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Ultimatum Games, Easy Money is Generosity? A Violation of Rational Homo Economicus

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Abstract

This study investigates fairness behaviour in the Ultimatum Game by examining proposer-to-responder offer ratios in same-gender dyads within the Indonesian cultural context. One hundred twelve undergraduate students (56 pairs) participated in a one-shot game involving a Rp 10,000 endowment. The research aims to determine whether same-gender pairs, specifically male–male and female–female, deviate from classical rationality models and align with normative fairness expectations. Female proposers offered higher and more consistent amounts than male proposers. The Wilcoxon Signed-Rank Test showed that offers did not significantly differ from an equal-split benchmark (50%) but were significantly higher than the commonly reported 40% average. Although the Mann–Whitney U test did not reach conventional significance (p = 0.053), a marginal trend suggested greater fairness in female–female pairs. These findings indicate that fairness decisions are shaped by gender dynamics and cultural norms emphasising social harmony and equality. The study contributes to behavioural economics by highlighting the role of gender and context in shaping deviations from self-interested behaviour. Limitations include social familiarity between participants and the use of externally provided money. Future research should explore stranger pairings and link proposer resources to personal or charitable outcomes to further test fairness motivations.

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1. Introduction

Understanding human economic decision-making has long been a primary focus of behavioural economics studies. Classical economic theories assume that individuals are rational and self-interested agents who aim to maximise their gain. In other word, self-interest individual or “homo economicus” will seek to maximise their utility in every economic choice. The Ultimatum game is one of the most notable behavioural economic games for understanding the puzzle. In this game, two players are asked to divide fixed amounts of money among themselves. One player will act as the proposer who suggests a division, while the other will act as the responder, deciding whether to accept or reject the offer. Contrary to the prediction of rational models, numerous studies consistently demonstrate that low offers are often rejected, and the typical accepted offer is the fair split.

Human decision-making under conditions of strategic interaction reveals that individuals are not merely self-interested agents, but are deeply influenced by social and moral considerations. Contrary to the classical economic model, which assumes that agents act rationally to maximise utility, experimental research consistently shows that people often deviate from this prediction, particularly when issues of fairness are at stake. These behavioural deviations are especially evident in bargaining scenarios involving money and power.

Recent studies have expanded our understanding of the Ultimatum Game by exploring factors influencing decision-making beyond traditional economic models. Proposers tend to be less generous when sharing losses than gains (Kierspel et al., 2024). However, when participants were informed about average behaviours (norm focusing), their offers became more consistent, highlighting the role of social norms in decision-making. Additionally, the individuals with higher levels of anger are more likely to reject unfair offers in the Ultimatum Game, suggesting that emotional states, particularly anger, can significantly influence economic decision-making (Gröndal et al., 2024).

Gender dynamics in the Ultimatum Game have been the subject of extensive research, particularly how proposers and responders behave in same-gender pairings. Female proposers offer more than male proposers, averaging 48% and 43% of the total pie (Hasan & Ejaz, 2022). However, it's important to note that not all studies find significant gender-based differences. For instance, research by Solnick (2001) indicated that while there are some variations, they are not always statistically significant, and other factors such as cultural context and individual differences can play substantial roles. Therefore, while gender can influence behaviours in the Ultimatum Game, it's one factor contributing to the complexity of human decision-making in economic interactions.

The Ultimatum Game can serve as a good starting point for behavioural economic games, providing insight into the mechanisms of bargaining and settlement. The primary theme of this research centred on human interaction and the achievement of equilibrium. Fairness preferences were not fixed in the context of the production function (Takeuchi et al., 2022). When high-ability individuals are unable to secure a substantial share of joint profits,

inefficient teams become difficult to dissolve, resulting in cooperation that yields little or no profit (Corgnet et al., 2011). However, when we consider the cultural and traditional factors, the Balinese community can maintain a high level of cooperation, despite the increasingly intense reliance on market mechanisms (Veszteg & Narhetali, 2010). The gap in understanding how mutual understanding and fairness in terms of economic activities remain crucial in the global community. In collectivist societies like Indonesia, where social harmony and egalitarianism are culturally emphasised, these dynamics may manifest uniquely in same-gender interactions, yet empirical evidence remains limited.

Despite the rich body of literature examining gender dynamics in the Ultimatum Game, limited research has focused on behavioural outcomes within same-gender pairs, particularly proposer-responder dyads consisting solely of male or female participants. While some studies suggest that female proposers may offer higher amounts on average, there remains a lack of systematic investigation into whether fairness behaviour significantly differs between male–male and female–female pairings. Furthermore, little is known about how the proposer-to-responder ratio in accepted offers compares to standard Ultimatum Game outcomes, and whether this ratio varies meaningfully by gender composition. This study addresses these gaps by investigating does the proposer-to-responder ratio in same-gender Ultimatum Game outcomes align with standard fairness patterns of 50%, does the proposer-to-responder ratio in same-gender Ultimatum Game outcomes align with the previous findings' 40% fairness pattern? and does female–female pairs exhibit a higher proposer-to-responder offer ratio than male pairs?

While numerous studies on the Ultimatum Game have explored fairness behaviour across different genders, cultures, and experimental settings, limited attention has been given to same-gender pairings within a specific cultural context. This study offers a novel contribution by isolating proposer–responder interactions in male–male and female–female dyads in Indonesia, a collectivist society where social harmony, equality, and gender roles are deeply embedded in daily interactions. By focusing exclusively on same-gender pairs, this research minimises cross-gender social dynamics and highlights how fairness norms operate when participants share both gender identity and cultural background. This approach not only fills a gap in the behavioural economics literature but also provides unique insights into how culturally grounded gender expectations shape economic decision-making, offering implications that may differ from findings in more individualistic societies.

2. Literature Review

The Ultimatum Game was first introduced by Güth et al. (1982) as a simple yet powerful experimental tool to explore human bargaining behaviour. In the original setup, one participant (the proposer) was given a fixed sum of money and asked to offer a portion to another participant (the responder), who could accept or reject the offer. If the responder rejected the offer, both parties received nothing. According to classical economic theory and the assumption of rational self-interest, the proposer should offer the smallest possible amount, and the responder should accept any non-zero offer. However, the experiment

revealed a surprising deviation from this prediction: proposers often offered around 40–50% of the total amount, and responders frequently rejected offers perceived as unfair, particularly those below 20% (Camerer, 2011). This groundbreaking result challenged the "homo economicus" model and laid the foundation for a new wave of behavioural economic research focused on fairness, equity, and social norms in financial decision-making.

Several researchers proposed various perspectives to explain this phenomenon. It can connect the concept of fairness and regret, which means the responders will reject the offer if they feel less regret in the transaction (Aleksanyan et al., 2025). The expectation of fair division can be the key to predicting the responder's decision (Heilman et al., 2025). Perceived interdependence on fairness behaviour can affect the responder's decisions (Declerck et al., 2009). It was found that proposers' offers did not significantly differ regarding whether they were matched with a specific partner. However, responders who believed they were not yet matched rejected unfair offers more often and had higher minimum acceptable offers. Offers in the Ultimatum Game decrease as the amount of money increases, a phenomenon known as the magnitude effect (Bechler et al., 2015). Proposers tend to offer less as social distance increases (e.g., offering to a stranger vs. a friend). While women offered more than men in the Dictator Game, no significant gender differences were observed in the Ultimatum Game. However, the latest research has not proven that the delay and social distances are statistically significant (Osiński et al., 2021).

Fairness perceptions in the Ultimatum Game are not universal but are significantly influenced by cultural norms and social values. A meta-analysis of 75 experimental results from 25 countries found that while the average offer hovers around 40% of the total amount, there are substantial differences across cultures, particularly in responder behaviour (Oosterbeek et al., 2004). These differences are not fully explained by economic factors or experimental design but are partly attributed to cultural traits. Supporting this, Kierspel et al. (2024) demonstrated that when social norms were made salient through "average behaviour" cues, proposers' decisions in both gain and loss domains became more consistent, indicating the normative anchoring effect of shared expectations. Altruistic behaviour, which underpins fairness, is closely tied to perceived social distance; individuals are more generous toward those they feel socially or emotionally closer to (Rachlin & Jones, 2008). In collectivist cultures like Indonesia, fairness tends to be framed around group harmony and equality rather than strict proportionality. (Sudirman, 2022) emphasised that values like conformity, universalism, and social harmony shape justice perceptions in such societies, making equal or need-based distribution appear fairer than meritocratic or proportional models.

In collectivist societies such as Indonesia, fairness decisions in bargaining games are often shaped by an emphasis on group cohesion, conflict avoidance, and the maintenance of long-term relationships (Sudirman, 2022). These cultural traits can lead to higher offers and lower rejection thresholds compared to more individualistic settings, as individuals are motivated to preserve harmony even at a personal cost. Recent cross-cultural findings suggest that gendered social norms interact with collectivist values to produce distinctive behavioural patterns: women in collectivist cultures may display stronger egalitarian preferences, driven by expectations of nurturing and communal responsibility, while men may moderate

competitive instincts to align with social harmony norms (Hasan & Ejaz, 2022; Kierspel et al., 2024). Moreover, studies from other non-Western contexts, such as Japan and China, have shown that collectivist orientations amplify the influence of relational closeness and shared identity on proposer generosity and responder acceptance rates (Aleksanyan et al., 2025; Takeuchi et al., 2022). By situating same-gender interactions within Indonesia's collectivist framework, the present study provides an opportunity to observe how cultural prescriptions about fairness and gender roles jointly shape strategic decision-making in the Ultimatum Game. These findings suggest that fairness in economic decision-making is a culturally embedded construct, shaped by social norms, perceived closeness, and dominant societal values, especially in non-Western cultures.

While cultural norms have been shown to shape fairness preferences in bargaining contexts, there remains limited understanding of how gendered pairings within a cultural setting influence fairness behaviour. One of the earliest Ultimatum Game studies conducted in Indonesia found that even with high stakes, equivalent to three times participants' monthly expenditures, proposers continued to offer approximately 40–50% of the total amount, indicating that fairness norms persist despite strong economic incentives (Cameron, 1999). However, the study did not distinguish behaviour based on gender pairing. In a more recent large-scale cross-cultural experiment, Raihani & Bshary (2012) found that while the dictator game varied by culture, subtle cues such as eye images did not significantly alter behaviour under conditions of true anonymity, further emphasising that deeper social norms, rather than superficial cues, drive fairness preferences. Despite this growing body of evidence, few studies have systematically compared behavioural patterns between same-gender pairs, particularly in collectivist societies like Indonesia, where gender roles and social expectations are culturally salient. This study addresses this gap by examining whether female–female pairs exhibit higher proposer-to-responder fairness ratios than male–male pairs in an Ultimatum Game setting. By integrating insights from behavioural economics and cultural psychology, the present research contributes a novel perspective to the literature on fairness by exploring how gendered dynamics interact with social norms in shaping economic decision-making.

3. Research Methods

This study applied a quantitative method to test the hypothesis. It involved 112 participants (56 pairs) recruited from Pradita University, Tangerang. It consists exclusively of same-gender pairings: 22 male–male pairs and 34 female–female pairs. Participants were undergraduate students aged 18 - 25, and participation was voluntary. Informed consent was obtained before the experiment. The pair matching was assigned randomly to ensure there was no social bias in the game interaction. The experiment was conducted in the class, where all the students knew their colleagues.

The experiment employed a standard Ultimatum Game setup and was self-funded. In each pair, one participant was randomly assigned the proposer role, and the other the responder. The proposer was given a fixed endowment of Rp 10,000 and asked to decide how much to offer the responder. The responder could either accept or reject the offer. If the offer was accepted, both players received the agreed split. If rejected, both players received nothing. It

is a one-shot game to eliminate reputational concerns and repeated game effects. No deception was involved, and participants were paid based on the game's outcome to ensure real monetary incentives. Descriptive statistics were used to summarise proposer offer ratios and responder acceptance rates. The average proposer-to-responder offer ratio was calculated for both male–male and female–female groups.

To test the research questions: RQ1 & RQ2: One-sample t-tests were conducted to compare mean proposer offers against benchmark fairness values (e.g., 50% and 40%). RQ3: An independent samples t-test was used to examine whether there was a significant difference in proposer-to-responder ratios between male–male and female–female pairs. Non-parametric tests were employed if the data did not meet the normality assumption after transformation. The Wilcoxon Signed-Rank Test was used to compare median offer ratios to benchmark fairness values (0.5 and 0.4). At the same time, the Mann–Whitney U Test assessed differences in proposer offers between male–male and female–female dyads. All statistical analyses were conducted using SPSS with a significance threshold set at $p < 0.05$.

4. Results and Discussion

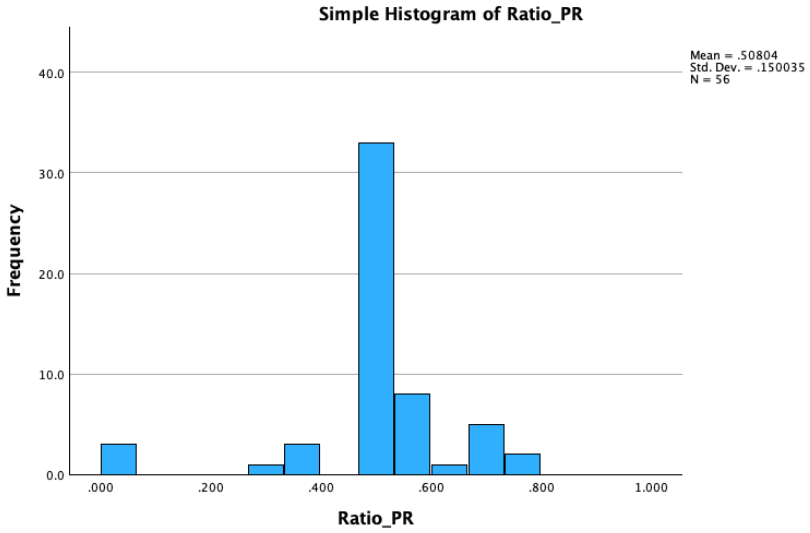
The descriptive statistics reveal notable differences in the proposer and responder shares across same-gender pairings in the Ultimatum Game. Among the male–male pairs, proposers offered an average of Rp 4,852, with a median of Rp 5,000, and a standard deviation of Rp 1,377.54. This indicates that, on average, male proposers tended to offer slightly less than half of the total endowment (Rp 10,000), though the median suggests a clustering around the equal-split norm. Meanwhile, male responders received an average of Rp 5,368, with the same median (Rp 5,000), and a slightly higher standard deviation (Rp 1,696.32), reflecting more variability in accepted outcomes, likely due to occasional rejections or uneven splits.

In contrast, female–female pairs demonstrated slightly more equitable patterns in proposer behaviour. Female proposers offered an average of Rp 5,533, more than half of the total stake, with a median of Rp 5,000 and a lower standard deviation (Rp 907.84) than their male counterparts. This suggests that female proposers were more generous on average and more consistent in their decisions. On the other hand, female responders received an average of Rp 4,629, with the same median (Rp 5,000) and a lower spread (Rp 1,303.73) compared to male responders. These descriptive results suggest a tendency for greater fairness and lower variability among female–female dyads, aligning with prior findings that associate women with more altruistic or equitable behaviour in economic games.

Table 1. Descriptive Result of the Proposer and Responder Money

Players	Pair of Men			Pair of Women		
	Mean	**Median**	**Std Dev**	**Mean**	**Median**	**Std Dev**
Proposer Money	4,852	5,000	1,377.54	5,533	5,000	907.84
Responder Money	5,368	5,000	1,696.32	4,629	5,000	1,303.73

Source: Author's work



Source: Author's work (SPSS)

Figure 1. Histogram of Proposer / Responder Ratio

Table 2. Normality Distribution Test Result

Statistic	Result
Kolmogorov-Smirnov Test Stat	0.354
Sig (2-tailed test)	< 0.001

Source: Author's work

The Kolmogorov–Smirnov test results indicated that the distribution of proposer-to-responder ratios significantly deviated from normality ($D = 0.354$, $p < 0.001$), suggesting that the assumption of normality was violated. This finding was further supported by the histogram (Figure 1), which displayed a non-symmetric, slightly skewed distribution around the median value of 0.5. The clustering of values near the central point and some dispersion at the lower and upper tails reflect behavioural patterns consistent with fairness norms but marked by occasional strategic deviations. Given this non-normal distribution, subsequent analyses employed non-parametric statistical tests to ensure the robustness of inferential conclusions.

Table 3. Wilcoxon Signed Test Result

Statistic	Ratio of 0.5	Ratio of 0.4
Wilcoxon Signed Test	-1.121	-4.988
Sig (2-tailed test)	0.262	< 0.01

Source: Author's work

A Wilcoxon Signed-Rank Test was conducted against two theoretical benchmarks: 0.5 (equal split) and 0.4 (the commonly observed empirical average in Ultimatum Games) to test whether proposer-to-responder offer ratios align with standard fairness expectations. The test result against the 0.5 ratio yielded a non-significant result ($Z = -1.121$, $p = 0.262$), indicating

that the median offer ratio did not significantly differ from an equal division of the endowment. This suggests that, on average, participants in same-gender dyads tended to behave in line with normative fairness expectations, offering approximately half of the total stake. The clustering around the 0.5 median supports the notion that fairness, rather than strict self-interest, guided many of the proposers' decisions, regardless of gender pairing.

However, a significant deviation emerged when the offer ratio was tested against the 0.4 benchmark ($Z = -4.988$, $p < 0.01$). This result suggests that the median offer was significantly higher than 40%, the commonly reported average in past Ultimatum Game studies (Camerer, 2011; Oosterbeek et al., 2004). This may reflect a contextual or cultural tendency toward stronger fairness norms among Indonesian participants, or possibly a social desirability effect due to the face-to-face or one-shot structure of the game. The significant difference from the 40% benchmark but not from the 50% benchmark provides early support for the notion that participants were influenced more by ideal fairness norms than by historically observed empirical averages, laying the groundwork for further analysis by gender dyad in the following section.

Table 4. Mann-Whitney Test Result

Statistic	Result
Mann-Whitney U	270.00
Z Score	-1.936
P-Value	0.053

Source: Author's work

A Mann-Whitney U test was conducted to compare proposer-to-responder ratios across the two groups to examine whether there was a significant difference in fairness behaviour between male–male and female–female pairs. The result approached statistical significance, with $U = 270.00$, $Z = -1.936$, and $p = 0.053$. While this result narrowly exceeds the conventional alpha threshold of 0.05, it still suggests a marginal trend toward higher fairness ratios among female–female pairs compared to male–male pairs. This finding aligns with previous research indicating that women may exhibit more altruistic or egalitarian behaviour in bargaining contexts (Hasan & Ejaz, 2022). However, the effect does not reach conventional statistical significance in this sample, which should be interpreted with caution. It represents a trend where female pairs tend to be more generous than male pairs, although there is not strong empirical evidence.

The near-significant result invites cautious interpretation. It may imply that gendered social norms influence proposers' decisions, particularly in a collectivist culture like Indonesia, where expectations of care and harmony may be more strongly associated with female roles. However, the p-value above 0.05 also highlights the need for larger sample sizes or additional replications to validate this trend. Despite the statistical limitations, the directionality of the result strengthens the case for further investigation into gendered fairness behaviour, especially in culturally specific contexts where relational expectations may modulate economic choices.

Discussion

This study examined fairness behaviour in same-gender Ultimatum Game pairings, specifically comparing proposer-to-responder offer ratios between male–male and female–female dyads within the Indonesian cultural context. The descriptive analysis revealed that female proposers offered, on average, a higher proportion of the endowment than their male counterparts, with less variability in decision-making. Although the Mann–Whitney U test did not reach conventional significance ($p = 0.053$), the result suggested a marginal trend toward higher fairness in female–female dyads, consistent with prior findings that associate women with more altruistic or equitable preferences (Hasan & Ejaz, 2022). These findings support that gender norms and social roles may subtly shape economic decision-making, even in incentivised, anonymous games.

Moreover, the results from the Wilcoxon Signed-Rank Test demonstrated that proposer offers did not significantly differ from the 50% fairness benchmark but were considerably higher than the 40% average typically reported in global Ultimatum Game studies (Oosterbeek et al., 2004). This suggests that participants, regardless of gender, may have internalised ideal fairness norms, particularly within the collectivist cultural context of Indonesia, where equality and group harmony are highly valued (Sudirman, 2022). The clustering of offers around the equal split supports this interpretation, as does the rejection of the 40% benchmark, indicating that proposers in this study were influenced more by normative ideals than by strategic self-interest or historical empirical trends.

The tendency for female–female pairs to exhibit slightly higher fairness ratios may be explained by the intersection of gendered social expectations and the collectivist values prevalent in Indonesia. In many Indonesian cultural settings, women are often socialised to prioritise empathy, relational harmony, and communal welfare, which can translate into more equitable divisions in bargaining situations. This aligns with previous findings that women in collectivist contexts tend to frame fairness in relational rather than purely transactional terms, leading them to avoid outcomes that could be perceived as exploitative or disharmonious. Furthermore, shared gender identity in same-gender female pairs may reduce perceived competition and foster mutual identification, further encouraging equitable offers. However, these interpretations must be considered in light of the study's design limitations. The face-to-face format and the pre-existing familiarity between participants could have amplified normative pressures to act generously, especially among women, who may be more sensitive to reputational concerns in communal environments. Additionally, because the monetary endowment did not come from participants' own resources, the psychological cost of fairness was likely reduced, which may have magnified these gendered patterns.

This research contributes to the behavioural economics literature by introducing a culturally grounded, gender-sensitive perspective to fairness behaviour in the Ultimatum Game. Unlike most studies, which focus on mixed-gender or anonymous pairings, this study isolates the role of same-gender social expectations, an underexplored but theoretically rich area. It also reinforces the importance of contextual factors, such as culture, gender identity, and perceived social roles, in shaping fairness decisions that deviate from the rational agent model. While the results do not establish definitive gender effects, they lay the foundation

for future research on how fairness is interpreted and enacted through gendered social lenses, particularly in non-Western or collectivist societies.

The spirit of collectivism is a complex phenomenon, and behavioural economic games can be a useful tool for unveiling the fairness and equilibrium processes. Achieving strong cooperation can be very profitable in the context of the production function (Corgnet et al., 2011; Takeuchi et al., 2022). Within the bound culture, the Balinese have shown an example of beneficial coordination to provide public goods for individuals (Veszteg & Narhetali, 2010). The result is still in line with most research papers on the Ultimatum Game, as there are no proposers who are completely selfishly seeking profit for themselves. From a good point of view, altruistic factors may make the proposer feel uncomfortable about making a profit for themselves. From the opposite view, the proposers might feel afraid if the responders reject their offer, which eventually leads them to gain nothing. It can be further explored by conducting more Ultimatum Games with more rounds, stakes, or endowment manipulation.

These findings can serve as a starting point for exploring another behavioural economics game that may be useful in understanding human decision-making. Several ideas are worth investigating, such as whether the framing effect causes different outcomes in the game. Framing effect can be a handy tool to combat behavioural biases (Kiky et al., 2024). These findings also underscore the importance of carefully considering the role of heuristics and social norms in fairness-based experiments. As shown by Guillen & Veszteg (2021), what appears to be a rational strategy or truthful behaviour may reflect confusion or reliance on default cues rather than deliberate decision-making. Similarly, in our Ultimatum Game setting, participants' adherence to fairness norms may stem more from ingrained social expectations than from calculated utility maximisation.

5. Conclusion and Suggestion

This study explored fairness behaviour in the Ultimatum Game by analysing proposer-to-responder offer ratios within same-gender dyads, specifically comparing male—male and female—female pairs in an Indonesian context. The results show that offers generally clustered around the equal-split point (50%), indicating that fairness norms play a significant role in guiding proposer behaviour. Notably, offers were significantly higher than the 40% benchmark often reported in global studies, suggesting that participants in this study adhered more closely to ideal fairness norms than to typical empirical averages.

Although the Mann–Whitney U test result did not reach statistical significance, it revealed a marginal trend suggesting that female–female pairs exhibited slightly higher fairness ratios than male–male pairs. This trend supports previous research linking female participants with more egalitarian tendencies and highlights the subtle influence of gender roles on economic decision-making. However, the limited sample size warrants cautious interpretation and suggests the need for further replication to confirm this pattern.

The findings contribute to behavioural economic theory by showing that fairness decisions are contextually shaped by gender composition and cultural values. In collectivist societies such as Indonesia, social norms emphasising harmony and equality may encourage more generous offers than predicted by traditional economic models. Future research should consider expanding to mixed-gender dyads, increasing the sample size, and incorporating qualitative measures of norm perception and self-concept to deepen understanding of fairness motivations in economic games.

From a policy perspective, the findings of this study suggest that initiatives aimed at fostering fairness and cooperation in economic interactions could benefit from integrating cultural and gender-sensitive approaches. In educational settings, incorporating behavioural economics modules that highlight fairness norms into entrepreneurship and management curricula could cultivate equitable decision-making skills among future leaders. For policymakers, recognising that collectivist values and gender dynamics can influence bargaining behaviour may inform the design of negotiation training, community development programs, and conflict resolution frameworks that leverage these cultural strengths. Future research could build on these findings by testing the Ultimatum Game in mixed-gender and cross-cultural contexts, incorporating higher stakes or real-resource contributions to assess the robustness of fairness norms under increased economic pressure. Additionally, longitudinal studies could explore whether repeated exposure to fairness-based games fosters lasting behavioural change, offering insights for policy interventions in education, workplace ethics, and social governance.

Research Limitations and Future Research

One key limitation of this study lies in the social familiarity between participants. Since the proposer and responder in each pair were known to one another, often as classmates or peers, this familiarity may have influenced their decisions, particularly through social pressure, desire to maintain harmony, or reputation concerns. The face-to-face nature of the interaction, despite being a one-shot game, could have amplified these effects, potentially leading participants to behave more generously than they would in anonymous settings. As a result, the fairness ratios observed may not fully reflect behaviour in more impersonal or competitive environments.

Additionally, the monetary endowment used in the game was externally provided by the researcher and did not originate from the participants. This may have reduced the psychological cost of generosity, as participants were essentially dividing "free money." Future research could address this by modifying the experimental design to simulate real financial trade-offs, such as linking the endowment to participants' resources or integrating a charitable donation option. Another promising direction is to conduct the Ultimatum Game between stranger pairs or in virtual/anonymous environments to eliminate the influence of existing social ties. These adjustments would clarify how fairness behaviour operates under varying degrees of relational closeness and resource ownership.

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