

Internet Appendix to
Comments to the Editor on
“The Willingness to Pay for Diversification”

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March 2024

A Discrepancies in the Data Analysis

The Replication Package. We utilize three files from the replication package provided on the *Management Science* website: the raw data file, which contains the experimental data; the data analysis file, which generates the tables and figure in Mahmoud (2022); and the models.py file, which is part of the oTree code used to generate the experiment.

Number of Participants. Mahmoud (2022) states that 241 participants completed the experiment. However, the experimental data show that one participant did not complete the risk aversion and loss aversion tasks, and another participant did not complete the loss aversion task. Mahmoud (2022) thus incorrectly allocates one participant to a risk aversion group even though they did not complete the risk aversion task.

Risk Aversion Classification. The risk aversion classification reported in Mahmoud (2022) is inconsistent with (1) the oTree code used to generate the experiment, (2) the monetary payoffs rewarded to the participants, (3) the information reported in the data analysis file, and (4) the results from earlier papers that have elicited risk preferences with similar experiments.

(1) In the experimental data, the part of the initial endowment that a participant chooses to keep is stored in the column “player.question2a,” while the part that they allocate to the gamble is stored in the column “player.question2b.” By inspecting lines 82–83 of the models.py file, we confirm that the value stored in the “player.question2a” column is indeed the amount the participant chooses to “Keep (in CHF),” while the value stored in the “player.question2b” column is the amount the participant chooses to “Play (in CHF).” Classifying participants as “strongly risk averse” or “less risk averse” based on the values stored in these columns confirms that the classification reported in Mahmoud (2022) is incorrect.

(2) Line 117 of the models.py file shows that the monetary payoff a participant receives is given by the amount of the endowment they choose to keep (“self.question2a”) plus twice the amount they invest in the gamble (“self.question2b”) if the outcome of

the gamble is favorable. This reconfirms the fact that the amount a participant chooses to keep is stored in the column “player.question2a,” while the part that they allocate to the gamble is stored in the column “player.question2b.” Classifying participants as “strongly risk averse” or “less risk averse” based on the values stored in these columns confirms that the classification reported in Mahmoud (2022) is incorrect.

(3) The data analysis file includes “Keep” and “Play” columns in sheets “Table_3_(strongly_risk_averse)” and “Table_3_(less_risk_averse).” Participants in the “less risk averse” sheet all have “Keep” values of 10 and “Play” values of 0, which indicates that they should be classified as strongly risk averse. Participants in the “strongly risk averse” sheet all have “Keep” values smaller than 10 and “Play” values greater than 0, which indicates that they should be classified as less risk averse. The data analysis file thus confirms that the classification reported in Mahmoud (2022) is incorrect.

(4) Following Simonsohn (2013), we use the results from earlier experiments to evaluate the classification reported in Mahmoud (2022). In particular, Gal (2006) and Ertac and Gurdal (2012) elicit participants’ risk preferences with experiments that are similar to the one used by Mahmoud (2022).¹ Gal (2006) finds that 23% of participants keep the entire endowment, which is similar to the 18% of participants who keep the entire endowment in the experimental data, but inconsistent with the 82% of participants reported in Mahmoud (2022). Similarly, Ertac and Gurdal (2012) find that participants allocate an average of 51% of the endowment to the gamble. This is similar to the average allocation of 55% in the experimental data, but inconsistent with the maximum of 18% reported in Mahmoud (2022).² These earlier papers are thus consistent with the experimental data, but inconsistent with the classification reported in Mahmoud (2022).

¹Specifically, we refer to the allocation task in Gal (2006) and to the experiment with $p = 2$ in Ertac and Gurdal (2012).

²Mahmoud (2022) does not report this value directly, but if 82% of participants keep the entire endowment, then the average allocation to the gamble across all participants cannot be larger than 18%.

Loss Aversion Classification. Following Imas, Sadoff, and Samek (2017), we calculate the risk aversion parameters used to identify the loss aversion parameter by setting the indifference point between the risky option and the sure outcome as the midpoint between the payoff at which a participant switches and the preceding payoff. For more details, see the Supplemental Materials of Imas, Sadoff, and Samek (2017).

Table 2. The data analysis file provides three reasons why Table B3 is slightly different from Table 2 in Mahmoud (2022). First, even though 241 participants completed this part of the experiment, most of the p -values are incorrectly calculated assuming a sample size of 242 or 243. Second, the calculation of the p -values incorrectly omits one of the participants. Third, some of the participants' responses in the data analysis file do not match their responses in the experimental data.

Table 5. The chi-squared test described in Table 5 of Mahmoud (2022) is inconsistent with the chi-squared test performed in the data analysis file. The null hypothesis stated in the paper is that "each risk attitude has the same proportion of diversifiers." We would thus expect to see a 2×2 test of the proportions of diversifiers and non-diversifiers across the risk aversion groups. Instead, the test performed in the data analysis file is a 3×2 test of the proportions of 50/50 diversifiers, other diversifiers, and non-diversifiers across the risk aversion groups. The p -values in the data analysis file are consistent with the p -values reported in the paper, implying that the p -values in the paper are indeed from this 3×2 test. In Panel C of Table B1, we report p -values from a 3×2 test of 50/50 diversifiers, other diversifiers, and non-diversifiers across the risk aversion groups.

Table 7. The chi-squared test described in Table 7 of Mahmoud (2022) is inconsistent with the chi-squared test performed in the data analysis file. The null hypothesis stated in the paper is that "each loss aversion group (loss averse, not loss averse, strongly loss averse) has the same proportion of observations." We would thus expect to see a 2×3 test of the proportions of diversifiers and non-diversifiers across the three loss

aversion groups. Instead, the test performed in the data analysis file is a 3×2 test of the proportions of 50/50 diversifiers, other diversifiers, and non-diversifiers across only two loss aversion groups: loss averse and not loss averse. The strongly loss averse participants are thus not treated as a separate group. The p -values in the data analysis file are consistent with the p -values reported in the paper, implying that the p -values in the paper are indeed from this incorrectly specified test. In Panel B of Table [B2](#), we report p -values from a 3×3 test of 50/50 diversifiers, other diversifiers, and non-diversifiers across all three of the loss aversion groups.³

³The chi-squared tests in the data analysis file include 241 participants. This is difficult to reconcile with the claim from Mahmoud ([2022](#)) that only 207 participants are included in the loss aversion groups.

B Replication of Tables and Figure

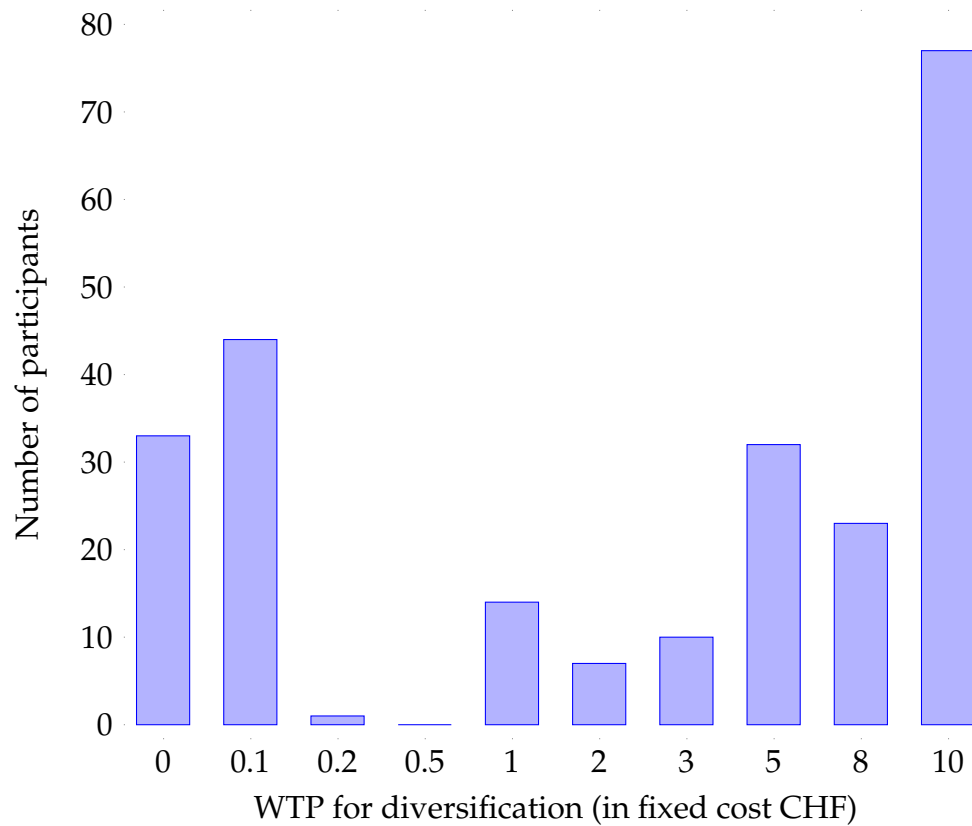


Figure B1: Distribution of Individual Willingness to Pay for Diversification.

This figure replicates Figure 1 of Mahmoud (2022) using the experimental data. For more details on the contents of the figure, see Mahmoud (2022).

Table B1: Risk Aversion Results.

This table replicates Tables 3–5 of Mahmoud (2022) using the experimental data. Panel A replicates Table 3, Panel B replicates Table 4, and Panel C replicates Table 5. For more details on the contents of the tables, see Mahmoud (2022).

Panel A: Replication of Table 3 of Mahmoud (2022)

Cost	0.0	0.1	0.2	0.5	1.0	2.0	3.0	5.0	8.0	10.0	1%	5%	10%
Mean	0.17	0.48	0.50	0.47	0.55	0.55	0.54	0.63	0.72	0.74	0.65	0.70	0.75
Median	0.00	0.02	0.46	0.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Strongly risk averse

Less risk averse

Mean	0.15	0.31	0.30	0.31	0.36	0.39	0.44	0.58	0.67	0.73	0.46	0.56	0.71
Median	0.00	0.00	0.00	0.00	0.00	0.00	0.04	1.00	1.00	1.00	0.20	0.90	1.00
<i>p</i> -value	(0.64)	(0.10)	(0.08)	(0.11)	(0.06)	(0.14)	(0.44)	(0.58)	(0.42)	(0.79)	(0.04)	(0.12)	(0.71)

Panel B: Replication of Table 4 of Mahmoud (2022)

Cost	0.0	0.1	0.2	0.5	1.0	2.0	3.0	5.0	8.0	10.0	1%	5%	10%
Strongly risk averse	85.71	54.76	52.38	54.76	47.62	47.62	47.62	38.10	28.57	26.19	38.10	33.33	30.95
	(0.00)	(0.32)	(0.44)	(0.32)	(0.68)	(0.68)	(0.68)	(0.96)	(1.00)	(1.00)	(0.96)	(0.99)	(1.00)
Less risk averse	86.36	71.72	72.22	72.22	66.67	63.13	58.08	43.94	34.85	28.79	58.08	50.00	34.34
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.96)	(1.00)	(1.00)	(0.01)	(0.53)	(1.00)

Panel C: Replication of Table 5 of Mahmoud (2022)

Cost	0.0	0.1	0.2	0.5	1.0	2.0	3.0	5.0	8.0	10.0	1%	5%	10%
<i>p</i> -value	(0.52)	(0.07)	(0.01)	(0.05)	(0.05)	(0.12)	(0.16)	(0.68)	(0.69)	(0.81)	(0.06)	(0.07)	(0.71)

Table B2: Loss Aversion Results.

This table replicates Tables 6–8 of Mahmoud (2022) using the experimental data. Panel A replicates Table 6, Panel B replicates Table 7, and Panel C replicates Table 8. For more details on the contents of the tables, see Mahmoud (2022).

Panel A: Replication of Table 6 of Mahmoud (2022)

Cost	0.0	0.1	0.2	0.5	1.0	2.0	3.0	5.0	8.0	10.0	1%	5%	10%
	Not loss averse												
Mean	0.15	0.36	0.37	0.37	0.49	0.54	0.56	0.69	0.79	0.84	0.54	0.69	0.80
	Loss averse												
Mean	0.19	0.41	0.41	0.41	0.41	0.44	0.46	0.60	0.72	0.80	0.50	0.55	0.71
<i>p</i> -value	(0.60)	(0.72)	(0.67)	(0.68)	(0.22)	(0.12)	(0.15)	(0.11)	(0.11)	(0.18)	(0.33)	(0.06)	(0.07)

Strongly loss averse

Mean	0.21	0.40	0.40	0.40	0.36	0.37	0.43	0.56	0.59	0.64	0.45	0.56	0.66
<i>p</i> -value	(0.72)	(0.38)	(0.41)	(0.39)	(0.35)	(0.35)	(0.46)	(0.40)	(0.11)	(0.04)	(0.30)	(0.45)	(0.32)

Panel B: Replication of Table 7 of Mahmoud (2022)

Cost	0.0	0.1	0.2	0.5	1.0	2.0	3.0	5.0	8.0	10.0	1%	5%	10%
<i>p</i> -value	(0.54)	(0.97)	(0.68)	(0.85)	(0.44)	(0.12)	(0.48)	(0.42)	(0.11)	(0.04)	(0.87)	(0.50)	(0.36)

Panel C: Replication of Table 8 of Mahmoud (2022)

Cost	0.0	0.1	0.2	0.5	1.0	2.0	3.0	5.0	8.0	10.0	1%	5%	10%
Not loss averse	85.51	65.22	63.77	65.22	52.17	47.83	44.93	31.88	21.74	15.94	49.28	36.23	23.19
	(0.00)	(0.01)	(0.01)	(0.01)	(0.40)	(0.68)	(0.83)	(1.00)	(1.00)	(1.00)	(0.60)	(0.99)	(1.00)
Loss averse	81.67	60.00	60.00	60.00	60.00	56.67	55.00	41.67	30.00	21.67	51.67	48.33	35.00
	(0.00)	(0.08)	(0.08)	(0.08)	(0.08)	(0.18)	(0.26)	(0.92)	(1.00)	(1.00)	(0.45)	(0.65)	(0.99)
Strongly loss averse	82.35	64.71	67.65	67.65	67.65	67.65	58.82	47.06	44.12	38.24	55.88	47.06	38.24
	(0.00)	(0.06)	(0.03)	(0.03)	(0.03)	(0.03)	(0.20)	(0.70)	(0.80)	(0.94)	(0.30)	(0.70)	(0.94)

Table B3: Willingness to Pay for Diversification.

This table replicates Table 2 of Mahmoud (2022) using the experimental data. For more details on the contents of the table, see Mahmoud (2022).

Cost	0.0	0.1	0.2	0.5	1.0	2.0	3.0	5.0	8.0	10.0
Div.	86.31	68.88	68.88	69.29	63.49	60.58	56.43	43.15	34.02	28.63
Conc.	13.69	31.12	31.12	30.71	36.51	39.42	43.57	56.85	65.98	71.37
<i>p</i> -val.	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)	(0.99)	(1.00)	(1.00)
Cost	1%	5%	10%							
Div.	54.77	47.30	34.02							
Conc.	45.23	52.70	65.98							
<i>p</i> -val.	(0.08)	(0.82)	(1.00)							

References

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