

# Risk stakeholder personality traits and risk decision making: a financial services case study

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Mini-dissertation submitted in *partial* fulfillment of the requirements for the degree *Magister Commercii* in Banking and Financial Risk Management at the Vaal Triangle Campus of the North-West University

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November 2015

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## **PREFACE**

This mini-dissertation is the final deliverable in the Centre for Applied Risk Management (UARM)'s taught master's degree programme. The mini-dissertation was written in article format and consists of three sections: Research project overview, Article, and Reflection.

This mini-dissertation is the student's work. The student was responsible for the final concept, set-up, execution of the research project and writing of the mini-dissertation. The members of the supervisory team contributed in an advisory and technical support capacity on study conception and design, analysis and interpretation of data and critical revision of the manuscript by the student. The mini-dissertation was language edited before submission.

The main study supervisor gave the student permission to submit this mini-dissertation for examination.

## ABSTRACT

Constructive critical discussion of risk issues between risk stakeholders should improve the quality of business decisions. This is one of the reasons why most financial organisations employ risk managers to assist business in such decisions. Role differences between risk managers and business *decision makers* in the decision making processes can be expected to attract people with role-compatible characteristics and personality types. Related personality-based differences in approach to risk-related questions should add to the quality of business decisions. This exploratory study investigated whether the typical personality traits and risk decision making propensity of risk managers and business decision makers differ in the personal wealth management division of a large financial services organisation. A three-phased mixed-method exploratory research approach was used to investigate this question. The first phase consisted of 10 semi-structured one-on-one interviews with risk stakeholders at management level in the organisation. The aim of the interviews was to gain an understanding of conflict situations that arose due to risk decision taken. In the second phase, this information was used to design and develop seven scenario-based risk decision making vignettes. In the third phase, a sample of 138 risk managers and decision makers completed the HEXACO PI-R 60-item personality inventory and the risk decision making vignettes. The application of scenario-based risk decision making vignettes to study risk stakeholder decisions is new to the financial sector. Despite our initial expectations, the personality traits and risk decision making propensity did not significantly differ between the risk and decision making groups. This result indicates that unfounded expectations of difference in approach between risk role-players may give management a false sense of comfort that risk managers are effectively challenging risk decisions taken by business decision makers. The research findings have implications for risk management and recruitment practices for organisations that rely on risk managers making a valuable contribution to business decisions.

## **ACKNOWLEDGEMENTS**

I am grateful to the NWU leadership team, especially my lead supervisor Prof Hermien Zaaiman, and the co-supervisor, Hedré Pretorius, for your skills sharing, support and guidance during this process. Thank you to my business study supervisor, Bertus Janse van Rensburg, who assisted with technical risk supervising activities. I also benefited from valuable suggestions by the editor from the Kerlick Academic Services team. Lastly, to Henry Cockeran, who provided superb assistance when required, thank you - I am forever thankful and humbled by your commitment to the students and their success.

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# RESEARCH PROJECT OVERVIEW

The pressure on risk stakeholders to successfully manage banking deal-related risk exposure is high due to increased regulatory requirements combined with greater risk uncertainty in volatile markets. Business decision makers and risk managers play different roles in the risk decision making process. The different roles should create healthy disagreement and robust deliberation of available options. The expectation is that such discussion will minimise risk when making decisions. However, disagreement between risk stakeholders may give management a false sense of comfort that risk managers are effectively challenging risk-related decisions taken by business decision makers.

The aim of the study was to contribute to improving the efficacy of the risk management process in the personal wealth management division of a South African bank. The study focused on investigating an expected link between role-based typical personalities and risk taking propensity of two risk stakeholder groups, namely, business decision makers and risk management. Our expectation was that differences in personality traits and risk decision making propensity should exist due to the requirements of their respective roles in the decision making process. A lack of difference between the decision making approach of the two groups may negatively impact the decision and could lead to the conclusion that one of the decision making stakeholder groups is unnecessary to the process. The results of this study were therefore expected to be of interest to the management of the bank studied in the research project.

#	Research objectives	Research questions
1.	Compare the personality traits of decision makers and risk managers	Is there a significant difference in personality traits between decision makers and risk managers?
2.	Compare the risk-related decision making propensity of decision makers and risk managers	Does the risk-related decision making approach differ between decision makers and risk managers?
3.	Investigate possible links between the risk stakeholder personality traits and risk decision making propensity	Do personality traits and risk decision making propensity correlate with each other?

This study is expected to contribute to the existing academic literature because:

- Little research has been published on personality traits and the risk management function in the financial sector;
- the application of scenario-based vignettes to study risk stakeholder decisions in the financial sector is novel; and
- applying the HEXACO-PI-R in the South African banking context has not yet been reported in the academic literature.

The *Journal of Behavioural Decision Making* (JBDM) was selected as the journal of choice for this study because this investigation, as part of the NWU Centre for Applied Risk Management (UARM)'s behavioural risk management programme, is aligned with the JBDM's focus.

# ARTICLE

Risk stakeholder personality traits and risk decision making: a financial services case study

## 1 Abstract

Constructive critical discussion of risk issues between risk stakeholders should improve the quality of business decisions. This is one of the reasons why most financial organisations employ risk managers to assist business in such decisions. Role differences between risk managers and business decision makers in the decision making processes can be expected to attract people with role-compatible characteristics and personality types. Related personality-based differences in approach to risk-related questions should add to the quality of business decisions. This exploratory study investigated whether the typical personality traits and risk decision making propensity of risk managers and business decision makers differ in the personal wealth management division of a large financial services organisation. A three-phased mixed-method exploratory research approach was used to investigate this question. The first phase consisted of 10 semi-structured, one-on-one interviews with risk stakeholders at management level in the organisation. The aim of the interviews was to gain an understanding of conflict situations that arose due to risk decisions taken. In the second phase, this information was used to design and develop seven scenario-based risk decision making vignettes. In the third phase, a sample of 138 risk managers and decision makers completed the HEXACO PI-R 60-item personality inventory and the risk decision making vignettes. The application of scenario-based risk decision making vignettes to study risk stakeholder decisions is new to the financial sector. Despite our initial expectations, the personality traits and risk decision making propensity did not significantly differ between the risk and decision making groups. This result indicates that unfounded expectations of difference in approach between risk role-players may give management a false sense of comfort that risk managers are effectively challenging risk decisions taken by business decision makers. The research findings have implications for risk management and recruitment practices for organisations that rely on risk managers to make a valuable contribution to business decisions.

**Key Words:** Personality traits; risk decision making; risk stakeholders; governance risk and compliance (GRC), HEXACO, vignettes

## 2 Introduction

Banks have to deal with a combination of increased regulatory requirements and greater risk uncertainty when making business decisions in the current economic climate. This means that much reliance is placed on each bank's internal risk stakeholders to manage its risks. However, risk stakeholders tend to have different objectives when considering risk in the decision making process (Freeman, Wicks, & Parmar, 2004). Business decision makers should ensure that they optimise the reward from taking risks, whereas risk and compliance managers are expected to minimise risk exposure. These core differences in approach to risk must be managed carefully for the bank to obtain full benefit from the two functions.

One factor impacting the contribution of the risk management process to the long-term success of a bank is how well risk managers are able to influence the business decisions made by business decision makers. The risk management process should involve constructive discussion between the governance, risk and compliance (GRC) managers, on the one side, and business decision makers on the other. Accordingly, a general perception exists in banks that, as part of the risk management process, these two groups should not be in immediate agreement on a risk decision but should consider all feasible options or choices aligned to the bank's risk strategy. A lack of disagreement between the groups due to a similar approach to risk-related decisions can be seen as problematic. A constructive approach to addressing difference of opinion is therefore necessary for optimal decision-making. This is underscored by the South African Reserve Bank's Banking Supervision regulatory requirements that risk and compliance managers should challenge line management as part of the business decision-making process (BCBS, 2011; SARB, 2007).

Our expectation is that the typical personality profiles of the GRC function, represented in this study by risk and compliance managers, and business decision maker (business line managers) function will fit the requirements of each function's role in the organisation. The different roles should attract employees with function-specific characteristic approaches to taking risks. Organisations should be able to leverage these typical differences to enable the constructive approach required for making optimal risk-related decisions. This paper describes the results of an exploratory study that investigated the assumption that the typical personality traits and risk decision-making propensity of risk and compliance managers and business decision makers differ.

To investigate whether these differences exist, we sought to answer three main questions:

#	Question	Medium or test choice
1.	Is there a significant difference in personality traits between decision makers and risk managers?	HEXACO PI 60-item instrument
2.	Does the risk-related decision making approach differ between decision makers and risk managers?	Risk decision making vignettes
3.	Do personality traits and risk decision making propensity correlate with each other?	Comparative analysis of vignette response options compared to responses to the HEXACO-PI 60-item instrument

### 3 Background

Little peer-reviewed published research was found on the link between personality traits of risk stakeholders and their decisions on risk in the financial services sector. Therefore, we considered other papers on personality traits and risky decision making. Information relevant to this study is summarised in the next paragraphs.

#### 3.1 Personality assessment

We sought to establish if significant differences in personality traits between business decision makers and risk managers exist by comparing the main dimensions of personality of the two groups. For this study, we used the 60 item version of the six factor HEXACO Personality Inventory developed by Ashton and Lee (Michael C. Ashton & Lee, 2009; Lee & Ashton, 2004). These factors are Honesty-Humility; Emotionality; Extraversion; Agreeableness; Conscientiousness; and Openness to Experience. The data from this instrument allowed for the comparison of group mean scores for the six broad personality dimensions of the HEXACO framework.

We considered issues of psychological test use in the South African workplace in the selection of the personality assessment instrument. For example, the large percentage of second language English speakers in the South African workplace could impact the reliability and validity of English language tools. In our sample, 64% of the sample indicated that they were English first language speakers, while the rest spoke Afrikaans (24%) or another African language (12%) as their first language. Other studies cite language as a hindrance when personality tests are administered, e.g. Paterson and Uys (2005). It is considered the norm to administer individual personality tests in English in the South African environment, as it is often argued that it is justifiable to administer the measure irrespective of first language of the test-taker. Although it is important to determine whether the performance on the test reflects the

participant's personality and not the participant's competence in the test language, the translation of an existing personality assessment tool to another language is not a quick-fix as changing some wording in an item/question can invalidate the test. English is the official business language in South Africa. Accordingly, a decision was made to use the English version of HEXACO PI-R 60 as we expected that the English language skills of second-language managers targeted for this study would be good enough to not significantly negatively impact the validity of the tool. The suitability of HEXACO for the South African context is a promising area for further research.

### **3.2 Decision making**

Weber and Milliman (1997) noted that the ability to categorise individuals on the basis of personality traits has important managerial implications for recruitment. Hodson and Sorrentino (1997) suggested that group-based personality characteristics, specifically those relating to decision-making orientation, play a critical role in the efficacy and cohesiveness of a group. Based on work done by e.g. Kristof (1996) and Nicholson et al. (2005), we assumed for the purpose of this study that the bank selects its personnel for the different functions according to their personal fit to their specific roles. The present study did not assess the job specification or personality trait job fit in relation to the bank's job characteristics.

### **3.3 Vignette-based study**

Our investigation focused on different role players' approach to risk decision making by applying a story-based vignette technique. Various academic studies, including the research by Hughes (1998), consider this technique to be a well-applied principle and assessment tool in the health and science sector. Our application is a first study to be reported for risk management in the financial sector. The vignette technique allowed for the ease of data collection of risk decisions taken by the groups. The study expectation was that reality-specific scenarios may realise stronger affective reactions and possibly responses that simulate real life.

The process of designing a vignette is similar to that of designing a story completion task. However, vignettes are typically more detailed than story stems. A story stem in research studies describes particular incidents or situations which can be used to evaluate a participant's response preference to the depicted circumstances (Lanza & Carifio, 1992).

Wilks (2004) suggested that researchers should pay special attention to the potential impact of participant interpretation of scenarios and responses to vignettes in the design and development of vignettes. Gould (1996) recommended that a three-pronged approach be utilised during future studies to establish internal validity of vignettes. The present study followed Gould's recommended three step process: (1) develop vignettes from the existing literature or use case histories of real events – Phase1 – in which semi-structured interviews provided business examples used as risk scenarios; (2) submit the vignettes to a panel of experts for comment (technical feedback from the study supervisor); and (3) pre-test to identify ambiguous questions (piloted the designed vignettes within the bank).

### **3.4 Associations between risky decisions and personality traits**

Risky choice may be associated with personality traits as noted in the research studies by Mishra and Lalumière (2011), Weller and Tikir (2011) and Weller and Thulin (2012). Nicholson et al. (2005) and Weller and Tikir (2011) investigated the impact of the domain-specific nature of risk decision-making. Similarly, the vignette choice options in the present study were designed to represent the risk-making domain that the participants work in. This was achieved by incorporating a pattern-based analysis where the response options distinguished between high and low risk-taking propensity, that is, the choice options were frames to be risky, risk neutral or risk averse. Nicholson et al. (2005) recommended researchers should consider the dual nature of risk taking as both domain-general and domain-specific. We therefore included vignettes to assess the personal risk propensity of risk stakeholder (vignettes 6 and 7) as well as risk taking from an organisational perspective (vignettes 1–5).

## **4 Method**

An exploratory research approach was adopted, which began by conducting one-on-one interviews, followed by the creation and design of risk scenario-based vignettes and, lastly, rolling out an online assessment which included the HEXACO PI-R 60-item personality inventory combined with scenario-based risk decision making vignettes. A three-phase, mixed-method exploratory research approach was therefore used. Purposive sampling was used for the semi-structured one-on-one interviews (n = 10); for the design, development and piloting of scenario-based risk decision making vignettes (n = 7); and electronically distributing a survey that consisted of the HEXACO PI-R 60-item instrument and the risk decision making vignettes to a target population of risk stakeholders (303 business decision makers and 40 risk and compliance managers). The SAS<sup>®</sup> system was the data analysis tool of choice as SAS adjusts for missing values and does not delete a whole entry if there were missing values in the response options. Ninety-five percent (alpha = 0.05) significance levels were used for evaluation of the statistical results. .

### **4.1 Phase 1: Semi-structured one-on-one interviews**

Semi-structured interviews were used to gain an understanding of conflict situations that arose due to risk decision making. The main purpose of the one-on-one interviews was to uncover trends in perceived constructive approach/conflict situations and to obtain specific examples of risk decisions taken within the bank. Analysis of the interview transcripts assisted greatly with the design and development of the scenario-based risk decision making vignettes.

### **4.2 Phase 2: Design and development and piloting of vignettes**

The scenario-based vignettes were designed based on the background literature study, using insights gained from the constructive conflict risk decision examples from the interviews. The resulting vignettes were piloted with a small group of five decision makers and two risk and compliance managers. The pilot group was selected according to study-related job requirements and level. This meant that each member of this group was either a line manager, or in a risk and compliance manager related role. Based on feedback during this pilot phase, the scenario-based risk decision vignettes were adapted to include scenarios on personal risk propensity.

### **4.3 Phase 3: Sample group roll-out (combined HEXACO-PI 60-item inventory and vignettes)**

In phase 3, the HEXACO-PI 60-item inventory and vignettes were combined in a questionnaire delivered electronically on the bank's intranet system. The data gathered from the questionnaire were statistically analysed to answer the three main research questions.

#### **4.3.1 Is there a significant difference in personality traits between decision makers and risk managers?**

A t-test was used to answer this question. The purpose was to determine if the trait means for each group differed significantly. Based on the research design and the distribution of the sample data for the two groups, two assumptions were made about the data in the decision to use the t-test for comparing two independent means: (1) the two samples were independent and (2) each sample was randomly sampled from a population that was approximately normally distributed. We used the pooled t-test as the variances of the two groups were similar. This allowed for the determination of a p value associated with the test statistic so that we could accept or reject the null hypotheses.

#### **4.3.2 Does the decision making approach between the two groups differ?**

**Vignettes 1–5:** The Kruskal–Wallis test, which extends Gehan's generalization of Wilcoxon's test, was used to perform nonparametric one-way analysis of variance and multiple comparisons on ranks of the groups (Theodorsson-Norheim, 1986). The Kruskal–Wallis test statistic is a chi-squared distribution, with  $k - 1$  degrees of freedom for  $k$  groups where each group's sample size  $n$  should be greater than 5. If the calculated value of the Kruskal–Wallis test is less than the critical chi-squared value, then the null hypothesis cannot be rejected. If greater than the critical chi-squared value, we can reject the null hypothesis and say that the sample populations are not the same.

**Vignettes 6 and 7:** We used the chi-squared test to determine whether there was a difference between the personal risky choice of risk managers and decision makers. We also compared conditional probabilities to see if their choices significantly differed between groups. The main purpose of this statistic is to determine whether the distributions of the categorical variables differed from one another. It also compares the tallies or counts of categorical responses between the two groups and determines how likely it is that an observed distribution is due to chance. Chi-squared is also called a "goodness of fit" statistic.

### **4.3.3 Is there a correlation between personality traits and risk decision making propensity?**

#### ***Vignettes 1– 5 and the HEXACO PI-R 60-item correlation:***

The SAS one-way ANOVA procedure was used to assess the association between decision making and personality traits. In this case, the data for the two groups were combined to create one set of risk propensity and personality data. A set of 129 valid responses out of the sample of 138 could be used for this analysis.

The one-way ANOVA method was used to compare the risk propensity means of the risky, neutral and risk-averse vignette options for each HEXACO personality trait. The HEXACO factors were therefore the dependent variables in the test. The ANOVA method was used throughout even though vignettes 3 and 5 had only two risk propensity levels. .

To assess the level of association between personality traits and risk decision making propensity, Spearman rank correlation coefficients of variation between the five vignettes and the six HEXACO factors (i.e. 11 variables) were calculated using the SAS CORR procedure with the SPEARMAN option. Spearman rank correlation was used as it is a non-parametric method suitable for measurements that are not normally distributed or homoscedastic, implying that it does not assume that the relationship between the variables is linear. The Spearman correlation coefficient is also not sensitive to outliers. On the other hand, the Spearman rank correlation assumes that the observations are independent and that there is a monotonic relationship between the variables. The outcome of the computation includes the Spearman correlation coefficient  $\rho$ , analogous to the Pearson linear correlation statistic,  $r$ .

## **5 Results and Discussion**

### **5.1 Respondent overview**

A sample of 138 respondents completed the questionnaire consisting 51% (n = 70) males and 49% (n = 68) females. The majority of the participants were White (53%, n= 73), followed by Indian (20%, n = 28), Black (14%, n = 19) and Coloured (13%, n = 18). The first language of most of the participants was English (64%, n = 88), followed by Afrikaans (24%, n = 33) while other African languages made up 12% (n = 16). One respondent did not provide information on first language.

The educational level of the sample groups consisted of post-university degree (38%, n = 46), university degree (17%, n = 20), college (22%, n = 26) and high school (23%, n = 28). Eighteen participants selected the “other” option, which was observed as missing information.

In terms of management level, the participants consisted of executives (4%, n = 2), senior managers (18%, n = 25), middle managers (62%, n = 86), and non-management employees within the bank (14%, n = 20); where 11 risk and compliance participants and 9 business decision makers indicated their management level as 'non-management'. One participant did not indicate a management level. The HEXACO management demographic variable does not have an option for “junior management”. Based on the study population, the twenty-one non-management respondents are expected to be junior managers. Within the bank, junior management is acknowledged as being part of the line management group.

The analysis reported in this article focused on the role of the respondents in the business or risk and compliance (GRC) functions. The group consisted of 76% (n = 104) business decision makers and 24% (n = 33) governance risk and compliance (GRC) employees. This percentage distribution is representative of the bank's wealth management division. Only one respondent did not indicate his/her area of responsibility and the data for this person were not used in the analysis.

The risk type most relevant to the respondents' role was distributed as Operational risk (52%, n = 72), Compliance risk (24%, n = 33), Market risk (11%, n = 15), Legal risk (5%, n = 7), Enterprise risk (4%, n = 6) and Credit risk (3%, n = 5), which is reflective of the business operation of the wealth division of the bank.

### **5.2 Phase 1: Semi-structured one-on-one interviews**

The majority of the interview respondents indicated that conflict does exist between line and risk managers. It was, however, noted that the conflict related to “good or constructive” conflict and

should be managed by the risk manager. Table 1 summarises the main reasons given for conflict. Three of the examples provided by the respondents on decisions that created conflict centred on compliance.

**Table 1: Interview outcomes – Main reasons given for conflict**

Reason for conflict	Respondent’s role*	Frequency (number of times mentioned)
<b>Risk seen as a business inhibitor rather than a business enabler</b>	RCM1, RCM2, BM1, BM2, RCM3,; RCM4, ; BM6	7
<b>Business and risk objectives and priorities differ</b>	RCM1, RCM3, BM6, RCM4	4
<b>Lack of understanding of the role of business and risk managers in enabling business</b>	RCM2, BM4	2

\*RCM, Risk and Compliance Manager; BM, Business Manager (line managers)

Perceiving the risk function as a business inhibitor was the main reason for conflict as noted by both risk and line managers.

**5.3 Phase 2: Design, develop and piloting the vignettes**

Seven vignettes were created based on risk decision taken within the bank as noted in the semi-structured one-on-one interviews. These vignettes are shown in Table 2. These vignettes were then piloted by 5 decision makers and 2 risk and compliance managers. The pilot feedback indicated that the designed vignettes assessed risk decision making. However, it is evident that neither group were risky in their decision making (refer to Appendix B for the detailed pilot results). The feedback received from the participants indicated that the assessment was fit for purpose. Based on the outcome from the feedback of the pilot group, we added two personal risk propensity vignettes.

**Table 2: Full set of wealth management business decision-making vignettes created for this study**

#	Vignette	Options
	<b>Organisational decision making</b>	
1	You are the chief investment officer of a well-known “first to the market” investment bank and your product team designed a product in line with the National Treasury tax free savings account. The product will be available for launch by 1 July 2015 in line with the legislated rollout date. However, the system fix, which will allow the required R30 000 per year or R500 000 per life limit, will only be ready on 15 September 2015.	<ol style="list-style-type: none"> <li>1. Approve go-live 1 July 2015 to ensure first to the market approach is maintained in the bank. (risky)</li> <li>2. Approve go-live 1 July 2015 subject to the implementation of additional controls linked to the advice process of the tax preferred savings account limits.(neutral)</li> <li>3. Delay go-live date to 16 September and ensure all necessary system fixes are made before rollout.(risk averse)</li> </ol>

2	<p>You are the managing executive of a financial planning (FSP) business. Your financial advisors achieve on average R50 million new business income per month.</p> <p>The Head of Compliance submits a report on business written for the past 6 months that illustrates significant gaps in your advice process. This report implies that the quality of advice is questionable and your business may receive a fine or penalty or your license may be revoked if found non-compliant.</p>	<ol style="list-style-type: none"> <li>1. Approve immediate changes to the advice process with impact: a potential R50 million negative impact on new business for the month the changes are implemented. (risk averse)</li> <li>2. Approve changes to the advice process including approval of all deals of R500 000 and above by area managers in a phased approach an expected R25 million negative impact on new business for the month the changes are implemented. (neutral)</li> <li>3. Delay changes to the advice process until a suitable later time period when new business will be minimally impacted. However, a potential fine and penalty of R30 million could be expected if the Financial Services Board finds your current practices to be non-compliant. This includes the potential loss of the business's FSP License. (risky)</li> </ol>
3	<p>A high net worth client for the past 20 years walks into your office and asks you, as his wealth manager, to transfer R10 million out of his cheque account to invest in a capital guaranteed investment for 10 years. He informs you that he will sign all the required paper work, including the mandate and indemnity form, at a later stage as he is in a rush. Which decision will you take?</p>	<ol style="list-style-type: none"> <li>1. Only action the request once the investment mandate and indemnity are signed. (risk averse)</li> <li>2. Email the client to confirm the instruction and only action the request accordingly upon written reply from the client. (risk neutral)</li> <li>3. Transfer the funds as instructed because you have managed this client for the last 20 years. (risky)</li> </ol>
4	<p>You must increase the bottom line profits of your business by an additional 20%.</p> <p>According to the business strategy analyst, collective investment schemes are highly regulated. However, some schemes are unregulated. In order to increase the business unit's profits by an additional 20% a year, he recommends that unregulated collective investment schemes are included on our product offering.</p>	<ol style="list-style-type: none"> <li>1. Five schemes with a potential gain in profits of 28%. However, there may be client losses to the value of 10% of the total portfolio. (risky)</li> <li>2. Three schemes for professional clients and a minimum investment of R10 million including EXCO review and approval of all concluded deals. Potential gain in profits of 20% and possible client losses to the value of 8% of the portfolio. (risk neutral)</li> <li>3. One scheme with a potential gain in profits of 5% and possible client losses to the value of 2% of the portfolio. (risk averse)</li> </ol>
5	<p>You are the chief investment officer of ABC bank who is about to approve the purchase of a stock recommended by your analyst to the value of R500 million. An anonymous caller indicates that your bank is using non-public information given to one of your employees. Upon investigation this allegation is confirmed. Your bank needs this deal to make your annual investment target. Would you proceed with the deal?</p>	<ol style="list-style-type: none"> <li>1. Yes (risky)</li> <li>2. No (risk averse)</li> </ol>
	<b>Personal risk propensity</b>	
6	<p>You are 35 years old and have to select a retirement portfolio. Which option would you choose?</p>	<ol style="list-style-type: none"> <li>1. Equities Fund (risky)</li> <li>2. Balanced Fund (neutral)</li> <li>3. Money Market Fund (risk averse)</li> </ol>
7	<p>You are 58 years old and have to select a retirement portfolio. Which option would you choose?</p>	<ol style="list-style-type: none"> <li>1. Equities Fund (risky)</li> <li>2. Balanced Fund (neutral)</li> <li>3. Money Market Fund (risk averse)</li> </ol>

**5.4 Phase 3: Questionnaire (combined HEXACO PI 60-item inventory and vignettes)**

The HEXACO Cronbach  $\alpha$  for the total sample group was 0.76. This suitably high value gave us confidence that the English version of the HEXACO PI-R could be used for our target group. Refer to Table 3 for the Cronbach  $\alpha$  of the HEXACO factors.

**Table 3: Cronbach  $\alpha$  results: HEXACO factors**

<b>HEXACO factor</b>	<b>Cronbach <math>\alpha</math> result</b>
Honesty-Humility	0.76
Emotionality	0.79
Extraversion	0.79
Agreeableness	0.73
Conscientiousness	0.85
Openness to Experience	0.83

**5.4.1 Is there a significant difference in personality traits between business decision makers and risk managers?**

As shown in Table 4, the t-test results showed no statistically significant difference between the risk stakeholders at the HEXACO factor level. Since  $p > \alpha = 0.05$ , we do not reject the null hypothesis of equal means at factor level.

However, significant facet level differences were found within the Honesty–Humility and Extraversion factors. Specifically, statistically significant differences were observed for Sincerity and Forgiveness, with the risk management group being significantly more sincere and less forgiving than the business decision-making group.

**Table 4: T-test results: HEXACO factors and facet differences between decision makers' management and risk and compliance management**

		Mean		Standard deviation		t-test		Significant difference at $\alpha = 0.05$
		RCM*	BLM**	RCM*	BLM**	Student's t	P-value	Yes/No
HEXACO factor	Honesty–Humility	4.0	3.9	0.5	0.5	0.4	0.7	No
	Emotionality	3.0	3.0	0.7	0.5	0.4	0.7	No
	Extraversion	3.6	3.6	0.6	0.4	-0.3	0.8	No
	Agreeableness	3.2	3.4	0.4	0.5	-1.5	0.1	No
	Conscientiousness	4.1	4.0	0.4	0.5	0.8	0.4	No
	Openness to Experience	3.4	3.4	0.7	0.6	-0.3	0.8	No
HEXACO facet	Sincerity	4.2	3.9	0.6	0.7	2.0	0.0	Yes
	Forgiveness	3.2	3.6	3.0	3.5	-2.6	0.0	Yes

\*RCM, Risk and Compliance Manager; \*\*BLM, Decision-maker Manager

The “Equality of variance test” results depicted in Table 5 indicate that the variances between two groups are not significantly different.

**Table 5: Equality of variance: HEXACO factors between decision makers management and risk and compliance management**

		Equality of variance	F value	Pr > F
HEXACO factor	Honesty–Humility	Equal	1.1	0.8
	Emotionality	Equal	1.5	0.1
	Extraversion	Equal	1.6	0.1
	Agreeableness	Equal	1.4	0.3
	Conscientiousness	Equal	1.5	0.2
	Openness to Experience	Equal	1.4	0.2

**5.4.2 Does the decision making approach between the two groups differ?**

The results of the Kruskal–Wallis test are shown in Table 6. No statistically significant differences were observed. Decision makers’ and risk and compliance management’s answers did not differ for the five vignettes.

**Table 6: The Kruskal–Wallis test results**

	Wilcoxon mean scores		Kruskal–Wallis test	
	Risk man.*	Line man.*	Chi-squared**	p-value
Vignette 1	70.0	63.7	0.9	0.4
Vignette 2	69.6	65.0	0.5	0.5
Vignette 3	68.2	69.5	0.0	0.8
Vignette 4	69.9	63.8	0.7	0.4
Vignette 5	68.7	70.0	0.6	0.4

\*Line man - Decision makers & Risk man – risk and compliance managers; \*\*H statistic

Lastly, we evaluated whether differences in personal risk propensity between the groups existed. The personal risk propensity of risk managers and line managers were independent and did not differ significantly between risk managers and business decision makers.

**Table 7: Chi-squared results: Personal risk propensity vignette difference between risk managers and business decision makers**

Personal propensity item	Chi-squared test	
	Chi-squared value	p-value
Vignette 6: Selecting a retirement portfolio when you are 35 years old	0.3	0.9
Vignette 7: Selecting a retirement portfolio when you are 58 years old	4.5	0.1

**5.4.3 Is there a correlation between personality traits and risk decision making propensity?**

We used Spearman correlations to test for association between variables (as opposed to Pearson's correlation that tests for linear relationships). Spearman correlations do not depend on the distribution of the underlying data and can be used for ordinal data. Spearman rank correlation must lie between –1 and 1. Values close to either –1 or 1 indicate a strong association between the variables; values close to zero indicate no or little association. The results in Table 8 show that no strong correlations were observed.

**Table 8: Spearman correlation results: Correlation between the HEXACO risk factors and the vignette response options**

	Spearman's rank correlation					
	Honesty–Humility	Emotionality	Extra-version	Agree-ability	Conscien-tiousness	Openness to Experience
Vignette 1	0.0	0.1	-0.1	0.0	0.1	-0.1
Vignette 2	0.0	0.0	0.1	0.0	-0.1	0.2
Vignette 3	-0.1	-0.1	0.1	-0.1	-0.1	0.0
Vignette 4	0.1	0.2	0.0	0.1	0.2	0.0
Vignette 5	-0.1	0.0	0.0	0.0	-0.2	-0.1

This result was confirmed by the one-way ANOVA results shown in Table 9. No statistically significant differences were observed.

**Table 9: ANOVA results comparison of the risk propensity means of the risky, neutral and risk-averse vignette options for each HEXACO personality trait**

		HEXACO factor					
		H-H	E	X	A	C	O
Vignette 1							
Risk propensity mean	Risky	3.7	3.3	3.3	3.8	4.0	2.9
	Neutral	3.9	2.9	3.7	3.4	4.0	3.5
	Risk averse	3.9	3.0	3.6	3.4	4.0	3.4
ANOVA	F-value	0.11	0.83	0.94	0.45	0.19	1.89
	P-value	0.89	0.44	0.39	0.64	0.82	0.16
Significant difference at $\alpha = 0.05$	Yes/No	No	No	No	No	No	No
Vignette 2							
Risk propensity mean	Risky	3.9	3.0	3.6	3.4	4.1	3.3
	Neutral	4.0	2.9	3.7	3.3	4.0	3.5
	Risk averse	3.5	3.1	3.4	3.4	4.0	3.4
ANOVA	F-value	2.54	0.20	1.57	0.10	0.55	1.62
	P-value	0.08	0.82	0.21	0.90	0.58	0.20
Significant difference at $\alpha = 0.05$	Yes/No	No	No	No	No	No	No
Vignette 3							
Risk propensity mean	Risky	.	.	.	.	.	.
	Neutral	3.9	2.9	3.7	3.3	3.9	3.4
	Risk averse	3.9	3.0	3.6	3.4	4.1	3.4
ANOVA	F-value	0.50	2.67	2.12	2.23	1.80	0.02
	P-value	0.48	0.10	0.15	0.14	0.18	0.88
Significant difference at $\alpha = 0.05$	Yes/No	No	No	No	No	No	No
Vignette 4							
Risk propensity mean	Risky	3.8	2.7	3.6	3.3	3.9	3.3
	Neutral	3.9	2.9	3.6	3.3	4.0	3.5
	Risk averse	4.0	3.1	3.6	3.4	4.1	3.4
ANOVA	F-value	0.93	3.25	0.04	0.45	0.69	0.41
	P-value	0.40	0.04	0.97	0.64	0.51	0.67

Significant difference at $\alpha = 0.05$	Yes/No	No	No	No	No	No	No
Vignette 5							
Risk propensity mean	Risky (1)	4.2	3.1	3.6	3.4	4.6	4.2
	Neutral/Risk Averse (2)	3.9	3.0	3.6	3.4	4.0	3.4
ANOVA	F-value	0.84	0.14	0.02	0.05	3.38	3.64
	P-value	0.36	0.71	0.88	0.82	0.07	0.06
Significant difference at $\alpha = 0.05$	Yes/No	No	No	No	No	No	No

## 6 Conclusion

Against expectation, the personality traits and the approach to risk decision making between business decision makers and the GRC groups within the wealth management division in a South African bank did not differ significantly.

The perceived conflict between risk managers and business decision makers can therefore not be attributed to a general difference in personality type or decision making propensity between the two groups. It may be that conflict is more due to role-required different objectives and resultant stress levels of business employees and risk and compliance managers in the risk decision making process. The significant differences in higher levels of sincerity and lower levels of forgiveness for risk managers can also create conflict between risk managers and business decision makers. On the other hand, the perceived conflict could be an outlier and consequently a memorable event involving atypical personalities in the group. These options can be interesting areas for further study.

Even though the risk stakeholders have different job profiles, it seems that employees within the wealth management division are recruited to fit into the bank's wealth management culture. More research on the impact of such recruitment practices on the efficacy of the risk management function in financial institutions is recommended. Future research should also include in-depth analysis of differences within groups.

The vignette pilot results indicated that, even though vignettes have predominantly been used in medical and social science research, it is possible to design and develop scenario-based decision making vignettes in financial risk management studies. Even though no strong correlation between the HEXACO main factors and the vignette options was found, this remains a promising area for further study.

The reliability and validity of the use of the English version of HEXACO PI-R 60 in business research in South Africa should also be further investigated.

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The article word count is 6213; the journal maximum is 10000 words

## REFLECTION

My NWU journey has been a profound experience not only from a learning perspective and the acquisition of new knowledge but also one that allowed me to grow emotionally. I consider myself to be an expert due to the years of experience in the risk management field. However, it was a humbling experience from an academic perspective. I will be forever grateful to the NWU leadership for their commitment and efforts.

I found the research project to be an extremely tedious task at each phase but all rewarding in the surprising result which rejected my initial assumption that groups will have different approaches to risk decision making. I assumed prior to undertaking the study that the decision making approaches between the risk stakeholders would differ despite the possible impact of the bank's "culture" fit recruitment requirement.

I will definitely change the time dedicated to complete the tasks at hand, but also request UARM to increase the time required to complete the mini-dissertation. I was extremely committed and worked exceptionally hard as academic writing does not come naturally to someone like me as it does some gifted individuals. However, work commitments also required its fair share of my time. Nevertheless, if I could choose it over I would still apply to go through this process that not only empowered me but also allowed me personal and professional growth.

Lastly, the fact that I am one of the first risk practitioners to add to the academic area of qualitative risk research within the financial services sector as well as to the academic literature linked to risk management is absolutely amazing as little academic evidence is found on this topic.

# **APPENDICES**

## **APPENDIX A – Phase 1**

Interview request with consent form

Consent Form for Phase 1 (note: you will need a similar consent form for Phase 2 -

Title of the Study: Risk stakeholder personality traits and risk decision making: a financial services case study

Study investigator: Leanne Williams

Invitation to Participate & Study Description

You are invited to participate in an interview on whether conflict exists between risk stakeholders. You will also be interviewed by Leanne Williams. Each interview will take approximately 15 minutes to complete and will be recorded.

Participant information will be maintained by the researcher as part of a risk stakeholder personality traits and risk decision making: a financial services case study and will be classified as the interview data.

By accepting the meeting request you acknowledge and approve participation in this research project.

Confidentiality

Your participation and information will be kept strictly confidential. To protect your privacy, the recorded interview questions will only be identified with a code name and number (example respondent 1).

All the research project material will be kept for three years after the study is concluded, and will be accessible only to members of the North West University Applied Risk Management faculty. It is important to note that the information obtained in the interview may be published in scientific journals and presented at professional meetings, but only group patterns will be described and your identity will not be revealed. You have the right to decline this request

The decision to participate in this research project is entirely up to you. You may decline to take part in the study.

**Interview Item for questionnaire:**

Select your role with an X

Line Manager

Risk Manager

Compliance Manager

Please indicate the business environment in which you operate.

Free Text

1) I believe that the risk and compliance function enables business management

- 1 Strongly Agree
- 2 Agree
- 3 Neutral
- 4 Disagree
- 5 Strongly disagree

2) I believe that the priorities and objectives of risk and compliance managers differ from that of business managers

- 1 Strongly Agree
- 2 Agree
- 3 Neutral
- 4 Disagree
- 5 Strongly disagree

3) Which factors do you believe cause conflict between the risk and compliance managers and business managers?

FREE TEXT

**Interview Notes**

Verbatim (note: add 'verbatim' to explain colloquialisms and grammar errors in text) excerpt of Interviews Conducted by Student	Interviewer comment
<p>Respondent 1 (RCM1):</p> <p>Do you think conflict exists between the risk and line managers? Yes</p> <p>Explain why: Risk and line managers have different objectives to achieve.</p> <p>It is important to note that the conflict between risk and line is “good conflict”</p> <p>Firstly, one must meet the business plan vested interest in managing risk.</p> <p>Secondly, first line (line managers)benefits from healthy conflict</p> <p>The risk objectives or balanced view – It is easy to say no or yes to everything and one must find the balance and manage the risk.</p> <p>Risk managers must understand the business objective and add value to the business to manage this conflict. Risk managers must be a business enabler and always ensure that they manage, monitor and escalate risks.</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>I can provide an Industry example of the newly regulated “Tax-free Savings Plan”</p> <p>The business wants to be first to the market which means “get the product out to the market quickly</p> <p>It is easy to copy and paste a competitor without realising the risk.</p>	<p>The respondent specifically mentions that the conflict is good conflict. However later in the interview he mentions that the risk manager must manage this conflict</p>

<p>The risk challenge and questions that come to mind, (1) do we (risk and business) know what's the risk? (2) are we confident in how we manage the risk and (3) if something goes wrong do we have action plans in place?</p> <p>If you analyse the risks linked to the Tax-free Savings plan it impacts the following</p> <ul style="list-style-type: none"> <li>• An existing “Unit Trust” product – the business needed to create a block on the system for additional payments above the regulated limit which is R25 000 per years or R500 000 per life-time</li> <li>• Penalties linked to non-compliance <ul style="list-style-type: none"> <li>○ If we are to found guilty of non-compliance this could be a Reputational risk – failed system (as indicated above the system block) including the client impact, as clients would need to pay more tax</li> </ul> </li> <li>• Additional advice risk linked to training. <ul style="list-style-type: none"> <li>○ Did we ensure all our financial advisors are trained to discuss the clients first R30 000 investment is a mandatory discussion to save in the Tax-free plan</li> <li>○ Is the necessary process changes and training ready and rolled out before the launch of this new product? before roll-out</li> </ul> </li> </ul> <p>Not all the risks linked to this Tax-free savings plan was mitigated or addressed so risk could not sign off or agree to the decision to “roll out” to be first to the market.</p>	
<p>Respondent 2 (RCM2)</p> <p>Do you think conflict exists between the risk and line managers? Yes</p> <p>Explain why? Potential lack of understanding exists between business and risk managers in relation to what is expected of risk managers and what is expected of business managers.</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>When we implemented a new Financial Needs Analysis (FNA) format. The risk management objective was to ensure high quality FNA's in Financial Planning and simultaneously complying with the compliance requirements of the Financial Services Board (FSB).</p>	<p>It was interesting to note that this respondent refers specifically to the level of understanding about the different functions and roles of the two types of risk stakeholders.</p>

<p>Business didn't see the decision as an opportunity to improve the business environment and reduce inadequate advice related claims pay-outs. It was received negatively and not as a business enabler.</p>	
<p>Respondent 3 (BM1)</p> <p>Do you think conflict exists between the risk and line managers? No</p> <p>Explain why? The risk function is there to help the business.</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>Looking at business requirement from FAIS fit and Proper perspective (Compliance Risk) – A business decision was approved linked to the recruitment process to increase the qualification standards for newly appointed Financial Planners. The Compliance manager stuck to what the regulations minimum qualification required (a lower qualification requirement) and in this case compliance became an inhibiting factor. The reason for the approved decision was to ensure Financial Planning appoints highly qualified financial planners and not recruit in line with legislation which is effectively a minimum standard.</p>	<p>The interviewer probes that risk could mean both risk and compliance. The respondent indicated no but her example, which links specifically to compliance, contradicted her first response</p>
<p>Respondent 4 (BM2)</p> <p>Do you think conflict exists between the risk and line managers? Yes</p> <p>Explain why? The business finance perspective on tax financial loss versus what group risk deems a financial loss. These perspectives are different. This issue is currently still going back and forth.</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>Tax risk and loss reporting. There was a self-identified issue that the business did not pay taxes on a specific fringe benefit and this was declared to SARS. The actual tax not paid, penalties and fines total is R5.5M and R1.2M is fines and penalties, group risk wants the full R5.5M captured and not just the R1.2M. Business is of the view the</p>	<p>This business representative seems not to have experienced any other risk related issues accept for the tax loss issue. This issue is not linked to the management of tax risk but the treatment of materialised tax risks and linked losses.</p>

<p>actual tax that should have been paid is not a loss.</p>	
<p>Respondent 5 (BM3)</p> <p>Do you think conflicts exist between the risk and line managers? Yes</p> <p>Explain why? Due to rules by business, we must achieve production and linked targets. However, compliance issues take away the power of writing new business. Compliance requirements are not business enabling.</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>In the emerging and traditional market segment there had now been a decision to cap or limit the income of clients to R120 000. What this means is that an emerging and traditional market segment financial planner operate within an area such as Alexandra and Diepsloot cannot write business if the income of the client is above R120 000 and must be referred to a business as usual planner. Currently in those mentioned areas there are no other planners which mean we lose those clients to a competitor. Compliance rules inhibits increasing market share in the emerging and traditional market segment.</p>	<p>Compliance rules or decisions taken seems to trend as being perceived as inhibiting business from achieving their objectives.</p>
<p>Respondent 6 (RCM3)</p> <p>Do you think conflict exists between the risk and line managers? Yes</p> <p>Explain why? Sometimes there is conflict from the point of view that risk and compliance priorities differ. Line managers sees it that they would be able to manage the risk</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>Compliance gap in the advice process – Compliance noted this must be addressed, however business does not see it as a risk.</p> <p>Compliance noted that the process was flawed, while business sees it that there is a process so everything is okay and the risk is</p>	<p>Important point <del>rose</del> <del>in</del> from interview 1 and interview 6 – the objectives or priorities differ for risk and business managers.</p> <p>Also implied as a problem in interview 4. See proposed summary table later.</p>

<p>mitigated.</p>	
<p>Respondent 7 (BM4)</p> <p>Do you think conflict exist between the risk and line managers? Yes</p> <p>Explain why? Business does not understand the reasoning for doing something or nothing. When risk or compliance raises concerns it's considered as disabling the business or putting barriers in place.</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>Email encryption project. Currently the Protection of Personal Information (POPI) legislation enactment requires banks to ensure client data is secured. The Risk Function made a decision to encrypt all emails, including bank statements of clients to ensure we meet the POPI requirements in terms of data protection. Business managers were informed about this change without the context of why the change is being implemented. Furthermore how this affected change was going to impact business as usual was not communicated.</p>	<p>Risk and business understanding on matters linked to risks is not on the same level. How risk and business decisions are communicated and presented is very important to ensure a balanced view is obtained</p>
<p>Respondent 8 (BM5)</p> <p>Do you think conflict exist between the risk and line managers? No</p> <p>Explain why? We are risk averse and make sure everything falls within the proposed guidelines. We cover our "asses".</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>Recruitment (followed process) If the wrong FAIS person is brought on board we face a potential fine and penalty. It's important to follow the rules so that employees can start work immediately. Where a FAIS employee is brought on board for example a drug offense, this is signed off (risk accepted) by the Head of Risk before offer is</p>	<p>Interesting to note how Human Resources (HR) business managers understand the consequence of not managing the risk. The benefit of compliance outweighs the consequences of non-compliance</p>

<p>made.</p>	
<p>Respondent 9 (RCM4)</p> <p>Do you think conflict exists between the risk and line managers? Yes</p> <p>Explain why? You find that as compliance seen to be putting in more measures and controls making it more difficult for the business to make money. These changes are due to the regulations put in place by the regulators.</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>Account opening and account due diligence (FICA and AML requirements). Businesses have to comply with regulations, and they do comply however not without complaining.</p>	<p>In this instance it is noted business complies but with complaints specifically linked to profit achievement</p>
<p>Respondent 10 (BM6)</p> <p>Do you think conflict exists between the risk and line managers? Yes</p> <p>Explain why? Mainly due to the fact that the compliance function sits within the business, even though it's attempted to segregate the business. When the compliance function sit within the business there seems to be a negative biased against the business.</p> <p>Provide an example where a decision was taken that created conflict between risk and line.</p> <p>No specific example can be provided but the general feeling or perception is that the lack of separation or independence impacts decisions negatively.</p>	<p>The point made in this interview is how the implementation of the Basel lines of defense is required so as to ensure risk and compliance remains or perform an independent function from that of line managers.</p>

**Post interview Summary**

Below find the summary of the conflict between Risk and Compliance and business. Item number 1-3 will be used as key case study information.

Item No	Scenario	Risk Type	Decision	Reason for conflict
1	New Product	Business Risk	Business needs to be first to the market: competitive edge versus managing the risk	Being first to the market would potential ensure greater market share, however the risk managers do not approve this decision at the product approval committee which means business will not be first to the market. Risk does not approve the proposed date of roll out as all the risks have not been mitigated or managed.
2	On-boarding a client	Compliance Risk	Which? Advisors: client on boarding process (production) versus all the compliance requirements extending the on boarding process	Compliance requires that all the regulatory requirements are met during the client on boarding process; however business perceives the compliance requirements as tedious and takes more time to on board clients which impacts production turnaround times.

3			Compliance identified advice gaps and recommends enhancements, while business is of the view the process is adequate	Compliance reviewed the quality of advice which is currently poor and could lead to numerous claim pay outs or the ombud ruling in favour of the client. The business does not share this view as to date there is limited claims or ombudsman pay-outs linked to poor advice provided
4	Recruitment FAIS Role	Fit and Proper requirements	Business decision to increase the qualification standard of all newly appointed financial planners - Business standards to recruit only certified financial planners (quality of recruits) versus compliance requirements which only require a NQF level 5 certificate	The compliance manager's focus is only on meeting the legislative minimum standards while business wants to ensure a higher standard of employees for the business.
5	Tax	Business versus operational risk	The reporting of Taxes not paid including the fine and penalties received from SARS	Reporting a tax loss, business only wants to report the fine and penalties, group risk indicating the full tax payment plus penalties must be recorded as a loss
6	Segmentation	Advice Risk	A business decision	Emerging and traditional

	limits		that planners in the emerging and traditional market segment financial planners can only sell up to an income level of R120 000 and thereafter refer to a planner in a higher segment.	market segment financial planners operate within townships where people earn income higher than the set R120 000. In many instances you find financial planners term difficult to read only operate in the metro's which leads to loss of client income for the business and potential commission planners could have earned.
7	Email encryption	Information Security Risk	Protection of data leaving the organisation by encrypting all emails.	Risk should communicate and present risk mitigation actions in order for business to understand firstly why certain steps are taken and secondly the practicality of the implemented action in terms of how it add value to the business.

**APPENDIX B – Phase 2**

**Vignette Pilot Results**

Participant	Explain your answer	How would you improve this assessment
BM 1	<p>“I think that while the assessment could provide a high level view as to the risk tolerance levels of a person I think in practice individuals are likely to deviate from their answers. People tend to think idealistically about their views on a matter and when the situation is not real to them they might not answer it based on what they actually would do given that situation. Overcoming this in a written assessment would be challenging</p>	<p>1. The scale within the options is evident, i.e 1 is the most risky option, 2 is medium risk and 3 is lowest risk. If this scale was of a more mixed nature it would allow for more application by the respondent. At the moment I could answer this questionnaire based on what I think the organisation would want to hear. i.e always answer 2 where there is a cautious risk appetite but the risks are more calculated.</p> <p>2. I would suggest one example where the person is tested based on the impact of the risk on them personally. i.e would they change the risk if the risk had negative impacts on them. I think this is a true test of risk tolerance levels for individuals. It is always easier to accept risks when the impact is on the organisation and not on the individual. To truly test a person’s risk tolerance levels it would be beneficial to know how they treat risk on others vs risk on themselves. So if they were the owner of a business and the risk if realised might cause them</p>

		<p>personal financial losses or jail time would they treat the risk differently. Again responses might be idealistic in nature.</p> <p>3. An example that is not work based at all might also help? Possibly something along the lines of monopoly which I think is a good test of risk. Should you take risk and purchase property to a specific value given that it would reduce your ability to pay debt. Should you upgrade or spread your risk across the board.”</p>
BM2	<p>Every business has to take risks provided they calculated and approvals are done on deals to minimise the risk. The assessment is a good test for risk decision making, makes a person think in a broad way</p>	I wouldn't change anything
BM3	<p>The assessment adequately tests risky decision making because the scenario's given test the ability of a leader and how they make decisions when they are under pressure to produce results or make a profit</p>	None
BM4	<p>It makes you evaluate your business to ensure you look at all risks and explore avenues to where you have quick wins. There is a real understanding of what the implications of your decisions are.</p>	None

BM5	Seems that the answer selection includes clear indicators of risk appetite, the delegate is faced with options stating a gain/loss, regulatory implications and risk due to client impact that could result in reputational and sustainability risks. Taking all this into account one should be able to determine how risk averse a delegate would be in the way they made decisions.	No additional recommendations as I believe the areas exposed would be adequate to conduct a profile risk assessment on a delegate
RCM6	Based on the scenarios being very close to the business environment in which I operate	None
RCM7	The questions include compliance specific components that the business must adhere to	None

Analysis of the results:

Participant - BM1

Vignette	Answer1	Answer2	Answer3
No1		x	
No2		x	
No3	x		
No4			x

Participant – BM2

Vignette	Answer1	Answer2	Answer3
No1		x	
No2	x		
No3	x		
No4			x

Participant BM3

Vignette	Answer1	Answer2	Answer3
No1			x
No2		x	
No3		x	
No4			x

Participant: BM4

Vignette	Answer1	Answer2	Answer3
No1		x	
No2		x	
No3	x		
No4			x

Participant: BM5

Vignette	Answer1	Answer2	Answer3
No1		x	
No2		x	
No3	x		
No4		x	

Participant RCM6

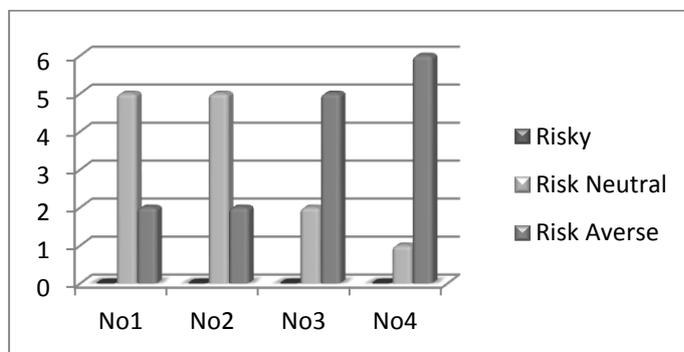
Vignette	Answer1	Answer2	Answer3
No1		x	
No2		x	
No3		x	
No4			x

Participant RCM7

Vignette	Answer1	Answer2	Answer3
No1			x
No2	x		
No3	x		
No4			x

Combined scores:

Results of the completed vignettes



Vignette	Risky	Risk Neutral	Risk Averse
No1	-	5	2
No2	-	5	2
No3	-	2	5
No4	-	1	6

## APPENDIX C

### Journal of Behavioural Decision Making: Author Guideline

The Journal of Behavioral Decision Making operates an online submission and peer review system that allows authors to submit articles online. For more information on author requirements click on <http://mc.manuscriptcentral.com/bdm>. All papers must be submitted via the online system. Manuscript submissions should be no longer than 10,000 words and the actual word-count should be included on the first page of a submitted manuscript. Any manuscript that is longer than 10,000 words, in total, will be returned unread. Preferred formats for the text and tables of your manuscript are .doc, .rtf, .ppt, .xls. LaTeX files may be submitted provided that an .eps or .pdf file is provided in addition to the source files. Figures may be provided in .tiff or .eps format. Masked review is optional for authors submitting papers to the Journal of Behavioral Decision Making. Authors should omit their names and affiliations from the main manuscript document and also make every effort to ensure that the manuscript itself contains no clues to their identities. Authors for whom English is a second language may choose to have their manuscript professionally edited before submission to improve the English. For reviewing purposes you should upload a single .pdf that you have generated from your source files. You must use the File Designation "Main Document" from the dropdown box. Tables must be on separate pages after the reference list, and not be incorporated into the main text. Figures should be uploaded as separate figure files. When submitting your revision you must still upload a single .pdf that you have generated from your now revised source files. You must use the File Designation "Main Document" from the dropdown box. In addition you must upload your TeX source files. For all your source files you must use the File Designation "Supplemental Material not for review". Previous versions of uploaded documents must be deleted. If your manuscript is accepted for publication we will use the files you upload to typeset your article within a totally digital workflow. If you wish to submit Supporting Information, please select the file designation "Supporting Information for online publication only" when uploading your files. If the paper is accepted, the author identified as the formal corresponding author for the paper will receive an email prompting them to login into Author Services; where via the Wiley Author Licensing Service (WALS) they will be able to complete the license agreement on behalf of all authors on the paper. For more information on this policy and the Journal's compliant self-archiving policy please visit: <http://www.wiley.com/go/funderstatement>.

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