total number of constructs 213	96	87	30				15.24	10.18	4.22
							χ _{0.025} ² =17.5	χ _{0.025} ² =9.3	χ _{0.025} ² =9.3

Z* test

$z^* = \frac{(p_1 - p_2) - (\pi_1 - \pi_2)}{\sqrt{p(1-p)(1/n_1 + 1/n_2)}}$ where $p = \frac{(n_1 p_1 + n_2 p_2)}{(n_1 + n_2)}$, π_1, π_2 are population means respectively, $\pi_1 = \pi_2 = 0$
 p_1 = sample proportion 1, p_2 = sample proportion 2, n_1 = sample size 1, n_2 = sample size 2

Highlighted figures indicate significance, and rejection of Ho the null hypothesis, at $z_{0.05} = 1.96$, $z_{0.02} = 2.06$, $z_{0.01} = 2.33$

****** the test statistic is undefined due to the sample proportion being zero.

χ² test

Tests for an association between 2 variables, combining all Categories where the expected value was less than 5.

The df (n-1) are shown at the top of each column. The null hypothesis Ho was accepted in each case (at the 2.5% level) indicating there was an association between the variables