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Perceived Values and Peer Influence in Mobile Gacha Game Impulse Purchases in Mobile Game (Gacha Context)

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Abstract

Background: Gacha-based mobile games monetize randomized virtual rewards, creating opportunities for unplanned in-app spending whose correlates require closer examination.
Objective: This study examines the associations of hedonic, utilitarian, and economic value and peer influence with self-reported in-app impulse purchases among gacha-game players.
Methods: A quantitative online survey recruited 100 mobile gamers reporting previous spontaneous gacha purchases through non-probability purposive sampling in gaming communities. Four predictors were assessed using Likert-type questionnaire items and multiple linear regression in SPSS 22.
Results: All four predictors had positive coefficients: hedonic value (standardized $\beta = 0.300$, $p < 0.001$), utilitarian value ($\beta = 0.165$, $p = 0.046$), economic value ($\beta = 0.261$, $p = 0.003$), and peer influence ($\beta = 0.262$, $p = 0.004$). The model explained 59.1% of the sample variation ($R^2 = 0.591$) and was jointly significant ($p < 0.001$).
Conclusion: Perceived values and peer influence are associated with reported impulse purchases in this selected sample. Cross-sectional, purposive sampling does not establish causality or permit population-wide generalization.

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INTRODUCTION

As a highly popular form of entertainment, mobile game has a very high potential to be profitable game segment. The mobile games market is booming, and it has been reported from Statista that in 2021 alone, there were 2.7 billion unique mobile game users worldwide, generating a whopping $103.5 billion in revenue (Lynkova, 2022). Furthermore, a recent survey from Statista.com predicts that the average annual revenue per user (ARPU) in the mobile games segment will reach $87.32 in 2022 (Mobile Games - Worldwide, 2022). This segment of the game market has also seen impressive year-on-year revenue growth, reaching 5.1% (Wijman, 2022).

Indonesia's mobile gaming market provides an important context for examining in-app purchasing, but published market estimates are not directly comparable when their definitions, platforms, and forecasting methods differ. Reogma (2022) reported an estimated market value of US$853 million for 2021 and projected US$2.188 billion by 2025, whereas Statista.com (2022) provided a separate estimate of US$630 million for the mobile games segment in 2022 and a projected US$900 million for 2027. These figures represent distinct source estimates rather than a single consistent market time series. Therefore, the present study does not use differences between them as evidence of measured year-on-year growth.

Within this market, gacha mechanisms allow players to exchange money for a chance to receive a randomized virtual reward. An in-app purchase may be planned or spontaneous, and the presence of randomized rewards does not establish that most game revenue originates from impulsive transactions. Nevertheless, uncertain rewards and time-sensitive purchase opportunities provide a relevant setting in which to examine unplanned spending. The present study therefore focuses on associations with self-reported impulse purchasing rather than making unsupported claims about its share of industry revenue.

In the gacha context, the decision to purchase can involve overlapping evaluations of enjoyment, functional usefulness, perceived monetary worth, and the social environment. Hedonic value concerns the pleasure associated with play and obtaining virtual rewards; utilitarian value concerns perceived practical usefulness; economic value concerns a player's assessment of value relative to expenditure; and peer influence concerns the perceived role of other players or gaming communities. These mechanisms are conceptually distinct, even though respondents may experience them together. Because the available survey measures perceptions and self-reported purchases at one point in time, the proposed relationships are examined as statistical associations rather than established causal pathways. Randomized outcomes are a contextual feature of gacha games, not an experimental manipulation in this study.

Several streams of research have examined related aspects of this phenomenon. From a perceived-value perspective, prior studies have shown that hedonic and utilitarian value perceptions influence purchase intention toward digital and virtual goods Cheng and Lin (2017) and Hamari (2015), while other work has linked perceived value to loyalty and in-app purchase intention in mobile games Hsiao and Chen (2016) and to purchase decisions for digital items in online communities (Kim et al., 2011). From a social perspective, peer influence has been found to affect continued engagement and purchase-related behavior in online games Ghazali et al., (2019) and to interact with hedonic value in shaping gamer satisfaction toward virtual item purchases, as well as to jointly affect app stickiness and in-app purchase intention together with perceived value (Hsu & Lin, 2016). More specific to gacha mechanics, Koeder et al. (2018) applied a Behavioral Economics lens to examine the game-of-chance elements in Japanese free-to-play mobile games, while Dreier et al. (2017) and Lynkova (2022) highlighted the gambling-like structure of loot box systems and their potential to encourage disproportionate spending among certain player segments.

Although this body of research provides useful theoretical grounding, at least three gaps remain. First, most perceived-value studies have examined purchase intention in general online games or digital goods contexts, rather than focusing specifically on impulsive, unplanned purchases within gacha-based mobile games. Second, perceived value and peer influence have largely been studied in isolation or as a mediated pathway (e.g., Chow, 2021), leaving their combined and simultaneous effect on in-app impulse purchase empirically underexplored. Third, empirical evidence from the Indonesian mobile gaming context remains scarce, despite Indonesia being the largest mobile games market in Southeast Asia and a rapidly growing market for gacha-based titles.

This study addresses these gaps by simultaneously examining three dimensions of perceived value, namely hedonic value, utilitarian value, and economic value, together with peer influence as parallel predictors of in-app impulse purchase specifically within the gacha context. The novelty of this research lies in its integration of value-based and social-influence perspectives into a single empirical model focused on impulsive rather than planned purchase behavior, tested using primary data collected from Indonesian mobile gamers, a population that has received limited empirical attention despite its substantial contribution to the regional mobile games market.

This combined four-predictor approach complements the Indonesian study by Angelia et al. (2021) on Genshin Impact gacha consumption by distinguishing hedonic, utilitarian, and economic values while evaluating peer influence in the same regression model. The contribution is a comparative assessment of their adjusted associations with self-reported impulse purchases rather than proof of specific psychological mechanisms. Such evidence may inform consumer education and the evaluation of game monetization practices, while recognizing that the

purposive sample does not support population-wide estimates.

Based on the research gap, this study examines (1) the associations of hedonic, utilitarian, and economic value with in-app impulse purchase; (2) the association of peer influence with in-app impulse purchase; and (3) the joint explanatory performance of the four predictors among the surveyed gacha-game purchasers. The analysis is intended to clarify the relative standardized coefficients within this particular sample, not to infer causal effects or generalize the observed estimates to all Indonesian mobile gamers.

METHOD

This study employed a cross-sectional quantitative online questionnaire and non-probability purposive sampling. The sample comprised 100 respondents recruited from mobile gaming communities who reported having made unplanned and spontaneous purchases in mobile games featuring gacha mechanisms. The most frequently reported games were Genshin Impact (17%), Mobile Legends (17%), Ragnarok (6%), PUBG Mobile (4%), and other games (56%), including Free Fire, Final Fantasy, Nikke, and Honkai. The source material does not report the data collection dates, geographic distribution, named recruitment communities, or a formal sample-size justification; these details cannot be reconstructed from the available aggregate data. Consequently, results describe the surveyed respondents rather than a representative sample of all Indonesian gamers.

Respondents are 12% Female, 82% Male, and 6% Others. Respondents' other characteristics are as follows:

Table 1
Characteristic of Respondents

Age	%	Monthly Income (in Rp. 000)	%
<17	0	<1500	19
17-22	13	1500-5000	29
23-27	26	5000-10000	27
28-33	28	10000-15000	11
>33	35	>15000	14
TOTAL	100	TOTAL	100
Ave Spend (in Rp000)*)	%	Platform OS	
<500	65	Android	71
500-1000	10	IOS	15
1000-5000	6	Emulator	11
5000-10000	17	Other	3
10000-50000	2		
TOTAL	100	TOTAL	100

*) In stated Mobile Game in Recent Year
Sources: Primary data

The questionnaire contained 47 items adapted from prior literature: hedonic value 11 items; Van der Heijden (2004), utilitarian value 7 items; Chuang (2020), economic value 11 items; Cheng and Lin (2017), peer influence 9 items; Ghazali et al. (2019), and in-app impulse purchase (9 items, conceptually informed by Stern's typology). Responses were obtained through Likert-type measures and analyzed using multiple linear regression in SPSS 22. The original questionnaire, item wording, Likert response endpoints, translation or adaptation records, and score-construction rules were not supplied in the manuscript. Thus, item-level replication and confirmation of the distinction between spontaneous and planned impulse buying are not possible from the reported material; planned purchasing should not be treated as equivalent to the study's spontaneous-purchase screening criterion.

The available description does not provide sufficient information to determine whether transaction verification, duplicate-response prevention, missing-questionnaire handling, informed consent, and personal-data protection measures were implemented. These aspects of data integrity and research ethics therefore remain unclear. In addition, restricting the sample to

respondents who reported having made spontaneous purchases may introduce selection bias and limit the generalizability of the findings to the broader population of mobile game players.

RESULTS AND DISCUSSION

Validity and Reliability

The original analysis reports that item correlations exceeded a threshold of 0.30 and that all five constructs met its item-validity criterion. However, the manuscript does not provide the item-by-item coefficients, exact correlation method, or evidence of discriminant validity; therefore, the validity of each individual item and the empirical distinctness of the five constructs cannot be independently verified here. The available Cronbach's alpha coefficients in Table 2 range from 0.708 to 0.909 and support internal-consistency reliability under the study's stated 0.70 threshold. Reliability evidence alone does not establish construct validity.

Table 2
Reliability

Constructs	No of Items	Cronbach's Alpha	Conclusions
Hedonic Value	11	0.909	Reliable
Utilitarian Value	7	0.708	Reliable
Economic Value	11	0.771	Reliable
Peer Influence	9	0.858	Reliable
In-App Impulse Purchase	9	0.855	Reliable

Hypotheses Testing

Model-reporting note: The reported sample size (n = 100) and number of predictors (k = 4) imply regression df = 4 and residual df = 95. Adjusted $R^2 \approx 0.574$ is calculated from the rounded reported R^2. Because residual diagnostics, ANOVA sums of squares, and item-level datasets are not available, these cannot be presented as independently verified outputs from SPSS.

Classical assumptions for ordinary least squares regression concern the model residuals and the relationship among predictors. Residual-normality diagnostics, tolerance or variance inflation factor (VIF) estimates, and heteroscedasticity results are not numerically supplied in the available manuscript. Accordingly, compliance with these assumptions cannot be confirmed from the narrative alone. Tolerance above 0.10 and VIF below 10, if observed, would suggest that severe multicollinearity was not detected using those thresholds; they would not imply zero correlations among predictors. Inferential conclusions should therefore be interpreted with this reporting limitation. The result of multilinear regression analysis can be seen in table 3.

Table 3
Multiple Regression Analysis Result

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.723	3.262		-1.448	.151
	X1 Hedonic value	.283	.075	.300	3.754	<0.001
	X2 Utilitarian value	.256	.127	.165	2.021	.046
	X3 Economic value	.258	.086	.261	3.000	.003
	X4 Peer Influence simultaneously affect	.254	.086	.262	2.971	.004

a. Dependent Variable: Y Gamers in-app impulse purchase
Source: SPSS Results

Linear regression model:

Y= -4,723 + 0,283 X1 + 0,256 X2 + 0,258 X3 + 0,254 X4

The regression coefficients in Table 3 are positive for hedonic value (B = 0.283,

standardized β = 0.300, t = 3.754, p < 0.001), utilitarian value (B = 0.256, β = 0.165, t = 2.021, p = 0.046), economic value (B = 0.258, β = 0.261, t = 3.000, p = 0.003), and peer influence (B = 0.254, β = 0.262, t = 2.971, p = 0.004). All four predictors exhibit positive conditional associations with self-reported in-app impulse purchases in the sample. The reported overall model test is F = 34.263 (p < 0.001), supporting joint model significance; these findings do not establish causal influence.

The reported multiple correlation is R = 0.769, with R^2 = 0.591. Thus, the four-predictor regression model explains 59.1% of the observed variation in the in-app impulse-purchase score in this sample, leaving 40.9% unexplained by this model. With n = 100 respondents and four predictors, the model and residual degrees of freedom are 4 and 95, respectively, and the adjusted R^2 calculated from the reported R^2 is approximately 0.574. The source does not report the underlying sums of squares or confidence intervals, which prevents reconstruction of a complete source-verified ANOVA table and precise coefficient uncertainty intervals.
Summary of Hypotheses testing are as follows:

Table 4
Hypotheses Results Summary

Hypotheses	t/F value	Sig (p)	t/Ftable	α	Remarks
H0 : β1 = 0	3,754	<0.001	1,985	5%	H1 Accepted
H0 : β2= 0	2,021	0,046	1,985	5%	H2 Accepted
H0 : β3 = 0	3,000	0,003	1,985	5%	H3 Accepted
H0 : β4 = 0	2,971	0,004	1,985	5%	H4 Accepted
H5	34,263	<0.001	2.467	5%	H5 Accepted

Source: SPSS Results

Discussion

The findings indicate positive, statistically significant conditional associations of hedonic value, utilitarian value, economic value, and peer influence with reported in-app impulse purchases within this purposively selected gacha-player sample (R^2 = 0.591). Because the design is observational and cross-sectional, the regression cannot determine temporal order or establish that the predictors caused purchases. The unexplained 40.9% of variation suggests that additional measured or unmeasured influences may matter; their role remains a question for subsequent research rather than a result of the present analysis.

Hedonic value has the numerically largest standardized regression coefficient (β = 0.300) among the four reported predictors. This is consistent with the relevance of enjoyment to digital-goods consumption discussed by Hamari (2015) and with the hedonic-value perspective considered by Chow (2021). However, no pairwise tests of differences between standardized coefficients are reported, so this numerical ordering should not be interpreted as evidence of a statistically stronger association. The possibility that enjoyment of randomized draws contributes to purchases remains interpretive because that particular mechanism was not independently evaluated.

Economic value (β = 0.261) and utilitarian value (β = 0.165) are both positively associated with impulse purchasing in the reported model. The coefficients suggest a larger numerical estimate for economic than utilitarian value, but do not establish a statistically significant difference between the two estimates. Perceived monetary worth and perceived functional usefulness remain conceptually distinct; the study did not test whether reward probabilities or event offers account for their association with purchasing. Such proposed mechanisms should be treated as hypotheses rather than direct empirical findings (Cheng & Lin, 2017).

Peer influence is also positively associated with in-app impulse purchase (β = 0.262, p = 0.004), consistent with prior studies relating social influences to mobile app purchases and gaming engagement (Ghazali et al., 2019; Hsu & Lin, 2016). Interactions with other players may provide one possible interpretation, but this analysis did not separately test whether displaying rare items, discussing odds, or receiving recommendations mediates the association. It therefore provides evidence of a statistical relationship, not confirmation of those specific social processes.

Gacha rewards are randomized, and previous literature has discussed the similarities between loot boxes and gambling-like mechanics (Nielsen & Grabarczyk, 2019; Xiao et al., 2022).

This context motivates attention to impulse buying, but neither the present questionnaire results nor the regression identifies the causal effect of reward probabilities or establishes a particular regulatory outcome. Respondent spending is described in categories in Table 1; it does not establish the distribution of industry revenue or the prevalence of problematic gaming.

Taken together, these results extend the value-based impulse buying framework into the specific context of mobile gacha games by demonstrating that hedonic, utilitarian, and economic value perceptions operate alongside, rather than independently of, peer influence in shaping impulsive spending behavior. The findings suggest that both individual value perceptions and the social gaming environment should be considered jointly when explaining or addressing in-app impulse purchase behavior, a perspective that carries direct implications for game design, consumer protection, and future research, as discussed in the following sections.

CONCLUSION

In the sample of 100 respondents who reported unplanned gacha purchases, hedonic value ($\beta = 0.300$, $p < 0.001$), utilitarian value ($\beta = 0.165$, $p = 0.046$), economic value ($\beta = 0.261$, $p = 0.003$), and peer influence ($\beta = 0.262$, $p = 0.004$) each had a positive conditional association with self-reported in-app impulse purchase. The regression model was jointly significant (reported $F = 34.263$, $p < 0.001$) and explained 59.1% of the sample variation ($R^2 = 0.591$). Hedonic value had the largest numerical standardized coefficient, although no statistical comparison of coefficient differences was conducted. The findings describe perceived economic value, not the effect of personal income or financial well-being.

The study contributes by jointly examining three perceived-value dimensions and peer influence in an Indonesian gacha-game purchasing context. Its cross-sectional design, purposive selection of respondents who had already purchased impulsively, limited sample size, and incomplete reporting of the item-level instrument and regression diagnostics restrict causal interpretation, reproducibility, and generalizability. Future studies should use more diverse and clearly documented samples, compare different game genres, follow players longitudinally, verify purchasing behavior where ethically feasible, and include potential additional predictors such as self-control and exposure to promotions. These extensions could test the specific mechanisms suggested by the present associations.

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AUTHOR CONTRIBUTION STATEMENT

Nora Andira Brabo is the sole author of this article and was responsible for all aspects of the study, including conceptualization, research design, questionnaire development, data collection, statistical analysis, and writing of the original draft as well as the review and editing of the final manuscript.

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