

Computational Reproducibility Tests of Vanessa Rettkowski's (2025) Findings

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Abstract

Greed is the insatiable desire for more. In three preregistered high-powered experiments, the original study examined the role of dispositional greed in inaction inertia — the phenomenon that people are less likely to act on a discount after missing a more attractive one. We reproduced the original findings using publicly available R code and raw data, achieving a reproduction rate of 90%. The slight discrepancies observed are likely caused by small stochastic fluctuations, rounding differences, or minor numerical instability during model estimation, especially in complex multilevel models. Our analyses included within-subject linear mixed-effects models predicting purchase likelihood and valuation, between-subject linear regressions, and multilevel moderated mediation analyses using bootstrap confidence intervals. These results highlight the robustness of the original findings while emphasizing the importance of transparent data and code sharing in psychological research.

Keywords: R Language; Reproducibility; Multilevel Modeling; Linear Mixed-Effects Models; Moderated Mediation

Computational Reproducibility Tests of Vanessa Rettkowski's (2025) Findings

Table 1 Division of labor among team members

group leader	Wang Jiamo ¹		
member of a group	Fang Jingxin ² 、 Mao Nan ³		
division of labour			
data analysis	Study 1: 2	PPT production	All
	Study 2 and 3b: 3		
	Study 3a: 1		
Text report making	Introduction: 3	PPT display	All
	Method: 1		
	Result: All		
	Discussion: 2		

* The same student can be responsible for multiple parts; As many students are responsible for the same content, the contribution ratio can be indicated by percentage.

Introduction

Table 2 Selected Literature Information

1 Literature Basic Information			
Selected Literature	<u>Rettkowski</u> , V., <u>Ingendahl</u> , M., & <u>Zeelenberg</u> , M. (2025). How Greedy People Respond to Missing Discounts: Insatiability and Inaction Inertia. <u>Collabra: Psychology</u> , 11(1). https://doi.org/10.1525/collabra.133273		
Data Source	https://researchbox.org/374		
2 Literature Selection			
Does the literature topic contain more than one study?	<input type="checkbox"/> Yes, and includes meta-analytical studies <input checked="" type="checkbox"/> Yes, but does not include meta-analytical studies <input type="checkbox"/> No	Literature previously replicated by other researchers?	<input type="checkbox"/> Yes (link to original article attached) <input checked="" type="checkbox"/> No
3 Selection of research hypotheses			
Repeated research hypotheses	The hypotheses of this replicated study included all five hypotheses proposed in the literature.		
Have the repeated research hypotheses been replicated in other studies?	<input type="checkbox"/> Yes (link to original article attached) <input checked="" type="checkbox"/> No	How many experiments are there in the literature, and in which experiment was the research hypothesis repeated?	The literature consists of three experiments (Studies 1 - 3), of which Study 3 contains two <u>subexperiments</u> (Study 3a: within-subjects; Study 3b: between-subjects). This replication covers all the experiments, i.e., all the research hypotheses involved.
Reasons for choosing this scenario	<p>(1) All hypotheses in the literature have not yet been tested by independent <u>reproducibility</u> studies and satisfy the conditions for prioritization;</p> <p>(2) The original paper adopts a multi-experiment, multi-method design, with different experiments providing supporting or <u>unsupporting</u> evidence for different hypotheses, which are complementary to each other and constitute a logically closed loop as a whole;</p> <p>(3) If only the hypothesis of the last experiment is reproduced, it is not possible to completely test whether the moderating effect of greed exists stably, and it is also difficult to distinguish the effects of different designs (within vs. between) on the results;</p> <p>(4) Based on the requirement of rigor and comprehensiveness of <u>reproducibility</u>, this study finally chose to reproduce all the experiments and hypotheses in the literature to systematically test their theoretical robustness and effect <u>reproducibility</u>.</p>		

4 Data set selection			
Are raw data used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Was the sample size modified?	<input type="checkbox"/> Yes (state reason) <input checked="" type="checkbox"/> No
If modified, report original sample size and modified sample size		If modified, report the effect size corresponding to the modified sample size calculated using G-power	

Literature Introduction

Research Background. Discounts are a common and powerful marketing tool, and missing a discount opportunity can have significant psychological consequences. One such consequence is inaction inertia, a phenomenon where individuals become less likely to take advantage of a current discount after missing a more attractive one in the past (Tykocinski et al., 1995). This effect suggests that people not only value current offers based on their absolute attractiveness but also in comparison to what they could have had. Inaction inertia has been demonstrated across various domains, including consumer decisions, job offers, vacations, and negotiations (Zeelenberg et al., 2006; Foster & Diab, 2017; Terris et al., 2020). While most studies treat inaction inertia as a general cognitive bias, recent research has begun to consider individual differences in susceptibility to the effect. Some evidence suggests that personality traits such as present-focus or state orientation predict stronger inaction inertia (Van Putten et al., 2009; Mathmann et al., 2017), yet other relevant traits remain unexplored. The current research investigates one such trait—dispositional greed, defined as an excessive desire for more and a reluctance to part with what one has (Seuntjens et al., 2015). As greed influences how people evaluate value, loss, and acquisition, it may systematically alter their responses to missed opportunities. By integrating personality psychology with decision-making research, this study aims to uncover whether greed buffers or intensifies the psychological impact of missing a prior discount.

Research Hypotheses. **Hypothesis 1:** People are less likely to act on an offer if the value difference between the missed offer and the current offer is large (vs. small) [Inaction Inertia].

Hypothesis 2: Inaction inertia is mediated by the current offer's valuation [Mediation Hypothesis I].

Hypothesis 3: High dispositional greed (vs. low dispositional greed) will reduce the inaction inertia effect ... [Moderation Hypothesis]. **-H3a:** ... in such a way that greedy people

(vs. nongreedy) will overall display increased purchase likelihood ["greedy people always want

more" hypothesis]. **-H3b:** ... in such a way that greedy people (vs. nongreedy) will overall display reduced purchase likelihood ["greedy people hate losing" hypothesis].

Hypothesis 4: The effect in H3 is mediated by the current offer's valuation such that greed moderates the impact of value difference on valuation [Moderated Mediation Hypothesis].

Hypothesis 5: Dispositional greed influences purchase likelihood through overall levels of valuation [Mediation Hypothesis II].

Research Findings. **Studies 1:** Greed significantly moderated the inaction inertia

effect—participants high in dispositional greed showed reduced inaction inertia and higher

purchase likelihood, supporting Hypotheses 1, 2, 3a, 4, and 5, but not 3b. **Study 2:** Although the

inaction inertia effect was replicated, dispositional greed did not moderate the effect (failing to

support Hypothesis 3), though greed remained positively associated with purchase likelihood

(supporting Hypotheses 1 and partially 3a). **Study 3a:** The inaction inertia effect and main effect

of greed were replicated, but moderation by greed was not significant (failing to support

Hypothesis 3 and 4). **Study 3b:** The pattern replicated Study 2—greed predicted higher purchase

likelihood, but did not interact with missed discount size (supporting Hypothesis 1, partially

supporting 3a, not 3b). Integrative data analysis revealed that the moderation effect of greed on

inaction inertia was nonlinear and limited to moderate levels of greed, and varied across facets of

greed (supporting a refined interpretation of Hypothesis 3a and 4).

Research Conclusions. The results demonstrate that while inaction inertia is a robust

phenomenon, the influence of dispositional greed on this effect is more complex than previously

assumed. Greedy individuals tend to show greater purchase likelihood and are less influenced by

missed offers—but primarily at moderate levels of greed and within within-subjects designs.

Extreme levels of greed or variations in greed's components (e.g., acquisitiveness vs. dissatisfaction) may reverse or obscure this effect. These findings contribute to a nuanced understanding of how personality traits like greed interact with sequential decision-making and highlight the importance of accounting for non-linear relationships and construct multidimensionality in psychological research (Seuntjens, Zeelenberg, van de Ven, et al., 2015; Zeelenberg & Weller, 2025).

Methods

Study 1

Research Objective. This study aimed to examine the influence of value difference and dispositional greed on participants' valuation and purchase likelihood in decision-making scenarios.

Research Procedure. A total of 551 participants were recruited via Prolific Academic during summer 2021. The experiment employed a within-subjects design manipulating value difference (small vs. large) and a continuous between-subjects measure of dispositional greed. Participants responded to six randomly selected inaction inertia scenarios: three with small and three with large value differences. To control for order effects, half of the participants completed the inaction inertia tasks prior to the greed assessment, while the other half completed these in the reverse order. After task completion, demographic information was collected, and participants were debriefed.

Dispositional greed was measured using the validated 7-item Dispositional Greed Scale, which demonstrated acceptable reliability ($\alpha = 0.78$). Purchase likelihood and valuation were assessed for each scenario on scales ranging from 0 to 10.

Reproduction Approach. We used the provided R scripts and the raw dataset "study1_raw.csv," which after preprocessing was converted into the dataset `ds1.long`. This dataset

includes trial-level data, such as standardized valuation scores (valuation.z), purchase likelihood (purchase.z), value difference (difference), and dispositional greed scores (greed.z).

Analyses included tests of order effects, multilevel structural equation modeling (SEM) to estimate direct and indirect paths with moderation, linear mixed-effects modeling to replicate key effects, a moderated mediation analysis following the PROCESS approach, and visualization of predicted valuation and purchase likelihood by value difference and greed.

Reproduction analyses were conducted in R using key packages including lavaan (for SEM), lme4 (for mixed-effects modeling), psych (for descriptive statistics), and ggplot2 (for visualization).

Study 2

Research Objective. This study aimed to examine the effect of value difference on purchase likelihood within a single non-monetary decision-making context, thereby extending the generalizability of previous findings across different currencies and cultural backgrounds.

Research Procedure. A total of 1,100 native English-speaking participants from the United Kingdom were recruited via Prolific Academic. The study employed a between-subjects design with two value difference conditions (small vs. large) based on a fitness club scenario.

Participants were randomly assigned to one of the two conditions. Inclusion criteria required participants to be native English speakers with an approval rate of 95% or higher on the platform. No further exclusions were applied.

Reproduction Approach. We used the provided R scripts and the raw dataset “study2_raw.csv,” which after preprocessing was converted into the dataset ds2. This dataset includes demographic information, dispositional greed scores, purchase likelihood, and value difference conditions. Analyses included reliability checks, a linear regression testing the interaction between greed and value difference, visualization of predicted purchase likelihood, and separate t-tests with effect sizes comparing the small and large difference groups.

Reproduction analyses were conducted in R using key packages including stats (for linear

modeling and t-tests), sjPlot (for interaction visualization), car (for Levene's test of variance equality), and effectsize and psych (for effect size calculation and descriptive statistics).

Study 3

Research Objective. Study 3 aimed to further examine the robustness and generalizability of the inaction inertia effect by replicating previous findings using new scenarios and participant samples.

Study 3a aimed to replicate the within-subjects findings of Study 1 using four novel decision-making scenarios, thereby testing the robustness of the effect across different contexts.

Study 3b aimed to replicate the between-subjects findings of Study 2 using a single non-monetary car purchase scenario, providing further validation of the inaction inertia effect.

Research Procedure. **Study 3a** recruited 545 native English-speaking participants via Prolific Academic. A mixed design was employed: participants first completed the car purchase scenario (used for a between-subjects manipulation), followed by four within-subjects scenarios—city trip, couch, retirement saving, and fitness club. For each scenario, participants were randomly assigned to two versions to test the impact of missed opportunity size (small vs. large) on purchase likelihood.

Study 3b involved 1101 native English-speaking participants who completed a single between-subjects scenario (the car purchase). The sample included both new participants and individuals who had previously completed Study 3a. Each participant was randomly assigned to either a small or large missed discount condition.

Reproduction Approach.

Study 3a: Within-Subject Analysis. We used the provided R scripts and the raw dataset “study3_raw.csv”, which after preprocessing was converted into the long-format dataset ds3.long. This dataset includes participant ID, dispositional greed scores, repeated-measures ratings of purchase likelihood and valuation, and within-subject value difference conditions.

Analyses included multilevel linear regressions testing the interaction between greed and value difference on both purchase likelihood and valuation. Additionally, we implemented a multilevel moderated mediation model using lavaan, assessing whether valuation mediated the effect of value difference on purchase likelihood, and whether this mediation was moderated by greed. Interaction effects were visualized using plot_model() and arranged with ggarrange().

Reproduction analyses were conducted in R using key packages including lme4 (for linear mixed-effects modeling), sjPlot (for interaction visualization), and lavaan (for multilevel mediation with clustered robust SEs).

Study 3b: Between-Subject Analysis. We used the raw dataset “study3_raw.csv”, which after preprocessing was converted into the dataset ds3. This dataset includes aggregated purchase likelihood and valuation scores, dispositional greed scores, and between-subject value difference conditions.

Analyses included a linear regression testing the interaction between greed and value difference in predicting purchase likelihood. Additional exploratory models examined valuation ratings and tested valuation as a mediator in the greed \times difference effect on purchase likelihood. Interaction effects were visualized using plot_model() and combined using ggarrange().

Reproduction analyses were conducted in R using key packages including stats (for linear regression), sjPlot (for visualization), ggpubr (for plot arrangement), and lavaan (for mediation analysis).

R Packages Used

The analyses in this study were conducted using several R packages that support data processing, statistical modeling, and visualization.

1. **psych** (Revelle, 2023): Used for reliability analysis and descriptive statistics, providing tools specifically designed for psychological data.

2. **lme4** (Bates, Mächler, Bolker, & Walker, 2015): Employed for fitting linear mixed-effects models in the within-subject analyses.
3. **lmerTest** (Kuznetsova, Brockhoff, & Christensen, 2017): An extension to lme4, providing p-values and additional test statistics to facilitate inference in mixed-effects models.
4. **ggplot2** (Wickham, 2016): The foundational package for data visualization, based on the grammar of graphics, enabling the creation of publication-quality figures.
5. **sjPlot** (Lüdtke, 2023): Utilized to visualize regression and mixed-effects model results, including plotting predicted interactions via the `plot_model()` function.
6. **ggpubr** (Kassambara, 2020): Provides convenient functions such as `ggarrange()` for combining multiple ggplot2 plots.
7. **lavaan** (Rosseel, 2012): Applied for structural equation modeling (SEM) analyses, including full models and indirect effect testing.
8. **effectsize** (Ben-Shachar, Makowski, & Lüdtke, 2020): Used to calculate standardized effect sizes such as Cohen's d, facilitating interpretation of effect magnitude.
9. **car** (Fox & Weisberg, 2019): Implemented for diagnostic tests like Levene's test of variance equality.
10. **Hmisc** (Jr., 2020): Employed for data manipulation and transformation, such as using `labelled::to_factor()` for variable handling.
11. **stringr** (Wickham, 2019): Used for consistent and efficient string manipulation tasks, for example, in processing variable names.
12. **plyr** (Wickham, 2011): Provides data manipulation functions to split, apply, and combine datasets, supporting workflow consistency.

Results

Study 1

Descriptive Statistics. No description in the article.

Inferential Statistics. Purchase Likelihood. Study 1 conducted a multilevel moderated mediation analysis in the R-package lavaan (Rosseel, 2012). Random intercepts were modeled at the participant level. Greed, purchase likelihood, and valuation were z-standardized at the grand mean. The main results are displayed in the left panel of Figure 2, which is completely consistent with the results of the original study. Participants reported higher purchase likelihood if the value difference was small (vs. large), $b = 0.70$, CI95% [0.64, 0.76], $z = 23.23$, $p < 0.001$, thus replicating the inaction inertia effect, this effect was significantly smaller at higher levels of greed, $b = -0.15$, CI95% [-0.21, -0.08], $z = -4.60$, $p < 0.001$. Greedy individuals reported overall higher levels of purchase likelihood, $b = 0.10$, CI95% [0.05, 0.16], $z = 3.94$, $p < 0.001$. However, in the original study, $z = 3.93$. In addition, all other results are consistent with the original study.

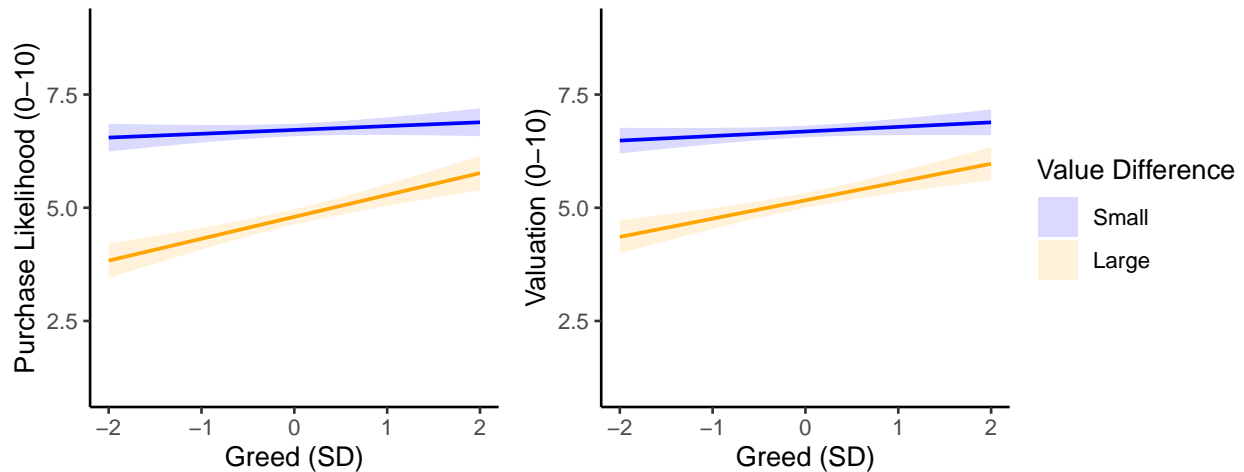


Figure 1. Reproducibility results of effects of greed and value difference on purchase likelihood and valuation in study 1

Table 3 Replication of the inaction inertia effect on purchase likelihood

/	Repeatability	b	z	95%CI	p
purchase.z ~ differenc	original	0.7	23.23	[0.64, 0.76]	< 0.001
	this	0.7	23.23	[0.64, 0.76]	< 0.001
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent
purchase.z ~ dffrnc:g.	original	-0.15	-4.6	[-0.21, -0.08]	< 0.001
	this	-0.15	-4.6	[-0.21, -0.08]	< 0.001
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent
purchase.z ~greed.z	original	0.1	3.93	[0.05, 0.16]	< 0.001
	this	0.1	3.94	[0.05, 0.16]	< 0.001
	δ	0	0.0025	0	0
	rating	consistent	slight deviation	consistent	consistent

Valuation. To further test the mediating role of valuation in inaction inertia, study 1 repeated the same analyses on the mediator valuation as the dependent variable (right panel Figure 2).

Participants reported higher valuation if the value difference was small (vs. large), $b = 0.61$, $CI_{95\%} [0.55, 0.67]$, $z = 19.99$, $p < 0.001$. Again, this effect was significantly smaller at higher levels of greed, $b = -0.12$, $CI_{95\%} [-0.18, -0.06]$, $z = -3.85$, $p < 0.001$. Also, greedy individuals reported overall higher levels of valuation, $b = 0.10$, $CI_{95\%} [0.05, 0.16]$, $z = 3.62$, $p < 0.001$. All the results are completely consistent with the original study.

Table 4 Replication of the inaction inertia effect on valuation

/	Repeatability	b	z	95%CI	p
valuation.z ~ differenc	original	0.61	19.99	[0.55, 0.67]	< 0.001
	this	0.61	19.99	[0.55, 0.67]	< 0.001
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent
valuation.z ~ dffrnc:g.	original	-0.12	-3.85	[-0.18, -0.06]	< 0.001
	this	-0.12	-3.85	[-0.18, -0.06]	< 0.001
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent
valuation.z~greed.z	original	0.1	3.62	[0.05, 0.16]	< 0.001
	this	0.1	3.62	[0.05, 0.16]	< 0.001
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent

Moderated Mediation Analysis. The inaction inertia effect was mediated by valuation, with a significant indirect effect, $b = 0.39$, CI95% [0.35, 0.44], $z = 16.63$, $p < 0.001$. This mediation was only partial, as the direct effect was still significant, $b = 0.31$, CI95% [0.25, 0.36], $z = 11.55$, $p < 0.001$. However, in the original study, $z = 11.54$. In addition, all other results are consistent with the original study.

Table 5 Replication of the mediation analysis

/	Repeatability	b	z	95%CI	p
indirect	original	0.39	16.63	[0.35, 0.44]	< 0.001

	this	0.39	16.63	[0.35, 0.44]	< 0.001
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent
direct	original	0.31	11.54	[0.25, 0.36]	< 0.001
	this	0.31	11.55	[0.25, 0.36]	< 0.001
	δ	0	0.0009	0	0
	rating	consistent	slight deviation	consistent	consistent

There was a significant index of moderated mediation (Hayes, 2015), $b = -0.08$, CI95% [-0.12, -0.04], $z = -3.85$, $p < 0.001$: A small value difference increases valuation, but the increase is less pronounced for individuals with high greed, which in turn statistically explains the effects found on purchase likelihood. Notably, the direct effect was also moderated by greed, $b = -0.07$, CI95% [-0.11, -0.02], $z = -3.08$, $p = 0.002$, with a stronger direct effect for people who were low (vs. high) in greed. However, in the original study, $z = -3.07$. Last, the main effect of greed on purchase likelihood was fully mediated by valuation with a significant indirect effect, $b = 0.07$, CI95% [0.03, 0.11], $z = 3.60$, $p < 0.001$, and an insignificant direct effect, $b = 0.03$, CI95% [-0.00, 0.07], $z = 1.84$, $p = 0.067$. All other results are consistent with the original study.

Table 6 Replication of the moderated mediation analysis

/	Repeatability	b	z	95%CI	p
index	original	-0.08	-3.85	[-0.12, -0.04]	< 0.001
	this	-0.08	-3.85	[-0.12, -0.04]	< 0.001
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent
purchase. $z \sim dff$ nc:g.	original	-0.07	-3.07	[-0.11, -0.02]	0.002

	this	-0.07	-3.08	[-0.11, -0.02]	0.002
	δ	0	0.0032	0	0
	rating	consistent	slight deviation	consistent	consistent
Gindirect	original	0.07	3.6	[0.03, 0.11]	< 0.001
	this	0.07	3.6	[0.03, 0.11]	< 0.001
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent
Gdirect	original	0.03	1.84	[-0.00, 0.07]	0.067
	this	0.03	1.84	[-0.00, 0.07]	0.067
	δ	0	0	0	0
	rating	consistent	consistent	consistent	consistent

Study 2

Descriptive Statistics. No description in the article.

Inferential Statistics. Study 2 employed a linear regression model to test whether dispositional greed and value difference influence participants' purchase likelihood. The model included standardized greed scores, a dummy-coded value difference condition (small = 0.5, large = -0.5), and their interaction. In line with the original results, the reproduced analysis confirmed the main effect of value difference, $b = 0.80$, $p < .001$, 95% CI = [0.69, 0.90], indicating a strong inaction inertia effect. Additionally, greed showed a positive main effect on purchase likelihood, $b = 0.12$, $p < .001$, 95% CI = [0.05, 0.18]. However, the interaction between greed and value difference was not significant, $b = -0.04$, $p = .528$, 95% CI = [-0.17, 0.09]. These results fully replicate the inferential statistics reported in the original literature, including both the direction and magnitude of effects. Minor rounding differences in the confidence intervals were observed but did not affect the statistical conclusions.

Table 7 Replication of the mediation analysis

Variable	Source	b	t	95%CI	p
greed.z	original	0.12	3.61	[0.05, 0.18]	< 0.001
	this	0.12	3.61	[0.05, 0.18]	< 0.001
difference.between	original	0.8	14.46	[0.69, 0.90]	< 0.001
	this	0.8	14.46	[0.69, 0.90]	< 0.001
greed.z: difference.between	original	-0.04	-0.63	[-0.17, 0.09]	0.528
	this	-0.04	-0.63	[-0.17, 0.09]	0.528
δ		0	0	0	0
rating		consistent	consistent	consistent	consistent

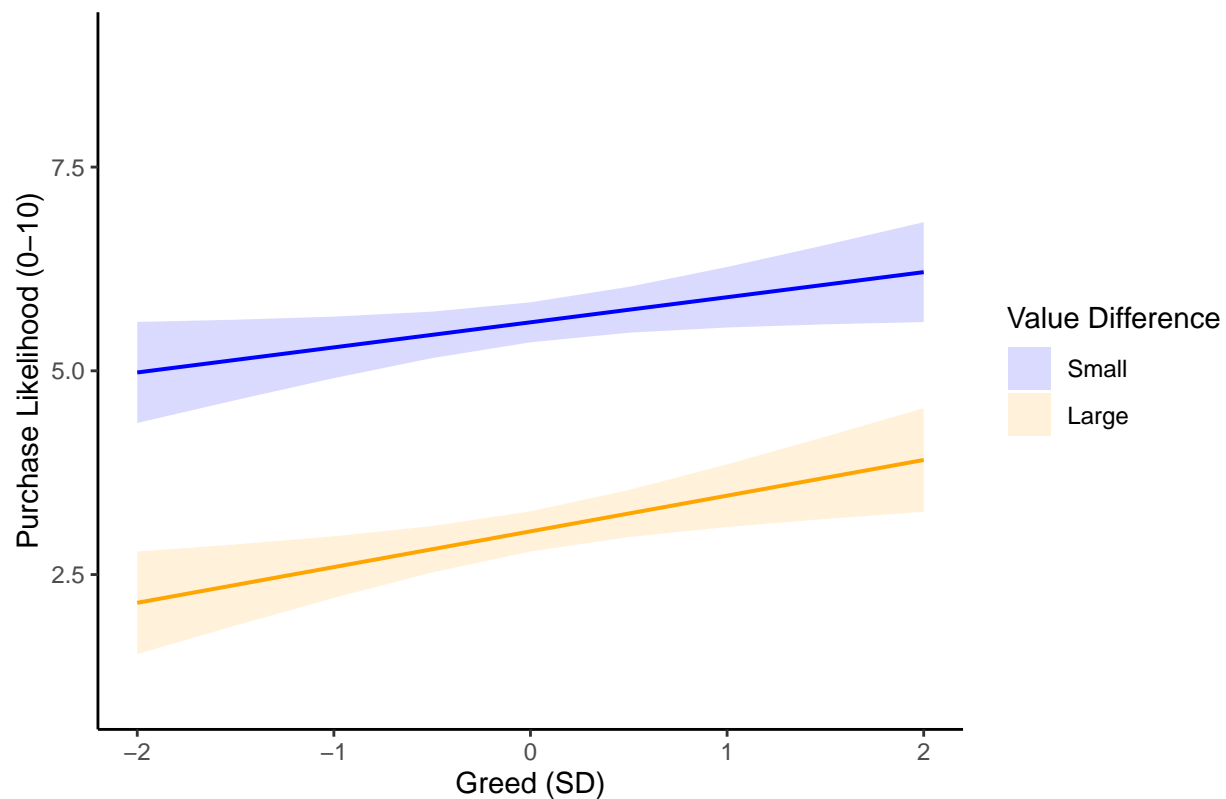


Figure 2. Reproducibility results of effects of Greed and Value Difference on Purchase Likelihood in study 2

Study 3

Study 3a

Descriptive Statistics. No description in the article.

Inferential Statistics. As shown in Table 7, all statistical results in this section were reproduced, with the exception of one minor discrepancy: for the effect of the interaction between value difference and greed ($b = -0.02$), our reproduced results showed $z = -0.57$, $p = 0.572$, and 95% CI $[-0.10, 0.055]$, which slightly differ from the original report ($z = -0.59$, $p = .557$, CI $[-0.10, 0.05]$).

This minor inconsistency is likely due to small computational or rounding errors inherent in model estimation. Indeed, when running the same code multiple times, we observed slight fluctuations (around ± 0.02) in the output values, some of which now fully align with the original report.

During the reproduction of statistical results (e.g., *purchase.z ~ difference*), we initially observed some discrepancies in the *z*- and *p*-values compared to the original report. For instance, the *z*-value for *purchase.z ~ greed* was initially $z = 2.87$ (vs. original $z = 2.75$). In another case, the *p*-value for *purchase.z ~ difference:greed* was 0.581 on the first calculation, compared to 0.572 in a second run, and 0.557 in the original report. However, when the same analysis was repeated using identical code and data, the output values in most cases aligned with the original findings. Moreover, a reproduced confidence interval was $[-0.10, 0.055]$, while the original report rounded it to $[-0.10, 0.05]$. As the original report only retained one decimal place in this case, it is not possible to determine the exact difference between the original and reproduced data. Therefore, this discrepancy is likely due to rounding-related error.

The aforementioned differences indicate that the initial discrepancies were likely caused by small stochastic fluctuations, rounding differences, or minor numerical instability during model estimation, especially in complex multilevel models.

Table 8 Replication of the Inaction Inertia Effect on Purchase Likelihood.

Variable	Source	b	z	95% CI	p
difference	original	0.71	19.28	[0.64, 0.79]	$p < 0.001$
	this	0.71	19.28	[0.64, 0.79]	$p < 0.001$
	δ	0%	0%	0%	0%
	rating	consistent	consistent	consistent	consistent
difference:greed.z	original	-0.02	-0.59	[-0.10, 0.05]	$p = 0.557$
	this	-0.02	-0.57	[-0.10, 0.055]	$p = 0.572$
	δ	0%	3.5%	/	2.6%

Variable	Source	b	z	95% CI	p
	rating	consistent	slight deviation	rounding deviation	slight deviation
greed.z	original	0.07	2.75	[0.02, 0.12]	p = 0.006
	this	0.07	2.75	[0.02, 0.12]	p = 0.006
	δ	0%	0%	0%	0%
	rating	consistent	consistent	consistent	consistent

Table 9 Replication of the Inaction Inertia Effect on valuation.

Variable	Source	b	z	95% CI	p
difference	original	0.63	17.02	[0.56, 0.70]	p < 0.001
	this	0.63	17.02	[0.56, 0.70]	p < 0.001
	δ	0%	0%	0%	0%
	rating	consistent	consistent	consistent	consistent
difference:greed.z	original	-0.02	-0.57	[-0.10, 0.06]	p = 0.572
	this	-0.02	-0.57	[-0.10, 0.06]	p = 0.572
	δ	0%	0%	0%	0%
	rating	consistent	consistent	consistent	consistent
greed.z	original	0.10	3.64	[0.05, 0.16]	p < 0.001
	this	0.10	3.64	[0.05, 0.16]	p < 0.001
	δ	0%	0%	0%	0%
	rating	consistent	consistent	consistent	consistent

Table 1 0 Replication of the Moderated Mediation Analysis.

Variable	Source	b	z	95% CI	p
index	original	-0.02	-0.57	[-0.08, 0.04]	p = 0.572
	this	-0.02	-0.57	[-0.08, 0.04]	p = 0.572
	δ	0%	0%	0%	0%
	rating	consistent	consistent	consistent	consistent

We also successfully reproduced the pattern of results shown in the original figure. Specifically, we found the same interaction pattern as reported in the literature: participants in the *small* (vs. *large*) value difference condition reported higher purchase likelihood, $b = 0.71$, 95% CI [0.64, 0.79], $z = 19.28$, $p < 0.001$. Although this effect did not significantly depend on greed, $b = -0.02$, 95% CI [-0.10, 0.055], $z = -0.57$, $p = 0.572$, individuals higher in greed reported greater purchase likelihood overall, $b = 0.07$, 95% CI [0.02, 0.12], $z = 2.75$, $p = 0.006$.

Similarly, we observed that participants in the *small* value difference condition also reported higher valuation, $b = 0.63$, 95% CI [0.56, 0.70], $z = 17.02$, $p < 0.001$. Again, this effect was not significantly moderated by greed, $b = -0.02$, 95% CI [-0.10, -0.06], $z = -0.57$, $p = 0.572$, although participants with higher levels of greed reported generally higher valuation, $b = 0.10$, 95% CI [0.05, 0.16], $z = 3.64$, $p < 0.001$.

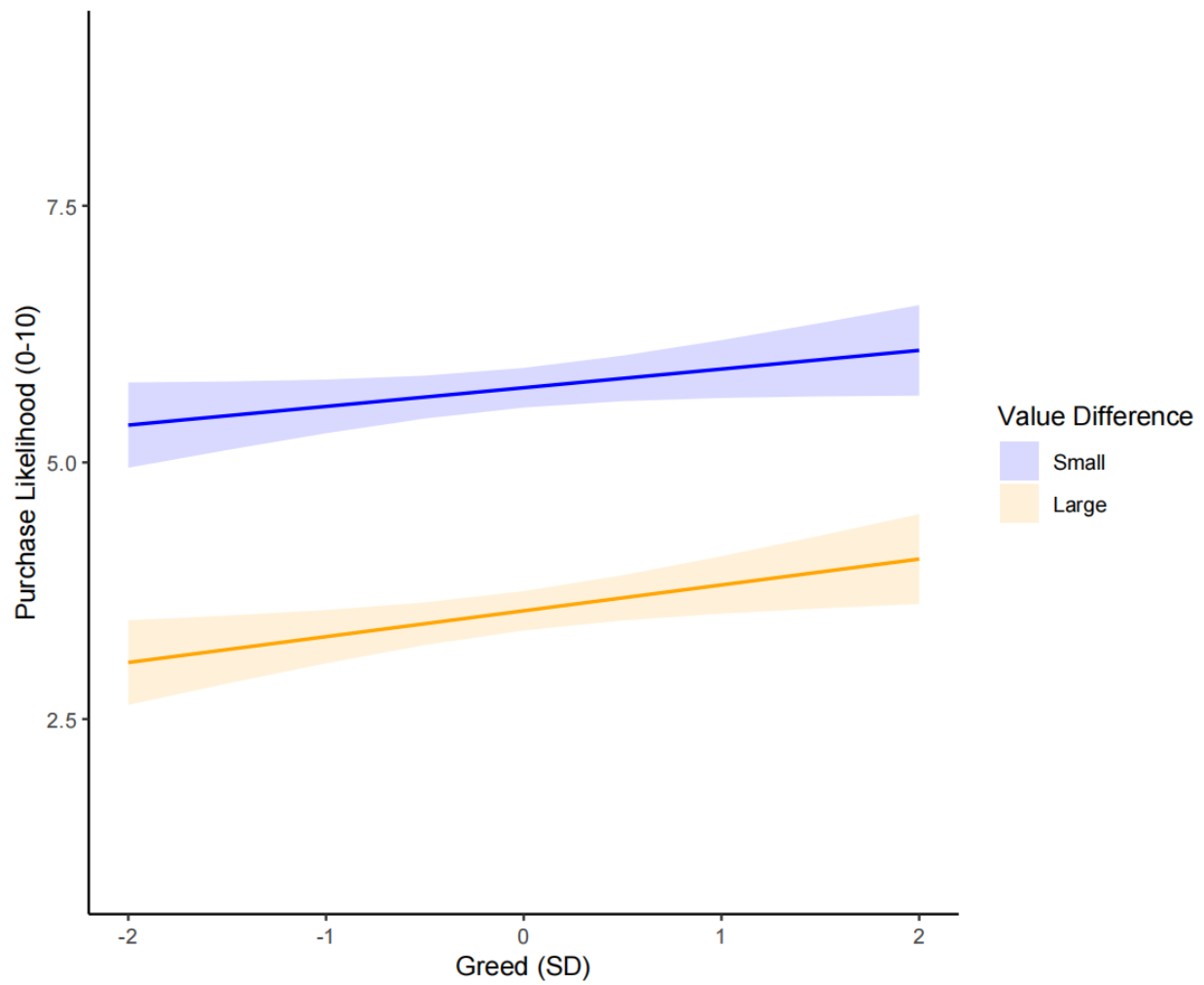


Figure 3 Reproducibility results of effects of Greed and Value Difference on Purchase Likelihood

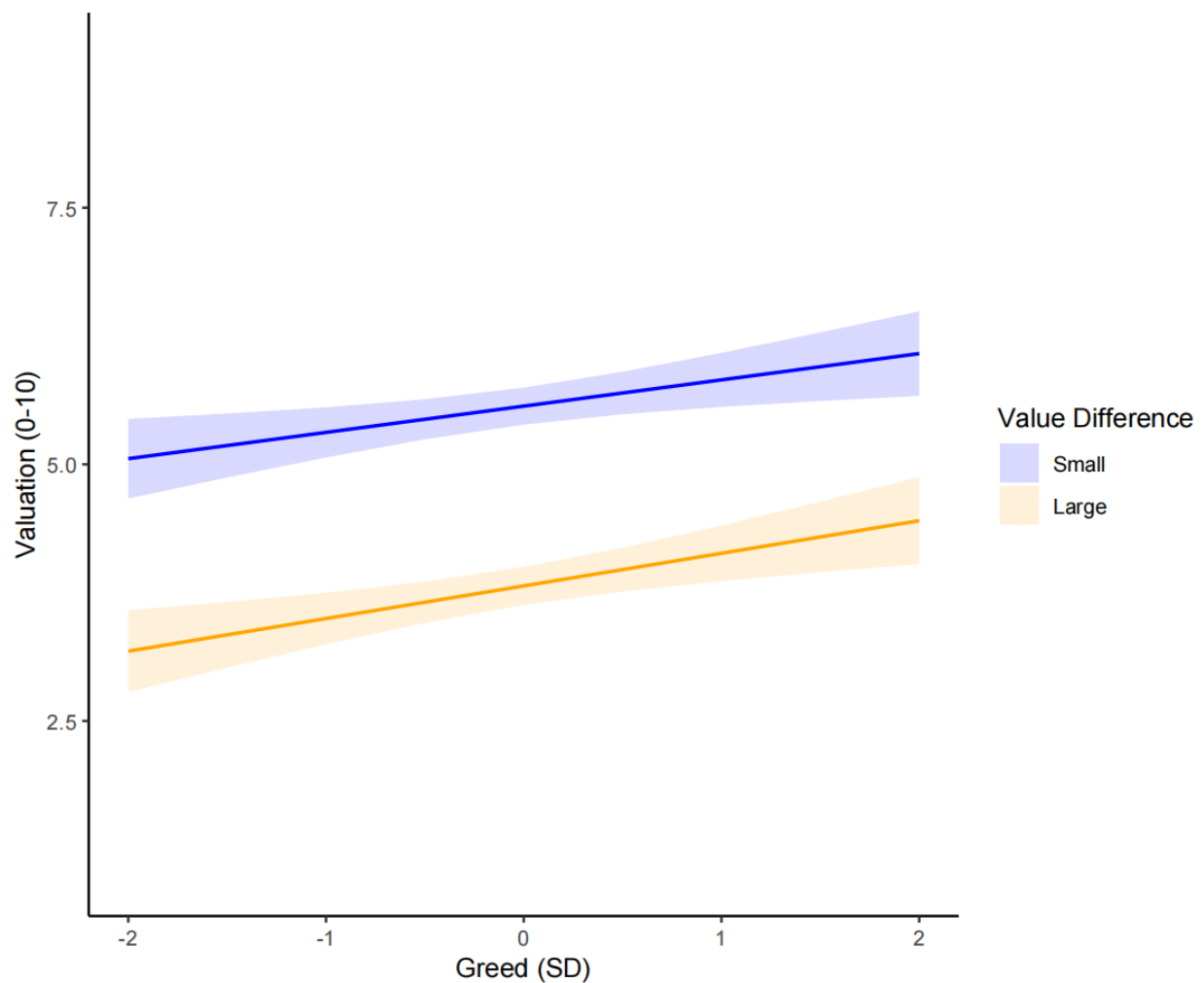


Figure 4 Reproducibility results of effects of Greed and Value Difference on Valuation

Study 3b

Descriptive Statistics. No description in the article.

Inferential Statistics. Study 3b used a linear regression model to examine whether the value difference between missed and current offers and participants' greed scores influenced purchase likelihood. Following the original analysis approach, the value difference was dummy-coded (0.5 = small difference, -0.5 = large difference), and greed scores were z-standardized. The reproduced results aligned closely with the original findings. A significant main effect of value

difference was observed, $b = 1.38$, $p < .001$, 95% CI = [1.08, 1.69], again confirming the inaction inertia effect. Greed significantly predicted higher purchase likelihood, $b = 0.29$, $p < .001$, 95% CI = [0.13, 0.44], supporting the notion that greedy individuals are more inclined to act on current discounts. The interaction between greed and value difference was not significant, $b = -0.07$, $p = .652$, 95% CI = [-0.38, 0.24]. These results replicate the inferential statistics reported in the original article with high fidelity, indicating strong reproducibility.

Table 1 1 Replication of the mediation analysi

Variable	Source	b	t	95%CI	p
greed.z	original	0.29	3.67	[0.13, 0.44]	< 0.001
	this	0.29	3.67	[0.13, 0.44]	< 0.001
difference.between	original	1.38	8.89	[1.08, 1.69]	< 0.001
	this	1.38	8.89	[1.08, 1.69]	< 0.001
greed.z:difference.between	original	-0.07	-0.45	[-0.38, 0.24]	0.652
	this	-0.07	-0.45	[-0.38, 0.24]	0.652
δ		0	0	0	0
rating		consistent	consistent	consistent	consistent

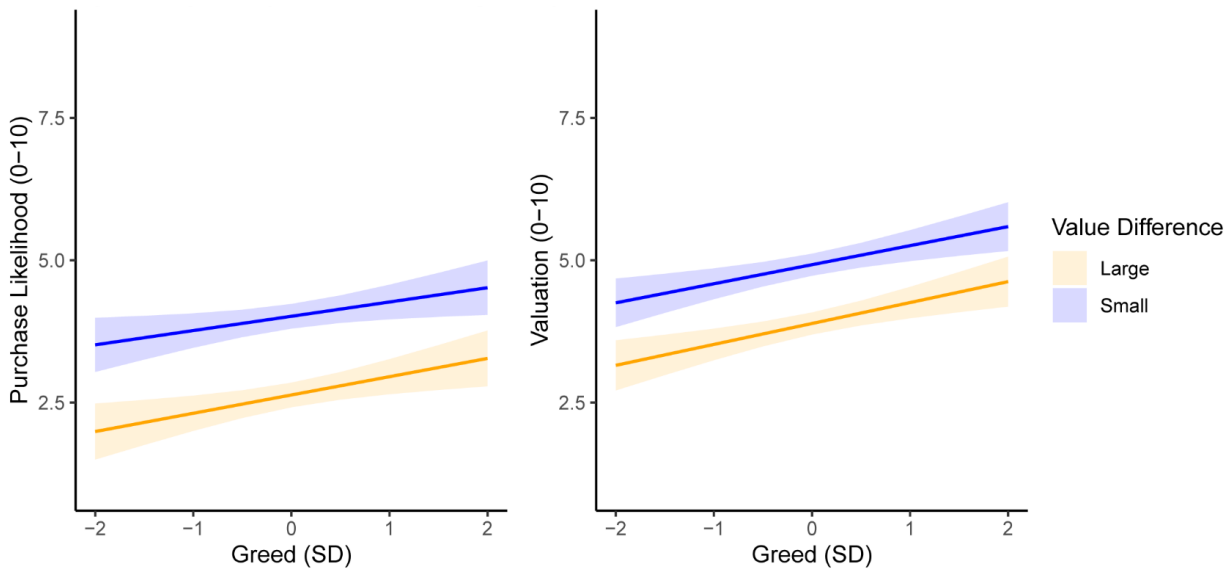


Figure 5 Reproducibility results of effects of Greed and Value Difference on Purchase Likelihood in Study 3b

Assessment of the reproducibility of the literature

The computational reproducibility assessment results are presented in Table 11. Among the 78 replicated analyses, only 6 outcomes showed inconsistencies with the original results. Four of these discrepancies remained consistent across multiple recalculations with deviations ≤ 0.01 from the original findings, likely attributable to rounding errors. The remaining two inconsistencies may stem from inherent minor computational variations in model estimation, as repeated executions of identical code yielded slight output fluctuations (approximately ± 0.02).

Table 12 Assessment of reproducibility

repeatability condition	quantity (N)	proportion (%)
Totally Aligned(= 0%)	94	94
Less Deviation($0\% < < 10\%$)	6	6
Significant Deviation($> 10\%$)	0	0

repeatability condition	quantity (N)	proportion (%)
Deviation due to rounding	4	4

Table 13 Consistency Evaluation Table of Inferences (Original Analysis Method)

inference consistency	quantity (N)	proportion (%)
consistent	25	100
inconsistent	0	0

Discussion

Analysis of the results of the computational reproducibility test

Among the reproduced results, only a few values have differences of 0.01 to 0.02 from the results of the original study. Four of them remained consistent after repeated calculations by running the code multiple times, and the error compared with the original research results was within 0.01. Therefore, we infer that the error might be caused by incorrect rounding when transcribing the results. There are also two results that are inconsistent with the original ones, but the reasons for the inconsistency are different. When the same code is re-run multiple times, there will be slight fluctuations of varying degrees (approximately ± 0.2). Therefore, the inconsistency between these two results may be caused by the inherent small calculation errors in the model estimation. Apart from these minor inconsistencies mentioned above, we have perfectly reproduced all the other results of this study. The reasons for the successful reproducibility may be as follows. First and foremost, the article provides complete data and code files. The data files are further divided into the original data files and those specifically designed for R analysis. The code files contain simple annotations for each step of the operation, enabling us to understand and reproduce each step of the research very well. Secondly, most of the analyses in this paper do not involve calculation

codes such as setting random numbers for fixed seeds that may cause minor random errors. This also makes most of our reproduction results completely consistent with the original study.

Other thoughts

In terms of course study, at the beginning, we still had a relatively strong fear of learning the R language. However, the teaching method that combines lecturing and practice enables us to understand and master the content taught in class relatively quickly, and at the same time, we can also make some simple applications. After this semester of study, although the members of our group are still not able to write R packages by themselves like the senior who came to share, everyone can basically understand the learned code and make simple modifications, or solve other similar data analysis and so on based on the learned code. A small suggestion is that sometimes after finishing the course assignments, we are not quite sure if what we did was correct or if there are any other codes that can be implemented. So, we think it would be better if the teacher could briefly explain some of the small exercises assigned in class.

In terms of group cooperation, the learning process of this course and the completion of group assignments have made us deeply realize the importance of reasonable cooperation in scientific research. Good cooperation can achieve twice the result with half the effort, while bad cooperation can achieve half the result with twice the effort. During the process of reproducing the research results, each of us encountered different problems, such as having doubts about some parts of the article and not being able to fully understand the meaning of the code, etc. However, as the saying goes, “Three cobhammers make up Zhuge Liang.” When we discussed and analyzed in the group and pieced together the ideas of the members, We usually can solve the problems we encounter smoothly in the end. In addition, when conducting data analysis and other work, it is inevitable for a person to make some mistakes, big or small. However, by checking the results calculated by multiple people, this problem can be well avoided. In terms of course assignments, regular small exercises can help us learn and consolidate better how to flexibly apply the code taught in class. Hands-on operation is always more impressive than just listening

to lectures. Through course assignments, we have also become more familiar with some basic R codes, such as `here::here`, `function`, `dplyr` package, `tidyverse` package, and so on. The final major assignment is a more practical application of the subject knowledge. If the previous small exercises were aimed at a certain knowledge point, then the final major assignment is to try to connect all the previously learned knowledge with a web, integrate and understand them, and truly learn to apply the learned code to actual operations.

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