

Attitudes to economic risk-taking, sensation seeking and values
of business students specializing in finance

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Lennart Sjöberg

lsjoberg@fastmail.fm

Elisabeth Engelberg

elisabethengelberg@hotmail.com

Center for Risk Research

Stockholm School of Economics

Box 6501

113 83 Stockholm

Sweden

Telephone +4687557234

Fax +4687557234

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Summary

Financial decision-making rarely follows models derived from economic theory, which postulate that people are rational economic actors. Psychological alternatives abound. The Tversky-Kahneman heuristics approach is dominating, but it needs to be complemented with emotional and personality factors, since cognitive limitations do not provide exhaustive explanations of the psychology of decision-making. In this paper, attitudes to financial risk-taking and gambling are related to sensation seeking, emotional intelligence, the perceived importance of money (money concern), and over-arching values, in groups of students of financial economics (N=93). Comparative data were collected for a group of non-students. Data on values were also available from a random sample of the population. It was found that the students of finance had a positive attitude to economic risk-taking and gambling behavior, a high level of sensation seeking, a low level of money concern, and gave low priority to altruistic values about peace and the environment. The subgroup of participants planning a career in finance showed an even more pronounced interest in gambling.

Key words: Decision-making, finance, risk attitude, financial advice

Managing an investment broker firm involves selecting people with a high level of skill at counseling investors. Such a skill involves sensitivity to how the investor thinks about and assesses risks, a task which is difficult if the advisor and the investor have different values and risk attitudes. It might be argued that the problem is solved if everyone concerned acts in a rational manner. However, rational decision-making is an ideal that few human decision makers live up to [Kahneman, 2003a, 2003b].

It is common folklore among practitioners, advisors and investors that psychological factors play an important role in financial decision-making and counseling. Research results support these views [Hilton, 2001; Slovic, 2001]. People do not behave according to economic theory [Kahneman, 2000]. What other factors and models may be useful in explaining and understanding financial decision-making?

The field has received much stimulation from the work of Kahneman and Tversky [Tversky & Kahneman, 1974]. They stressed cognitive limitations and the use of simplifying heuristics and Aframing@ as factors responsible for the lack of use of normatively proscribed decision rules. The Kahneman-Tversky tradition has been important in stimulating work on decision-making and the psychology of finance [Houge & Loughran, 2000; Shefrin, 2001], but it has some limitations. Much of the work cited in support of advice to investors [Kahneman & Riepe, 1998] was conducted in fields other than finance and, indeed, largely laboratory based and concerned with hypothetical judgments tasks without important consequences. Emotional and personality factors were not in focus [Sjöberg, 1982] despite evidence for their

importance [Clare & Schnall, 2005; Pixley, 2002]. Advisors need to be aware of the great variability of investors, related to their values and personalities [Clark-Murphy & Soutar, 2005; Keller & Siegrist, 2006].

In addition, wishful thinking is another important factor [Babad, 1997; MacGregor, Slovic, Dreman, & Berry, 2000; Sjöberg, 2006; Sjöberg & Biel, 1983]. People believe that good rather than bad things will happen to them, and this is true in all realms of life, including financial matters. For example, a thorough analysis of prognoses of the Stockholm stock exchange published by leading Swedish economics magazines showed them to be excessively optimistic, especially in Bear markets [Albrecht, Mayer, & Winström, 2002]. In the Swedish Ministry of Finance, there is a clear tendency to give excessively optimistic predictions of the Swedish economy¹ [Montgomery, 2005]. Financial analysts have been found to base their judgments of unfamiliar stocks on global attitude, leading to a positive belief-value correlation [Ganzach, 2001]. Such correlations probably reflect an underlying image [Sjöberg & Biel, 1983] or “affect” [Slovic, Finucane, Peters, & MacGregor, 2002]. At the level of individual households, it has been found that they are more optimistic about their individual prospects than about other households or the country at large. For example, in August 2006 30.2 percent of the interviewed households in Sweden expected improved economics conditions for themselves in the next 12 months. For the country as a whole, 24.3 percent expected improvements². Entrepreneurs have been found to be excessively optimistic [De Meza & Southey, 1996]. The common finding that people are unrealistically optimistic and judge that they are less at risk than others [Harris, 1996], has been found to hold for economic risks as well [Fromm, 2005; Sjöberg, 2003]. It is well established that people are over-confident, a strong factor especially among people with a high level of education [Bhandari & Deaves, 2006]. These tendencies do not express only cognitive limitations, but psychological dynamics commonly found in the study of attitudes [Alabarracín, Johnson, & Zanna, 2005].

Investment decisions make up one level of financial behavior; the decision to have a career in finance is another. These two levels probably interact. If people with certain values, attitudes, and types of personality are especially likely to choose a career in finance, there are consequences for decision-making. It is likely that they also make decisions in a manner different from others who do not share their particular preferences and attitudes. For example, a person who has altruistic values such as those associated

¹. There are obvious political reasons that may explain this tendency. However, a more interesting explanation relates it to perceived control. It is a common tendency to underestimate a risk if we believe, rightly or wrongly, that we are in control of the events [Harris, 1996].

².
<http://www.konj.se/download/18.514cc05910c58eb13ad800027494/PressHIP060830.pdf>, retrieved September 22, 2006.

with peace and environmental protection is likely to stress investment in “ethical” funds, while an advisor with a “gambling personality” is likely to recommend risky investments.

The stock market crash of 2000-2001 resulted in much criticism directed against some of the advice given to investors. It was claimed that they had recommended too risky options, with the result that small private investors lost a lot of money. At the present, stockbrokers and banks in Sweden are required to let their advisors take a certification test measuring knowledge in finance. This practice, while sound, still does not guarantee that the advisors’ personality and risk attitudes will not lead investors astray. There are many biases of judgments, which are prevalent in financial sector [Taleb, 2005].

What, then, is the reason for specializing in finance? Do students who choose this orientation have values, attitudes, and personalities that differ from other business and economics students and from the general population? There is little previous research on students of finance. The value of business students in general have been studied in Norway by Gooderham et al. [Birkelund, Goodham, & Nordhaug, 2000; Gooderham, Nordhaug, Ringdal, & Birkelund, 2004]. They found that personal development was a more important motive than materialistic values. Men were somewhat more materialistic than women were, however. Gooderham et al. related this finding to Maccoby’s notion of self-development [Maccoby, 1988]. Small gender differences were also reported in an American study by Konrad et al. [Konrad, Corrigan, Lieb, & Ritchie, 2000].

Gender differences have often been found, implying that men are more materialistic than women, boys more than girls [Borkowski & Ugras, 1998; Gamberale, Bracken, & Mardones, 1995; Hagström & Gamberale, 1995]. Gamberale et al. also found that intrinsic, non-materialistic work values were important, even in a time of economic recession.

The dimensions we study with regard to students of finance are risk attitude, attitudes to money, sensation seeking, gambling attitude and preference, emotional intelligence, basic values and gender. Risk attitude is an important aspect of financial decision-making. Research on risk perception and risk-taking has shown that it is to a large extent specific to the topical area [Weber, Blais, & Betz, 2002; Wärneryd, 2001]. Perceived risk seems not to be well accounted for by the variance of expected returns [Unser, 2000]. Therefore, there is a need to measure specific risk attitude about economic decision-making. Such a scale was available in previous research [Hedelin & Sjöberg, 1995] and was revised for the present purposes.

People have many affective and idiosyncratic reactions to money [Furnham & Argyle, 1998]. Decision-making in finance has monetary consequences, and consequences is a crucial aspect of attitudes in any area. It has been found that consequences loom larger than probabilities in typical health and environment risk

items [Sjöberg, 1999, 2000]. Therefore, money attitudes are a potentially important factor in financial decision-making.

The most basic personality disposition of importance to financial decision-making is assumed to be that of *sensation seeking* [Zuckerman, 1994]. It has been found that people who value money strongly and take monetary risks have higher scores on sensation seeking and competitiveness [Kirkcaldy & Furnham, 1993; Wong & Carducci, 1991].

Gambling is a special form of financial risk-taking, related to financial investment [Keller & Siegrist, 2006], sometimes bordering on the pathological [Martins, Tavares, da Silva Lobo, Galetti, & Gentil, 2004]. It has been found to be related to risk preference and sensation seeking [Kassinove, 1998]. Unrealistic optimism and impulsivity may cause financial disasters [Olsen, 2004]. Gambling attitudes are therefore of special interest in the present context. We measure gambling attitudes and behavior with a special scale constructed for the present study.

Another dimension of recent interest is that of *emotional intelligence* (EI) [Matthews, Zeidner, & Roberts, 2002; Sjöberg, 2001]. People who are high in emotional intelligence attach less importance to money [Engelberg & Sjöberg, 2002, in press; Sjöberg, 2005].

Values are also potentially interesting in the present context. Ethical concerns are becoming increasingly important to some investors [Lewis & Mackenzie, 2000], making it interesting to study the basic values [Schwartz, 1992] of people who are planning to work in that line of business. We assume that the search for success and autonomy are values positively related to economic risk-taking, while valuing peace and the environment and deference to authority are negatively related to economic risk-taking. The study of economics may promote antisocial values and behavior [Frank, Gilovich, & Regan, 1993; Yezer, Goldfarb, & Poppen, 1996; Zsolnai, 2003].

Distal factors of importance to financial decision-making are found in demographics, especially *gender*. It has been found that female investors are more risk adverse than their male colleagues [Olsen & Cox, 2001]. This is a finding that is in good agreement with other work on gender differences in economic decision-making [Grable, 2000], as well as in work on other types of risk attitudes and perceptions. Several other studies in this research field found robust gender differences. Men place a higher value on money and are more likely to use money as a tool to influence and to impress others [Prince, 1993]. Whereas men tend to be more concerned with money, women are more conservative and security conscious [Furnham, 1984]. Women are less comfortable with debt and manage their money better than men do [Davies & Lea, 1995]. It is tempting to interpret such findings because of socialization. For example, in one study male adolescents tended to opt for work values associated with money and status, whereas females opted for people-oriented values [Bowes & Goodnow, 1996].

Based on research cited above, the following hypotheses were formulated:

- (1). Students of finance will show a more pronounced preference than non-students for economic risk-taking, more gambling and speculation, more sensation seeking, and higher emotional intelligence.
- (2). Students of finance will value peace and the environment less, career and success more, and show less deference to authority than non-students show.
- (3). Students who plan a career in finance will show the differences postulated in (1) and (2) even stronger than other students of finance do.
- (4). Among students of finance, there will also be gender differences, women being less risk and gambling prone, less sensation seeking, having higher emotional intelligence and being less concerned about money, and more concerned about peace and the environment.

Method

Participants

One group of participants consisted of undergraduate students of Financial or Behavioral Economics (Uppsala and Stockholm Universities) or Financial Psychology (Stockholm School of Economics). They were all enrolled in study programs leading to Aekonomexamen®, an undergraduate degree between a BA with a major in business administration and an MBA. They were 93 in all, 69 men and 24 women. Their mean age was 24.8 years, range 20-40 years. Forty percent had experience of working in the financial sector, 59 percent stated that they planned a career in that sector.

A second group consisted of 99 people, 33 men and 62 women³, who were recruited through the official employment office and were at the time unemployed. The mean age was 28.8 years, range 18-65. For these participants, data were available on risk attitudes, gambling habits, EI, and sensation seeking.

Data were also available from a study of risk perception carried out with a random and representative sample of the general Swedish population. These respondents used the Schwartz scheme for rating basic values [Schwartz, 1992]. A subgroup of respondents in the age range 22-30 (mean 26.4 years) were selected, 94 in all. Half were men, half women.

The design enabled us to compare the students' values with those of a sample from the general the population and the risk attitude data with those from a group of

³. Four respondents did not state gender.

unemployed people. The difference in gender composition was handled by analyzing genders separately, whenever suitable.

Questionnaire

The participants in the first two groups were given the questionnaire to fill out in class. The data from the third groups were collected by means of a postal survey. All responses were anonymous. There were three sets of items:

- a set of items measuring emotional intelligence [Schutte et al., 1998], attitude to economic risk⁴ [Hedelin & Sjöberg, 1995] (revised for the present study), and gambling and speculation⁵ (devised for the present study, referred to as Agambling@)
- items measuring attitudes to money and saving [Furnham & Argyle, 1998]; used to form one index of money importance
- the items devised by Schwartz [Schwartz, 1992] for measuring general values; used for deriving three broad factors (see below)
- questions about gender and age, experience of working in the finance line of business, and intention to opt for a career in that line of business.

The scales were item analyzed and Cronbach alpha values were estimated (see Tables 1 and 2). The final scales were adjusted in the sense that a few items that did not correlate as expected with the others of the same scale were deleted. Retained items are found in the Appendix for two of the scales. The reliability values were satisfactory.

⁴. Available in the Appendix.

⁵. Available in the Appendix.

Tables 1 and 2 about here

Results

Risk and gambling attitudes

Comparing students and non-students, men and women, there were several significant main effects. For economic risk preference, both main effects were significant, but not the interaction. For the group difference, $F(1,187) = 57.280$, $p < 0.0005$, and for the gender difference $F(1,187) = 9.419$, $p = 0.002$. These differences are illustrated in Fig. 1, which displays economic risk attitude scores after standardization to mean of 0 and a standard deviation of 1.

Fig. 1 about here

For gambling, the results were similar with both main effects significant and no significant interaction. The F-values (1,187) for group and gender were, respectively, 6.020, $p = 0.015$, and 25.265, $p < 0.0005$. The mean standardized scores are given in Fig. 2.

Hypothesis (1) was strongly supported by these results. Students of finance were more positive to economic risk-taking than others and more inclined towards gambling behavior.

Fig. 2 about here

Personality

For sensation seeking and emotional intelligence there were no significant effects of group and gender and no significant interactions⁶, except for gender and emotional intelligence, see Fig. 3, $F(1,187) = 6.997$, $p = 0.009$. Women excelled in emotional intelligence, and there was a tendency, although non-significant, for students to do so as well, in comparison with the non-student group.

Fig. 3 about here

Finally, students and non-students were compared for the importance they paid to money, see Fig. 4, $F(1, 164) = 19.327$, $p < 0.0005$. The gender difference was also significant ($p = 0.029$), but not the group x gender interaction. As Fig. 4 shows, there was

⁶. However, there was a consistent trend in the sense that students had higher average values of sensation seeking than non-students.

a large difference between groups – students were less money concerned than the non-students were. Women were, in both groups, less concerned with money than the men were. These results support Hypothesis (1).

Fig. 4 about here

Basic values

Peace and environment values distinguished genders and (marginally) students from the population sample. The $F(1,182)$ -values were 9.683, $p=0.002$ and 3.080, $p=0.081$, respectively. The interaction was non-significant. See mean standardized values in Fig. 5. Women were more positive to peace and the environment than men were, as was (marginally) the random population sample compared to the students.

Fig.5 about here

Success orientation distinguished the student group from the random sample, $F(1,184)=6.307$, $p=0.013$. There were no gender differences and no significant interaction (see Fig. 6). The student group showed a stronger success orientation than the random sample.

Fig. 6 about here

Deference to authority also distinguished groups, $F(1,184) = 8.618$, $p=0.004$. There was no significant interaction with gender, and no gender differences reached significance (see Fig. 7). The student group expressed less deference to authority than the random sample.

Fig. 7 about here

The results of the present section support Hypothesis (2).

Interest and experience of work in finance

The students were divided into 4 groups:

- both experience of work in finance and intention to pursue a career in that field (n=27)
- no experience but intention (n=28)
- no experience and no intention (n=25)
- experience but no intention (n=9).

The group responding both that they had experience and intention was designated as the most interested group, those having neither intention nor experience as the least interested one. The mean standardized values for these two groups are given in Table 3.

In one case, gambling, there was a significant difference and in another, sensation seeking, a borderline significance. In all cases, the trend was the same as the one hypothesized in Hypothesis (3). Those strongly oriented towards work in the financial sector were the ones most strongly showing the attitudes characterizing the student group as a whole compared to other samples. Hypothesis (3) was thus supported by the results. These differences are large, only one is at the level of *Asmall* according to standard assessment of effect size. The small size of the groups (about 25 participants in each) precluded statistical significance except for *Alarge* effects.

Table 3 about here

The results of the present section support Hypothesis (3).

Gender differences in the student group

Risk attitudes and basic values were compared for men and women in the student group. See Table 4.

Table 4 about here

Summing-up these findings, it was found that women were lower than men in economic risk preferences, gambling and speculation, money concern, sensation seeking, success orientation, and deference to authority. They were higher in emotional intelligence and expressed higher values of peace and protection of the environment. These results support Hypothesis (4).

Discussion

The present results confirm the existence of the postulated cluster of attitudes and values in students of finance. They were high in economic risk-taking and gambling, low in money importance and concern or worry, high in sensation seeking and success orientation, relatively high in emotional intelligence in comparison with other students, on the average, and low in altruistic values. It is reasonable to draw the conclusion that people with such characteristics also tend to invest their own and other people's money in risky projects with little regard for altruistic values. Many other people find such values to be important. The relatively low emotional intelligence scores of some of these respondents also suggest that they may find it hard to sense and respond to cues from other people. Such cues may signal preferences for risk and value priorities of a widely different nature compared to their own. Identifying the risk preferences of clients is difficult for financial advisors [Snelbecker, Roszkowski, & Cutler, 1990]. In addition, advisors may also interpret the market differently from their clients, as seems to have been the case during the IT bubble in the end of the 1990's [Fisher & Statman, 2002]. Such difficulties could lead to serious consequences in the counseling of individual investors. Gambling has been found to be associated with an illusion of control [Moore & Ohtsuka, 1999] and it is possible that these future finance analysts exaggerate their competence and control, contributing further to less than ideal decisions and advice.

Risks tend to be perceived differently for one's own person compared to others. It would be interesting to study risk attitudes and risk-taking for oneself and others also in finance. Stone, Yates and Caruthers [Stone, Yates, & Caruthers, 2002] found similar tendencies for personal and general risks and risk-taking for oneself and others. The properties of economic risks resemble those of other risk domains [Sjöberg, 2003].

The cluster of attitudes and values found among future finance analysts may to an important extent be understood in terms of the high sensation seeking found among them. Individuals high in sensation seeking are more extraverted, impulsive, antisocial, nonconformist, and less anxious than others [Dåderman, 1999; Mellstrom, Cicala, & Zuckerman, 1976; Zuckerman, 1994; Zuckerman & Link, 1968]. Sensation seekers may be risk prone, but some research suggests that it may not be the search for risky ventures as much as a search for new experiences that accounts for this finding [Rowland, Franken, & Harrison, 1986]. They are likely to get involved eventually in risky activities, however, if they constantly seek out stimulation, novelty, and change. The present data highlight the need for managers of investment broker firms to attend to these matters, e.g. in recruitment, to guarantee the best possible advice to their clients and to stay competitive.

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Table 1. Scale properties, risk and money attitudes

Scale	Number of items	Cronbach=s alpha		Mean		Standard deviation	
		Students	Non-students	Students	Non-students	Students	Non-students
Economic risk attitude	22	0.73	0.62	2.95	2.48	0.26	0.5
Gambling behavior	7	0.70	0.89	1.82	1.59	0.53	0.75
Emotional intelligence	34	0.84	0.89	3.11	3.15	0.26	0.48
Money importance	48	0.84	0.81	2.18	2.24	0.52	0.60
Sensation seeking	45	0.87	0.94	2.62	2.58	0.35	0.54

Table 2. Scale properties, values

Scale	Num- ber of items	Cronbach's alpha			Mean			Standard deviation		
		Stu- dents	Non- stu- dents	Ran- dom sam- ple	Stu- dents	Non- stu- dents	Ran- dom sam- ple	Stu- dents	Non- stu- dents	Ran- dom samp- le
Schwartz: Peace and the environment	13	0.85	0.83	0.84	4.45	4.86	4.87	1.15	0.98	1.01
Schwartz: Success	12	0.85	0.80	0.85	4.38	3.94	3.90	1.06	0.94	1.05
Schwartz: Deference to authority	14	0.88	0.84	0.87	3.73	3.19	4.21	1.15	1.07	1.18

Table 3. Mean standardized values of risk attitudes in students with a definite interest in a career in finance, and with those lacking such interest.

Variable	Definite interest	Lack of interest	Effect size [*]
Economic risk preference	0.11	-0.07	0.18 (not significant)
Gambling and speculation	0.49	-0.43	0.92
Money concern	0.30	-0.17	0.47 (not significant)
Sensation seeking	0.29	-0.25	0.54 (bordering on significance)
Emotional intelligence	-0.17	0.19	0.36 (not significant)

*Note. Effects sizes in standardized units according to Cohen's standard [Cohen, 1988]: 0.2 -0.3 Asmall@, 0.4 -0.6 Amedium@ and 0.7+ Alarge@.

Table 4. Mean standardized values of risk attitudes and basic values in male and female students of finance.

Variable	Men	Women	Effect size [*]
Economic risk preference	0.15	-0.43	0.58
Gambling and speculation	0.22	-0.64	0.86
Money concern	0.19	-0.55	0.74
Sensation seeking	0.07	-0.19	0.26 (not significant)
Emotional intelligence	-0.14	0.42	0.56
Value of Peace and the environment	-0.12	0.34	0.46
Value of Success orientation	0.07	-0.20	0.27 (not significant)
Value of Deference to authority	0.06	-0.17	0.23 (not significant)

*Note. Effects sizes in standardized units according to Cohen's standard [Cohen, 1988]: 0.2 -0.3 Asmall, 0.4 -0.6 Amedium and 0.7+ Alarge.

Figure captions

Figure 1. Economic risk preferences, men and women. Students and non-students.

Figure 2. Gambling and speculation, men and women. Students and non-students.

Figure 3. Emotional intelligence, men and women. Students and non-students.

Figure 4. Importance of money, men and women. Students and non-students.

Figure 5. Peace and environment values, men and women. Students and random sample.

Figure 6. Success orientation values, men and women. Students and random sample.

Figure 7. Deference to authority values, men and women. Students and random sample.

Fig. 1

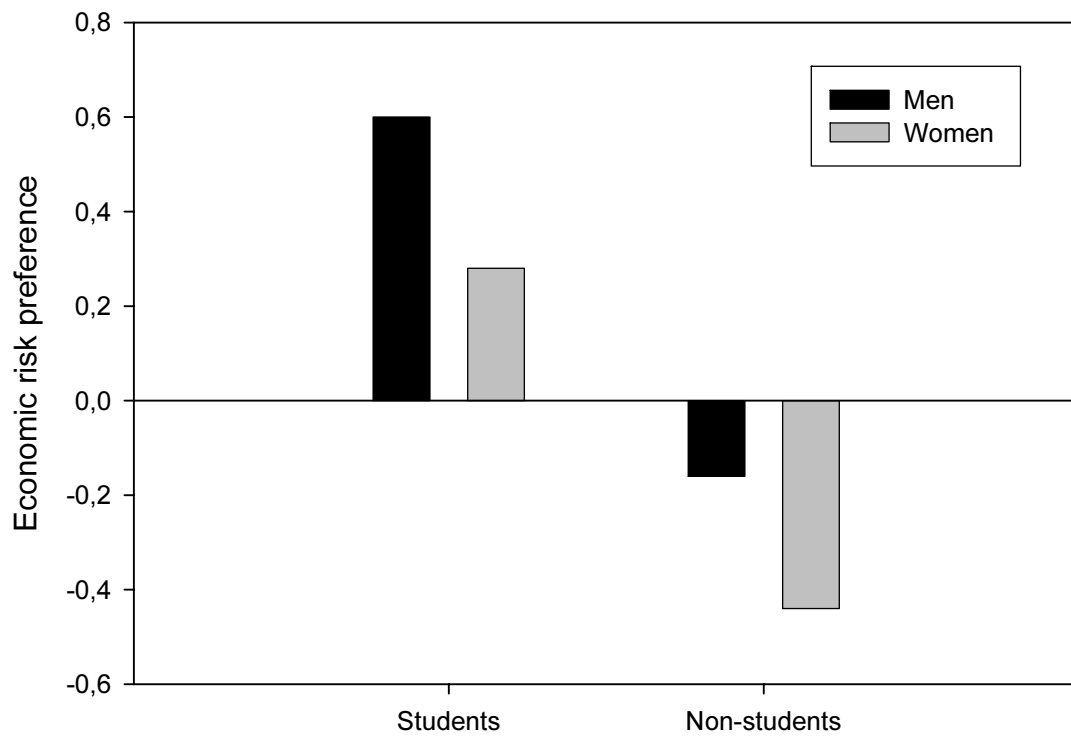


Fig. 2

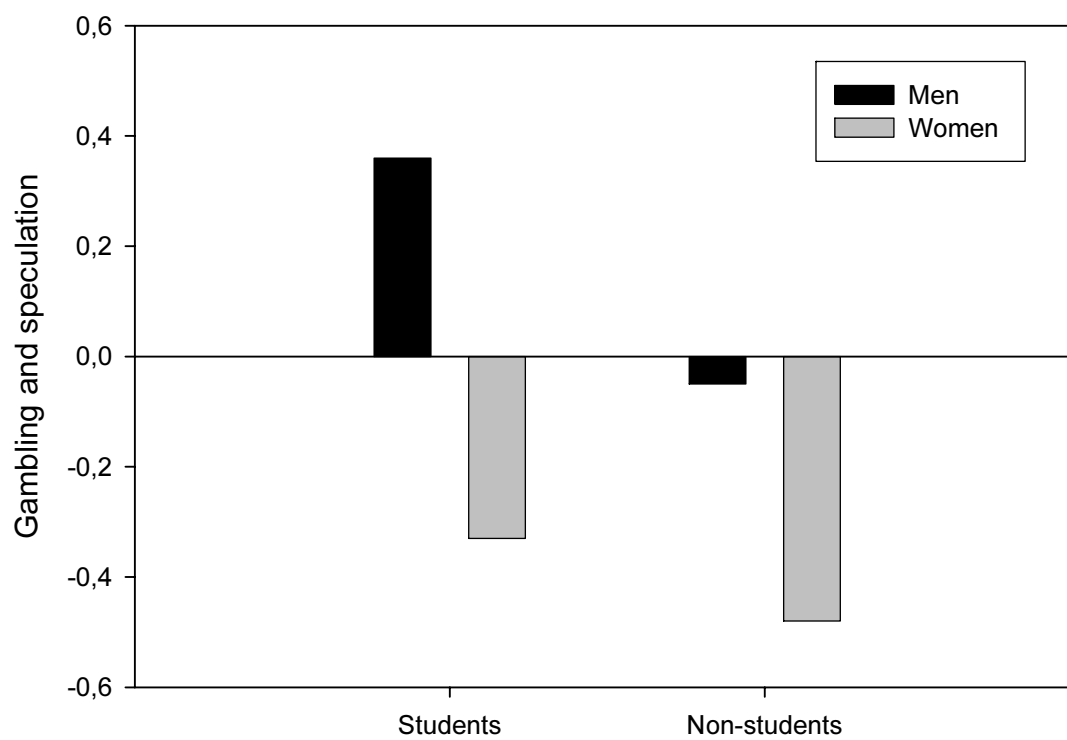


Fig. 3

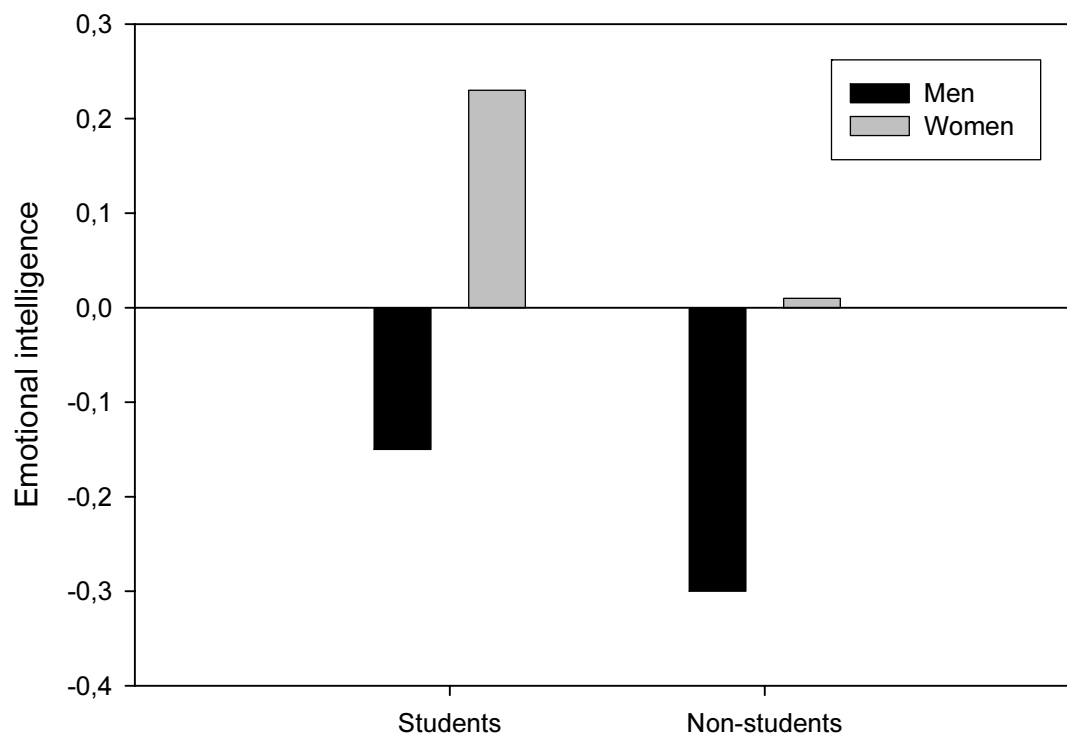


Fig. 4

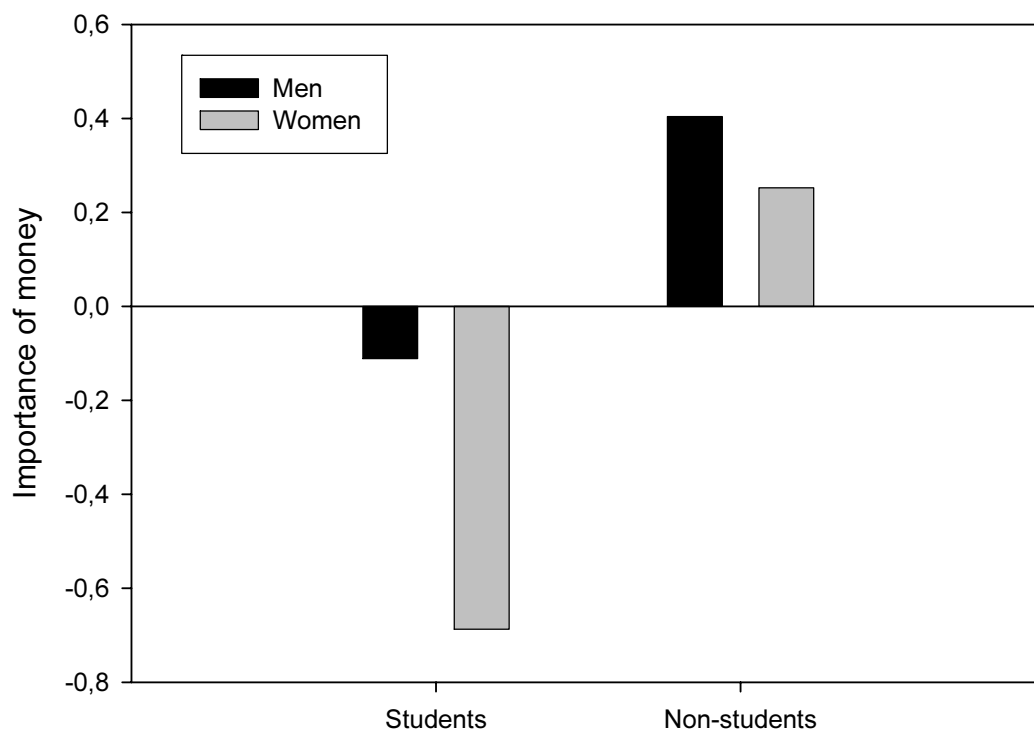


Fig. 5

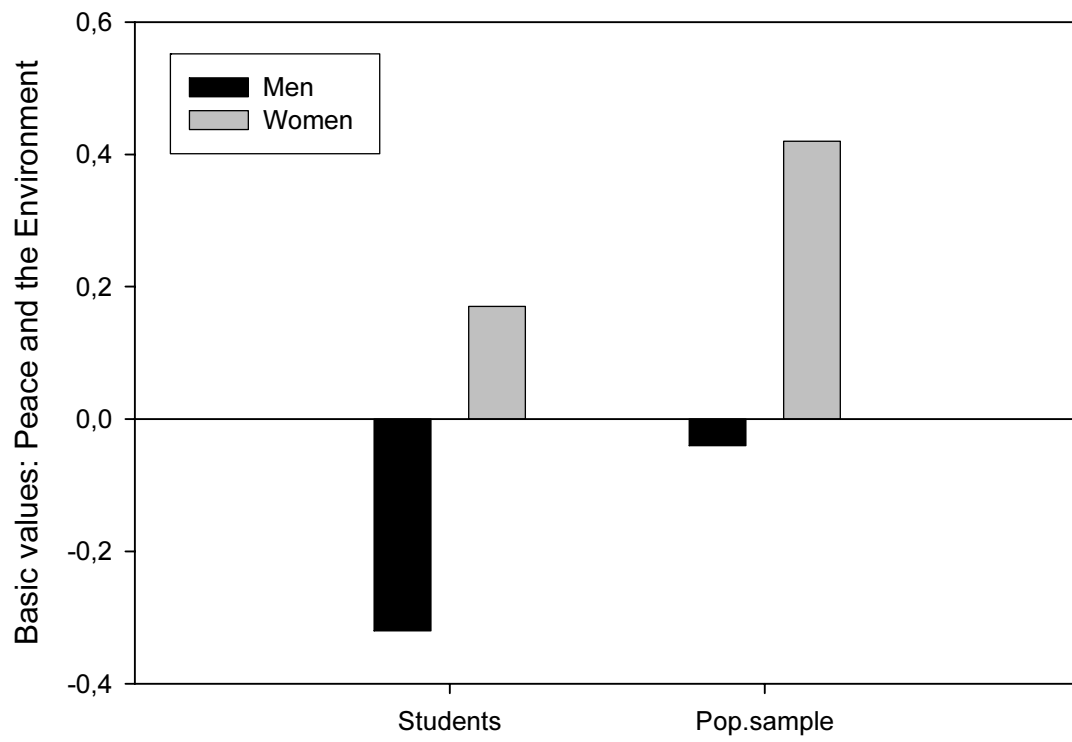


Fig. 6

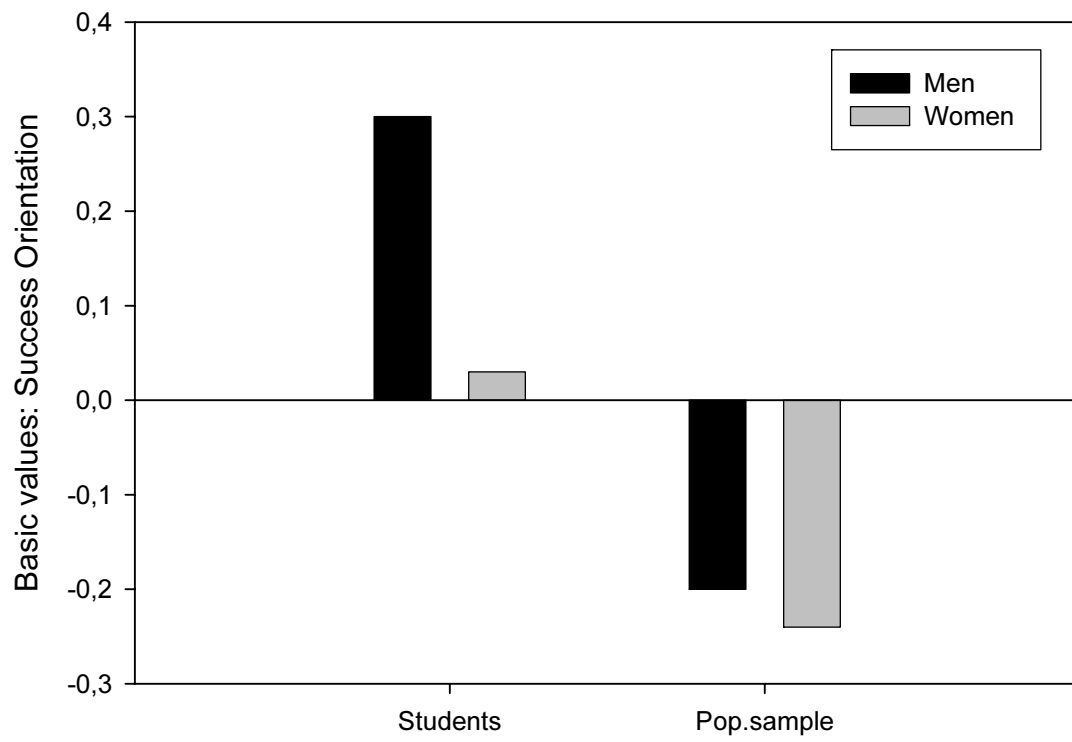
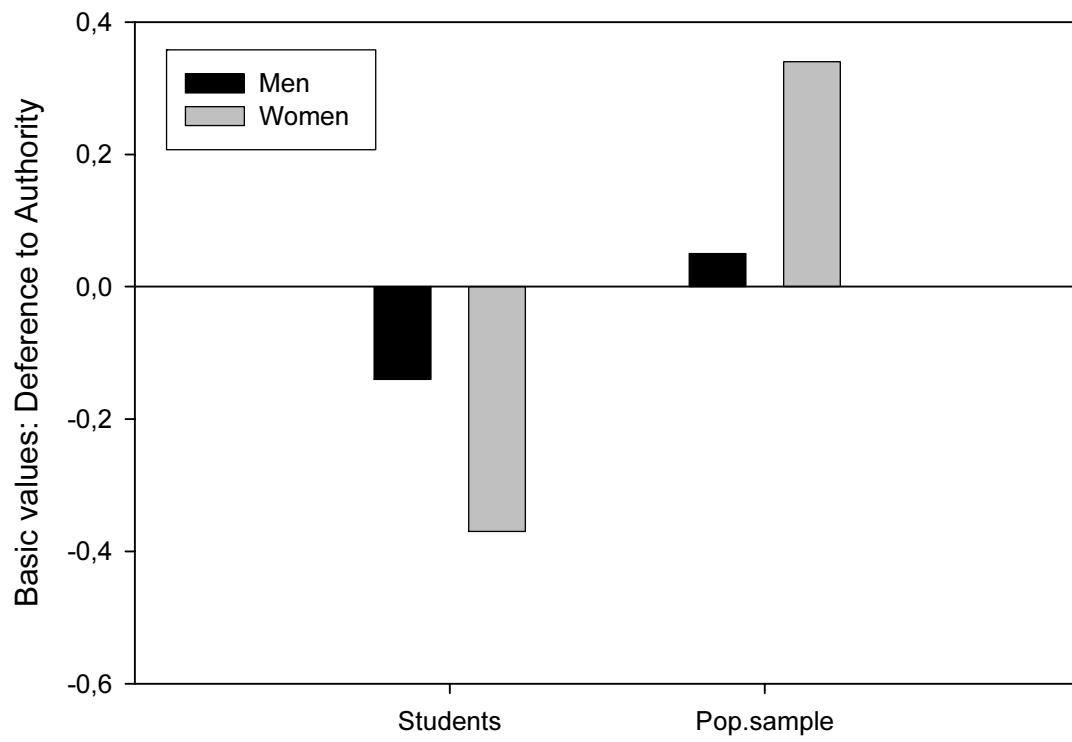


Fig. 7



Appendix

Economic risk scale. Items marked (R) were reverse scored. The present version of the scale used 4 response categories.

1. Risk-taking in business is always a bad thing. (R)
2. My philosophy with regard to risk-taking in business is simple: you should avoid it. (R)
3. Taking a business risk is acceptable if you have first carefully analyzed the situation.
4. Taking an economic risk is not that dangerous - it is necessary in most kinds of business.
5. Skillful economists never take business risks. (R)
6. Risks and business are incompatible concepts. (R)
7. I have almost always had good results from taking economic risks.
8. The danger of taking business risks is usually exaggerated.
9. There is a need for skillful risk analysts in industry.
10. It is quite all right for a bank to give a loan to a high risk project, if they have a collateral.
11. It is quite all right for a bank to give a loan to a high risk project, if they charge sufficient interest.
12. You should not be afraid to take an economic risk.
13. The economy of the country has profited from risks taken by banks and risk capitalists.
14. Risk-taking is OK, but one should not transfer the risk to someone else, e.g. someone who has given a loan
15. It is immoral to take risks with other people=s money. (R)
16. You can usually predict the success of a business project - risk-taking is therefore seldom called for. (R)

17. The importance of economic risks in business is usually exaggerated. (R)
18. Most people spend too much money on life insurance.
19. If more bank officers were to be more willing to take risks when assessing loan applications, the economy of the country would be in much better shape.
20. There is a tempting aspect of excitement and gambling in risk-taking.
21. I can judge when a risk is too large to take.
22. You should only take economic risks with regard to small amounts of money. (R)

Gambling and speculation scale. Items marked (R) were reverse scored. The present version of the scale used 4 response categories

1. I have won quite a lot of money on stocks.
2. I often buy lottery tickets.
3. I like to play cards about money.
4. I use to bet on horses.
5. I have lost quite a lot of money on gambling.
6. I gamble more than I should but find it hard to quit.
7. I find it very exciting to speculate in stocks.

