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THE FINANCIAL AUDITOR'S RISK BEHAVIOUR – THE INFLUENCE OF AGE ON RISK BEHAVIOUR IN A FINANCIAL AUDIT CONTEXT

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ABSTRACT

A main issue in the audit process is the risk faced by the decision makers in every aspect of an audit process decision. The decision makers' risk behaviour and their attitude towards risk is considered to be central to the way business risk, in general, and audit risk, in particular, is managed but no conclusive theory as to what influences the decision makers' risk behaviour is commonly accepted. Although previous studies have brought arguments in favour of different factors considered to have an influence on the decision makers' risk behaviour, what is not known is whether age has an influence on risk behaviour. This article advances the hypothesis that the auditor's attitude towards risk is correlated with the auditor's age, in a financial audit context. The methodological approach used was the survey of a representative sample using a carefully designed questionnaire and the use of statistical software to analyse the responses. The analysis of data collected revealed that there is a strong correlation between the financial auditor's risk behaviour and the financial auditor's age, confirming the research hypothesis as well as setting a starting point for future research.

risk, age, financial audit, risk behaviour, correlation

INTRODUCTION

Throughout his work the financial auditor uses an element that is central to all audit activities: risk assessment. The activity of risk assessment is closely linked to the auditor's risk behaviour and risk attitude, as well as professional judgement. The validity and quality of the financial auditor's professional judgement as well as his

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risk behaviour are critically important elements which work together to strengthen the reputation of the auditing profession. Generally, the academic literature related to professional judgement, risk and decision making in audit showed that professional judgement and decision making are inherent to any audit stage, that the risk preferences and risk behaviour varies widely between auditors and that a wide spectrum of factors influence professional judgement and risk behaviour. The relationship between professional judgement and risk is a direct and constant one because professional judgement in audit is exercised in a risk context. In exercising professional judgement, the auditor makes initial risk assessments which are consequently modified in the light of the new audit evidence gathered throughout the audit process. Any risk assessment in audit implies professional judgement to some extent. However, despite the fact that there are a significant number of empirical studies on risk behaviour and decision making, these studies did not produce uniform findings. As the audit process is at the heart of the business world and while the audit firm itself is a business, general characteristics of risk can be extrapolated to embrace a more general business risk view. There are solid grounds to argue that the financial auditor is a business decision maker. Moreover, while the audit process is basically a team work led by the audit firms' managers and partners, risk theory that applies to business managers will certainly apply to the audit field as well.

Risk is a concept whose definition has not generated a consensus in the academic or business circles but is generally accepted that it relates to issues of unpredictability, decision making and potential loss. Risk is intrinsically linked with decision-making and every decision made in business implies a certain degree of risk. According to March and Shapira (1987), the importance of risk to decision making is attested by its position in decision theory and by the high level of interest in risk assessment in audit. Kendrick (2004) underlines the importance of understanding the personal attitudes to risk and considers the attitude and behaviour dimension one of the key dimensions to understanding risk. The rationale of the importance of understanding the decision makers' risk behaviour as underlined by Kendrick (2004), is that, to a certain extent, the strategies of an organisation reflect the dispositions of their managers in terms of their background, beliefs, attitudes and problem-solving styles. This behavioural aspect of risk taking in decision making introduces the fundamental question about the determinants of risk behaviour. What exactly determines or influences a decision maker's risk behaviour when making a decision? There are currently several views accepted. The most popular are those articulated by Kogan and Wallach (1967): the dispositional view, which considers the personal characteristics of a decision maker such as natural predisposition towards taking or avoiding risk to be determinant of the type of decision taken and the situational view, which considers the context in which the decision is taken to be determinant of the decision maker's risk behaviour, irrespective of dispositional preferences. There are also integrative views accepted which suggest that the dispositional risk propensity interacts with situational factors in determining risk taking behaviour (Baird and Thomas, 1985; Sitkin and Pablo, 1992; Das and Teng, 2001; Kendrick, 2004).

This study follows the integrative lines and proposes that age is a transcending factor which influences the decision makers' risk behaviour irrespective of dispositional or contextual factors.
The purpose of this article is to establish the relationship between the auditor's age and the auditor's risk behaviour in a financial audit context, contributing to the understanding of risk behaviour and adding to the literature on the relationship between age and risk. The research question is whether the auditor's age can influence his/her risk behaviour. The research method is the hypothesis testing using questionnaires on a sample of practicing financial auditors, active members of The Romanian Chamber of Financial Auditors (CAFR). The data will be analysed using the SPSS statistical software. The main contribution of this work will be to augment the academic research on risk and help to better understand the financial auditor's risk behaviour in a financial audit context.

1. LITERATURE REVIEW

In this section, theories and previous research in the field of risk behaviour are explored. All the relevant theories and literature regarding risk and its relationship with age will be discussed. The chapter begins with a discussion of the theories regarding risk behaviour, followed by a discussion of the academic literature on the relationship between age and risk. This approach will analyse the theories of risk from different angles and will enable a multidimensional view on previous literature.

1.1. Theories on the determinants of risk behaviour

Academic theories which attempted to explain the risk behaviour of decision makers date back as far as 1738 (Bernoulli, 1738) and there are a significant number of empirical studies in the area of risk taking behaviour. However, these studies have not produced uniform findings. The theories of risk taking behaviour are split into two major competing paradigms: one which emphasizes the importance of individual dispositional differences, which is called the dispositional view, and one which emphasizes the importance of situational factors, called the situational view.

The dispositional view focuses on the individual differences in risk taking behaviour. For this school of thought, the general traits and general dispositional tendencies of the decision makers are believed to dictate their risk taking attitude. It argues that some people have a natural predisposition to be more risk-seeking or more risk-averse than others, irrespective of the situation or the context of the problem. In support of this theory, a significant number of empirical studies have reported on individual differences in risk taking behaviour. Alderfer and Bierman (1970) use two questions from Kogan and Wallach's (1964) Choice Dilemma Questionnaire relating to financial investment, alongside other types of questions, to substantiate considerations regarding individual differences in attitudes towards risk choice in financial investment. However, Alderfer and Bierman (1970), among many other scholars

(Bromiley & Curley, 1992; Weber *et al.*, 2002), raise doubts as to the appropriateness of using Kogan and Wallach's (1964) Choice Dilemma Questionnaire to extract generalities about any attitude behaviour relationship. It is interesting to observe that by using the Kogan and Wallach's (1964) Choice Dilemma Questionnaire and by being critical of it at the same time, Alderfer and Bierman (1970) are actually raising doubts about the validity of their own findings. In a study that directly examined the consistency of dispositional risk taking behaviour in two groups, one risk-seeking and one risk-averse, Schneider and Lopes (Schneider and Lopes, 1986) found that the risk-seeking group tended to prefer riskier choice on a consistent base when compared with the risk-averse group. Bromiley and Curley (1992) observed that some people were more tolerant towards risk than others and found that individuals tend to be consistent in their attitudes towards risk. In an experiment in which the roles of risk attitude and tolerance for ambiguity in predicting choice were jointly assessed, Ghosh and Ray (1997) found that both risk attitude and ambiguity intolerance determined choice behaviour. Based on individual differences in risk taking as an individual attribute, scholars have introduced the concept of risk propensity, defined by Sitkin and Weingart (1995) as "an individual's current tendency to take or avoid risks" (Sitkin & Weingart 1995: 1575). Rowe (1977) and Fischhoff et al. (1981) have used the term risk propensity with reference to a consistent individual trait towards taking or avoiding risks. Das and Teng (2001) observe that Sitkin and Weingart (1995) believe that even the critics of the dispositional approach to risk "have employed the traditional conception of risk propensity as a stable individual attribute" (p.1575). However, this view is questioned by Weber *et al.* (2002). In their study, they present a psychometric scale that assesses risk taking in five content domains – financial decisions (separately for investing versus gambling), health/safety, recreational, ethical and social decisions – and find that the degree of risk taking was highly domain specific, not consistently risk-averse or consistently risk-seeking. Thei findings are contrary to those of Rowe (1977), Fischhoff *et al.* (1981), Schneider and Lopes (1986), Bromiley and Curley (1992) and Sitkin and Weingart (1995), making it one of the findings supporting the situational view.

Many empirical studies suggest that situational factors such as the framing of the problem and the context in which the decision on risk is taken have a greater influence on risk taking behaviour. Slovic (1972) argues that high correlations between risk-taking measures in structurally different settings are highly unlikely, suggesting that different settings in which decision on risk is made will have different decisional outcomes. March and Shapira (1987) find that managers, as decision makers, make a sharp distinction between taking risk and gambling, which implies that the context or situation of the decision plays a major role in risk taking behaviour. In line with these findings, a very strong argument in favour of the situational view of risk taking behaviour comes from a seminal study conducted by Kahneman and Tversky (1979) in which the authors advance an alternative theory of choice under risk – the prospect theory. Essentially, the prospect theory suggests that individuals tend to interpret the outcomes of a risky decision according to a reference point – such as the status quo -

which changes depending on whether the outcome is framed as a gain or as a loss. In line with this view, March (March, 1988) introduces the term adaptive aspirations as a complement to Kahneman and Tversky's (1979) reference point. In the prospect theory, Kahneman and Tversky (1979) and later Tversky and Kahnemann (1991) contradict the expected utility model (Bernoulli, 1738; von Neumann & Morgestern, 1947) and argue that, in evaluating risk, value is assigned to gains and losses rather than to final assets, and probabilities are replaced by decision weights. Kahneman and Tversky (1979) argue that the carriers of value or utility are the actual changes of wealth rather than the final asset positions that include current wealth. In particular, Kahneman and Tversky (1979) observe that people under weigh outcomes that are only probable in comparison with outcomes that are obtained with certainty and call this the certainty effect. Consequently, Kahneman and Tversky (1979) argue that the certainty effect contributes to decision makers being risk averse in choices involving sure gains and risk seeking in choices involving sure losses. There is evidence to support this view in a study by Highhouse and Yüce (1996) who investigated the attempt to empirically separate threat and opportunity perceptions from loss and gain perspectives. Highhouse and Yüce (1996) found that when in the loss domain, most decision makers perceived the risk alternative as an opportunity and when in the gain domain, most decision makers perceived the risk alternative as a threat. However, it is interesting to observe that Kahneman and Tversky's (1979) prospect theory, although demonstrates several phenomena which violate the principles of expected utility theory, it is based on responses of students and faculty to hypothetical choice problems of the type that resembles a gambling situation and therefore their arguments may be questionable in the light of the findings by Schubert et al. (Schubert *et al.*, 1999) which suggests that abstract gambling experiments might not be adequate for the analysis of risk attitudes.

The main conclusion of the risk literature review is that since Kogan and Wallace (1967) first articulated the fundamental question about the determinants of risk behaviour in terms of whether they are dispositional or situational, the issue remains unresolved.

1.2. Relationship between age and risk behaviour

While conventional wisdom suggests that individuals take fewer risks as they age, the evidence from empirical studies yields contradictory results. In an early study on the relationship between age and risk behaviour, Wallach and Kogan (1961) compared risk-taking behaviour of college age and elderly men and women, and found that the older subjects, both males and females, were significantly more conservative than the college students. Recognizing the shortfalls of examining two extreme age groups, Kogan and Wallach (1967) comment in a later review article on the need for further exploration of age – risk–taking relationship using less extreme age groups. In an attempt to satisfy this need, Vroom and Pahl (1971) investigate the age-risk behaviour relationship on a sample of almost 1,500 managers with age ranging from 22 to

60 years. After plotting the data obtained using the Kogan and Wallach (1964) choice dilemma questionnaire as a measure of risk propensity, Vroom and Pahl (1971) found that the slope of the relationship between mean riskiness and age is greatest in the age range 22 to 32 years, flattens out in the age range 33 to 48 years and increases again in the age range 48 to 58 years. This means that for the managers used in Vroom and Pahl's (1971) study, the age group 22 to 32 years and 48 to 58 years appears to be more risk seeking whereas the age group 33 to 48 appears to be more risk averse. Vroom and Pahl (1971) also find evidence that the value people place on risk decreases with age in a linear relationship. The results from Vroom and Pahl (1971) study offer evidence that there is a significant relationship between age and measures of both risk taking and of the value placed on risk. However, caution must be exercised in interpreting the findings of Vroom and Pahl (1971) as the instrument used to measure risk propensity – Kogan and Wallach's (1964) choice dilemma questionnaire – has been subject to a number of criticisms (Cartwright, 1971; MacCrimmon & Wehrung, 1984; Shaver & Scott, 1991; Kamalanabhan *et al.*, 2000). There is also the possibility that the sample used may have had unique properties which might render the results artifactual. Despite these limitations, the findings of Wallach and Kogan (1961) and Vroom and Pahl (1971) are supported by those of Morin and Suarez (1983) who conclude that, on average, risk aversion increases with age. However, these findings do not seem to hold unconditionally - while on average and for those individuals with low levels of net worth risk aversion increases with age, for those individuals with high levels of net worth risk aversion decreases with age (Morin and Suarez, 1983). This is in line with Kahneman and Tversky's (1979) prospect theory - in which age may be a factor that alters the "objective" assessment of risk – and which could represent an alternative theoretical explanation for how age may affect financial decision making. The views presented by Wallach and Kogan (1961), Vroom and Pahl (1971) and Morin and Suarez (1985) that risk taking decreases with age, are challenged by the findings of Bellante and Saba (1986), Wang and Hanna (1997) and Bellante and Green (2004) who argue that, on the contrary, risk tolerance increases with age. It appears that, similarly to the risk behaviour theory, the relationship between age and risk behaviour is not conclusive and that additional variable factors must be taken into account.

2. RESEARCH METHODOLOGY

The research philosophy of this study is based on the positivist deductive approach embracing a critical realism epistemology. In the deductive approach of this study there are several stages of the research: hypotheses are presented following the review of the literature, the hypotheses are expressed in operational terms which propose a relationship between two specific variables and, finally, testing the hypothesis and examining the outcome of the test. If necessary, the theory is modified in the light of the findings. The research in this explanatory study will be cross-sectional and the quantitative mono method using questionnaires, together with analysis of quantitative

data, will be used to establish causal relationships between the variables contained in the hypotheses.

2.1. Research hypothesis

Based on the literature review on age and risk behaviour while pursuing the research objective, the following main hypothesis together with two deriving secondary hypotheses is advanced:

Hypothesis 1. The financial auditor's age is correlated with his risk behaviour in a financial audit context.

Hypothesis 1a. There is a significant correlation between the financial auditor's age and his risk behaviour, in a financial audit context.

Hypothesis 1b. The financial auditor's risk tolerance is negatively correlated with his age, in a financial audit context.

2.2. Data collection and treatment

The objective of the present research is to answer the research question and identify whether the auditor's risk behaviour is influenced by his age. Due to time and economic constraints, in answering the research question, the survey method is selected for the purpose of this study in order to collect a sufficient amount of primary data. The use of questionnaires is the most widely used data collection technique in a survey and, in this study, a questionnaire containing 4 questions will be distributed to a representative sample of 650 practicing financial auditors, active members of The Romanian Chamber of Financial Auditors (CAFR), for primary data collection. The data collected will then be analysed using graphic representations and SPSS statistical software and the results will be used to validate or invalidate the hypotheses. The findings will be discussed and conclusions will be drawn. The design of the questionnaire is essential for the reliability and validity of the data, hence great care has been given to the framing and wording of questions. In this study, the questionnaire which will be administered to the chosen sample will consist of 4 questions (see Appendix 1). Question 1 is a quantity type question to determine the age of the respondent. Questions 2, 3 and 4 are rating type questions using a four point Likert scale in which the respondent is asked how strongly he or she agrees or disagrees with a statement. Four points were used for the Likert scale (strongly agree, tend to agree, tend to disagree and strongly disagree) to eliminate the possibility that the respondent will 'sit on the fence' by ticking the middle 'not sure' category which will render the response ambiguous. We choose the four point Likert scale because we wanted the respondent to express a clear opinion on the statements, which enabled us to clearly determine whether the respondent is more or less risk seeker or more or less risk averse in certain situations.

3. FINDINGS AND DISCUSSION

In August 2011 the questionnaires were distributed to 650 practicing financial auditors, active members of The Romanian Chamber of Financial Auditors (CAFR). There were a total of 368 responses received which means a 56.6% actual response rate. This actual response rate is above the expected 50% response rate for which we have hoped at the design stage of the study. Out of a total of 368 actual responses, 16 responses had to be left aside because in these three cases the questionnaire has not been filled in properly and responses to some of the questions were either missing or incomplete. However, 352 responses were valid which means a total effective response rate of 54.1%.

3.1. Data coding

The responses to the Questions 2, 3 and 4, which are rating type questions using a four point Likert scale, were coded by assigning to each response option representing a point on the Likert scale a number value from 1 to 4, with 1 representing the highest preference towards risk and 4 representing the least preference towards risk. Risk will be represented by the Total Risk Score variable arrived at by adding the corresponding values for each respondent's answer to questions 2, 3 and 4. Therefore, the more preference for risk a person would show in his/her risk attitude or behaviour, the lower the Total Risk Score would be. For a clearer picture of the coding procedure, see Table 1 below.

Table 1. **Illustration of the coding of responses for the questions using the four point Likert scale**

For Questions 2, 3 and 4:

Strongly Agree	Tend to Agree	Tend to Disagree	Strongly Disagree
☐	☐	☐	☐
1	2	3	4

(*Source*: Original work of the authors)

3.2. Hypotheses testing

Testing Hypothesis 1a. There is a significant correlation between the financial auditor's age and his risk behaviour, in a financial audit context.

In order to test Hypothesis 1a the respondents' answers to Question 1, 2, 3 and 4, which tests the risk propensities of the respondents in a specific financial audit context, are investigated. Running a correlation test for the two variables of age and risk behaviour using the SPSS statistical software will show the following results (see Table 2).

Table 2. **The sample correlation test for the two variables of age and risk behaviour**

Correlations

		Age	Total Risk Score
Age	Pearson Correlation	1	**.680****
	Sig. (2-tailed)		.000
	N	352	352
Total Risk Score	Pearson Correlation	**.680****	1
	Sig. (2-tailed)	.000	
	N	352	352

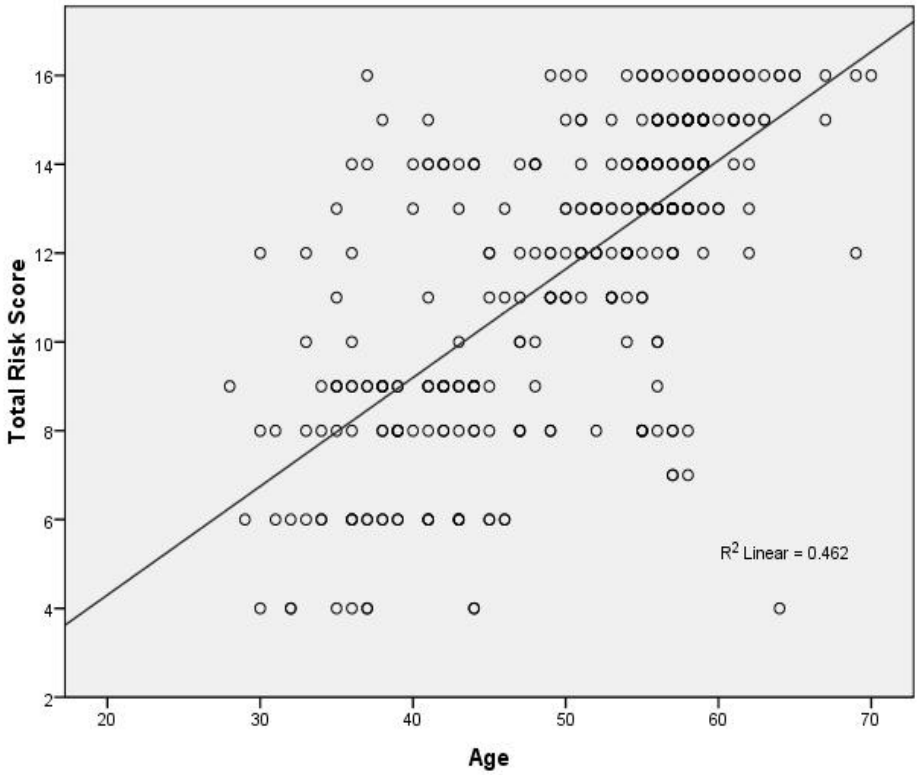
**. Correlation is significant at the 0.01 level (2-tailed).

For the selected sample, the correlation coefficient between age and risk behaviour is 0,680 which indicates that the correlation is significant. The value of the correlation coefficient (0,680) is not close to zero, so there is evidence of a linear relationship between the two variables. It is positive, so as total risk score increases, indicating a more risk adverse person, age also increases. Finally, the value of the correlation coefficient is close to 1 or -1 indicating that the relationship is a strong one. As a consequence of the result of the test, there is evidence to retain Hypothesis 1a and conclude that there is a significant correlation between the financial auditor's age and his risk behaviour, in a financial audit context.

Testing Hypothesis 1b. The financial auditor's risk tolerance is negatively correlated with his age, in a financial audit context.

In order to test Hypothesis 1b the respondents' answers to Question 1, 2, 3 and 4, which tests the risk propensities of the respondents in a specific financial audit context, are investigated. This time, though, the data will be presented in a scatter plot, with Total Risk Score plotted against age (see Figure 1).

Figure 1. **Scatter plot with Total Risk Score plotted against Age**



From the scatter plot it appears that when age is high, total risk score is also high which suggests that as age increases, total risk score may also increase. It is therefore a positive correlation between Total Risk Score and age, a fact which is confirmed by the positive value of the correlation coefficient (0,680) obtained in the statistic test performed when testing Hypothesis 1a. However, bearing in mind that a high value of Total Risk Score means a decreased risk tolerance, the higher the age, the more decreased risk tolerance appears to be. In other words, risk tolerance tends to be associated with lower age of the respondents and as age increases, risk tolerance decreases. This is equivalent with the conclusion that there is a negative correlation between risk tolerance and age. As a consequence of the result of the test, there is evidence to retain Hypothesis 1b and conclude that the financial auditor's risk tolerance is negatively correlated with his age, in a financial audit context.

As both Hypothesis 1a and Hypothesis 1b are retained, there is evidence to support the main Hypothesis 1, which is retained, and conclude that the financial auditor's age influences his risk behaviour in a financial audit context.

CONCLUSION

This study investigated the relationship between financial auditor's age and his risk behaviour in a financial audit context. The study concentrated on the analysis of risk behaviour and on the identification of a relationship between risk behaviour and the age of the financial auditor. The responses of 352 practicing financial auditors, active members of The Romanian Chamber of Financial Auditors (CAFR), to the 4 questions contained in the questionnaires were analysed using a series of statistical tests. The design of the questionnaire and the careful wording of the questions together with the data coding method represent the pivotal point of the study. The responses' analysis and findings provide significant evidence in favour of the main research hypothesis. Consequently, the results of this study demonstrate that the auditors' risk behaviour is correlated with his/her age. However, one limitation of this study is the relatively small sample size. Although statistically a sample number of 352 respondents is considered to be enough to draw conclusions about the population, a larger number of participants would not only improve the validity and reliability of the findings, but it might also indicate slightly different results, especially in the borderline results. A second limitation refers to the way risk propensity was measured by using a four point Likert scale. The four point Likert scale was chosen because it translates the risk propensity showed by a respondent into different measurable and analysable grades. The use of a Likert scale with more points would have resulted in a more finely graded scale of measurement of risk propensity. Finally, the main conclusion of this study, that age is a personal factor which is correlated with the auditor's risk behaviour, could be used as a starting point for future research on the auditor's judgement and decision making process.

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Appendix 1. The research questionnaire

You are asked a series of questions, some requiring you to make a decision in hypothetical situations, others requiring you to express your view.

All the information you provide will be used for research purposes only and will be treated in the strictest confidence. You will not be identified from the information you provide.

I hope you find completing the questionnaire enjoyable and thank you for taking the time to answer it. A summary of the findings will be emailed to you.

Question 1.

What is your age?

☐

Question 2.

You are the recently appointed the auditor of ABC Ltd., about which you know that it is a medium size developer with one shareholder that also represents the company's management. You know that the company has invested a substantial sum of its financial reserves in the development of a residential area which is now finalised. You know that if the company manages to sell all the houses in the residential area in the current financial year, there will be substantial success, not only financially but also in market share. But if the company will not manage to sell all of its houses from its residential area, it will be faced with serious liquidity and reputational problems. You also know that there are 60% chances that the company will manage to sell all the houses and 40% chances to be unable to sell all the houses.

Assuming that these are the only information available, please express your opinion on the following statement:

The inherent risk at the ABC SRL level is small.

Answer:
(please tick only one box)

Strongly agree	Tend to Agree	Tend to Disagree	Strongly disagree
☐	☐	☐	☐

Question 3.

A recent approach in financial audit is the one based on business risk. The business risk audit approach is based on a company's objectives: a certain level of profitability, obtaining a certain market share, maintaining a certain level of liquidity, brand improvement etc. In essence, audit business risk approach is about the cost that a company could incur if it doesn't meet its strategic objectives.

Considering the case of company ABC SRL, presented in the previous question (Question 2), please express your opinion on the following statement:

The business risk in the case of ABC SRL (the risk that it will not meet its objectives) is small.

Answer:
(please tick only one box)

Strongly agree	Tend to Agree	Tend to Disagree	Strongly disagree
☐	☐	☐	☐

Question 4.

Assuming you are solvent and living in a comfortable lifestyle, in addition to whatever you own you have been given 1,000 on condition that you choose one option from the following two:

- You may gamble the 1,000 - with a 50% chance of winning, in which case you keep the whole 1,000, and a 50% chance of losing, in which case you lose all the money

Or

- You may keep 500 of the 1,000 without gambling

Please express your opinion on the following statement:

Gambling the 1,000 is a better choice.

Answer:
(please tick only one box)

Strongly agree	Tend to Agree	Tend to Disagree	Strongly disagree
☐	☐	☐	☐