

## INSTRUCTIONS INCLUDED WITH THIS ANONYMOUS QUESTIONNAIRE

### UNDERSTANDING FINANCIAL DECISIONS

The following pages contain an anonymous questionnaire which we invite you to complete. This questionnaire was developed as part of a research project at HEC Montréal.

Since your first impressions best reflect your true opinions, we request that you please answer the questions included in this questionnaire without any hesitation. We do ask, however, that you take the time needed to consider certain questions that might involve concepts with which you are less familiar, or which require more specific information about your situation. There is no time limit for completing the questionnaire, although we have estimated that it should take approximately 20-25 minutes.

The information collected will be anonymous and will remain strictly confidential. It will be used solely for the advancement of knowledge and the dissemination of the overall results in academic or professional forums. It is possible that the collected data will be shared with other researchers, solely for non-commercial research purposes, for projects other than the one for which the data were originally collected.

The online data collection provider agrees to refrain from disclosing any personal information (or any other information concerning participants in this study) to any other users or to any third party, unless the respondent expressly agrees to such disclosure or unless such disclosure is required by law.

You are free to refuse to participate in this project and you may decide to stop answering the questions at any time. By completing this questionnaire, you will be considered as having given your consent to participate in our research project and to the potential use of data collected from this questionnaire in future research. Since the questionnaire is anonymous, you will no longer be able to withdraw from the research project once you have completed the questionnaire because it will be impossible to determine which of the answers are yours.

If you have any questions about this research, please contact the principal investigator, Pierre-Carl Michaud, at the telephone number or email address indicated below.

HEC Montréal's Research Ethics Board has determined that the data collection related to this study meets the ethics standards for research involving humans. If you have any questions related to ethics, please contact the REB secretariat at (514) 340-6051 or by email at [cer@hec.ca](mailto:cer@hec.ca).

Thank you for your valuable cooperation!

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[FOR THE MAIN STUDY RECRUITMENT: PREPARE 2 RANDOM SAMPLES THAT ARE INVITED TO RESPOND TO THE SURVEY, WHERE EACH INVITEE HAS A PROBABILITY OF 1/5 TO BE ALLOCATED TO TREATMENT = 1 AND A PROBABILITY OF 4/5 TO BE ALLOCATED TO TREATMENT = 2. CLOSE THE SURVEY WHEN A TOTAL OF 2000 RESPONDENTS IS REACHED. FIGURE 2 IN THE APPENDIX PROVIDES AN ILLUSTRATION OF THE GROUPS FOR THE MAIN STUDY.]

[SECTION 1. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Background**

QA. Are you...?

1 Male

2 Female

3 Other

8888888 Refuse to answer

QB. How old are you? Please specify. [PN: MUST ENTER THE 2 CHARACTERS]

Numeric (25-80)

[NOTE: TERMINATE IF NOT 25-80 INCLUSIVELY]

QC. Which province or territory do you live in?

1. British Columbia

2. Alberta

3. Saskatchewan

4. Manitoba

5. Ontario

6. Quebec

7. New Brunswick

8. Nova Scotia

9. Prince Edward Island

10. Newfoundland and Labrador

11. Northwest Territories

12. Nunavut

13. Yukon

14. None of the above [TERMINATE IF QC==14]

**Q0** What is the highest certificate, diploma or degree you have obtained?

1 Less than high school diploma or its equivalent

2 High school diploma or a high school equivalency certificate

3 Trade certificate or diploma

4 College, CEGEP or other non-university certificate or diploma (other than trades certificates or diplomas)

5 University certificate or diploma below the bachelor's level

6 Bachelor's degree (e.g. B.A., B.Sc., LL.B.)

7 University certificate, diploma, degree above the bachelor's level

**Q1** What is your marital status?

- 1 Married
- 2 Living common-law
- 3 Widowed
- 4 Separated
- 5 Divorced
- 6 Single, never married

**Q2** Do you have children?

- 1 Yes
- 2 No

[SECTION 2. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Financial Matters**

We will now ask you a few questions concerning your familiarity with certain numerical concepts. Please answer the questions as best you can.

**Q3** Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow during these 5 years?

1 More than \$102

2 Exactly \$102

3 Less than \$102

7777777 Don't know

8888888 Refuse to answer

**Q4** Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy...

1 More than today

2 Exactly the same as today

3 Less than today

7777777 Don't know

8888888 Refuse to answer

**Q5** Do you think the following statement is true or false? "Buying a single company's stock usually provides a safer return than a stock mutual fund."

1 True

2 False

7777777 Don't know

8888888 Refuse to answer

**Q6** A bat and a ball cost \$ 1.10 in total. The bat costs \$ 1.00 more than the ball. How much does the ball cost?

Numeric (0.00-100000.00) [ALLOW TWO DECIMALS; ADD A "\$" BEHIND THE INPUT SPACE]

7777777 Don't know

8888888 Refuse to answer

**Q7** If it takes 5 machines 5 minutes to make 5 widgets, how many minutes would it take 100 machines to make 100 widgets?

Numeric (0-100000)

7777777 Don't know

8888888 Refuse to answer

**Q8** In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take the patch to cover half of the lake?

Numeric (0-100000) [ADD THE WORD "days" BEHIND THE INPUT SPACE]

7777777 Don't know

8888888 Refuse to answer

**Q9** Out of 1,000 people in a small town, 500 are members of a choir. Out of these 500 members in the choir, 100 are men. Out of the 500 inhabitants that are not in the choir, 300 are men. What is the probability that a randomly drawn man is a member of the choir? (Please indicate the probability in percentage).

Numeric (0-100) [BOX WITH % SIGN NEXT TO IT; ALLOW AT MOST TWO DECIMALS]

7777777 Don't know

8888888 Refuse to answer

**Q10** Imagine we are throwing a loaded die (6 sides) 70 times. The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. On average, out of these 70 throws, how many times would the die show the number 6?

Numeric (0-70)

7777777 Don't know

8888888 Refuse to answer

**Q11** In a forest, 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. What is the probability that a poisonous mushroom in the forest is red? (Please indicate the probability in percentage).

Numeric (0-100) [BOX WITH % SIGN NEXT TO IT; ALLOW AT MOST TWO DECIMALS]

7777777 Don't know

8888888 Refuse to answer

[SECTION 3. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Preferences**

**Q12** Please evaluate your patience when it comes to financial decisions.

- 1 Very patient
- 2 Patient
- 3 Impatient
- 4 Very impatient
- 7777777 Don't know
- 8888888 Refuse to answer

**Q13** For this question, we ask you to indicate your preferences regarding 10 different hypothetical lotteries. In each case, you must decide whether you would prefer to participate in Lottery A or Lottery B. Each of the two lotteries offers you a given chance of winning different dollar amounts.

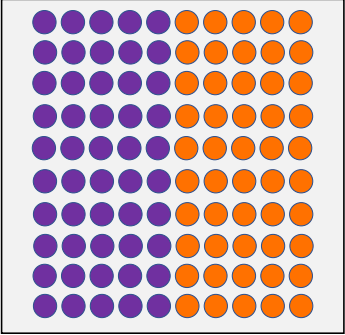
Let's take, for example, the first choice, which corresponds to the first row of the following table. In this case, Lottery A gives you a 10% chance of winning \$20 and a 90% chance of winning \$16. Lottery B, on the other hand, gives you a 10% chance of winning \$39 and a 90% chance of winning \$1. All other choices work in the same way, but the chances of winning each amount change from one choice to the next. For each choice, you need to select your preferred lottery, either Lottery A or Lottery B.

Choice		Lottery A				Lottery B				
Lottery A	Lottery B	Chances of winning	Amount to win	Chances of winning	Amount to win	Chances of winning	Amount to win	Chances of winning	Amount to win	
1	<input type="checkbox"/>	<input type="checkbox"/>	10%	\$20	90%	\$16	10%	\$39	90%	\$1
2	<input type="checkbox"/>	<input type="checkbox"/>	20%	\$20	80%	\$16	20%	\$39	80%	\$1
3	<input type="checkbox"/>	<input type="checkbox"/>	30%	\$20	70%	\$16	30%	\$39	70%	\$1
4	<input type="checkbox"/>	<input type="checkbox"/>	40%	\$20	60%	\$16	40%	\$39	60%	\$1
5	<input type="checkbox"/>	<input type="checkbox"/>	50%	\$20	50%	\$16	50%	\$39	50%	\$1
6	<input type="checkbox"/>	<input type="checkbox"/>	60%	\$20	40%	\$16	60%	\$39	40%	\$1
7	<input type="checkbox"/>	<input type="checkbox"/>	70%	\$20	30%	\$16	70%	\$39	30%	\$1
8	<input type="checkbox"/>	<input type="checkbox"/>	80%	\$20	20%	\$16	80%	\$39	20%	\$1
9	<input type="checkbox"/>	<input type="checkbox"/>	90%	\$20	10%	\$16	90%	\$39	10%	\$1
10	<input type="checkbox"/>	<input type="checkbox"/>	100%	\$20	0%	\$16	100%	\$39	0%	\$1

**Q14** [DEFINE THE VARIABLES MP50<sub>low</sub>=0 AND MP50<sub>up</sub>=100. THE VALUES FOR THESE VARIABLES SHOULD BE REASSIGNED / OVERWRITTEN ACCORDING TO RESPONDENTS' ANSWERS TO THE FOLLOWING QUESTIONS.]


**Q14a** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
●	50%	\$15
●	50%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

*[IF Q14a==1, THEN  $MP_{up}^{50} = 50$ .*

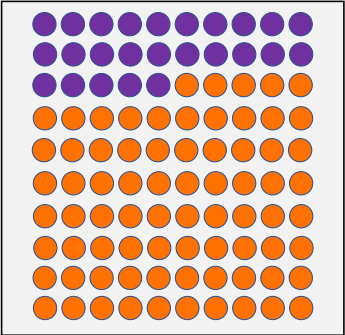
*IF Q14a ==2, THEN  $MP_{low}^{50} = 50$ .*

*IF Q14a== 3, THEN  $MP_{low}^{50} = 50$  AND  $MP_{up}^{50} = 50$  AND GO TO Q15.]*

[ASK IF  $Q14a==1$ ]

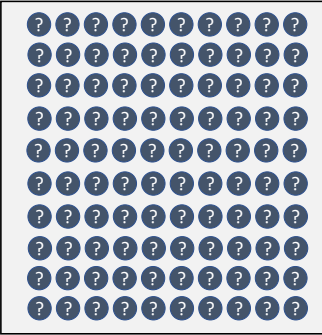
**Q14b** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
● (purple)	25%	\$15
● (orange)	75%	\$0

**BOX U**



Chance	You win	
● (purple)	?%	\$15
● (orange)	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

*[IF Q14b==1, THEN  $MP_{up}^{50} = 25$ .*

*IF Q14b==2, THEN  $MP_{low}^{50} = 25$ .*

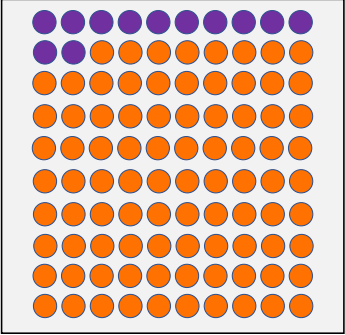
*IF Q14b==3, THEN  $MP_{low}^{50} = 25$  AND  $MP_{up}^{50} = 25$  AND GO TO Q15.]*

[ASK IF Q14b==1]

**Q14c** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.




**BOX K**



Chance	You win	
●	12%	\$15
●	88%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

*[IF Q14c==1, THEN  $MP_{up}^{50} = 12$ .*

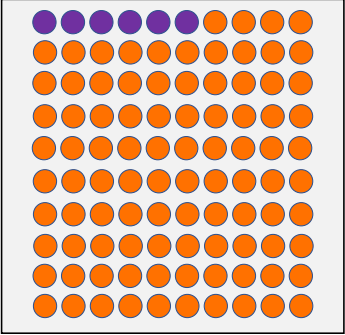
*IF Q14c==2, THEN  $MP_{low}^{50} = 12$ .*

*IF Q14c==3, THEN  $MP_{low}^{50} = 12$  AND  $MP_{up}^{50} = 12$  AND GO TO Q15.]*

[ASK IF Q14c==1]


**Q14d** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
●	6%	\$15
●	94%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

[IF Q14d==1, THEN  $MP_{up}^{50} = 6$ .

IF Q14d==2, THEN  $MP_{low}^{50} = 6$ .

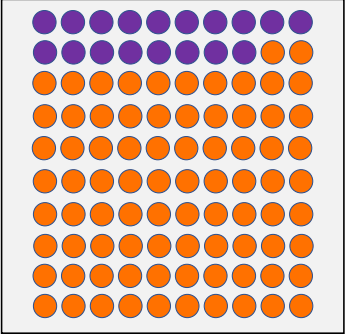
IF Q14d==3, THEN  $MP_{low}^{50} = 6$  AND  $MP_{up}^{50} = 6$ .

GO TO Q15.]

[ASK IF Q14c==2]


**Q14e** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
● (purple)	18%	\$15
● (orange)	82%	\$0

**BOX U**



Chance	You win	
● (purple)	?%	\$15
● (orange)	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

[IF Q14e==1, THEN  $MP_{up}^{50} = 18$ .  
 IF Q14e==2, THEN  $MP_{low}^{50} = 18$ .  
 IF Q14e==3, THEN  $MP_{low}^{50} = 18$  AND  $MP_{up}^{50} = 18$ .  
 GO TO Q15.]

[ASK IF Q14b==2]

**Q14f** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**

Chance	You win	
● (purple)	38%	\$15
● (orange)	62%	\$0

**BOX U**

Chance	You win	
● (purple)	?%	\$15
● (orange)	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

*[IF Q14f==1, THEN  $MP_{up}^{50} = 38$ .*

*IF Q14f==2, THEN  $MP_{low}^{50} = 38$ .*

*IF Q14f==3, THEN  $MP_{low}^{50} = 38$  AND  $MP_{up}^{50} = 38$  AND GO TO Q15.]*

[ASK IF Q14f==1]

**Q14g** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**

Chance	You win
●	32%      \$15
●	68%      \$0

**BOX U**

Chance	You win
●	?%      \$15
●	?%      \$0

Which box do you prefer?

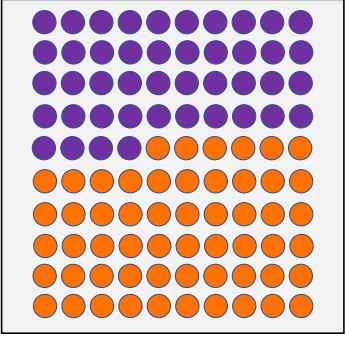
- 1 Box K
- 2 Box U
- 3 Indifferent

[IF Q14g==1, THEN  $MP^{50}_{up} = 32$ .  
 IF Q14g==2, THEN  $MP^{50}_{low} = 32$ .  
 IF Q14g==3, THEN  $MP^{50}_{low} = 32$  AND  $MP^{50}_{up} = 32$ .  
 GO TO Q15.]

[ASK IF Q14f==2]

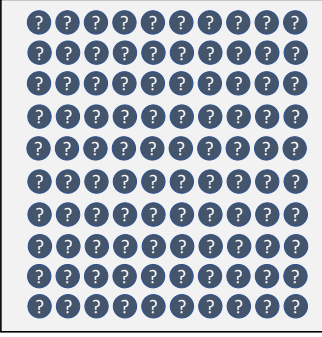
**Q14h** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
●	44%	\$15
●	56%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

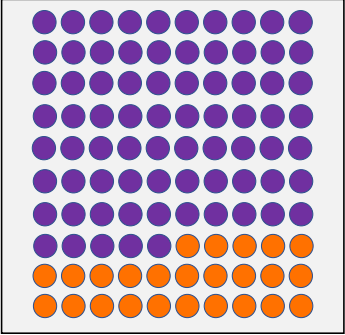
- 1 Box K
- 2 Box U
- 3 Indifferent

*[IF Q14h==1, THEN  $MP_{up}^{50} = 44$ .  
 IF Q14h==2, THEN  $MP_{low}^{50} = 44$ .  
 IF Q14h==3, THEN  $MP_{low}^{50} = 44$  AND  $MP_{up}^{50} = 44$ .  
 GO TO Q15.]*

[ASK IF Q14a==2]


**Q14i** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
●	75%	\$15
●	25%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

*[IF Q14i==1, THEN MP<sup>50</sup><sub>up</sub> = 75*

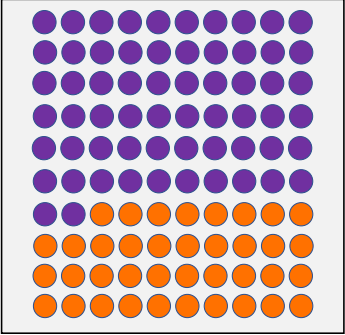
*IF Q14i==2, THEN MP<sup>50</sup><sub>low</sub> = 75*

*IF Q14i==3, THEN MP<sup>50</sup><sub>low</sub> = 75 AND MP<sup>50</sup><sub>up</sub> = 75 AND GO TO Q15]*

*[ASK IF Q14i==1]*


**Q14j** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
●	62%	\$15
●	38%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

*[IF Q14j==1, THEN MP<sup>50</sup><sub>up</sub> = 62*

*IF Q14j==2, THEN MP<sup>50</sup><sub>low</sub> = 62*

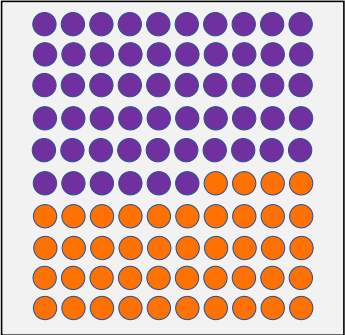
*IF Q14j==1, THEN MP<sup>50</sup><sub>low</sub> = 62 AND MP<sup>50</sup><sub>up</sub> = 62 AND GO TO Q15]*

*[ASK IF Q14j==1]*

**Q14k** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

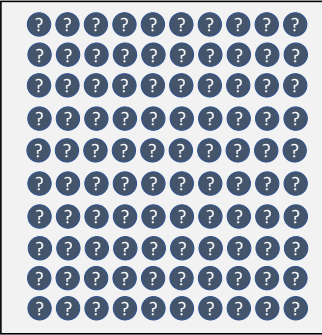


**BOX K**



Chance	You win	
●	56%	\$15
●	44%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

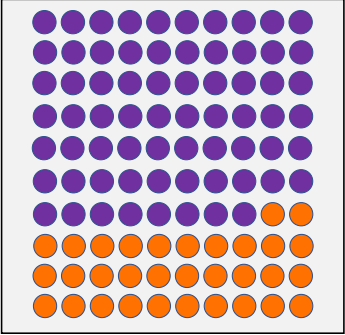
- 1 Box K
- 2 Box U
- 3 Indifferent

[IF Q14k==1, THEN  $MP_{up}^{50} = 56$ .  
 IF Q14k==2, THEN  $MP_{low}^{50} = 56$ .  
 IF Q14k==3, THEN  $MP_{low}^{50} = 56$  AND  $MP_{up}^{50} = 56$ .  
 GO TO Q15.]

[ASK IF Q14j==2]


**Q14I** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
●	68%	\$15
●	32%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

[IF Q14l==1, THEN  $MP_{up}^{50} = 68$ .

IF Q14l==2, THEN  $MP_{low}^{50} = 68$ .

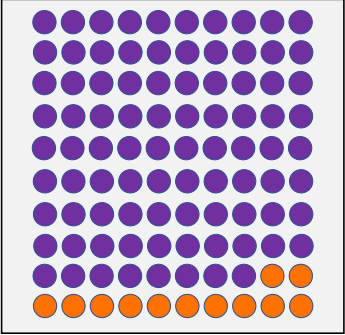
IF Q14l==3, THEN  $MP_{low}^{50} = 68$  AND  $MP_{up}^{50} = 68$ .

GO TO Q15.]

[ASK IF Q14i==2]


**Q14m** The following question asks you to make a hypothetical choice between two boxes, either Box K or Box U. Both hold 100 balls which can either be purple or orange. For Box K, the exact mix of purple and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown. In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U. One ball will be drawn at random from the box you choose. A purple ball is worth \$ 15 and an orange ball is worth \$ 0. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose indifferent.

**BOX K**



Chance	You win	
●	88%	\$15
●	12%	\$0

**BOX U**



Chance	You win	
●	?%	\$15
●	?%	\$0

Which box do you prefer?

- 1 Box K
- 2 Box U
- 3 Indifferent

*[IF Q14m==1, THEN MP<sup>50</sup><sub>up</sub> = 88.  
 IF Q14m==2, THEN MP<sup>50</sup><sub>low</sub> = 88.  
 IF Q14m==3, THEN MP<sup>50</sup><sub>low</sub> = 88 AND MP<sup>50</sup><sub>up</sub> = 88.  
 GO TO Q15.]*

[SECTION 4. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Allocation Task 1**

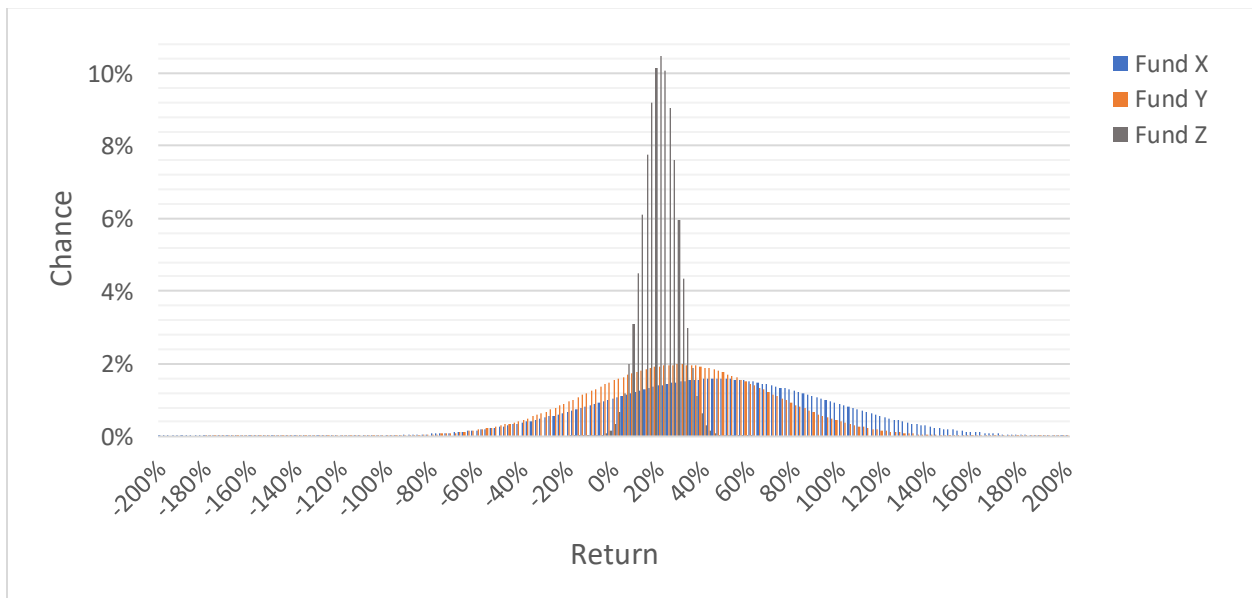
[TAKE THE TIME FOR THIS SECTION AND SAVE SECONDS AS VARIABLE “TIMEALLOCATION1”. START TAKING TIME FOR VARIABLE “TIMEALLOCATION1” HERE.]

Suppose that you received an amount of **\$30** that you need to allocate (assign) to three different investment opportunities (“funds”). The table below provides a brief description of these three funds, showing their expected 5-year return (payoff) and the return variability (technically, standard deviation).

Funds	Expected 5-year Return (%)	5-year Variability (%)
Fund X	44.4	50.2
Fund Y	27.5	40.3
Fund Z	18.9	7.6

You can interpret the expected return as follows. When you invest \$10 in a fund with an expected 5-year return of 30%, it is likely that you will receive your original investment of \$10 and a return of \$3 from this investment after 5 years. When a fund has a high variability, your return from investing in this fund is likely to differ from the expected return.

For a better understanding of how this table can be interpreted, the figure below illustrates the chances of different 5-year returns for each fund. The higher the bars are for each return, the greater chance this return will occur. You can end up with more than you started with if the return is positive and with less than you started with if the return is negative.



**Q15** Please indicate how much money you would allocate to each fund if you had to assign the entire amount of 30 across the three funds for 5 years. Please select how much you would

assign to each fund by specifying it in the second column of the table below (“Investment (\$)”). When you specify the amount in dollars, the third column will indicate how much this amount is in terms of percentage of your overall account balance of \$30.

Funds	Expected 5-year Return (%)	5-year Variability (%)
Fund X	44.4	50.2
Fund Y	27.5	40.3
Fund Z	18.9	7.6

	Investment (\$)	Percent (%) of \$30
Fund X	[“CELL A”, SAVE PARTICIPANTS’ INPUT AS VARIABLE “X1” AND SEE INSTRUCTIONS BELOW] (Numeric, 0- 30)	[“CELL E” SEE INSTRUCTIONS BELOW]
Fund Y	[“CELL B”, SAVE PARTICIPANTS’ INPUT AS VARIABLE “Y1” AND SEE INSTRUCTIONS BELOW] (Numeric, 0- 30)	[“CELL F” SEE INSTRUCTIONS BELOW]
Fund Z	[“CELL C”, SAVE PARTICIPANTS’ INPUT AS VARIABLE “Z1” AND SEE INSTRUCTIONS BELOW] (Numeric, 0- 30)	[“CELL G” SEE INSTRUCTIONS BELOW ]
Total invested	[“CELL D” SEE INSTRUCTIONS BELOW]	[“CELL H” SEE INSTRUCTIONS BELOW]

[CELLS A, B, AND C, SHOULD BE FILLED BY THE PARTICIPANTS. CELL D SHOULD DISPLAY THE AUTOMATICALLY CALCULATED SUM OF X1, Y1, AND Z1. IF THIS SUM IN CELL D IS SMALLER THAN 30, THERE SHOULD BE AN ERROR MESSAGE SAYING “YOU HAVE NOT ALLOCATED THE WHOLE AMOUNT ACROSS THE THREE FUNDS.” IF THE SUM IS GREATER THAN 30, THERE SHOULD BE AN ERROR MESSAGE SAYING “YOU HAVE ALLOCATED MORE MONEY ACROSS THE THREE FUNDS THAN YOU CAN ALLOCATE.“. THE LAST COLUMN, I.E. CELLS E, F, AND G, SHOULD CALCULATE AND DISPLAY THE INVESTMENT AMOUNT PER FUND IN PERCENT OF THE ENDOWMENT, I.E., THE DISPLAYED VALUE IN CELL E SHOULD BE X1 DIVIDED BY 30, THE VALUE IN CELL F SHOULD BE Y1 DIVIDED BY 30, AND THE VALUE IN CELL G SHOULD BE Z1 DIVIDED BY 30. CELL H SHOULD CALCULATE THE SUM OF THE VALUES IN CELLS E, F, AND G, AND SHOULD THEREFORE RESULT IN 100. IF CELL H IS NOT EQUAL TO 100, THIS SHOULD YIELD IN THE ERROR MESSAGES DESCRIBED ABOVE.]

[RESPONDENTS SHOULD NOT BE ABLE TO GO BACK AND CHANGE THEIR RESPONSES TO THIS SECTION]

[STOP TAKING TIME FOR VARIABLE "TIMEALLOCATION1" HERE WHEN RESPONDENTS MOVE TO NEXT SECTION.]

[SECTION 5. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Evaluation of Allocation Task I**

**Q16** What do you expect to be the change in value from the allocation you just selected, as a percent of your original balance?

Percent (-100000.00-100000.00) [BOX WITH % SIGN NEXT TO IT; ALLOW AT MOST TWO DECIMALS]

7777777 Don't know

**Q17** How confident are you about your response to the previous question?

1 Extremely confident

2 Very confident

3 Somewhat confident

4 Not very confident

5 Not at all confident

7777777 Don't know

8888888 Refuse to answer

**Q18** In this question, we present you with five possible scenarios for the returns of your allocation, and we ask you to indicate the chances that each scenario will occur.

Please type in the number to indicate the percentage chance that you attach to each scenario. The sum of chances across all five scenarios must add to 100%.

(Please answer only with values between 0 and 100 with at most two decimals.)

Your total return will be...

50.00 % or more	Percent [BOX WITH % SIGN NEXT TO IT] (RANGE: 0% TO 100%, ALLOW AT MOST TWO DECIMALS)
between 35.00 % and 49.99 %	Percent [BOX WITH % SIGN NEXT TO IT] (RANGE: 0% TO 100%, ALLOW AT MOST TWO DECIMALS)
between 5.00 % and 34.99 %	Percent [BOX WITH % SIGN NEXT TO IT] (RANGE: 0% TO 100%, ALLOW AT MOST TWO DECIMALS)
between -10.00 % and 4.99 %	Percent [BOX WITH % SIGN NEXT TO IT] (RANGE: 0% TO 100%, ALLOW AT MOST TWO DECIMALS)
less than -10.00 %	Percent [BOX WITH % SIGN NEXT TO IT] (RANGE: 0% TO 100%, ALLOW AT MOST TWO DECIMALS)
Total	["CELL A" SEE INSTRUCTIONS BELOW]

[CELL A SHOULD DISPLAY THE AUTOMATICALLY CALCULATED SUM OF THE CELLS ABOVE. IF THIS SUM IN CELL A IS SMALLER THAN 100% WHEN THE PARTICIPANT CONTINUES TO THE NEXT SECTION, THERE SHOULD BE AN ERROR MESSAGE SAYING "YOU HAVE NOT ALLOCATED 100%. " IF THE SUM IS GREATER THAN 100% WHEN THE PARTICIPANT CONTINUES TO THE NEXT SECTION, THERE SHOULD BE AN ERROR MESSAGE SAYING "YOU HAVE ALLOCATED MORE THAN 100%.“.]

[RESPONDENTS SHOULD NOT BE ABLE TO GO BACK AND CHANGE THEIR RESPONSES TO THIS SECTION]



[DEFINE VARIABLE “PRICE”. IF TREATMENT==1, SET PRICE=0, IF TREATMENT==2, FOR EACH RESPONDENT DRAW A RANDOM NUMBER WITH TWO DECIMALS FROM A UNIFORM DISTRIBUTION OVER [0.00, 5.00] OR DRAW FROM TABLE 2 IN THE APPENDIX AND SAVE THIS AS THE VARIABLE “PRICE.”]

[GO TO SECTION 9, IF TREATMENT==1]

[SECTION 6. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Expression of Interest in Action**

[TAKE THE TIME FOR THIS SECTION AND SAVE SECONDS AS VARIABLE “TIMEWTP”. START TAKING TIME FOR VARIABLE “TIMEWTP” HERE.]

You will now receive an amount of **\$30** that you can spend and invest in this part of the survey.

[IF TREATMENT==2, INSERT “You can use this money to purchase additional information that might help you make better financial decisions in general and may improve your results in Allocation Task 2, later in this survey.”]

The remaining amount that you do not spend on acquiring financial information will stay in your account. Then, you will need to invest the remaining amount on a second allocation task (“Allocation Task 2”) that is the same as Allocation Task 1. **You will receive an Amazon gift card valued at the amount of your payout from Allocation Task 2 as an additional payment to the rewards points that you receive as compensation for your participation in this survey.**

In order to determine whether or not you will receive this financial information, we would like to know the price you would be willing to pay for purchasing this financial information.

You will be asked to **state the highest price that you would be willing to pay for the financial information.** Then the computer will draw a random number between \$0.00 and \$5.00, where all numbers between (and including) \$0.00 and \$5.00 occur with equal probability. The number drawn will be stated in dollars and cents (with up to two decimals).

There are two cases to keep in mind:

- If the number drawn at random by the computer is higher than or equal to the price you have specified, you will not purchase the treatment. That is, you will not receive financial information, and you do not have to pay anything out of your account balance.
- If the number drawn at random by the computer is smaller than the price you specify, you will purchase the treatment. That is, you will receive the financial information and you must pay the price drawn by the random number generator out of your account balance. Note that you will never have to pay more than the price that you have specified, and that specifying a higher price raises the chance that you receive financial information.

Here is an example:

Let's imagine that you specify a price of \$3.10.

If the computer draws \$2.30, you will purchase financial information for \$2.30.

If the computer draws \$4.40, you will not purchase any financial information.

You will only receive financial information if you state the same price or a higher price than what the computer generated.

**Q19** Now imagine that you specify a price of \$4.50 and that the computer draws 3.20. Please state which of the following outcomes is correct.

- 1 You will purchase the financial information for \$3.20.
- 2 You will purchase the financial information for \$4.50.
- 3 You will not purchase any financial information.

[SAVE THE RESPONSE TO THE FOLLOWING QUESTION AS THE VARIABLE "WTP"]

**Q20** Please state now the highest price that you are willing to pay out of your account balance of \$30 in order to receive financial information. The price that you state should be between \$0.00 and \$5.00.

Numeric (0.00-5.00) [BOX WITH \$-SIGN NEXT TO IT, ALLOW AT MOST TWO DECIMALS]

6666666 I do not want to receive any financial information

[RESPONDENTS SHOULD NOT BE ABLE TO GO BACK AND CHANGE THEIR RESPONSES TO THIS SECTION]

[STOP TAKING TIME FOR VARIABLE "TIMEWTP" HERE WHEN RESPONDENTS MOVE TO NEXT SECTION.]

[SECTION 7. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Expectation of Allocation Task 2**

Later in this survey you will face Allocation Task 2, which is **the same as Allocation Task 1**. That is, you will need to allocate a fixed amount across the three investment opportunities (“funds”) that you have seen before. As a reminder, the table below provides a brief description of these three funds, showing their expected 5-year return (payoff) and the return variability (technically, standard deviation).

Funds	Expected 5-year Return (%)	5-year Variability (%)
Fund X	44.4	50.2
Fund Y	27.5	40.3
Fund Z	18.9	7.6

**Q21** Do you think you will be able to apply the financial information provided to your investment decision in Allocation Task 2, later in this survey?

- 1 No
- 2 Probably not
- 3 Probably
- 4 Yes
- 7777777 Don't know

**Q22** Do you expect your total return from Allocation Task 2 to be higher than the total return from Allocation Task 1, if you acquire additional financial information?

- 1 No
- 2 Probably not
- 3 Probably
- 4 Yes
- 7777777 Don't know

[ASK IF Q22==3 OR Q22==4; DISPLAY ON SAME SCREEN]

**Q23** How much additional value do you think you'll receive from Allocation Task 2, compared to the value you expected from Allocation Task 1, if you acquire financial information? Please make a guess (in % with at most two decimals).

Percent [BOX WITH %-SIGN NEXT TO IT] (RANGE: 0% TO 100%, ALLOW AT MOST TWO DECIMALS)

- 7777777 Don't know

[ASK IF Q22==3 OR Q22==4; DISPLAY ON SAME SCREEN]

**Q23a** How confident are you about your answer to the previous question?

- 1 Extremely confident
- 2 Very confident
- 3 Somewhat confident
- 4 Not very confident
- 5 Not at all confident

7777777 Don't know

8888888 Refuse to answer

[RESPONDENTS SHOULD NOT BE ABLE TO GO BACK AND CHANGE THEIR  
RESPONSES TO THIS SECTION]

[SECTION 8]

[INSERT THE FOLLOWING SUBSECTION, IF TREATMENT==2 AND WTP >= PRICE.]

[SECTION 8.1 SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Treatment:**

**Financial Knowledge**

[TAKE THE TIME FOR THIS SECTION AND SAVE SECONDS AS VARIABLE “TIMETREATMENT”. START TAKING TIME FOR VARIABLE “TIMETREATMENT” HERE.]

[SCREEN 1:]

**You have purchased financial information for the price of \$[INSERT=PRICE].** This additional information may help you make better financial decisions and increase your results in Allocation Task 2, later in this survey.

A portfolio consists of all your investments in the financial market, and portfolio allocation refers to the task of distributing your money across different investment opportunities. In the following description, we will teach you two very important concepts for making a good portfolio allocation: 1) The value of diversification, and 2) The value of high risk-adjusted portfolio returns. You can use the knowledge about these concepts to improve your decision in Allocation Task 2.

[SCREEN 2:] **The value of diversification**

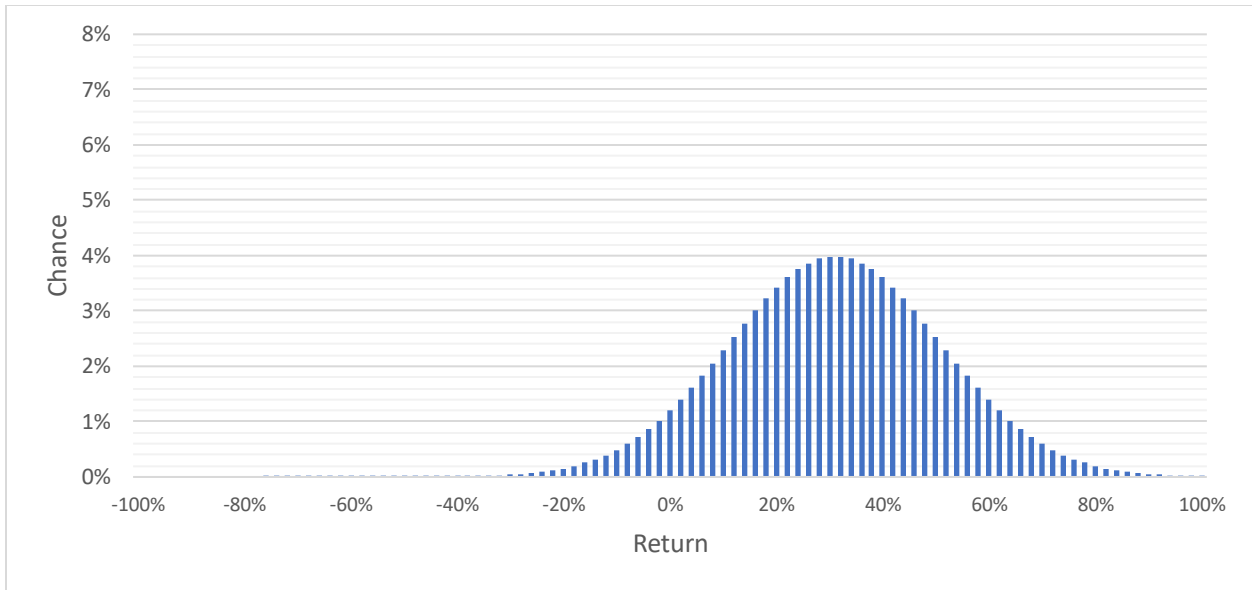
Suppose you have the opportunity to invest in three different funds, A, B and C. They all have the same expected return of 30% and variability of 20%.

Funds	Expected 5-year Return (%)	5-year Variability (%)
Fund A	30	20
Fund B	30	20
Fund C	30	20

[SCREEN 3. ADD TO SCREEN 2 THE FOLLOWING TEXT BELOW.] **The value of diversification**

Since they are all equal in terms of expected return and variability, you may be tempted to invest all your money in just one fund. If you do, you might be lucky and it performs well. However, if you are unlucky and the fund that you invested in performs badly, you can also lose a lot of money.

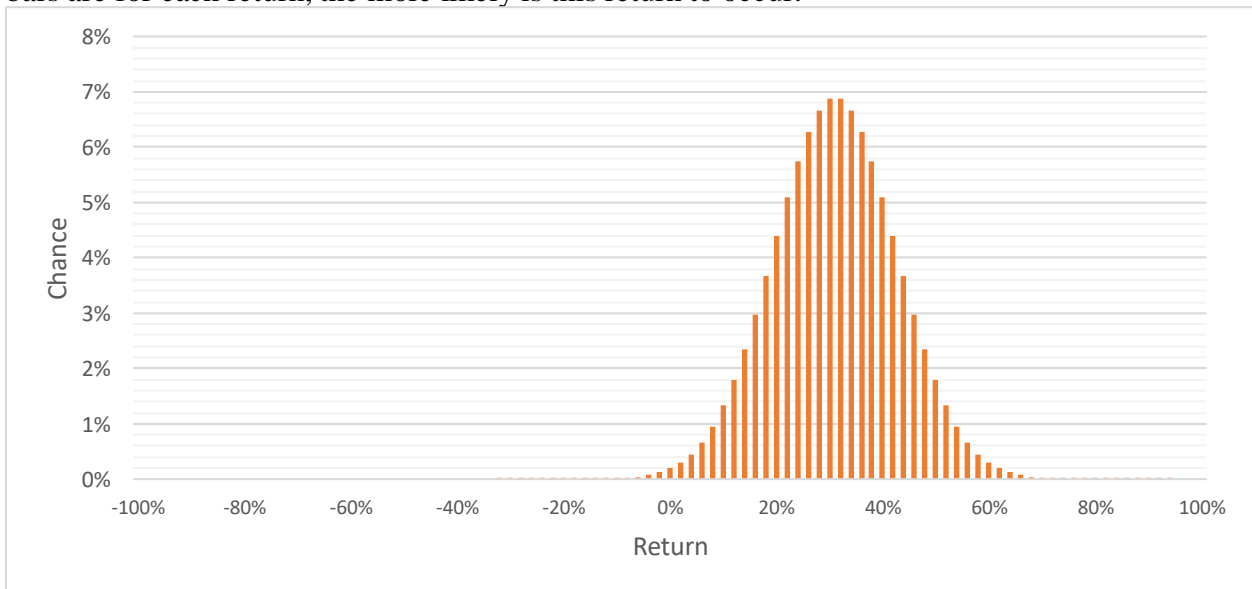
When you invest all your money into a single fund (out of the three funds described above) for 5 years, your portfolio will have an expected return of 30% with 20% variability. The figure below illustrates the likelihood of different 5-year returns for this case. The higher the bars are for each return, the more likely is this return.



[SCREEN 4. KEEP ONLY THE TABLE WITH FUNDS' RETURNS FROM SCREEN 2 AND ADD THE FOLLOWING TEXT.] **The value of diversification**

Now consider dividing your investment across all three funds. The expected return is still 30%. Makes sense. But the variability of each fund is not related. That is, the chance that one fund has an above-average return is the same whether or not the other funds do well or poorly. You can take advantage of this by putting the same amount into each of the funds. This will reduce the overall variability of the portfolio, which now becomes about 11.55%. So you are now getting the same expected return as when you invested in just one fund, but the return is much less volatile. How awesome is that?

The figure below illustrates the likelihood of different 5-year returns for this case. The higher the bars are for each return, the more likely is this return to occur.



[SCREEN 5.] **The value of diversification**

This concept is called diversification. When funds returns are volatile but do not move together (are not correlated), spreading your investment across several funds reduces the variability of your portfolio. Putting all your eggs in a single basket is risky.

[SCREEN 6:] **The value of high risk adjusted portfolio returns.**

Ok, you get it. But what about when funds differ in terms of expected return and variability? Consider the following three funds.

<b>Funds</b>	<b>Expected 5-year Return (%)</b>	<b>5-year Variability (%)</b>
Fund D	40	25
Fund E	30	20
Fund F	30	30

Now consider dividing your investment equally across all three funds (that is, you invest one-third (33.33%) of your money in each fund). After all, you are an expert in diversification now!

The expected return of this portfolio is 33.33% and the variability is 14.62%: not bad. But can you do better? Yes, if you can increase the expected return without changing the variability, right? For the same risk, you could increase the expected return.

[SCREEN 7.] **The value of high risk-adjusted portfolio returns.**

One way to accomplish this is to look at risk-adjusted returns. We can calculate these by dividing the expected return by the variability.

Fund D is the one with the highest risk-adjusted return, while Fund F has the lowest. Fund F has the highest variability. So you can tilt your investment more heavily towards Fund D. Let's try this and see how the expected return can increase, while keeping variability constant.

For example, when you increase your investment in Fund D from 33.33% to 46%, you increase your investment in Fund E from 33.33% to 35%, and you decrease your investment in Fund F from 33.33% to 19%, **the expected return of your portfolio increases from 33.33% to 34.60%, while the variability stays constant at 14.62%.**

You have now created value in terms of returns for a given level of variability. How much variability you are willing to bear is a decision you have to make. But you can certainly play with your allocation to get the best return possible. Using risk-adjusted returns is one way of identifying potential gains.

[SCREEN 8:]

To sum up what we have learned, **diversifying** is definitely something to try. First, for a given expected return, diversifying will often reduce the variability of your investment. Second, for a

given amount of variability you are willing to bear, tilting your investment towards funds with higher risk-adjusted returns will generally increase your expected return without exposing you to higher variability.

[STOP TAKING TIME FOR VARIABLE “TIMETREATMENT” HERE WHEN RESPONDENTS MOVE TO NEXT SECTION.]

[INSERT THE FOLLOWING SUBSECTION, IF TREATMENT==2 AND WTP < PRICE]  
[SECTION 8.2.]

The price randomly generated by the computer turns out to be higher than your willingness to pay for financial information. **Therefore, you did not purchase financial information and you can use all your money for Allocation Task 2.**



[SECTION 9. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Allocation Task 2**

[DEFINE VARIABLE ENDOWMENT2 = 30.00 - (IF WTP < PRICE, INSERT "0", IF WTP >= PRICE, INSERT = PRICE)]

[TAKE THE TIME FOR THIS SECTION AND SAVE SECONDS AS VARIABLE "TIMEALLOCATION2". START TAKING TIME FOR VARIABLE "TIMEALLOCATION2" HERE.]

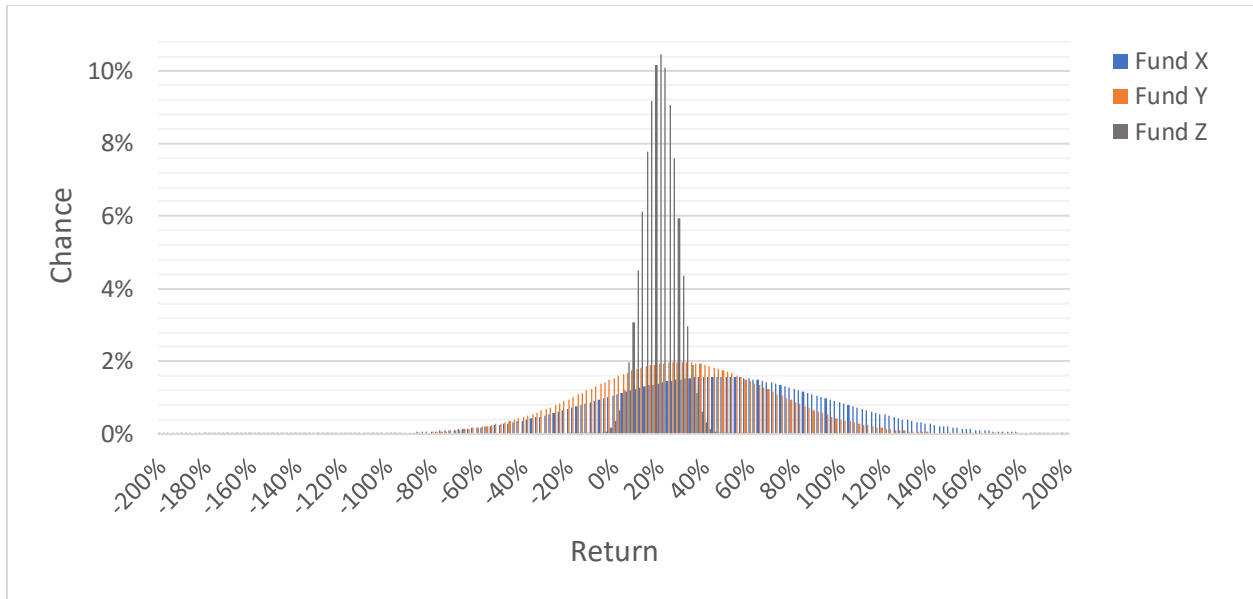
You will now need to allocate (assign) your remaining amount of **\$(INSERT=ENDOWMENT2)** across the same three investment opportunities ("funds") that you saw in Allocation Task 1. The table below is simply to remind you of the description of these three funds, showing their expected 5-year return (payoff) and the return variability (technically, standard deviation).

<b>Funds</b>	<b>Expected 5-year Return (%)</b>	<b>5-year Variability (%)</b>
Fund X	44.4	50.2
Fund Y	27.5	40.3
Fund Z	18.9	7.6

You can interpret the expected return as follows. When you invest \$10 into a fund with an expected 5-year return of 30%, it is likely that you receive your original investment of \$10 and a return of \$3 from this investment after 5 years. When a fund has a high variability, your return from investing in this fund is likely to differ from the expected return.

For a better understanding of how this table can be interpreted, the figure below illustrates the chances of different 5-year returns for each fund. The higher the bars are for each return, the greater chance this return will occur. You can end up with more than you started with if the return is positive and with less than you started with if the return is negative.

**You will receive an Amazon gift card valued at the amount of the return from this allocation task as an additional payment to the rewards points that you receive as compensation for your participation in this survey.**



**Q24** Please indicate how much money you would like allocate to each fund. You have to assign the entire remaining amount of \$[INSERT=ENDOWMENT2] across the three funds for 5 years. Please select how much to invest into each fund by specifying it in the second column of the table below (“Investment (\$”). When you specify the amount in dollars, the third column will indicate how much this amount is in terms of percentage of your overall account balance of \$[INSERT=ENDOWMENT2].

Funds	Expected 5-year Return (%)	5-year Variability (%)
Fund X	44.4	50.2
Fund Y	27.5	40.3
Fund Z	18.9	7.6

	Investment (\$)	Percent (%) of \$[INSERT=ENDOWMENT2]
Fund X	[“CELL A”, SAVE PARTICIPANTS’ INPUT AS VARIABLE “X2” AND SEE INSTRUCTIONS BELOW] (Numeric, 0-ENDOWMENT2)	[“CELL E” SEE INSTRUCTIONS BELOW]
Fund Y	[“CELL B”, SAVE PARTICIPANTS’ INPUT AS VARIABLE “Y2” AND SEE INSTRUCTIONS BELOW] (Numeric, 0-ENDOWMENT2)	[“CELL F” SEE INSTRUCTIONS BELOW]
Fund Z	[“CELL C”, SAVE PARTICIPANTS’ INPUT AS	[“CELL G” SEE INSTRUCTIONS BELOW ]

	VARIABLE "Z2" AND SEE INSTRUCTIONS BELOW (Numeric, 0-ENDOWMENT2)	
Total invested	["CELL D" SEE INSTRUCTIONS BELOW]	["CELL H" SEE INSTRUCTIONS BELOW]

[CELLS A, B, AND C, SHOULD BE FILLED BY THE PARTICIPANTS. CELL D SHOULD DISPLAY THE AUTOMATICALLY CALCULATED SUM OF X2, Y2, AND Z2. IF THIS SUM IN CELL D IS SMALLER THAN ENDOWMENT2, THERE SHOULD BE AN ERROR MESSAGE SAYING "YOU HAVE NOT ALLOCATED THE WHOLE AMOUNT ACROSS THE THREE FUNDS." IF THE SUM IS GREATER THAN ENDOWMENT2, THERE SHOULD BE AN ERROR MESSAGE SAYING "YOU HAVE ALLOCATED MORE MONEY ACROSS THE THREE FUNDS THAN YOU CAN ALLOCATE.". THE LAST COLUMN, I.E. CELLS E, F, AND G, SHOULD CALCULATE AND DISPLAY THE INVESTMENT AMOUNT PER FUND IN PERCENT OF THE ENDOWMENT, I.E., THE DISPLAYED VALUE IN CELL E SHOULD BE X2 DIVIDED BY ENDOWMENT2, THE VALUE IN CELL F SHOULD BE Y2 DIVIDED BY ENDOWMENT2, AND THE VALUE IN CELL G SHOULD BE Z2 DIVIDED BY ENDOWMENT2. CELL H SHOULD CALCULATE THE SUM OF THE VALUES IN CELLS E, F, AND G, AND SHOULD THEREFORE RESULT IN 100. IF CELL H IS NOT EQUAL TO 100, THIS SHOULD YIELD IN THE ERROR MESSAGES DESCRIBED ABOVE.]

[RESPONDENTS SHOULD NOT BE ABLE TO GO BACK AND CHANGE THEIR RESPONSES TO THIS SECTION]

[STOP TAKING TIME FOR VARIABLE "TIMEALLOCATION2" HERE WHEN RESPONDENTS MOVE TO NEXT SECTION.]

[SECTION 10. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Financial situation**

**Q25** What is your best estimate of the total income received by all members of your household in 2020, from all sources, before taxes and deductions?

Numeric (0-9999998) [ADD A "\$" BEHIND THE INPUT SPACE]

9999999 Don't know or prefer not to say

[ASK IF Q25==9999999; DISPLAY ON SAME SCREEN]

**Q25a** Is it more than \$60,000?

1 Yes

2 No

7777777 Don't know

8888888 Refuse to answer

[ASK IF Q25a==1; DISPLAY ON SAME SCREEN]

**Q25b** Is it less than \$120,000?

1 Yes

2 No

7777777 Don't know

8888888 Refuse to answer

[ASK IF Q25b==1; DISPLAY ON SAME SCREEN]

**Q25c** Is it more than \$90,000?

1 Yes

2 No

7777777 Don't know

8888888 Refuse to answer

[ASK IF Q25a==2; DISPLAY ON SAME SCREEN]

**Q25d** Is it more than \$30,000?

1 Yes

2 No

7777777 Don't know

8888888 Refuse to answer

**Q26** Including yourself, how many people living in your household are supported by this income?

Numeric (1-100000) [ALLOW ONLY INTEGER]

7777777 Don't know

8888888 Refuse to answer

**Q27** Of the following types of assets or plans, please select all that you own/participate in. Also, give us your best estimate of the amount of money in each (account balance) as well as the fraction invested in shares of stock of publicly held corporations, including through mutual funds or investment trusts.

		Ownership	Account balance (\$)	Fraction invested in shares	To the best of your knowledge, how are you invested in shares?	How many different company stocks are in your individual stock portfolio?
Q27a	Individual RRSPs (Registered Retirement Savings Plans)	<input type="checkbox"/>			<input type="checkbox"/> Domestic mutual funds <input type="checkbox"/> International mutual funds <input type="checkbox"/> Domestic ETFs <input type="checkbox"/> International ETFs <input type="checkbox"/> Domestic individual stocks <input type="checkbox"/> International individual stocks	
Q27b	Individual TFSAs (Tax-Free Savings Accounts)	<input type="checkbox"/>			<input type="checkbox"/> Domestic mutual funds <input type="checkbox"/> International mutual funds <input type="checkbox"/> Domestic ETFs <input type="checkbox"/> International ETFs <input type="checkbox"/> Domestic individual stocks <input type="checkbox"/> International individual stocks	
Q27c	Group plans acquired through employer, such as a Group RRSP (offered by the employer; contributions are taken on work income; the employer can contribute to the group RRSP) and a Group TFSA (offered by the employer; contributions are taken on work income; the	<input type="checkbox"/>			<input type="checkbox"/> Domestic mutual funds <input type="checkbox"/> International mutual funds <input type="checkbox"/> Domestic ETFs <input type="checkbox"/> International ETFs <input type="checkbox"/> Domestic individual stocks <input type="checkbox"/> International individual stocks	

	employer can contribute to the group TFSA)					
Q27d	Defined contribution (DC) pension plan, including simplified pension plans (This type of pension plan pays benefits that depend on the pension plan's returns. You and your employer deposit contributions.)	<input type="checkbox"/>				<input type="checkbox"/> Domestic mutual funds <input type="checkbox"/> International mutual funds <input type="checkbox"/> Domestic ETFs <input type="checkbox"/> International ETFs <input type="checkbox"/> Domestic individual stocks <input type="checkbox"/> International individual stocks
Q27e	Other accounts	<input type="checkbox"/>				<input type="checkbox"/> Domestic mutual funds <input type="checkbox"/> International mutual funds <input type="checkbox"/> Domestic ETFs <input type="checkbox"/> International ETFs <input type="checkbox"/> Domestic individual stocks <input type="checkbox"/> International individual stocks

[NEED A CHECKBOX OF SOME SORT IN THE "Ownership" COLUMN AND A DROP DOWN MENU FOR EACH CELL IN THE "Fraction invested in shares" COLUMN, WHERE RESPONDENTS CAN SELECT zero OR a quarter OR half OR almost all. ANSWERS IN THE "Account balance" COLUMN ARE: Numeric (0 – 2,000,000). RESPONDENTS CAN ONLY STATE AN ACCOUNT BALANCE AND A FRACTION IF THEY HAVE SELECT THE ASSET OWNERSHIP. FURTHER, WE WOULD LIKE TO HAVE TWO ADDITIONAL COLUMNS. THE FIRST ADDITIONAL COLUMN (COLUMN 5) ASKS "To the best of your knowledge, how are you invested in shares?" RESPONDENTS SHOULD BE ABLE TO TICK ONE OR MORE OF THE BOXES FOR THE OPTIONS IN THE CELLS OF THIS COLUMN ONLY IF THEY HAVE SPECIFIED A FRACTION INVESTED IN SHARE THAT IS EITHER "a quarter" (3) OR "half" (4) OR "almost all" (5) FOR THIS ROW / SUBQUESTION. THE SECOND ADDITIONAL COLUMN (COLUMN 6) ASKS "How many individual stocks (companies) are in your portfolio?" RESPONDENTS SHOULD ONLY BE ABLE TO GIVE ANY INPUT IN THIS ANY CELL OF THIS COLUMN IF THEY HAVE SELECTED "Domestic individual stocks" OR "International individual stocks" IN THE PREVIOUS COLUMN FOR THE RESPECTIVE ROW.

CODING SUGGESTION: SAVE RESPONSES IN TWO VARIABLES PER SUB-QUESTION. VARIABLES Q27a1-Q27e1 TAKE THEIR VALUES FROM COLUMN 1 AND COLUMN 3 AS FOLLOWS. IF OWNERSHIP IS UNSELECTED, THE VALUE IS 1 AND NO FRACTION CAN BE SPECIFIED. IF OWNERSHIP IS SELECTED, THE VALUE OF THE VARIABLE IS EITHER 2, 3, 4, OR 5, DEPENDING ON THE SELECTION IN COLUMN 3: 1 OWNERSHIP UNCHECKED, 2 Zero, 3 A quarter, 4 Half, 5 Almost all. THE SECOND VARIABLE Q27a2-Q27e2 TAKES ITS VALUE FROM COLUMN 2 (NUMERIC BETWEEN 0 AND 2,000,000). ALTERNATIVELY, IF THE PROGRAMMING OF Q27a1-Q27e1 IS TOO COMPLICATED, WE COULD CREATE 3 VARIABLES PER SUB-QUESTION, ONE FOR EACH COLUMN. THEN, THE FIRST ONE FOR THE OWNERSHIP SELECTION IN COLUMN 1 IS BINARY, THE ACCOUNT BALANCE VALUE IN COLUMN 2 IS NUMERIC (BETWEEN 0 AND 2,000,000) AND THE FRACTION IN COLUMN 3 IS CATEGORICAL (2, 3, 4, or 5). FOR THE FIRST ADDITIONAL COLUMN (COLUMN 5) ON HOW RESPONDENTS ARE INVESTED IN SHARES, WE SUGGEST TO CREATE AN ADDITIONAL BINARY VARIABLE FOR EACH OPTION THAT CAN BE CHECKED IN EACH SUBSECTION. FOR THE LAST COLUMN, THE INPUT SHOULD BE NUMERIC BETWEEN 1 AND 10,000 AND THIS VARIABLE SHOULD TAKE ON THE VALUE 0 IF THE LAST COLUMN DOES NOT APPEAR TO THE RESPONDENT, I.E., IF THEY HAVE NOT SELECTED “Domestic individual stocks” OR “International individual stocks” IN THE PREVIOUS COLUMN FOR THE RESPECTIVE ROW.]

**Q28** Do you currently participate in a **Defined Benefit (DB) pension plan** offered by your employer? This type of pension plan pays fixed benefits during retirement. The benefits depend on number of years worked and income, but not on the pension plan’s returns.

1 Yes

2 No

7777777 Don’t know

8888888 Refuse to answer

**Q29** How would you assess your overall financial knowledge?

1 Very low

2 Low

3 Moderate

4 High

5 Very high

7777777 Don’t know

8888888 Refuse to answer

**Q30** Please indicate whether the following statement is true or false: “Imagine that Fund Q yields the highest expected return of investment opportunities available to you. Then you will always earn the highest return when you invest everything into fund Q.”

1 True

2 False

**Q31** Please indicate whether the following statement is true or false: “Comparing risk-adjusted returns across funds can help you increase your expected return for a given variability, by putting more money in certain funds than in others.”

- 1 True
- 2 False

**Q32** Please indicate whether the following statement is true or false: “Diversification means investing your money in several funds instead of investing everything in one fund”.

- 1 True
- 2 False

**Q33** Please indicate whether the following statement is true or false: “Spreading your money across all available funds equally is the best investment strategy for everyone.”

- 1 True
- 2 False

**Q34** Have you ever received financial advice either from a financial professional, friends, or family members?

- 1 Yes, from a financial professional
- 2 Yes, from friends or family
- 3 Yes, from a financial professional and from friends or family
- 4 No
- 7777777 Don’t know
- 8888888 Refuse to answer

[ASK IF Q34==1,2, OR 3; DISPLAY ON SAME SCREEN]

**Q34a** Did you request this advice, or was it simply provided to you without you requesting it?

- 1 I requested it
- 2 It was simply provided to me without me requesting it
- 7777777 Don’t know
- 8888888 Refuse to answer

[ASK IF Q34==1,2, OR 3; DISPLAY ON SAME SCREEN]

**Q34b** Have you ever acted on this financial advice?

- 1 Yes
- 2 No
- 7777777 Don’t know
- 8888888 Refuse to answer

**Q35** How would you rate your knowledge about the stock market?

- 1 Very low
- 2 Low
- 3 Moderate
- 4 High
- 5 Very high
- 7777777 Don’t know



8888888 Refuse to answer

**Q36** Have you ever traded stocks or other financial instruments yourself (e.g., using a brokerage account or with an app)?

1 Yes

2 No

7777777 Don't know

8888888 Refuse to answer

**Q37** When you were growing up, did your parents invest in stocks or other financial instruments?

1 Yes

2 No

7777777 Don't know

8888888 Refuse to answer

**Q38** Did you study economics or finance in high school?

1 Yes

2 No

7777777 Don't know

8888888 Refuse to answer

**Q39** Could you tell us how clear you found the questions in this survey?

1 Very clear

2 Clear

3 Confusing

4 Very confusing

[SECTION 11]

[DEFINE WORTH = ENDOWMENT2 + X2\* RETURNX2+ Y2\* RETURNY2+ Z2\* RETURNZ2, WHERE RETURNX2, RETURNY2, AND RETURNZ2 ARE DRAWN FROM TABLE 3 IN THE APPENDIX]

[INSERT THE FOLLOWING PARAGRAPH, IF TREATMENT==2]

[SECTION 11.1. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Your Payout**

From the \$30.00 received for Allocation Task 2, you spent \$[IF WTP < PRICE, INSERT “0.00”, IF WTP >= PRICE, INSERT = PRICE] on financial knowledge and invested the remaining \$[INSERT= ENDOWMENT2] in the allocation task. After five years, your portfolio is now worth \$[INSERT= WORTH].

[IF WORTH >0, INSERT= “In about 4-6 weeks, you will receive an Amazon gift card valued at this amount as an additional payment to the rewards points that you receive as compensation for your participation in this survey”.] We thank you very much for your participation.

[INSERT THE FOLLOWING PARAGRAPH, IF TREATMENT==1]

[SECTION 11.2. SHOW THE FOLLOWING TITLE TO RESPONDENTS:] **Your Payout**

You received \$30.00 for Allocation Task 2. After five years, your portfolio is now worth \$[INSERT= WORTH]. [IF WORTH >0, INSERT= “In about 4-6 weeks, you will receive an Amazon gift card valued at this amount as an additional payment to the rewards points that you receive as compensation for your participation in this survey”.] We thank you very much for your participation.

[DISPLAY THE FOLLOWING QUESTIONS ON THE SAME PAGE AS THE PREVIOUS PARAGRAPH(S)]

**Q40** Please provide your email address below for the purpose of transferring your Amazon e-gift card. Your email address will only be used for this purpose and will not be kept on file nor shared with the research team.

String [THE INPUT MUST CONTAIN A “@” AND A “.”. OTHERWISE, THERE SHOULD BE AN ERROR MESSAGE SAYING “Please provide a valid email address.”]

1 I do not want to provide my email address and I do not want to receive an Amazon e-gift card.

[ASK IF Q40 IS NOT 1]

**Q41** Please repeat your email address below for the purpose of transferring the Amazon e-gift card.

String [THE INPUT MUST EQUAL THE INPUT FOR Q40. OTHERWISE, THERE SHOULD BE AN ERROR MESSAGE SAYING “The email address must match the email address provided above.”]

[APPENDIX: THE FOLLOWING TABLES AND FIGURES ARE INTENDED FOR PROGRAMMERS ONLY AND SHOULD NOT BE SHOWN TO THE PARTICIPANTS]

TABLE 1 VARIABLES

VARIABLES	POSSIBLE VALUES	VALUE MAIN
<b>TREATMENT</b>	1, 2	1, 2
<b>PRICE</b>	Random draw of numeric value with two decimals from uniform distribution over [0.00, 5.00] (or draw from Table 2)	
<b>WTP</b>	[0.00, 5.00]	Participants' response to Q20
<b>ENDOWMENT2</b>	30.00 – [IF WTP<PRICE, INSERT “0.00”, IF WTP >=PRICE, INSERT = PRICE]	
<b>X1</b>	0-30	
<b>Y1</b>	0-30	
<b>Z1</b>	0-30	
<b>X2</b>	0- ENDOWMENT2	
<b>Y2</b>	0- ENDOWMENT2	
<b>Z2</b>	0- ENDOWMENT2	
<b>RETURNX2</b>	Normally distributed with mean = 0.444 and standard deviation = 0.502 (Or draw from Table 3)	
<b>RETURNY2</b>	Normally distributed with mean = 0.275 and standard deviation = 0.403 (Or draw from Table 3)	
<b>RETURNZ2</b>	Normally distributed with mean = 0.189 and standard deviation = 0.076 (Or draw from Table 3)	
<b>WORTH</b>	$\text{WORTH} = \text{ENDOWMENT2} + \text{X2} * \text{RETURNX2} + \text{Y2} * \text{RETURNY2} + \text{Z2} * \text{RETURNZ2}$	

TABLE 2 RANDOM PRICE FOR TREATMENT

Outcome	Probability
<b>0</b>	$\frac{1}{501}$
<b>0.01</b>	$\frac{1}{501}$
<b>0.02</b>	$\frac{1}{501}$

0.03	$\frac{1}{501}$
0.04	$\frac{1}{501}$
0.05	$\frac{1}{501}$
...	...
...	...
...	...
4.95	$\frac{1}{501}$
4.96	$\frac{1}{501}$
4.97	$\frac{1}{501}$
4.98	$\frac{1}{501}$
4.99	$\frac{1}{501}$
5	$\frac{1}{501}$

This table is shortened to save space. It represents 501 outcomes that each occur with equal probability (1/501)

TABLE 3 RETURN DISTRIBUTIONS FOR THE SECOND ALLOCATION TASKS

	KEY FOR RANDOM DRAW (WITH EQUAL PROBABILITY 1/99)	OUTCOME		
		RETURNX2 (Fund X)	RETURNY2 (Fund Y)	RETURNZ2 (Fund Z)
	<b>1</b>	-0.723826633	-0.662518193	0.012197562
	<b>2</b>	-0.586981953	-0.552660811	0.032915083
	<b>3</b>	-0.500158391	-0.482959824	0.046059686
	<b>4</b>	-0.434844408	-0.430526487	0.055947859
	<b>5</b>	-0.381716521	-0.387876012	0.063991124
	<b>6</b>	-0.336496344	-0.351573759	0.070837207
	<b>7</b>	-0.296847096	-0.319743784	0.076839882
	<b>8</b>	-0.261345923	-0.291243839	0.082214561
	<b>9</b>	-0.229059027	-0.265324279	0.087102617
	<b>10</b>	-0.199338886	-0.241465281	0.091602081
	<b>11</b>	-0.171717116	-0.219290832	0.095783863
	<b>12</b>	-0.14584337	-0.198519677	0.099701004
	<b>13</b>	-0.121448347	-0.178935625	0.103394274
	<b>14</b>	-0.098320309	-0.160368694	0.10689573
	<b>15</b>	-0.076289562	-0.142682656	0.110231062
	<b>16</b>	-0.055217857	-0.125766527	0.113421201
	<b>17</b>	-0.034990957	-0.109528597	0.116483441
	<b>18</b>	-0.015513274	-0.09389213	0.119432253
	<b>19</b>	0.00329606	-0.078792207	0.122279882

20	0.021506141	-0.064173357	0.125036786
21	0.039176534	-0.049987763	0.127711985
22	0.056359006	-0.036193865	0.130313316
23	0.073098882	-0.02275528	0.132847639
24	0.089436113	-0.009639933	0.135321005
25	0.105406145	0.003180631	0.137738779
26	0.121040606	0.015731802	0.140105749
27	0.136367879	0.028036365	0.142426213
28	0.151413563	0.040114873	0.144704045
29	0.166200871	0.051985958	0.146942761
30	0.180750943	0.063666593	0.149145561
31	0.195083126	0.07517231	0.151315374
32	0.209215203	0.086517384	0.153454891
33	0.223163591	0.097714994	0.155566599
34	0.236943509	0.108777359	0.157652802
35	0.250569126	0.119715852	0.159715645
36	0.264053686	0.130541106	0.161757132
37	0.27740962	0.141263101	0.163779146
38	0.290648644	0.151891242	0.16578346
39	0.303781845	0.162434429	0.167771753
40	0.316819754	0.172901117	0.16974562
41	0.329772422	0.183299374	0.171706582
42	0.342649473	0.193636928	0.173656096
43	0.355460169	0.203921212	0.175595563
44	0.368213454	0.214159406	0.17752634
45	0.380918004	0.224358477	0.179449738
46	0.393582272	0.234525211	0.181367037
47	0.406214529	0.244666246	0.18327949
48	0.418822901	0.254788106	0.185188328
49	0.431415408	0.26489723	0.187094763
50	0.444	0.275	0.189
51	0.456584592	0.28510277	0.190905237
52	0.469177099	0.295211894	0.192811672
53	0.481785471	0.305333754	0.19472051
54	0.494417728	0.315474789	0.196632963
55	0.507081996	0.325641523	0.198550262
56	0.519786546	0.335840594	0.20047366
57	0.532539831	0.346078788	0.202404437
58	0.545350527	0.356363072	0.204343904
59	0.558227578	0.366700626	0.206293418
60	0.571180246	0.377098883	0.20825438
61	0.584218155	0.387565571	0.210228247
62	0.597351356	0.398108758	0.21221654
63	0.61059038	0.408736899	0.214220854
64	0.623946314	0.419458894	0.216242868

<b>65</b>	0.637430874	0.430284148	0.218284355
<b>66</b>	0.651056491	0.441222641	0.220347198
<b>67</b>	0.664836409	0.452285006	0.222433401
<b>68</b>	0.678784797	0.463482616	0.224545109
<b>69</b>	0.692916874	0.47482769	0.226684626
<b>70</b>	0.707249057	0.486333407	0.228854439
<b>71</b>	0.721799129	0.498014042	0.231057239
<b>72</b>	0.736586437	0.509885127	0.233295955
<b>73</b>	0.751632121	0.521963635	0.235573787
<b>74</b>	0.766959394	0.534268198	0.237894251
<b>75</b>	0.782593855	0.546819369	0.240261221
<b>76</b>	0.798563887	0.559639933	0.242678995
<b>77</b>	0.814901118	0.57275528	0.245152361
<b>78</b>	0.831640994	0.586193865	0.247686684
<b>79</b>	0.848823466	0.599987763	0.250288015
<b>80</b>	0.866493859	0.614173357	0.252963214
<b>81</b>	0.88470394	0.628792207	0.255720118
<b>82</b>	0.903513274	0.64389213	0.258567747
<b>83</b>	0.922990957	0.659528597	0.261516559
<b>84</b>	0.943217857	0.675766527	0.264578799
<b>85</b>	0.964289562	0.692682656	0.267768938
<b>86</b>	0.986320309	0.710368694	0.27110427
<b>87</b>	1.009448347	0.728935625	0.274605726
<b>88</b>	1.03384337	0.748519677	0.278298996
<b>89</b>	1.059717116	0.769290832	0.282216137
<b>90</b>	1.087338886	0.791465281	0.286397919
<b>91</b>	1.117059027	0.815324279	0.290897383
<b>92</b>	1.149345923	0.841243839	0.295785439
<b>93</b>	1.184847096	0.869743784	0.301160118
<b>94</b>	1.224496344	0.901573759	0.307162793
<b>95</b>	1.269716521	0.937876012	0.314008876
<b>96</b>	1.322844408	0.980526487	0.322052141
<b>97</b>	1.388158391	1.032959824	0.331940314
<b>98</b>	1.474981953	1.102660811	0.345084917
<b>99</b>	1.611826633	1.212518193	0.365802438

[INSTRUCTIONS FOR THE TABLE: THE REALIZATION OF THE VARIABLES RETURNX2, RETURNY2, AND RETURNZ2 CAN BE DRAWN BY ASSIGNING ONE OF THE VALUES IN THE RESPECTIVE COLUMN (“RETURNX2”, “RETURNY2”, OR “RETURNZ2”) WITH EQUAL PROBABILITY 1/99. IT IS IMPORTANT THOUGH THAT THE REALIZATION FOR EACH VARIABLE AND EACH PARTICIPANT IS DRAWN SEPARATELY. THAT IS, FOR EACH PARTICIPANT, DRAW A NUMBER BETWEEN 1 AND 99 (WITH EQUAL PROBABILITY) FOR THE VARIABLE RETURNX2. IF THE NUMBER IS FOR EXAMPLE 95, ASSIGN THE RETURNX2=1.269716521. THEN, DRAW A NUMBER BETWEEN 1 AND 99 (WITH EQUAL PROBABILITY) FOR THE VARIABLE RETURNY2. IF THE NUMBER IS FOR EXAMPLE 2, ASSIGN THE RETURNY2=0.032915083. THEN, DRAW A NUMBER BETWEEN 1 AND 99 (WITH EQUAL PROBABILITY)

FOR THE VARIABLE RETURNZ2. IF THE NUMBER IS FOR EXAMPLE 74, ASSIGN THE RETURNZ2=0.237894251.]

FIGURE 2: ILLUSTRATION OF RANDOMIZED GROUPS IN MAIN STUDY

