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The relationship between demographic characteristics and risk tolerance level of college students in Wenzhou Kean University for the academic year 2019

In Partial Fulfillment of the Requirements

for the Bachelor of Science in Finance

by

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ABSTRACT

Finance has always been a popular term. People have lots of illusions regarding the finance industry such as instant millionaire. The expansion and once prosperity of the financial markets attract people to rush into the market. But profits always come with risks. Investors make investment decisions taking different risks including market risk, liquidity risk, credit risk, and inflation risk, etc. The measurement of individual risk tolerance level as a topic in behavioral finance shows its importance gradually. Figuring out the individual risk tolerance will help the study of investor behavior, and even help investors make wiser decisions. This thesis delves into the relationship between demographic characteristics and the risk tolerance level regarding college students, with the aspects of gender, income, and college department. A self-constructed internet survey is adopted to collect the required data. Based on the regression analysis of collected data, two demographic characteristics, gender, and income have significant relationships with the risk tolerance level of college students; but the college department has no significant relationship with the risk tolerance level of college students.

1. INTRODUCTION

In the era of globalization, Finance becomes a term that people mention more and more frequently. It also comes to the era of investment. The international capital market includes stocks and bonds keeps expanding. Everyone can be an investor because the threshold of investing has lowered to an incredible level, especially to the stock market. Even people without certain financial literacy can open accounts and trade in the market.

However, once there is an investment, there is a risk. Thus, the financial risk tolerance level enters the scholars' view. Financial risk tolerance level is related to behavioral finance, which is a relatively new subject. Relevant scholars have already developed a method to measure individual financial risk tolerance level. Risk tolerance is important because it affects investors' investment decision making. Investors have to fully understand their risk tolerance to set their long-term financial goals. I also heard that young investors without a clear understanding of their risk tolerance suffered from huge losses from irrational investment decisions. The purpose of the study is to **establish the relationship between demographic characteristics and the risk tolerance level of College students for the academic year 2019**.

This study consists of 4 research questions. Firstly, describing college students' attitudes toward financial investment is of great significance. Risk tolerance can hardly be assessed if people do not invest anything. Are they willing to invest or not? Second, using an internet survey method to collect the basic demographic information of college students is essential. This step helps the researcher to clarify the traits of college students' demographic characteristics. Three main demographic characteristics – gender, income, and college department– will be mainly focused. Moreover, the survey involves the measurement of risk tolerance level to position respondents' financial risk tolerance level.

Data ought to be collected to discover the relationship between demographic characteristics and risk tolerance. Finally, the statistical method will be adopted to test the significance of the relationship and determine which demographic characteristics affect risk tolerance most.

The three null hypotheses formulated to provide the direction of the study:

1. Gender has no significant relationship with risk tolerance level.

2. Income has no significant relationship with risk tolerance level.

3. Student's college has no significant relationship with risk tolerance level.

This study could help us have a better understanding of the importance of risk tolerance for students and faculties. If there exists an important relationship between three demographic characteristics, they then would make better investment decisions for discretion based on the results.

In the following part, the researcher will review relevant studies and summarize some useful methods and experiences. Regarding four research questions, attitudes towards financial investment will be reviewed first. Next, risk tolerance level is defined and decomposed. Because demographic characteristics as an ensemble are too broad to discuss its relationship with risk tolerance, this study will focus only on gender, income and college department. These three characteristics will be review in-depth.

2. REVIEW OF LITERATURE

2.1 Attitudes Towards Financial Investment

The second research question is about the attitude towards investment. It is not the same as risk tolerance. Attitudes refer more to an individual's willingness to take the risk, not the level of risk one can withstand. Many factors can contribute to the difference in attitudes. Lennart Sjo¨berg and Elisabeth Engelberg found that attitudes towards financial risk-taking were related to sensation-seeking, emotion intelligence, and money concern. Also, college students who major in Finance had a positive attitude towards financial risk-taking. Therefore, people with certain financial literacy tend to have positive attitudes towards financial risk-taking and have a higher possibility to invest.

2.2 Risk Tolerance

To study the relationship between demographic characteristics and financial risk tolerance level, it is vital to first define risk tolerance precisely. According to Investopedia, risk tolerance is the degree of variability in investment returns that an investor is willing to withstand (Investopedia, 2018). It can also be simply defined as how much loss that an investor can tolerate.

2.2.1 Risk Tolerance Level

Generally, three levels of risk tolerance, aggressive(high), moderate(medium), and conservative(low) are widely accepted (Investopedia, 2018). However, there is no such strict standard of risk tolerance level. Different studies use different measurements of risk tolerance level. And the assessment of risk tolerance level diversifies from online tests to individual interviews. FinaMetrica uses a questionnaire consists of 25 questions to get

respondents' attitudes, values, and experiences concerning financial risk (FinaMetrica, Resources, 2019). These questions vary from reality circumstances to imaginary circumstances.

FinaMetrica also released a ten-question questionnaire called "Jean Sample 10Q", applied to eight big countries around the world to offer a personal financial risk tolerance report (FinaMetrica, Support, 2019). It divided 0 to 100 scale to 5 risk groups to measure individual financial risk tolerance level. This report enables a respondent to compare herself/himself to a representative sample of the adult population. Taking the US report as an example, 50 is the average score. This report also points out that risk tolerance is a personal trait, which partly depends on genetics. Risk tolerance is not easy to change with time goes by.

2.3 Demographic Characteristics

Demographics is a broad idea. It includes age, gender, education, income, marital status, occupation, religion, birth rate, death rate, the average size of a family, and the average age at marriage, etc. Not all characteristics function in influencing the financial risk tolerance level. Considering the sample of this study, age, gender, and income will be highlighted in the review.

2.3.1 Age And Risk Tolerance

Rui Yao, Deanna L. Sharpe, and Feifei Wang directly decomposed the age effect on risk tolerance. This study not only established the relationship between aging and financial risk tolerance but also testified that the relationship was statistically significant (Rui Yao, 2011). According to their study, age harmed the willingness to take financial risks, which

meet the common sense that people become cautious when they grow older. Although people accumulate investment experience as they age, their ambitious decline. We can also see this kind of phenomenon in the *Subjective Risk Tolerance of South African Investors.* Zandri Dickason-Koekemoer and Suné Ferreira surveyed in 2017 and collected a sample of 800 South African investors. The study suggested that "age was a determining factor of risk tolerance which follows the assumptions of the investor lifecycle where younger investors are more risk-tolerant (Zandri Dickason-Koekemoer, 2018)."

However, this conclusion is not true. In *An Empirical Investigation For Determining Of The Relation Between Personal Financial Risk Tolerance And Demographic Characteristic*, results of t-test and ANOVA analysis indicated that age had no significant effect on financial risk tolerance, which is against the previous study (Adem ANBAR, 2010). Besides, the over- or under-estimation of risk tolerance may help to explain the gap. According to *Risk Tolerance Estimation Bias: The Age Effect*, "younger working adults tend to overestimate their risk tolerance compared to older working adults. Although those in middle-age were shown to under-estimate their risk tolerance compared to the youngest working adults, the results were not significant (John E. Grablem, 2009)." Hence, the relationship between age and risk tolerance remains controversial.

2.3.2 Gender And Risk Tolerance

Gender is always considered the crucial one to risk tolerance level among demographic characteristics. Many studies have discovered the relationship between gender and risk tolerance. Women tend to be less risk-tolerant than men (NEELAKANTAN, 2010).

According to Rui and Sherman, risk tolerance was highest for single males, followed by married males, then unmarried female married females (Rui Yao, 2011). Another study on risk tolerance on married couples also generates a similar conclusion that wives were much less willing to take risks than husbands (Sherman D. Hanna, 2005). Although there was a significant gender difference in risk tolerance scores, indicating that males were more rik-tolerant than females, that did not lead to a significant difference in asset choice (Yook & Everett, 2003). But the point is that most studies do agree on the significant relationship between gender and risk tolerance. And the results are similar, which is male is undoubtfully more risk-tolerant than female without considering other factors.

But what about considering other factors? There was a survey conducted by the researches at Virginia Tech and the University of Missouri on households. This survey intended to determine whether other factors lead to or influence gender-related differences in financial risk tolerance (Patti J. Fisher, 2017). On one hand, the results confirmed the findings of the previous study: men were more risk-tolerant than women are. On the other hand, men who have uncertain income were 95.6% more risk-tolerant than men who hse no income uncertainty. Oppositely, women who have uncertain income were less risk-tolerant than women who have no uncertain income. Hence, it can be concluded that income also played a role in risk tolerance, which is going to be discussed in the following part.

2.3.3 Income And Risk Tolerance

The main difference in income, in reality, is not so obvious between students. But other researchers have a sample size much bigger and way more informative. For example, Zandri and Suné surveyed South African investors which had a sample of 800. They found

that higher annual income attracted more risk-taking while lower-income attracted more risk averseness in individuals (Zandri Dickason-Koekemoer, 2018). However, the relationship is somehow unclear. In the study of *Nonlinear linkages between financial risk tolerance and demographic characteristics*, researchers' statistical test supported the non-linear role of income to risk tolerance based on a sample of 15196 Australian respondents who completed the survey for the FinaMetrica Personal Financial Profiling system (Zandri Dickason-Koekemoer, 2018). Their evidence only supported the existence of a quadratic role of income.

It is believed that higher-income investors will tolerant a higher risk than lowe-income investors. However, the study of retail investors' financial risk tolerance found that income was not significant in classifying retail investors into FRT categories, which meant high- risk tolerance (M.Kannadhasan, 2015).

2.3.4 College Department And Risk Tolerance

Not many researchers study the relationship between then college department and risk tolerance level. College departments have plenty of categories. However, Lennart Sjöberg and Elisabeth Engelberg studied the attitudes to economic risk-taking of business students specializing in finance (Engelberg, 2009). According to this study, attitudes toward economic risk-taking was related to many psychological factors. Researchers adopted questionnaires to test two groups of population and compared the results to conclude. One group was undergraduate students enrolled in finance-related majors, and the other group was people who were recruited through the local employment office and were at the time unemployed. It was found that finance students had a positive attitude toward financial risk-taking, which stood for a higher risk tolerance level.

3. METHODOLOGY & DATA

3.1 Data And Sample

In this section, the researcher will briefly discuss the research dataset and sample. Firstly, the researcher will use primary data from survey respondents to analyze. The survey will be related to demographic characteristics and risk tolerance level of college students. To obtain the dataset, an online questionnaire will be created and posted through WeChat and other SNS.

A self-constructed questionnaire is attached in the Appendix. The main objective of the research is to establish the relationship between demographic characteristics and risk tolerance level of college students. Therefore, the demographic characteristics of college students, college students' attitudes toward financial risk, and risk tolerance level of college students will be measured b any internet survey. These three factors correspond to the research questions respectively.

Simple random sampling from probability sampling is chosen for this study. A subgroup of the college study population will be equally and randomly chosen to participate in the research. College students during the fall semester, 2019 will be the sample respondents. The sample period will depend on the data collection results of the survey and deadline of assignment during the fall semester, 2019.

If only examine WKU students, the sample will be too single. On account of the particularity of Wenzhou-Kean University, a Chinese - American joined university, other types of colleges that are different from WKU should be taken into consideration. Students in different types of colleges have different risk tolerance levels. It is more critical and professional to consider other universities. Also, getting survey responses from students in

other colleges is not difficult. Therefore, it is reasonable to include them in the sample respondents. The sample population will be mainly located in Zhejiang Province.

3.2 Methodology And Model

In this section, the researcher will discuss the statistical method to use in the analysis. The regression model is most suitable for this research. To analyze data based on the different research questions, different analytical methods will be used. The researcher will use descriptive and inferential statistics. To process the data, the researcher will use Microsoft Excel as a tool to organize relative charts and graphs.

The cross-sectional study design will be applied in this study. This study will provide an online questionnaire to collect the necessary information. The questionnaire is divided into three parts. The first part is the respondents' demographic profile. The second part collects students' attitudes on financial risk tolerance. The third part contains the risk tolerance level of college students.

Five-point Likert scale will be applied in the instrument to illustrate the risk tolerance level of college students. Frequency and percentage distribution are selected to describe the respondents' demographic profile. The regression model will be applied to establish the relationships between each demographic characteristic and risk tolerance.

Model:

$$y = \beta_0 + \beta_1 \mathrm{X} + e_i$$

X = gender, income, and college department respectively

Several null hypotheses formulated to provide the direction of the study will be tested:

1. Gender has no significant relationship with risk tolerance level.
2. Income has no significant relationship with risk tolerance level.

3. Student's college has no significant relationship with risk tolerance level.

The null hypothesis attempts to show that no variation exists between variables or that a single variable is no different than its mean. Therefore, the researcher developed three null hypotheses to be tested.

4. ANALYSIS AND FINDINGS

For the more precise and convenient understanding of the researcher's results and analysis, reviewing the dataset, sample, and model is vital. The demographic characteristics of college students, college students' attitudes toward financial risk, and risk tolerance level of college students will be measured by a self-constructed internet survey. A subgroup of the college study population during the fall semester, 2019 will be equally and randomly chosen to participate in the research. Therefore, the sample size was 382 when the survey channel was closed. Independent variables are gender, income, and college. The dependent variable is the risk tolerance level. Scatter charts and regression model will be applied to establish the relationships between each demographic characteristic and risk tolerance.

4.1 Demographic Distribution

According to Appendix 1, a pie chart shows the college students' distribution by gender. In 382 respondents, 107 or 28.01% of respondents were males, and 275 or 71.99% of respondents were females. Appendix 2 presents the college students' distribution by year levels. In 382 respondents, 29.84% or 114 of respondents were between 18 and 20; 49.21% or 188 of respondents were between 21 and 23; 14.66% or 56 of respondents were between 23 and 25, and 6.28% of 24 of respondents were more than 25. The classification of the college department is complex, so the researcher simply divided it into 5 categories. Based on Appendix 3, 25.13% or 96 of respondents belonged to College of Business & Public Management; 26.44% or 101 of respondents belonged to College of Liberal Arts; 8.9% or 34 of respondents belonged to College of Architecture & Design; 16.23% or 62 of respondents belonged to College of Science and Technology 23.3% or 89 of respondents belonged to other colleges. Refer to Appendix 4, in 382 respondents, 39.79% or 152 of respondents'

income were less than 2,000; 27.75% or 106 of respondents' income were between 2,000 and 2,500; 12.57% or 48 of respondents' income were between 2,500 and 3,000; and 19.9% or 76 or respondents' income were more than 3,000.

4.2 College Students' Attitudes Toward Investment and Risk

4.2.1 Investment

Because of the identity of college students, some students may make investments and others not. Therefore, the researcher separated the two groups in the survey. According to Appendix 5, 41.36% or 158 of respondents had investment currently among 382 respondents. It shows that investment is still not common even in college students. More than half of the respondents did not invest in something. However, Appendix 6 presents that 81.52% or 182 of those 224 respondents who did not have investment would invest in the future. It represents that even college students do not invest now, they have strong incentives to invest in the future.

4.2.2 Investment and Risk

The types of investment products which college students purchase are also different. Different types of finance products have different risks.

Appendix 7 presents 5 major types of finance products that college students. invest. It can be concluded that more than 25.08% of respondents purchased CDs on the bank, which had the lowest risk. Less than 10% of respondents purchased options and stocks, which had a relatively higher risk. It shows that college students who made investments prefer lower-risk products thus took a lower risk.

The feelings of college students investing also show their attitudes. Based on Appendix 8, 56.64% of respondents considered more about loss, and more than half of those always considered the possible loss. Less than half of respondents considered more about the gain. College students are not a high risk-taking population. They consider more about loss possibly due to limited income.

4.3 Risk Tolerance Level

To measure college students' risk tolerance more accurately, the researcher used 7 questions from different aspects of risk tolerance. The 25-Question Blank Questionnaire developed by FinaMetrica guided the researcher to develop her questionnaire to test college students (FinaMetrica, 2019). The seven questions vary from psychological feelings, investment intent, and investment portfolio. To standardize and quantify risk tolerance levels, the research using a five-point Likert scale. The risk tolerance level of college students increases from 1 to 5 with trendy options. A college student's risk tolerance level will be the average of her or his responses to a total of 7 questions. Appendix 10 shows 382 respondents' risk tolerance levels. The horizontal value only stands for the sequence number of respondents. The vertical value is college students' risk tolerance level from 1 to 5. Appendix 11 is the Likert scale interpretation of college students' risk tolerance level. 91.1% of respondents' risk tolerance level is between 1 to 4. And no one has a risk tolerance level higher than 4.

4.4 Hypothesis Testing

4.4.1 Gender And Risk Tolerance Level

To test whether gender has a significant relationship with college students' risk tolerance level, the researcher uses regression analysis.

Coefficients	Standard Error	t Stat	P-value
-0.6035005	0.05941585	-10.157231	0.000

Table 1.1 Regression analysis on the gender variable (a)

Regression Statistics	
Multiple R	0.46256796
R Square	0.21396912

Table 1.2 Regression analysis on the gender variable (b)

Table 1 is some vital values from the summary output of the regression analysis of gender and risk tolerance levels. Since the P-value is 0.000, less than 0.05, the researcher rejects the null hypothesis. Gender has a significant relationship with risk tolerance level. Moreover, the coefficients show that females are more risk tolerance than males. The results are consistent with what the researcher reviewed in the literature, that most studies do agree on the significant relationship between gender and risk tolerance. Nevertheless, women tend to be less risk-tolerant than men (NEELAKANTAN, 2010).

4.4.2 Income And Risk Tolerance Level

Coefficients	Standard Error	t Stat	P-value
0.07633117	0.02614559	2.91946694	0.003715715

Table 2.1 Regression analysis on income variable (a)

Regression Statistics	
Multiple R	0.14830461
R Square	0.02199426

Table 2.2 Regression analysis on income variable (b)

Table 2 presents some vital values from the summary output of the regression analysis of income and risk tolerance level. Since P-value is 0.003, still less than 0.05, the research rejects the null hypothesis. Income has a significant relationship with risk tolerance level. But the relationship is not as strong as the gender to risk tolerance level based on R Square. Also, the coefficients are 0.07. College students with higher incomes have higher risk tolerance level. On the contrary, college students with lower incomes have lower risk tolerance level. Zandri and Suné found that higher annual income attracted more risk-taking while lower-income attracted more risk averseness in individuals (Zandri Dickason-Koekemoer, 2018). The researcher found a similar phenomenon, which is also consistent with general knowledge.

4.4.3 Student's College Department And Risk Tolerance

Coefficients	Standard Error	t Stat	P-value
-0.034227	0.01960302	1.7460151	0.081618585

Table 3.1 Regression analysis on college department variable (a)

Regression Statistics	
Multiple R	0.089328
R Square	0.00798

Table 3.2 Regression analysis on college department variable (b)

The college department is not a trend. It is only a classification. Hence, coefficients could be of no help. The P-value is 0.08, which is more than 0.05. And R Square is very small. Therefore, the researcher does not reject the null hypothesis. Students' college has no significant relationship with risk tolerance level. The researchers' results are inconsistent with Lennart Sjo¨berg and Elisabeth Engelberg's findings. They found that the students of finance had a positive attitude towards economic risk-taking and gambling behavior compared to other students (Engelberg, 2009). The inconsistency may appear on account of sample selection. They focused on only finance major students, however, the researcher's classification is more general, which is by the college but not major.

The weakness and limitation of the study come from data and measurement. The sample size of not enough for studying the college student population. The survey results can statistically be improved by extending to other respondent groups like oversea college students. The options setting of college department in then survey is not completed. The

classification of college department may vary from colleges and regions, which cannot be defined to a trend as income. Moreover, measuring the risk tolerance level by only 7 questions is inaccurate. According to FinaMetrica, ts least 10 questions should be used to test the individual risk tolerance level (FinaMetrica, Support, 2019). The researcher sacrificed the accuracy of risk tolerance level to get more respondents.

For college students, the researcher recommends that it is better to make ae conservative investment portfolio due to their relatively low- risk tolerance level and limited income. College students should invest in their capabilities.

5. CONCLUSIONS

The study aims to establish the relationship between demographic characteristics and risk tolerance level of college students for the academic year 2019. In the light of the findings of this study, the researcher was able to establish the following conclusions: investing is not so popular with college students since less than half of them have investments regarding college students. But college students have strong incentives to invest in the future. Most college students have low or medium risk-taking levels. They consider more about the loss when it comes to investing. The hypotheses “Gender has no significant relationship with risk tolerance level” and “Income has no significant relationship with risk tolerance level” are thereby rejected. Gender and income have an impact on individual risk tolerance level. The findings are consistent with what the researcher reviewed in the literature. However, the hypothesis "Student’s college has no significant relationship with risk tolerance level” cannot be rejected. Statistical evidence showed that college has no significant relationship with risk tolerance level.

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Appendix

Appendix A. Questionnaire of The Relationship Between Demographic Characteristics and Risk Tolerance Level

I am a finance senior in Wenzhou-Kean University. I am carrying a study about the relationship between demographic and characteristics and college students' risk tolerance level. Thanks for participating this study.

All responds will be strictly confidential. Your identity will be anonymous.

If you have any questions about the survey, please use email (zhangsiq@kean.edu) to contact me. Thanks for your support and participation.

1. What is your gender? 您的性别 [单选题] *

○Male 男

○Female 女

○Others 其他

2. How is your age range? 您的年龄范围 [单选题] *

○18~20

○21~23

○23~25

○More than 25

3. Which college do you belong to? 您的学院 [单选题] *

○College of Business & Public Management 商务与公共管理学院

○College of Liberal Arts 人文学院

○College of Architecture & Design 建筑与设计学院

○College of Science and Technology 理工学院

○Others 其他

4. How much is your income/living expenses monthly? 您每月的收入/生活费是多少 [单选题] *

○Less than 2,000 少于 2k

○2,000~2,500

○2,500~3000

○More than 3000 大于 3k

5. Do you have investments currently? 您现在是否有进行投资理财 [单选题] *

○Yes 是 (请跳至第 7 题)

○No 否 (请跳至第 6 题)

6. Will you invest in the future? 您在将来会进行投资吗 [单选题] *

○Yes 是

○No 否

7. What king of investment you are making currently? 您正在进行何种投资 [单选题] *

○CDs in banks 银行定期存款

○Bonds 债券

○Funds 基金

○Options 期权

○Stocks 股票

○Others 其他

8. How do you rate your willingness to take financial risks? 您如何评价您承受风险的意愿 [单选题] *

○Very low risk taker 非常低

○Low risk taker 低

○Average risk taker 平均

○High risk taker 高

○Very high risk taker 非常高

9. How do you usually feel after you make financial investment decisions? 在做出投资决定后您的感受如何 [单选题] *

○Very pessimistic 非常消极

○Somewhat pessimistic 有点消极

○Somewhat optimistic 有点积极

○Very optimistic 非常积极

10. What degree of risk have you taken when you invest financially in the past? 您过去投资冒过多大的风险 [单选题] *

○Very small 非常小

○Small 小

○Medium 中等

○Large 大

○Very large 非常大

11. How easily do you adapt when things go wrong financially? 你能适应自己财政上出错的状况吗 [单选题] *

○Very uneasily 很不容易

○Somewhat uneasily 比较不容易

○About the average 还好

○Somewhat easily 比较容易

○Very easily 非常容易

12. What degree of risk are you currently plan to take when you invest？ 您现在计划冒多大的风险进行投资 [单选题] *

○Very small 非常小

○Small 小

○Medium 中等

○Large 大

○Very large 非常大

13. Are you concerned about the possible losses or the possible gains when you made financial investment? 当你进行投资时，更关心可能的回报还是可能的损失 [单选题] *

○Always the possible losses 经常考虑损失

○Usually the possible losses 有时考虑损失

○Usually the possible gains. 有时考虑回报

○Always the possible gains. 经常考虑回报

14. Suppose you are making investment, how much could the total value of all your investments shrink before you would began to feel upset? 假设您在进行投资，那么您投资资产缩水多少时会感到焦虑 [单选题] *

○Lower than 20% 少于 20%

○20%~30%

○30%~40%

○40%~50%

○More than 50% 大于 50%

15. In recent years, which direction have your investment changed? 在最近几年，您的投资向哪个方向变化？ [单选题] *

○Always toward lower risk. 总是偏向低风险

○Mostly toward lower risk. 经常偏向低风险

○No changes or changes with no clear direction. 没有明确的变化

○Mostly toward higher risk. 经常偏向高风险

○Always toward higher risk. 总是偏向高风险

16. Suppose you have some money and want to invest in different kind of investments. There are high risk, medium risk and low risk, three types of investment. High risk investment has higher return, low risk investment has lower return (percentage represents for return rate). 假设你将进行投资，有三种不同的产品，即高风险产品，中等风险产品，以及低风险产品。高风险产品回报高，低风险产品回报低(选项中的百分比代表回报率)。就投资组合而言，哪一种最吸引你 [单选题] *

○High risk 0%, Medium risk 30%, Low risk 70%

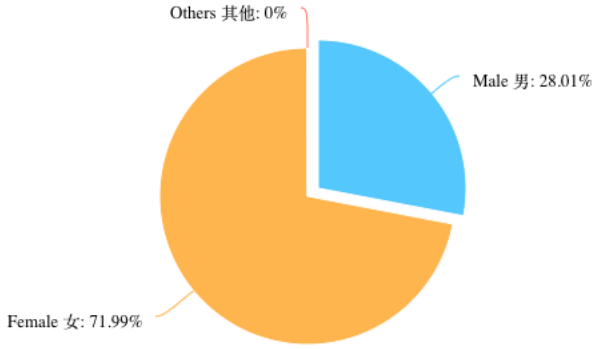
○High risk 10%, Medium risk 40%, Low risk 50%

○High risk 30%, Medium risk 40%, Low risk 30%

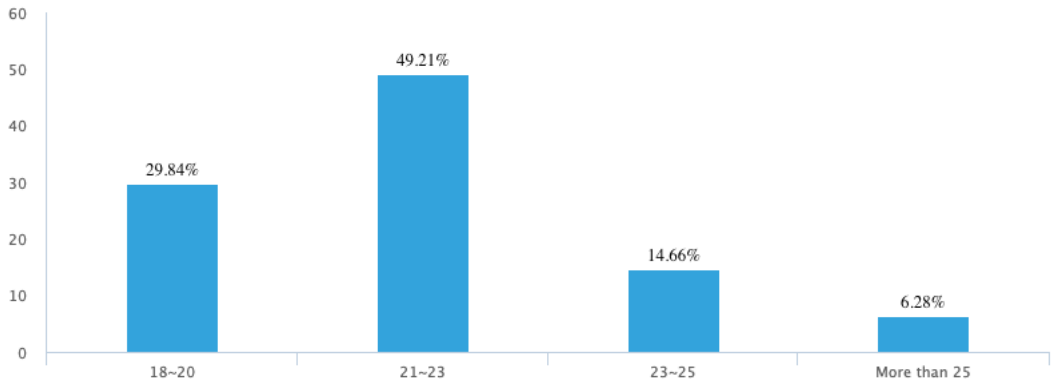
○High risk 50%, Medium risk 40%, Low risk 10%

○High risk 70%, Medium risk 30%, Low risk 0%

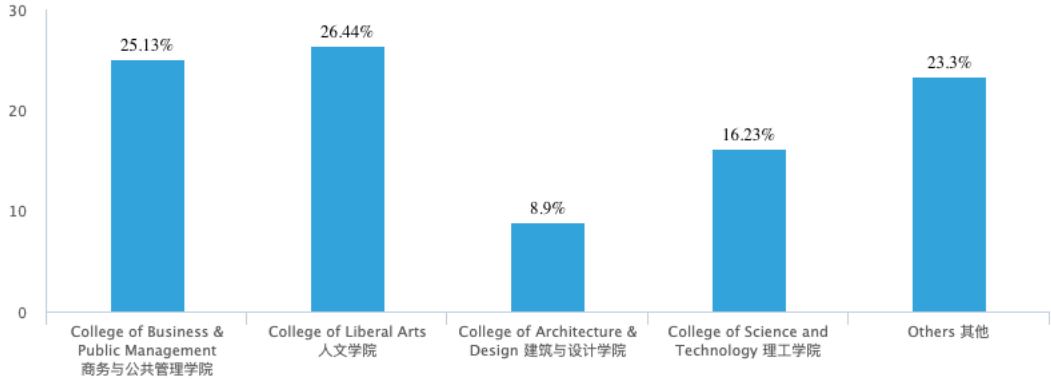
Tables and Figures



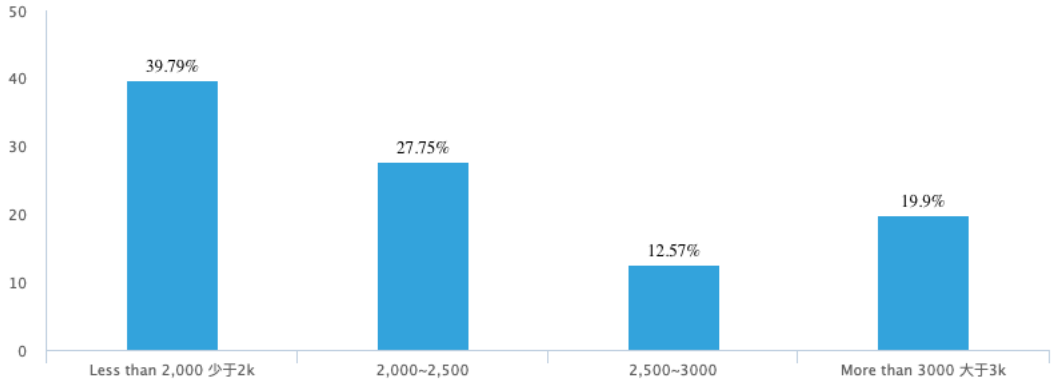
Appendix B. college students' distribution by gender



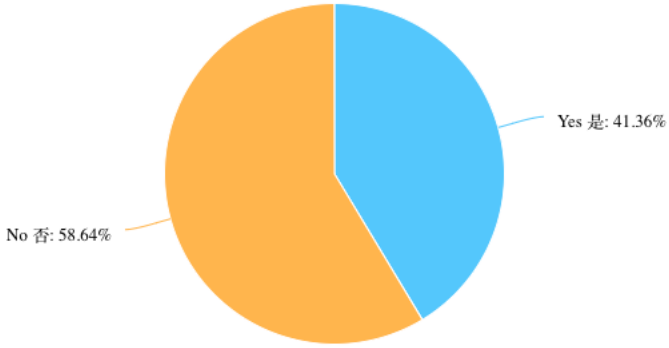
Appendix C. college students' distribution by year level



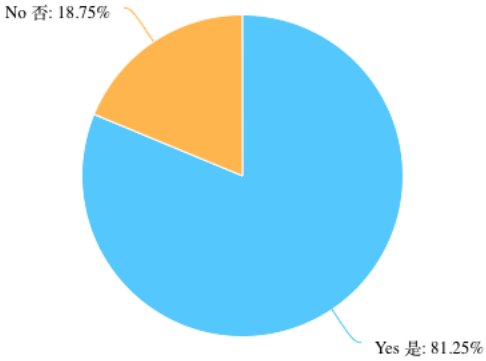
Appendix D. college students' distribution by college department



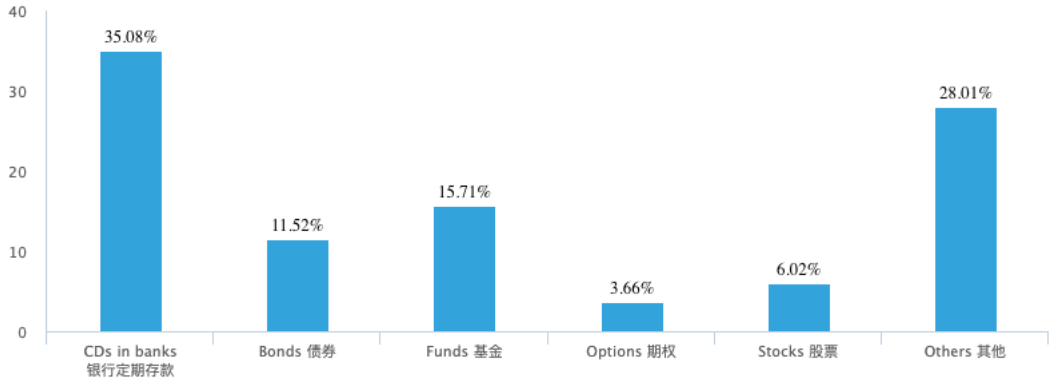
Appendix E. college students' distribution by income / living expense



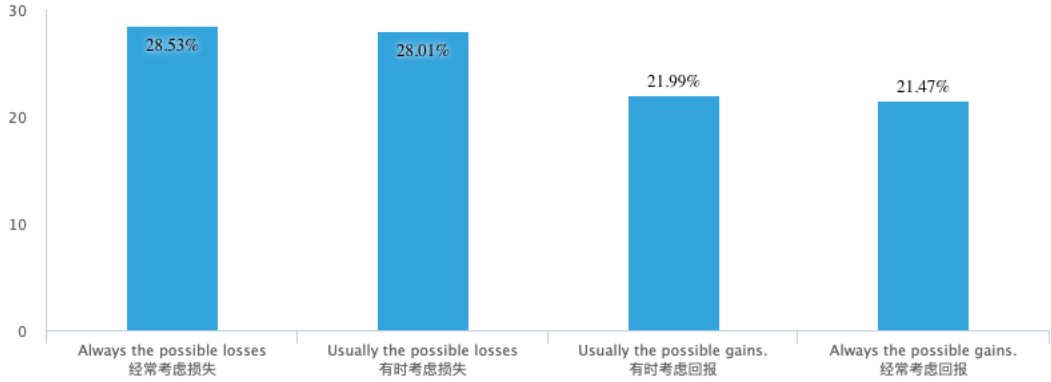
Appendix F. college students' distribution by investing or not



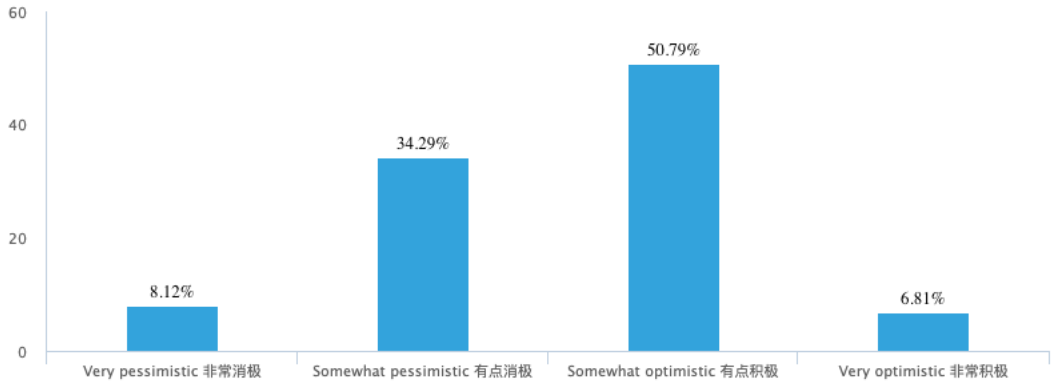
Appendix G. college students' who do not have investment distribution by invest or not in the future



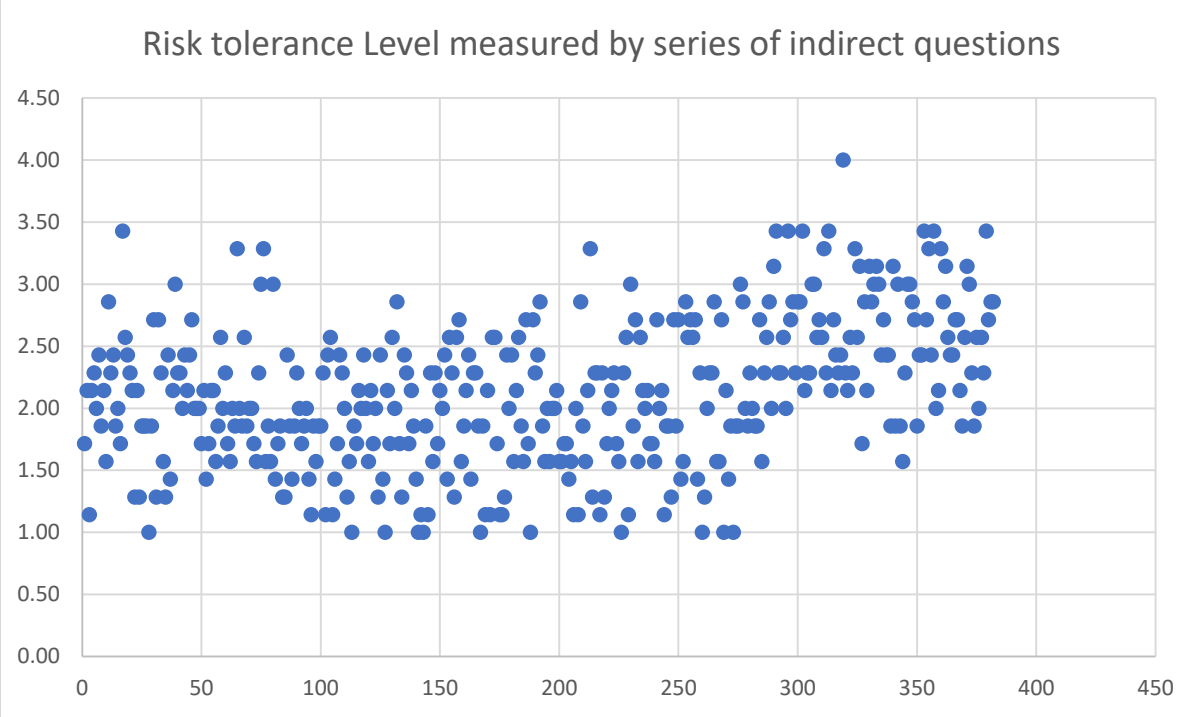
Appendix H. response to types of finance products invested



Appendix I. response to concern about making investment



Appendix J. response to feelings after making investment decision



Appendix K. college students' risk tolerance level

Response Scale	Degree of risk tolerance level	Mean interval
5	Very high	4.51-5.00
4	High	3.51-4.50
3	Medium	2.51-3.50
2	Low	1.51-2.50
1	Very low	1.00-1.50

Appendix L. likert scale interpretation

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.46256796
R Square	0.21396912
Adjusted R Sq	0.21189516
Standard Erro	0.5212031
Observations	381

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	28.0262298	28.0262298	103.1693516	0.000
Residual	379	102.956362	0.27165267		
Total	380	130.982591			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	3.16424819	0.10557781	29.9707706	0.000	2.95665658	3.37183981	2.95665658	3.37183981
2	-0.60350053	0.05941585	-10.1572315	0.000	-0.72032653	-0.48667454	-0.72032653	-0.48667454

Appendix M. regression analysis of gender and risk tolerance level

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.14830461
R Square	0.02199426
Adjusted R Sc	0.01941377
Standard Erro	0.58137705
Observations	381

ANOVA

	df	SS	MS	F	Significance F
Regression	1	2.88086492	2.88086492	8.523287185	0.00371572
Residual	379	128.101727	0.33799928		
Total	380	130.982591			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1.96485598	0.06294126	31.2172979	0.000	1.84109817	2.08861378	1.84109817	2.08861378
4	0.07633117	0.02614559	2.91946694	0.003715715	0.0249226	0.12773974	0.0249226	0.12773974

Appendix N. regression analysis of income and risk tolerance level

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.0893282
R Square	0.0079795
Adjusted R Sc	0.0053621
Standard Erro	0.5855278
Observations	381

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1.04517973	1.04517973	3.048568621	0.08161859
Residual	379	129.937412	0.34284278		
Total	380	130.982591			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	2.2248341	0.0636915	34.9314144	0.00	2.0996011	2.35006701	2.0996011	2.35006701
1	-0.034227	0.01960302	-1.74601507	0.081618585	-0.07277146	0.00431713	-0.07277146	0.00431713

Appendix O. regression analysis of college and risk tolerance level