Socioeconomic Status and Consumption Guilt among College Students: The Role of Family and Social Values

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Abstract

Consumer guilt is a unique phenomenon among college students during consumption processes, exerting a non-negligible influence on their mental health. However, few studies have systematically examined its triggering factors. This study aims to investigate the impact of socioeconomic status (SES) on college student consumer guilt, as well as the family and values factors that may moderate this relationship. The study measured different types of consumer guilt, socioeconomic status, parenting styles, parent-child communication, and materialistic values data among 560 college students. The results revealed: (1) Objective SES, rather than subjective SES, significantly negatively predicted anticipatory consumer guilt and reactive consumer guilt; (2) Parenting styles and parent-child communication moderated the association between objective SES and consumer guilt, such that under conditions of positive parenting styles (high parental warmth, low parental rejection, low paternal overprotection) and positive parent-child communication (high conversation orientation, low conformity orientation), objective SES significantly negatively predicted consumer guilt; under conditions of negative parenting styles and parent-child communication, the corresponding predictive effect was not significant; (3) Materialistic values did not significantly moderate the relationship between objective SES and consumer guilt. The findings suggest that objective SES influences college student consumer guilt, and the protective role of family factors in this relationship is more pronounced among college students with high objective SES.

Full Text

Submission Checklist

1. Please list up to three innovative contributions of this study in the form of "Research Highlights," with a total of no more than 200 words.

Acta Psychologica Sinica aims to publish cutting-edge psychological research that is "both scientifically excellent and of particularly broad interest and significance." If your study only makes minor incremental contributions without attempting to open new areas of inquiry or propose unique and innovative perspectives—especially if it is purely an algorithm or technical work without clear psychological questions—such research has a low chance of acceptance by this journal and we recommend submitting elsewhere.

Answer: (1) This is the first systematic investigation of how different types of socioeconomic status influence different types of consumer guilt among college students. (2) This is the first study to examine the potential moderating roles of family factors and value factors in the aforementioned relationship.

2. Have you used the same data as in any previously submitted or published articles? If yes, please attach them for review. (We do not encourage authors to publish multiple articles using the same data with identical variables, nor do we support splitting a series of related studies into multiple publications.)

Answer: No.

3. Non-experimental, non-intervention studies in management, clinical, personality, and social psychology that rely solely on self-report (questionnaire) methods need to check for common method bias. What methods did you use to control or demonstrate that such bias would not affect the validity of your conclusions? What measures were taken? (Relevant literature on common method bias can be found at: http://journal.psych.ac.cn/xlkxjz/CN/abstract/abstract894.shtml) Studies based on cross-sectional data with only self-reports and convenient sampling are easy to conduct but typically have limited innovative value and low acceptance chances.

Answer: This study employed procedural controls and post-hoc Harman's single-factor test to address potential common method bias. During questionnaire administration, the instructions emphasized response anonymity, data confidentiality, and academic use only. Harman's single-factor test revealed 13 factors with eigenvalues greater than 1, with the first factor explaining 18.29% of variance, far below the 40% critical threshold. Therefore, common method bias does not significantly affect the results.

4. Did you report and analyze effect sizes (e.g., Cohen's d for t-tests, ^{2} or ^{2}p for ANOVA, standardized regression co-

efficients)? (Many studies mechanically report effect sizes without necessary analysis or explanation, such as whether the effect size is small/medium/large or its theoretical/applied significance.) (Search "effect size calculator" on Google for convenient apps. Chinese explanations: http://journal.psych.ac.cn/xlkxjz/CN/abstract/abstract1150.shtml; English: http://www.uccs.edu/lbecker/effect-size.html) Did you report 95% CIs? (e.g., 95% CI for differences, correlations/regression coefficients) For CI calculation and graphing, see https://thenewstatistics.com/itns/esci/

Answer: This study reported standardized regression coefficients in the regression analysis results.

5. Please state the planned and actual sample sizes. If they differ, please explain why. Low statistical power due to insufficient sample sizes has been widespread in psychological research. We recommend explaining your sample size determination in the Methods section, based on justified effect sizes and desired power, and reporting the software/program used. See https://osf.io/5awp4/

Answer: To ensure adequate statistical power and referencing similar previous studies, we planned to collect a minimum of 300 responses. Using convenience sampling, we ultimately recovered 793 questionnaires, with 560 valid responses.

6. In hypothesis testing, if using Null Hypothesis Significance Testing (NHST), report exact p-values rather than ranges (report ranges only for $p < .001$, otherwise exact values). Does your paper meet this requirement? For Bayes factors, have you reported sensitivity to prior distribution assumptions?

Answer: Yes.

7. If you excluded data in statistical analysis, is this reported in the text? Why? How would results change if included? How were missing data handled? Were any individual items deleted from scales? Why? How would results change if included? Were any measured items or variables not reported? Why? Please indicate where in the paper.

Answer: (1) Excluded data are reported (see "2.1 Participants" section). (2) No items were deleted. (3) Some measured variables were not reported as they were irrelevant to this study.

8. Are unpublished experimental materials, scales, or questionnaires attached at the end for review? If not, please explain. If published, are you willing to share these materials with other researchers?

Answer: The consumer guilt scale used was extracted from a doctoral dissertation and is attached after the main text for review. We are willing to share it.

9. This journal requires authors to provide raw data. Please select one option:

a) Will send data to editorial email after submission

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10. Is your study a clinical intervention or laboratory experiment? Yes ( ) / No (√)

If yes, please provide pre-registration number. If no, please explain. Note: Clinical interventions or lab experiments should be pre-registered before data collection. Other experimental studies are also encouraged to pre-register. Pre-registration requires stating all hypotheses with rationales and detailed procedures. Our pre-registration sites: https://os.psych.ac.cn/preregister (manual on journal website) or https://osf.io/ or https://aspredicted.org/. Pre-registration significantly increases acceptance chances. See https://osf.io/5awp4/

11. If your study involved human or animal subjects, was it approved by your institution's ethics committee? If yes, please send scanned copy to editorial email. If no, please explain.

Answer: Yes, ethics approval was obtained.

12. Has the English title and abstract been reviewed by a proficient English speaker or professionally edited by an SCI/SSCI editing service?

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Socioeconomic Status and Consumer Guilt among College Students: The Role of Family and Social Values

Abstract

Consumer guilt represents a unique phenomenon among college students during consumption, exerting a non-negligible impact on their mental health. However, systematic investigation of its antecedents remains scarce. This study examines the influence of socioeconomic status (SES) on college students' consumer guilt and the potential moderating roles of family and value factors. We measured 560 college students' different types of consumer guilt, SES, parenting styles, parent-child communication, and materialistic values. Results revealed: (1) Objective SES, but not subjective SES, significantly negatively predicted both anticipated and reactive consumer guilt; (2) Parenting styles and parent-child communication moderated the relationship between objective SES and consumer guilt—under positive parenting styles (high parental warmth, low parental rejection, low paternal overprotection) and positive parent-child communication (high conversation orientation, low conformity orientation), objective SES significantly negatively predicted consumer guilt, whereas under negative conditions, this predictive effect was non-significant; (3) Materialistic values showed no significant moderating effect on the relationship between objective SES and consumer guilt. These findings suggest that objective SES influences college students' consumer guilt, with the protective role of family factors being more pronounced among high-objective-SES students.

Keywords: consumer guilt, socioeconomic status, parenting styles, parent-child communication, materialism

1. Introduction

As contemporary society evolves, college students have become a consumer group with considerable spending scale and potential. However, due to their lack of economic independence, they exhibit distinct psychological characteristics during consumption, among which consumer guilt is particularly salient. Consumer guilt refers to negative emotions arising when consumption behavior violates social norms or personal values (Bai et al., 2015). Based on timing, consumer guilt can be divided into anticipated consumer guilt and reactive consumer guilt (Lin, 2007; Basil et al., 2007; Huhmann & Brotherton, 1997). These two types carry different emotional connotations: anticipated consumer guilt comprises three emotional constructs—worry, reluctance, and hesitation; reactive consumer guilt comprises four constructs—guilt feelings, regret, worry, and shame (Lin, 2007). While consumer guilt has received considerable attention in marketing research focusing on its role in consumption decisions (Newman & Trump, 2017; Steenhaut & Van, 2006; Zemack-Rugar et al., 2015), few studies have examined its antecedents. Identifying factors that influence consumer

guilt will not only deepen understanding of this phenomenon but also provide references for developing educational and intervention programs.

Socioeconomic status is a comprehensive concept reflecting one's position in society and access to social resources. Research shows that individuals with different SES experience consumption differently due to varying resources, which subsequently influences consumption psychology and behavior (Kong & Sun, 2021; Lee et al., 2018). Do college students from different socioeconomic backgrounds experience varying levels of consumer guilt? Social cognitive theory of social class posits that individuals from lower SES develop a contextualistic cognitive tendency, whereas those from higher SES tend to ignore environmental influences and develop a solipsistic cognitive tendency (Hu et al., 2014; Kraus et al., 2012). These different cognitive tendencies may trigger distinct consumer guilt. Specifically, low-SES college students are more susceptible to environmental influences during consumption, making them more likely to experience consumer guilt when their consumption intentions conflict with external opinions. Conversely, high-SES students focus more on their own needs than others' opinions, making them less prone to consumer guilt. Empirical evidence indirectly supports this view; for instance, Lin (2007) found that individuals with lower social independence and self-interest moral reasoning experienced higher consumer guilt. On the other hand, consumption entails monetary loss, and resource availability affects attitudes toward such loss. Scarcity theory suggests that chronic resource scarcity creates a scarcity mindset, focusing attention on the most scarce resources while neglecting other issues (Shah et al., 2012). Compared to high-SES students, low-SES students' greater focus on economic resources may make monetary loss more impactful, triggering more negative emotions including consumer guilt. Therefore, we propose Hypothesis 1: SES significantly negatively predicts college students' consumer guilt, with lower-SES students experiencing more consumer guilt than their higher-SES peers.

If lower SES induces more consumer guilt, might protective factors exist? Numerous studies show that parent-child relationships significantly impact children's psychology and behavior. Parenting styles and parent-child communication are central to these relationships and have been found to influence various psychological characteristics. For example, research demonstrates that the emotional warmth dimension of parenting styles positively correlates with college students' positive psychological qualities, indicating that parental care and emotional support significantly benefit children's psychological development (Huang et al., 2020; Gorostiaga et al., 2019). Studies on parent-child communication reveal that positive communication predicts fulfillment of three basic psychological needs, enhancing satisfaction, trust, and sense of control, thereby fostering more adaptive responses to adverse environments (Guo et al., 2014). Moreover, positive guidance during parent-child communication promotes rational consumption attitudes and behaviors (Zhang & Zou, 2012). To a large extent, positive parent-child communication buffers children from negative environmental influences.

Based on this, we hypothesize that positive parenting styles and parent-child communication may serve as protective factors buffering the negative impact of low SES. Specifically, while low-SES college students may experience relatively high consumer guilt, positive parenting and communication might help them manage consumption desires and behaviors, thereby reducing guilt. Thus, we propose Hypothesis 2: Parenting styles and parent-child communication moderate the relationship between SES and consumer guilt.

Furthermore, consumption desires and behaviors that trigger guilt may relate to individuals' emphasis on material possessions. Materialism is a value emphasizing the importance of material wealth in personal life (Richins & Dawson, 1992). Research shows materialism positively correlates with shopping addiction and impulsive consumption (Ding et al., 2019; Dittmar, 2004), which are irrational consumption patterns that often induce consumer guilt (Wang & Chen, 2018; Togawa et al., 2019). This suggests individuals with higher materialistic values may be more prone to irrational consumption and thus experience more consumer guilt. Correspondingly, if SES influences college students' consumer guilt, this effect may be more pronounced among those with high materialism. For individuals low in materialism, regardless of SES, they may de-emphasize material pursuits, engage in moderate consumption, and be less troubled by consumer guilt. Therefore, we propose Hypothesis 3: Materialistic values moderate the relationship between SES and consumer guilt.

In summary, this study explores the relationship between SES and college students' consumer guilt, examining the potential moderating roles of family factors (parenting styles, parent-child communication) and value factors (materialism), aiming to reveal underlying mechanisms and inform intervention development.

2. Method

2.1 Participants

We distributed questionnaires to college students via the online survey platform "Wenjuanxing." To ensure adequate statistical power and referencing similar studies, we planned to collect at least 300 responses. Using convenience sampling, researchers shared survey links through social media, WeChat groups, and recruitment public accounts. We recovered 793 questionnaires. After excluding participants who failed attention checks (10 items, e.g., "Please select 'strongly agree' for this question"), we obtained 560 valid responses (70.62% validity). Excluded and valid data did not differ significantly in age or hometown.

The valid sample had a mean age of 20.94 years (SD = 1.99), with 266 females (47.6%).

2.2 Measures

2.2.1 Consumer Guilt Scale We used Lin's (2007) Consumer Guilt Scale developed for Chinese consumers, comprising anticipated and reactive consumer

guilt subscales rated on a 1 (strongly disagree) to 7 (strongly agree) scale. Higher scores indicate higher levels of anticipated/reactive consumer guilt. Research demonstrates good reliability and validity for both subscales (Lin, 2007). The anticipated consumer guilt subscale includes three emotional constructs—worry, reluctance, and hesitation—comprising 13 items (Cronbach's $\alpha = 0.82$ in this study). The reactive consumer guilt subscale includes four constructs—guilt feelings, regret, worry, and shame—comprising 16 items (Cronbach's $\alpha = 0.91$).

2.2.2 Subjective Socioeconomic Status We measured subjective SES using the MacArthur Scale of Subjective Social Status (Adler et al., 2000). This 10-rung ladder represents people at different income, education, and occupational prestige levels, with higher rungs indicating higher status. Participants selected a number representing their family's position on the ladder shown in Figure 1 [Figure 1: see original paper], based on their family's education, occupation, and income. The selected score served as the subjective SES indicator, with higher scores indicating higher subjective SES.

2.2.3 Objective Socioeconomic Status Objective SES was measured using three indicators: family annual income, parental education, and parental occupation. Family annual income had 13 intervals from "2,500–5,000" to "480,000+" RMB, scored 1–13. Parental education had six levels from "1=elementary school" to "6=graduate degree," scored 1–6. Parental occupation used Lu's (2002) indigenous Chinese objective SES scale, which classifies 10 socioeconomic strata from unemployed to national/social managers based on political, economic, and cultural resources, scored 1–10. For each indicator, we selected the higher value between father and mother. Following previous research (Zhou & Guo, 2013), we converted the three indicators to z-scores and conducted principal component analysis, extracting one factor with eigenvalue >1 that explained 58.06% of variance. The objective SES formula was: Objective SES = (0.638*Z_{{{family}}_{{income}}} + 0.827*Z_{{{parental}}_{{occupation}}} + 0.807*Z_{{{parental}}_{{education}}})/1.742, where 0.638, 0.827, and 0.807 are factor loadings and 1.742 is the eigenvalue. Higher scores indicate higher objective SES. In this study, objective SES ranged from –2.22 to 2.75 (M = 0.00, SD = 1.00).

2.2.4 Parenting Styles We used the Chinese version of the short-form EMBU-C (s-EMBU-C) revised by Jiang et al. (2010). This 42-item scale includes three dimensions: emotional warmth, rejection, and overprotection, with 21 items each for father and mother, rated on a 1 (never) to 4 (always) scale. In this study, Cronbach's α coefficients were: paternal warmth = 0.90, paternal rejection = 0.91, paternal overprotection = 0.76; maternal warmth = 0.90, maternal rejection = 0.90, maternal overprotection = 0.76.

2.2.5 Parent-Child Communication We used the Revised Family Communication Pattern (RFCP) scale by Ritchie and Fitzpatrick (1990), comprising

conversation orientation and conformity orientation dimensions rated on a 1 (very uncharacteristic) to 5 (very characteristic) scale. The scale has shown good reliability and validity with Chinese college students (Gong et al., 2023). However, our team identified some ambiguous wording in the existing Chinese translation. We therefore re-translated ambiguous items based on the original scale and had two English majors proofread the final version. In this study, Cronbach's α was 0.93 for conversation orientation and 0.90 for conformity orientation.

2.2.6 Materialistic Values We used the Chinese version of the Material Values Scale (MVS) revised by Li and Guo (2009). The original scale includes three dimensions: centrality of acquisition, acquisition as pursuit of happiness, and defining success through possessions. As we were interested in general materialism effects, we used total scale scores rather than dimensional scores. The 13-item scale uses a 1 (very uncharacteristic) to 5 (very characteristic) rating, with higher scores indicating stronger materialism (Cronbach's $\alpha = 0.79$).

2.3 Data Analysis

We used SPSS 26.0 and Hayes' SPSS macro PROCESS 4.1 for data analysis.

3. Results

3.1 Common Method Bias Test

We employed procedural controls and post-hoc Harman's single-factor test. Procedurally, we emphasized anonymity, confidentiality, and academic use only in the instructions. Harman's test revealed 13 factors with eigenvalues >1, with the first factor explaining 18.29% of variance, well below the 40% criterion. Thus, common method bias does not significantly affect our results.

3.2 Effects of Socioeconomic Status on Consumer Guilt

Correlation matrices appear in Table 1 . Objective SES significantly negatively correlated with both anticipated (r = –.21, p < .001) and reactive consumer guilt (r = –.22, p < .001). Subjective SES showed no significant correlation with either type (ps > .05). Regression analyses (Table 2) controlling for age, gender, education level, and hometown revealed that objective SES significantly negatively predicted anticipated guilt (β = –.19, p < .001) and reactive guilt (β = –.21, p < .001).

3.3 Moderating Roles of Family Factors

3.3.1 Paternal Parenting Styles We conducted hierarchical regression analyses with paternal emotional warmth, rejection, and overprotection as separate moderators. To avoid multicollinearity, we centered objective SES and parenting variables. Step 1 entered control variables (age, gender, education, hometown);

Step 2 entered centered objective SES and paternal parenting dimension; Step 3 entered the interaction term.

Results (Table 3) showed objective SES significantly negatively predicted both guilt types across all models (β = –.20 to –.16, ps $\leq$ .001). Paternal warmth did not predict anticipated guilt (β = .03, p > .05) but negatively predicted reactive guilt (β = –.12, p = .004). Paternal rejection did not predict anticipated guilt (β = .05, p > .05) but positively predicted reactive guilt (β = .26, p < .001). Paternal overprotection positively predicted both anticipated (β = .16, p < .001) and reactive guilt (β = .35, p < .001). The objective SES × paternal warmth interaction negatively predicted both guilt types (β = –.12, p = .003; β = –.16, p < .001). The objective SES × paternal rejection interaction positively predicted both (β = .12, p = .004; β = .12, p = .003). The objective SES × paternal overprotection interaction positively predicted both (β = .12, p = .003; β = .12, p = .022).

Simple slope analyses (Table 4 , Figure 2 [Figure 2: see original paper]) revealed that under low paternal warmth, high paternal rejection, and high paternal overprotection, objective SES did not significantly predict either guilt type (ps > .05). Under high paternal warmth, low paternal rejection, and low paternal overprotection, objective SES significantly predicted both (ps < .001).

3.3.2 Maternal Parenting Styles Hierarchical regression results appear in Table 5 . Objective SES significantly negatively predicted both guilt types across models (β = –.20 to –.14, ps $\leq$ .002). Maternal warmth did not predict anticipated guilt (β = .06, p > .05) but negatively predicted reactive guilt (β = –.12, p = .006). Maternal rejection positively predicted both anticipated (β = .10, p = .037) and reactive guilt (β = .33, p < .001). Maternal overprotection positively predicted both (β = .12, p = .008; β = .28, p < .001). The objective SES × maternal warmth interaction negatively predicted both guilt types (β = –.13, p = .001; β = –.19, p < .001). The objective SES × maternal rejection interaction positively predicted both (β = .12, p = .003; β = .12, p = .003). The objective SES × maternal overprotection interaction did not predict either guilt type (β = .08, p > .05; β = .02, p > .05).

Simple slope analyses (Table 6 , Figure 3 [Figure 3: see original paper]) showed that under low maternal warmth and high maternal rejection, objective SES did not significantly predict either guilt type (ps > .05). Under high maternal warmth and low maternal rejection, objective SES significantly predicted both (ps < .001).

3.3.3 Parent-Child Communication Hierarchical regression results appear in Table 7 . Objective SES significantly negatively predicted both guilt types across models (β = –.21 to –.13, ps $\leq$ .004). Conversation orientation did not predict either guilt type (β = .07, p > .05; β = –.05, p > .05). Conformity orientation positively predicted both (β = .21, p < .001; β = .33, p < .001). The objective SES × conversation orientation interaction did not predict anticipated

guilt (β = –.07, p > .05) but negatively predicted reactive guilt (β = –.13, p = .001). The objective SES × conformity orientation interaction positively predicted anticipated guilt (β = .10, p = .013) but not reactive guilt (β = .06, p > .05).

Simple slope analyses (Table 8 , Figure 4 [Figure 4: see original paper]) revealed that under high conformity, objective SES did not significantly predict anticipated guilt (p > .05), whereas under low conformity, it did (p < .001). Under high conversation orientation, objective SES significantly predicted reactive guilt (p < .001), whereas under low conversation orientation, it did not (p > .05).

3.4 Role of Social Value Factors

Hierarchical regression results appear in Table 9 . Objective SES significantly negatively predicted both guilt types across models (β = –.21 to –.19, ps < .001). Materialism did not predict anticipated guilt (β = –.02, p > .05) but positively predicted reactive guilt (β = .16, p < .001). The objective SES × materialism interaction did not predict either guilt type (β = –.06, p > .05; β = –.02, p > .05).

4. Discussion

This study explored the relationship between SES and college students' consumer guilt and potential moderating roles of family and value factors. Results partially support our hypotheses and provide insights for understanding this relationship.

First, findings confirm the link between SES and consumer guilt, supporting Hypothesis 1. Notably, this link only emerged for objective SES; subjective SES showed no association. Specifically, objective SES significantly negatively predicted consumer guilt—lower objective SES was associated with higher guilt. This may occur because objective economic resources directly affect judgments about affordability and budget constraints, triggering guilt. Subjective SES represents a perceived status ranking relatively independent of objective SES (Kraus et al., 2009), which may primarily influence social comparison contexts rather than general consumer guilt as examined here.

Second, objective SES negatively predicted both anticipated and reactive guilt to a similar degree, suggesting that while these are distinct constructs, their relationships with SES do not differ markedly. Students with fewer economic resources experience more hesitation, worry, and reluctance before purchases, and more guilt, regret, and shame afterward.

Third, family factors moderated the SES-guilt relationship, supporting Hypothesis 2, but contrary to expectations. We anticipated that positive parenting (high warmth, low rejection, low overprotection) and communication (high conversation, low conformity) would buffer low-SES students' guilt. Instead, these

protective effects appeared primarily among high-SES students—reducing their guilt while showing no significant effect for low-SES students (see simple slope results). This suggests family factors have limited impact in the face of stark economic realities. Research shows resource scarcity profoundly affects multiple domains (Cannon et al., 2018; Duncan et al., 2017). For low-SES students, economic deprivation may exert a more entrenched influence on consumer guilt than parenting or communication, leading to high guilt regardless of family dynamics. Conversely, for high-SES students, positive parenting and communication effectively reduce guilt, consistent with findings that positive parent-child interactions decrease problem behaviors in high-SES families (Cheng et al., 2019). In economically advantaged contexts, positive family factors promote adaptive consumption management and reduce guilt.

Additionally, materialism showed no moderating effect, possibly because while materialism reflects subjective attitudes toward possessions, objective economic resources directly constrain consumption capacity and trigger guilt independently of these attitudes. Thus, materialism levels do not affect how objective SES predicts consumer guilt.

Finally, although this study is the first to explore antecedents of consumer guilt in college students, revealing SES effects and roles of parenting, communication, and materialism, limitations remain for future research. First, single-wave online questionnaire data limit reliability; future studies should use longitudinal and experimental methods. Second, our moderators did not buffer the SES-guilt relationship effectively; future research should further examine the nature of consumer guilt to identify more effective moderating factors.

References

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. *Health Psychology*, *19*(6), 586-592.

Basil, D. Z., Ridgway, N. M., & Basil, M. D. (2007). Guilt and giving: A process model of empathy and efficacy. *Psychology & Marketing*, *25*(1), 1-23.

Bai, L., Chen, C., & Chen, H. W. (2015). Consumer guilt: The frontier analysis of dimension, process and empirical research. *Advances in Psychological Science*, *23*(10), 1818-1829. [Bai, L., Chen, C., & Chen, H. W. (2015). Consumer guilt: An exploration of dimensions, processes, and empirical research frontiers. *Advances in Psychological Science*, 23(10), 1818-1829.]

Cannon, C., Goldsmith, K., Roux, C., & Kirmani, A. (2018). A self-regulatory model of resource scarcity. *Journal of Consumer Psychology*, *29*(1), 104-127.

Cheng, G., Zhang, W., Xiao, X. X., Xiong, S. L., & Guo, C. (2019). The mediation effect of psychological quality of primary school students between their problem behaviors and parents' educational involvement — The regulating

effect of family socioeconomic status. *Chinese Journal of Special Education*, *(10)*, 82-89. [Cheng, G., Zhang, W., Xiao, X. X., Xiong, S. L., & Guo, C. (2019). The mediating role of primary school students' psychological quality between their problem behaviors and parental educational involvement—The moderating effect of family socioeconomic status. *Chinese Journal of Special Education*, (10), 82-89.]

Dittmar, H. (2004). Are you what you have? Consumer society and our sense of identity. *Psychologist*, *17*(4), 206-210.

Duncan, G. J., Magnuson, K., & Votruba-Drzal, E. (2017). Moving beyond correlations in assessing the consequences of poverty. *Annual Review of Psychology*, *68*, 413-434.

Ding, Q., Kong, L. L., Zhang, Y. X., & Zhou, Z. K. (2019). Parental materialism and college students' online compulsive buying: A serial mediating effect analysis. *Psychological Development and Education*, *35*(5), 549-556. [Ding, Q., Kong, L. L., Zhang, Y. X., & Zhou, Z. K. (2019). Parental materialism and college students' online compulsive buying: A serial mediating effect analysis. *Psychological Development and Education*, 35(05), 549-556.]

Gong, W. Q., Jiang, L. C., Guo, Q., & Shen, F. (2023). The role of family communication patterns in intergenerational COVID-19 discussions and preventive behaviors: A social cognitive approach. *BMC Psychology*, *11*(1), 290-303.

Gorostiaga, A., Aliri, J., Balluerka, N., & Lameirinhas, J. (2019). Parenting styles and internalizing symptoms in adolescence: A systematic literature review. *International Journal of Environmental Research and Public Health*, *16*(17), 3192-3211.

Guo, H. Y., Zhu, W. L., Zhu, Q., Zhu, M. L., Zuo, P. Y., & Lin, D. H. (2014). Parent-child communication and perceived well-being: The mediating effects of basic psychological needs satisfaction among rural children in China. *Psychological Development and Education*, *30*(2), 129-136. [Guo, H. Y., Zhu, W. L., Zhu, Q., Zhu, M. L., Zuo, P. Y., & Lin, D. H. (2014). The relationship between parent-child communication and well-being among rural adolescents: The mediating role of basic psychological needs satisfaction. *Psychological Development and Education*, 30(02), 129-136.]

Huhmann, B. A., & Brotherton, T. P. (1997). A content analysis of guilt appeals in popular magazine advertisements. *Journal of Advertising*, *26*(2), 35-45.

Hu, X. X., Li, J., Lu, X. Z., & Guo, Y. Y. (2014). The psychological study of social class: Social cognitive perspective. *Journal of Psychological Science*, *37*(06), 1509-1517. [Hu, X. X., Li, J., Lu, X. Z., & Guo, Y. Y. (2014). Psychological research on social class: A social cognitive perspective. *Journal of Psychological Science*, 37(06), 1509-1517.]

Huang, Z. W., Li, Y. C., Chang, K., & Zhang, H. (2020). Relationship between college students' mental health and parenting style—The mediating effect of

psychological capital. *China Journal of Health Psychology*, *28*(05), 737-742. [Huang, Z. W., Li, Y. C., Chang, K., & Zhang, H. (2020). The relationship between college students' mental health and parenting style: The mediating effect of psychological capital. *China Journal of Health Psychology*, 28(05), 737-742.]

Jiang, J., Lu, Z. R., Jiang, B. J., & Xu, Y. (2010). Revision of the short-form egna minnenav barndoms uppfostran for Chinese. *Psychological Development and Education*, *26*(01), 94-99. [Jiang, J., Lu, Z. R., Jiang, B. J., & Xu, Y. (2010). Preliminary revision of the short-form EMBU-C for Chinese. *Psychological Development and Education*, 26(01), 94-99.]

Kraus, M. W., Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of Personality and Social Psychology*, *97*(6), 992-1004.

Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D. (2012). Social class, solipsism, and contextualism: How the rich are different from the poor. *Psychological Review*, *119*(3), 546-572.

Kong, Y. Z., & Sun, S. J. (2021). Childhood socioeconomic status, life history strategy and consumption: China traditional values of "unity and harmony" as moderator. *Journal of Psychological Science*, *44*(01), 126-133. [Kong, Y. Z., & Sun, S. J. (2021). Childhood environment, life history strategy, and consumption behavior: The moderating role of traditional Chinese values of "unity and harmony." *Journal of Psychological Science*, 44(01), 126-133.]

Lee, J. C., Hall, D. L., & Wood, W. (2018). Experiential or material purchases? Social class determines purchase happiness. *Psychological Science*, *29*(7), 1031-1039.

Li, J., & Guo, Y. Y. (2009). Revision of material value scale in Chinese college students. *Studies of Psychology and Behavior*, *7*(04), 280-283. [Li, J., & Guo, Y. Y. (2009). Revision of the Material Values Scale among Chinese college students. *Studies of Psychology and Behavior*, 7(04), 280-283.]

Lin, Y. T. (2007). *The construct, timing, and measurement of consumer guilt* (Unpublished doctoral dissertation). National Chengchi University, Taipei, China. [Lin, Y. T. (2007). The emotional connotation, timing, and scale development of consumer guilt (Doctoral dissertation). National Chengchi University, Taipei.]

Lu, X. Y. (Ed.). (2002). *Contemporary Chinese social class research report*. Beijing, China: Social Sciences Academic Press. [Lu, X. Y. (Ed.). (2002). *Research report on contemporary Chinese social strata*. Beijing: Social Sciences Academic Press.]

Newman, K. P., & Trump, R. K. (2017). When are consumers motivated to connect with ethical brands? The roles of guilt and moral identity importance. *Psychology & Marketing*, *34*(6), 597-609.

Patterson, J. M. (2002). Integrating family resilience and family stress theory. *Journal of Marriage and the Family*, *64*(2), 349-360.

Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research*, *19*(3), 329-336.

Ritchie, L. D., & Fitzpatrick, M. A. (1990). Family communication patterns: Measuring interpersonal perceptions of interpersonal relationships. *Communication Research*, *17*(4), 523-544.

Shah, A. K., Mullaina, S., & Shafir, E. (2012). Some consequences of having too little. *Science*, *338*(6107), 682-685.

Steenhaut, S., & Van, K. P. (2006). The mediating role of anticipated guilt in consumers' ethical decision-making. *Journal of Business Ethics*, *69*(3), 269-288.

Togawa, T., Ishii, H., Onzo, N., & Roy, R. (2019). Effects of consumers' construal levels on post-impulse purchase emotions. *Marketing Intelligence & Planning*, *38*(3), 269-282.

Wang, Z., & Chen, Y. W. (2018). The relationship between impulsiveness and consumer guilt in university students from Hong Kong and Macao: Mediation effect of decision-making style. *Studies on Hong Kong and Macao*, *(04)*, 116-137. [Wang, Z., & Chen, Y. W. (2018). The relationship between impulsiveness and consumer guilt among university students from Hong Kong and Macao: The mediating effect of decision-making style. *Contemporary Hong Kong and Macao Studies*, (04), 116-137.]

Zhang, J., & Zou, H. (2012). The mediating role of adolescents' consumption values between family financial education and consumer decision-making styles. *Journal of Psychological Science*, *35*(02), 376-383. [Zhang, J., & Zou, H. (2012). The mediating role of adolescents' consumption values between family financial education and consumer decision-making styles. *Journal of Psychological Science*, 35(02), 376-383.]

Zhou, C. Y., & Guo, Y. Y. (2013). Impact of family social status on mental health: Mediating role of belief in a just world. *Chinese Journal of Clinical Psychology*, *21*(04), 636-640. [Zhou, C. Y., & Guo, Y. Y. (2013). The impact of family social class on college students' mental health: The mediating role of belief in a just world. *Chinese Journal of Clinical Psychology*, 21(04), 636-640.]

Zemack-Rugar, Y., Rabino, R., Cavanaugh, L. A., & Fitzsimons, G. J. (2015). When donating is liberating: The role of product and consumer characteristics in the appeal of cause-related products. *Journal of Consumer Psychology*, *26*(2), 213-230.

Appendices

Consumer Guilt Scale

Anticipated Consumer Guilt Subscale Instructions: For each statement below, please circle the number that best reflects your attitudes or behaviors before shopping.

1 = Strongly Disagree — 7 = Strongly Agree

1. Before buying something, I repeatedly consider whether I really need it.
2. Before buying, I feel reluctant about my money decreasing.
3. Before buying, I consider whether family or friends would support it.
4. Before buying, I feel uneasy worrying that relatives/friends might not approve.
5. Even for something I really want, I feel pained about spending the money before purchasing.
6. I sometimes think about secretly buying things without family/friends knowing.
7. I usually buy things I like as soon as I see them.
8. I feel hesitant before buying because what I want isn't a necessity.
9. Before buying, I wonder: "Do I simply want this, or do I really need it?"
10. Before buying, I worry about opposition from family/friends.
11. Whether relatives/friends approve my purchase decisions doesn't matter to me at all.
12. Even for something I really want, I sometimes feel very reluctant to spend money on it.
13. Sometimes before payment, I feel distressed that money will be spent.

Reactive Consumer Guilt Subscale Instructions: For each statement below, please circle the number that best reflects your attitudes or behaviors after shopping.

1 = Strongly Disagree — 7 = Strongly Agree

1. I feel self-blame for buying the wrong things.

2. I worry my family won't approve of my spending.
3. I feel uneasy when friends don't support my purchase decisions.
4. I often regret buying the wrong things.
5. After buying, I hide things at home for fear family/partner will see them.
6. I feel that although what I bought is good, I didn't need to spend that much.
7. If I could do it over, I wouldn't buy certain things.
8. I feel guilty when others disapprove of my purchases.
9. I rarely dislike or not use something after buying it.
10. I never feel self-blame for buying the wrong things.
11. I feel guilty when relatives/friends don't support my purchases.
12. I fear family won't approve of my consumption decisions.
13. When others disagree with my purchases, I feel I've wasted money.
14. I feel disappointed in myself for buying things I shouldn't have.
15. I feel guilty for rarely using what I bought.
16. After buying something, I fear family will find out.

Parenting Styles Scale (s-EMBU-C)

1. Are your parents divorced?
2. Who did you mainly live with before elementary school? (Multiple choice)

Paternal Parenting **Dear Student:** Please select the option that best describes your father's actual parenting style when you were young. Your responses are strictly confidential. Thank you for your cooperation!

1 = Never — 2 = Occasionally — 3 = Often — 4 = Always

1. Father often gets angry at me for no apparent reason.

2. Father praises me.
3. I wish father wouldn't worry so much about what I'm doing.
4. Father's punishment often exceeds what I deserve.
5. Father requires me to explain what I did outside when I return home.
6. I feel father tries to make my adolescent life more meaningful and colorful.
7. Father often criticizes me as lazy and useless in front of others.
8. Father doesn't allow me to do things other children can for fear I'll get hurt.
9. Father always tries to encourage me to be outstanding.
10. Father always controls what clothes I wear or how I look.
11. I feel father's worry about my potential accidents is exaggerated and excessive.
12. When encountering setbacks, I can feel father tries to encourage and comfort me.
13. I'm often treated as the "scapegoat" or "black sheep" at home.
14. I can feel father likes me through his words and expressions.
15. When I succeed at something, I feel father is proud of me.
16. Father often treats me in ways that embarrass me.
17. Father often allows me to go where I like without excessive worry.
18. I feel father interferes with everything I do.
19. I feel a warm, considerate, and affectionate connection with father.
20. Father has strict limits on what I can and cannot do and never compromises.
21. Father punishes me even for very small mistakes.

Maternal Parenting **Dear Student:** Please select the option that best describes your mother's actual parenting style when you were young. Your responses are strictly confidential. Thank you for your cooperation!

1 = Never — 2 = Occasionally — 3 = Often — 4 = Always

1. Mother often gets angry at me for no apparent reason.
2. Mother praises me.
3. I wish mother wouldn't worry so much about what I'm doing.
4. Mother's punishment often exceeds what I deserve.
5. Mother requires me to explain what I did outside when I return home.
6. I feel mother tries to make my adolescent life more meaningful and colorful.
7. Mother often criticizes me as lazy and useless in front of others.
8. Mother doesn't allow me to do things other children can for fear I'll get hurt.
9. Mother always tries to encourage me to be outstanding.
10. Mother always controls what clothes I wear or how I look.
11. I feel mother's worry about my potential accidents is exaggerated and excessive.
12. When encountering setbacks, I can feel mother tries to encourage and comfort me.
13. I'm often treated as the "scapegoat" or "black sheep" at home.
14. I can feel mother likes me through her words and expressions.
15. When I succeed at something, I feel mother is proud of me.
16. Mother often treats me in ways that embarrass me.
17. Mother often allows me to go where I like without excessive worry.
18. I feel mother interferes with everything I do.
19. I feel a warm, considerate, and affectionate connection with mother.

20. Mother has strict limits on what I can and cannot do and never compromises.

21. Mother punishes me even for very small mistakes.

Parent-Child Communication Scale (RFCP)

Based on your family's actual situation, mark the answer that best fits (1-5 points):

1 = Very Uncharacteristic — 2 = Uncharacteristic — 3 = Neutral — 4 = Characteristic — 5 = Very Characteristic

1. My parents encourage me to challenge their beliefs and values.

2. My parents often say something like "You'll know better when you grow up."

3. My parents often ask what I think about things.

4. My parents sometimes become irritated with my views if they differ from theirs.

5. My parents encourage me to express my feelings.

6. My parents often say something like "My ideas are right and you should not question them."

7. My parents and I often have long, relaxed conversations about nothing in particular.

8. My parents often say something like "A child should not argue with adults."

9. I can tell my parents almost anything.

10. My parents often say something like "There are some things that just should not be talked about."

11. My parents often say something like "You should give in on arguments rather than risk making people angry."

12. My parents and I often solve problems through discussion.

13. My parents often say something like "When you are older, you can make your own rules."

14. In our family, we often talk about our feelings and emotions.

15. My parents often say something like "You should always look at both sides of an issue."

16. My parents feel that it is important to be the boss.

17. My parents often say something like "You shouldn't argue with adults."

18. My parents often say something like "Our family has its own way of doing things."

19. My parents often say something like "There is a right way and a wrong way to do everything."

20. My parents often say something like "You should not question adult authority."

21. My parents often say something like "Children should be seen and not heard."

22. My parents often say something like "Children should not question adult decisions."

23. My parents often say something like "Children should not argue with parents."

24. My parents often say something like "Children should not disagree with parents."

25. My parents often say something like "Children should not talk back to parents."

26. When I'm at home, my parents expect me to obey their rules.

Materialistic Values Scale (MVS)

Below are some views on material possessions. Please select the degree that best matches your actual situation.

1 = Completely Uncharacteristic — 2 = Mostly Uncharacteristic — 3 = Neutral — 4 = Mostly Characteristic — 5 = Completely Characteristic

1. I admire people who own expensive homes, cars, and clothes.

2. I usually only buy what I need.

3. My life would be better if I owned things I don't have.
4. I place less importance on material things than most people I know.
5. I try to keep my life simple in terms of material possessions.
6. Even if I owned better things, my life wouldn't be happier.
7. Acquiring material possessions is one of life's most important achievements.
8. I enjoy spending money on impractical things.
9. I'd be happier if I could afford to buy more things.
10. I don't emphasize how much people own as a sign of their success.
11. Shopping brings me a lot of happiness.
12. The things people own say a lot about how successful they are.
13. I like to have many luxuries in my life.

Subjective Socioeconomic Status

Instructions: Please imagine this ladder represents different social positions of families in China. Higher rungs indicate higher status. For example, 01 represents the bottom—people from these families have the worst living conditions, lowest education, least respectable jobs, and lowest income. 10 represents the top—people from these families have the best living conditions, highest education, most respectable jobs, and highest income. Now, considering your situation, which rung best represents your family's position?

Your answer: (Please select a number from 1-10)

Objective Socioeconomic Status

Below are occupational categories - . Based on these descriptions, your father's occupation is category , your mother's occupation is category .

National and social managers (leading cadres at township level and above in party, government, institutional, and social organization units)

Managers (non-owner senior/middle managers and some department heads in enterprises)

Private business owners (those with substantial private capital/assets who

invest for profit and employ others)

Professionals (those engaged in specialized and scientific/technical work in all economic sectors, e.g., doctors, teachers, engineers, accountants, lawyers, designers)

Clerical staff (office workers assisting department heads with daily administrative tasks, including ordinary civil servants below township level and non-professional clerical staff)

Self-employed individuals (those with private capital/assets in production, distribution, services, or financial markets who live from this, e.g., small owners, self-employed, small shareholders, property renters)

Commercial service workers (non-professional, non-manual and manual workers in commerce/services, e.g., chefs, drivers, hairdressers, cashiers, sales staff, waiters, security)

Industrial workers (manual/semi-manual production and construction workers in industry and construction)

Agricultural workers (those contracted to collectively-owned farmland whose sole/main occupation and income source is agriculture/forestry/animal husbandry/fishery)

Urban/rural unemployed/underemployed (working-age population without fixed occupation, excluding students)

Parental Education Level

Your father's education: Elementary — Junior high — Senior high — Associate — Bachelor — Graduate (Master/PhD)
Your mother's education: Elementary — Junior high — Senior high — Associate — Bachelor — Graduate (Master/PhD)

Family Annual Income

(1) Your family's annual income (including wages, non-wage income, bonuses, subsidies, agricultural income, personal dividends, etc.) is approximately:

2,500–5,000 — 5,000–10,000 — 10,000–20,000 — 20,000–30,000 — 30,000–40,000 — 40,000–50,000 — 50,000–60,000 — 60,000–80,000 — 80,000–100,000 — 100,000–150,000 — 150,000–200,000 — 200,000–480,000 — 480,000+

(2) Your family's specific annual income: *{_}* RMB

Demographic Information

Please complete the following basic information:

- Gender: Male — Female
- Age: _____ years

- Grade: Freshman — Sophomore — Junior — Senior — Graduate (Master/PhD)
- Hometown: Urban — Rural

Note: Figure translations are in progress. See original paper for figures.