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The Relationship Between Conspicuous Signals and Players' Friendly Experience in the MOBA Mobile Game Honor of Kings: The Mediating Roles of Perceived Economic Status and Perceived Competence Status, and the Moderating Role of Cognitive Level

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Abstract: Using the MOBA mobile game Honor of Kings as the research context, this study examines the formation mechanism of players' friendly experience by investigating how two types of conspicuous signals, namely virtual assets and game skill, shape players' interactive experience during matches. It further explores the roles played by perceived economic status, perceived competence status, and cognitive level in this process. The findings show that players' friendly experience in game interactions is determined less by whether they are rational or mature, and more by conspicuous signals and the status judgments triggered by such signals. Compared with virtual assets, game skill is more effective in consistently eliciting teammates' respect, trust, and cooperation. Although virtual assets can also improve the quality of interaction, they primarily evoke associations with economic standing rather than recognition of competence. The results also indicate that players clearly distinguish between high spending and high ability. Possessing rare skins or premium status markers does not necessarily lead others to assume that the player is a stronger teammate. At the same time, cognitive level does not significantly alter the overall mechanism. However, players with a higher cognitive level are less likely to form status judgments about others solely on the basis of surface cues. This study reveals the deeper logic underlying friendly interaction in MOBA games, showing that such interaction is essentially a process of social evaluation triggered by conspicuous signals and shaped through status categorisation. The study contributes to a deeper understanding of social behaviour in digital games from the perspective of positive interaction, and it also offers theoretical implications for player behaviour optimisation and platform governance design.

Keywords: Honor of Kings; MOBA Games; Conspicuous Signals; Friendly Experience; Social Status Perception; Cognitive Level

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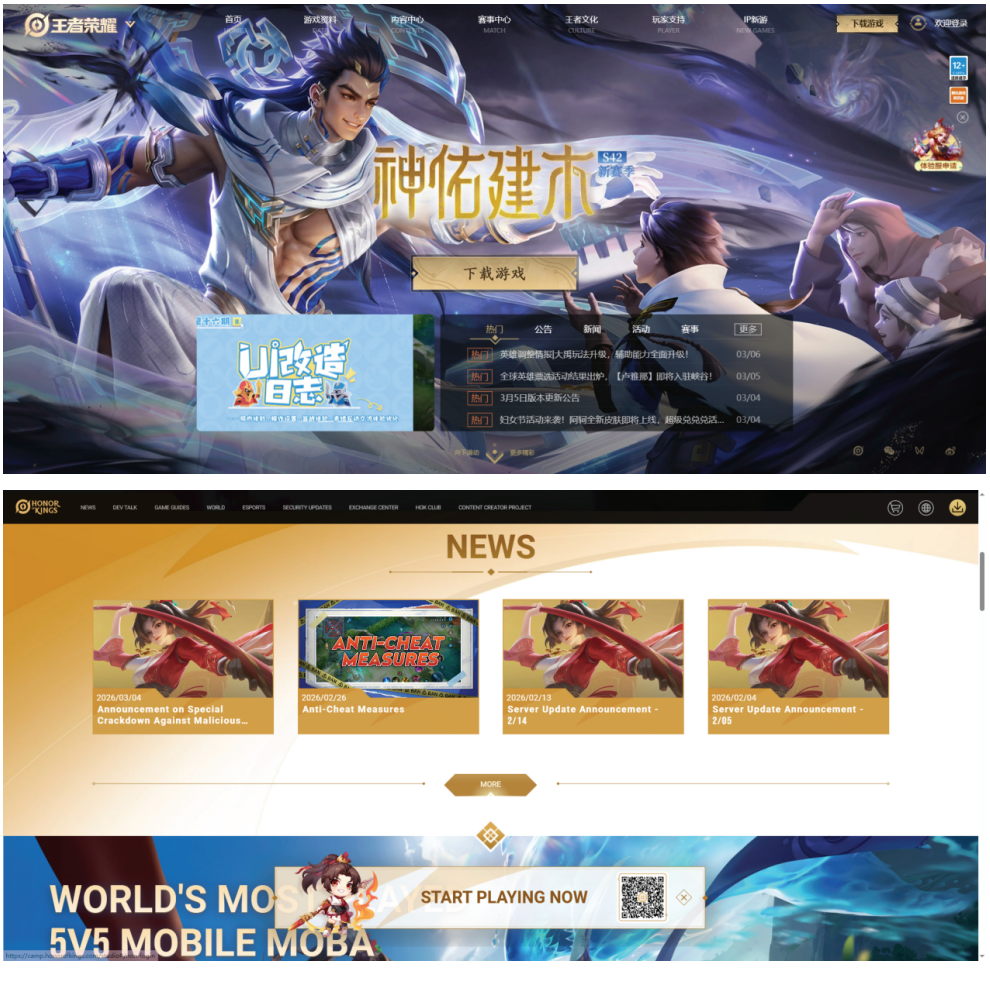
1. Introduction

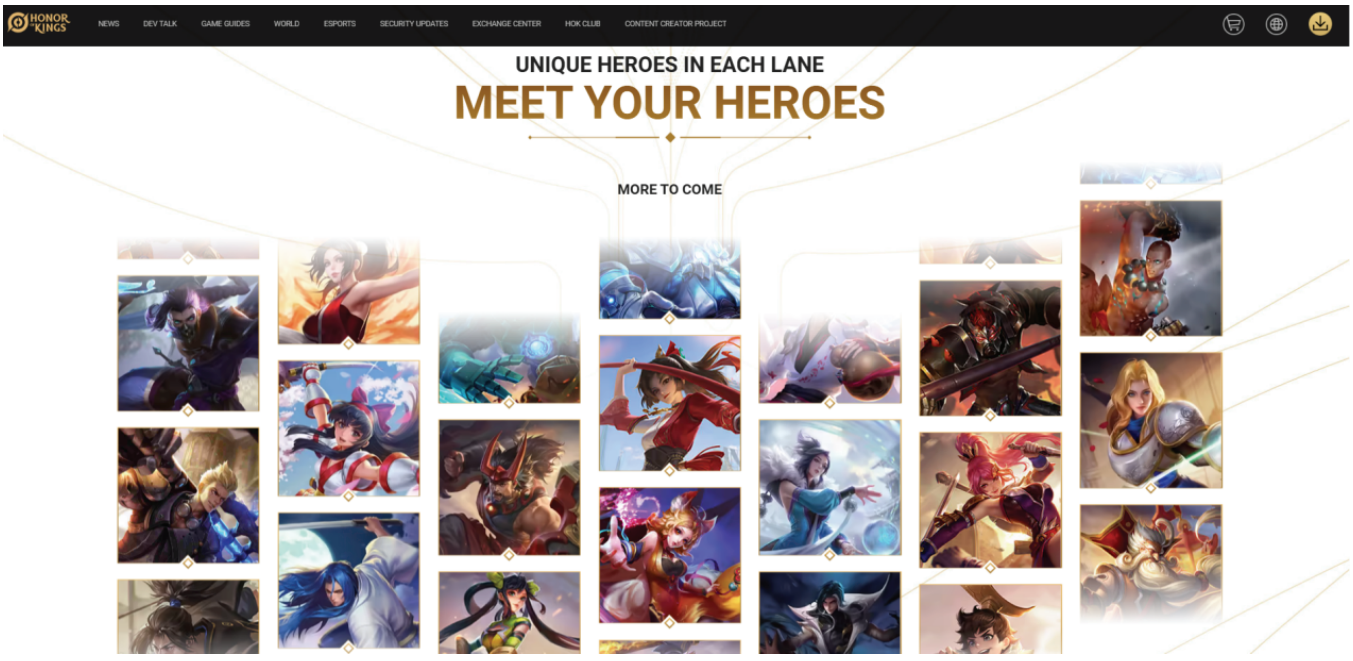
1.1 Research Background

Since the advent of the mobile Internet era, the social role of video games has undergone a fundamental transformation. They are no longer merely a form of entertainment, but have gradually evolved into social infrastructure and digital cultural carriers that connect hundreds of millions of users (Steinkuehler, 2023; Zhao, 2023). This trend is particularly pronounced in China. According to the 2024 China Gaming Industry Report released by the China Audio Video and Digital Publishing Association, the actual sales revenue of China's domestic gaming market reached RMB 325.783 billion in 2024, representing a year on year increase of 7.53 percent, while the number of game users rose to 674 million, both of which marked record highs. Within this vast user base, mobile games have assumed a dominant position because of their ease of access and suitability for fragmented usage scenarios. Among them, multiplayer online battle arena games have become a highly valuable commercial category due to their strong social interactivity and intense competitiveness (Gong et al., 2023; Xia et al., 2024).

Within the niche of mobile MOBA games, Tencent's Honor of Kings is undoubtedly the most representative title. Since its launch in 2015, the game has, over the course of a decade, transformed from an innovative product into a global cultural phenomenon (Feng & Zhang, 2022; Xiang & Yuan, 2025). In October 2024, the official Honor of Kings team announced that more than 100 million players logged in on the day of its ninth anniversary, with daily active users remaining steadily at the 100 million level. By the time of its tenth anniversary in 2025, official figures showed that the game's daily active users on the Chinese mainland server had exceeded 139 million, while its global monthly active users surpassed 260 million, once again setting a new record for game products worldwide. In terms of revenue, data from the mobile Internet analytics provider AppMagic show that Honor of Kings reached a historical peak of USD 2.22 billion in annual revenue in 2022, and still maintained a year on year revenue growth rate of 26 percent in 2024. In the first half of 2024, the game ranked first among China's evergreen games, with estimated iOS revenue of approximately USD 840 million.

Graphic 1. Honor of Kings China Server / Global Server Homepage





1.2 Problem Statement

While the more than 100 million daily active users of Honor of Kings enjoy the excitement of competitive play, they also find themselves embedded in a social environment marked by constant friction. In the academic literature, behaviours frequently observed in MOBA games, such as verbal abuse, ridicule, intentional idling, and deliberate feeding, are generally classified as toxic behaviour, and a growing body of empirical research has confirmed both its prevalence and its harmful consequences (Zsila et al., 2022; Aguerri et al., 2023). Drawing on research on League of Legends players, Kordyaka et al. showed that toxic behaviour is not an extreme practice confined to a small minority of players. Rather, it is a widespread collective phenomenon shaped by the combined effects of match pressure, role fluidity, and retaliatory interaction. Its harmful effects may continue to spread when victims respond in kind, thereby producing a toxic cycle characterised by chain transmission (Kordyaka et al., 2023). Research based on real behavioural data from commercial games has likewise found that once players are exposed to toxic language or conduct from teammates or opponents, the likelihood that they will engage in similar behaviour during the same match rises significantly, indicating that toxic interaction has a clear situational contagion effect (Morrier et al., 2025).

Honor of Kings faces the same challenge. Qualitative research on the game has shown that, under the combined influence of anonymity, the online disinhibition effect, and the frustration generated by competitive failure, players may easily develop both verbal and behavioural forms of toxic expression. Such unfriendly social interaction not only damages the immediate match experience but also gradually erodes players' broader perception of the gaming environment (Liu & Agur, 2022). Research on aggressive language in Honor of Kings further indicates that anonymity, competitiveness, and gendered bias jointly intensify hostile expression and communicative disorder within the game (Shou, 2023). Existing systematic reviews of toxic behaviour in games also suggest that both current scholarship and governance practice remain largely focused on ex post intervention, detection, and punitive mechanisms, whereas discussion of how to proactively cultivate a positive interactive climate remains comparatively limited (Wijkstra et al., 2024). At the same time, studies on positive communication have found that within persistently toxic environments, players are more likely to treat negative interaction as normal, while regarding positive expression as rare, inauthentic, or even sarcastic. This, in turn, helps explain why friendly interaction is especially difficult to sustain in high pressure competitive contexts (Poeller et al., 2023).

Existing research has devoted nearly all of its attention to the causes and governance of negative interaction, yet has rarely asked what factors, within the same high pressure match environment, actually promote friendly interactive experiences among players. In the actual play context of Honor of Kings, players' attitudes towards one another do not emerge in a vacuum, but are closely associated with a number of observable conspicuous signals. Relevant studies suggest that in mobile

multiplayer online games, identity visibility, information transparency, and the resulting forms of social interaction, social support, and social pressure significantly shape players' judgments of teammates, their willingness to cooperate, and their subsequent participation behaviour (Gong et al., 2023). On this basis, the level of virtual assets a player possesses and the level of game skill a player displays often become important cues through which teammates rapidly interpret that player's status and competence.

The former is mainly expressed through hero skins, rare cosmetic appearances, and other high value virtual items. Research on virtual item consumption in games suggests that players purchase and display cosmetic items not merely for aesthetic enjoyment, but also as a means of identity expression, belonging seeking, prestige display, and status signalling. As a result, such virtual assets are easily interpreted by others in multiplayer environments as symbols of greater commitment, longer experience, or heightened salience (Koles et al., 2025). The latter is primarily reflected in competitive indicators such as rank tier, win rate, and ranked play experience. Research on ranked modes in MOBA games has shown that social comparison and self determination mechanisms significantly affect how players assess both their own and others' competitive standing. High rank markers therefore function not only as labels of competence, but also as important reference points that shape expectations, trust, and interaction strategies in team settings (Xia et al., 2024). Research on in game communication and trust judgment further finds that in temporary teams characterised by limited information and urgent decision making, players rely heavily on a small number of visible cues to make rapid judgments about whether others are trustworthy and whether communication and cooperation are worth investing in. This makes visible assets and competitive labels especially likely to be amplified into the basis for social judgment during the hero selection and opening stages of play (Lee et al., 2025). In other words, differences in virtual assets and game skill are not merely personal attributes. More importantly, they may be transformed within team interaction into triggers for status perception, trust allocation, and differentiation in discursive influence. For precisely this reason, when players occupy a relatively disadvantaged position in terms of these conspicuous cues, they are more likely to encounter disregard, exclusion, or noncooperation in high pressure collaborative environments. By contrast, when players possess more visible asset symbols and competitive markers, they are more likely to receive positive expectations and greater room for cooperation from the very beginning of interaction.

2. Literature Review

2.1 A Review of Factors Influencing Players' Friendly Experience

With regard to the social functions of virtual items, prior research has shown that cosmetic virtual goods are not merely aesthetic embellishments, but also serve clear social signalling functions. Studies on in game cosmetic items have found that players purchase and display such non functional virtual goods not only for reasons of aesthetic preference or entertainment, but also in close connection with identity expression, the need for belonging, prestige display, and the communication of status signals (Koles et al., 2025). A systematic review of the motives underlying virtual item consumption further indicates that social attributes constitute one of the most stable and influential drivers of players' purchases of virtual goods. This suggests that virtual assets in multiplayer game interaction have moved beyond purely functional or aesthetic value and have become embedded in broader processes of social evaluation and identity construction (Huo et al., 2023). From a broader perspective on virtual consumption in mobile gaming, related studies also show that virtual consumption is not simply a form of item acquisition, but also carries functions of emotional connection, cultural identity affirmation, and symbolic self presentation. Accordingly, players' possession of high value virtual assets is readily interpreted by others as a visible form of identity capital (Zhang et al., 2025).

When situated in the specific context of Honor of Kings, this becomes even more apparent. When a player displays a high quality Legendary skin, a Glory Collection skin, or a high level Noble status badge during the hero selection stage, teammates' first impression is unlikely to stop at seeing that player merely as someone enthusiastic about the game. Rather, they are more likely to infer that the player is more invested, more experienced, or even possesses greater real world spending power. Research on real time social judgment in multiplayer games suggests that in temporary teams lacking personality information and a history of prior interaction, players rely heavily on a limited set of visible cues to form rapid judgments about others' trustworthiness, expected value, and communication strategy (Lee et al., 2025). Consequently, the status

associations triggered by virtual consumption symbols are likely to generate a sense of identity difference in the minds of teammates, which may then further shape their level of respect, their attribution patterns, and their tolerance for mistakes in subsequent interaction. In other words, the level of virtual assets may operate as a status signal that influences interactive attitudes by activating teammates' identity based inferences.

At the same time, existing studies also suggest that judgments of one another's competence within a team similarly shape interactive differences. A longitudinal study of mobile multiplayer online games found that identity visibility and information transparency significantly affect social interaction, social support, shared goals, and social pressure among players, and in turn influence gameplay participation and cooperative outcomes (Gong et al., 2023). Within the ranked match system of Honor of Kings, every player is subject to a clear pressure to win or lose, while performance indicators such as rank tier, win rate, and number of MVP awards are precisely the most direct cues for predicting a player's future performance. Research on ranked modes in MOBA games has shown that social comparison and self determination mechanisms significantly shape how players assess both their own and others' competitive standing. High rank and high performance markers therefore represent not only technical ability, but also important reference points that influence team trust, expectations, and subsequent interaction strategies (Xia et al., 2024). Research grounded in the Chinese gaming context likewise indicates that the success of Honor of Kings is closely tied to its psychological mechanisms, social engagement, and commercial profitability, within which player data, interaction design, and competitive performance jointly affect users' evaluations of both teammates and the gaming environment (Yang, 2024).

Taken together, the level of virtual assets and the level of game skill correspond to two qualitatively distinct processes of status perception. The former is more closely related to inferences about identity capital and symbolic status, whereas the latter is more closely associated with the formation of competence expectations and performance based trust. Both may constitute important antecedents of friendly experience and, within the high pressure and information constrained team environment of MOBA games, may be rapidly amplified into triggers for differentiated interaction among teammates.

2.2 A Review of the Mediating and Moderating Factors of Players' Friendly Experience

Existing research suggests that in social situations characterised by limited information and extremely short judgment time, individuals tend to rely on salient external cues to make heuristic inferences, and to extend favourable impressions formed in one dimension to judgments about other as yet unverified attributes. Recent reviews of the halo effect indicate that it is essentially a cognitive bias through which known positive characteristics are generalised to unknown ones, and that it is especially likely to occur when decision makers lack sufficient information. At the same time, more systematic thinking can, to some extent, mitigate this bias (Laham & Forgas, 2022). Related empirical research has also found that when evaluating others' specific abilities, perceptions of warmth and general competence often converge into a global impression factor, allowing local evaluations to spread unconsciously across other dimensions (Fritsch et al., 2023). Given that the hero selection stage in MOBA games is itself a setting of rapid judgment under severe informational constraints, skin quality, as the most salient visual cue, can easily become a heuristic device for filling informational gaps. As a result, the economic and identity signals conveyed by virtual assets may spill over into the domain of competence judgment. This suggests that the level of virtual assets may influence friendly experience not only through perceived economic status, but also through an additional indirect pathway activated by perceived competence status.

The reason this study treats perceived economic status and perceived competence status as two distinct mediating variables, rather than combining them into a single construct, lies in the fact that recent status research continues to emphasise that wealth, power, and competence are not entirely equivalent sources of social evaluation. Relevant studies indicate that individuals' judgments of others' hierarchical position may derive either from cues related to resources and social rank or from cues related to competence and expertise, and that these two sources of status do not produce identical psychological consequences in interaction (Gaubert & Louvet, 2021). More specifically, research distinguishing between symbolic and epistemic judgments in social cognition proposes that people often track two different information systems simultaneously in social interaction. One is more oriented towards social signals of identity and symbolic meaning, while the other is more oriented towards behavioural prediction and competence assessment. This distinction helps explain why seemingly similar

status cues may trigger different forms of compliance, trust, or interactional strategy (Westra, 2023). In the context of Honor of Kings, this means that symbols such as high level Noble status and Collection skins are more likely to trigger symbolic status inferences based on resources and identity, whereas performance indicators such as high rank tier and high win rate are more likely to activate functional judgments grounded in competence and achievement. Although both may shape friendly experience, the underlying mechanisms through which they operate are not the same.

At the same time, research on individual differences also suggests that the cognitive processes described above do not affect all players with equal intensity. Recent studies on cognitive reflection indicate that its central function lies in the ability to inhibit the intuitive response that first comes to mind and to shift towards more deliberate and analytical reasoning. This ability is significantly associated with higher levels of rational judgment (Shtulman & Young, 2022). In parallel, research on the relationship between cognitive reflection and heuristic processing has shown that lower levels of cognitive reflection are more likely to be accompanied by reliance on intuitive answers and social heuristics, whereas a stronger reflective tendency is more likely to interrupt this automatic processing pathway (Vikhman, 2025). Consistent with this, research on the halo effect likewise finds that enhanced systematic processing can reduce the global impression bias driven by surface cues (Laham & Forgas, 2022). Taken together, these findings suggest that players' cognitive level and thinking style may systematically amplify or weaken the extent to which they rely on external cues such as skins, Noble status markers, and rank tier, thereby further shaping the intensity of signal interpretation and interactive response.

3. Research Hypotheses

3.1 Direct Effect Hypotheses

In MOBA game settings, which are characterised by intense time pressure, temporary teaming with unfamiliar players, and interaction outcomes that depend heavily on team coordination, initial attitudes among players are rarely formed on the basis of thorough understanding. Instead, they are typically generated rapidly under conditions of limited information through reliance on conspicuous signals. Social comparison theory suggests that when objective standards are insufficient, individuals position both others and themselves by drawing on observable cues, and subsequently adjust their judgments and behaviour accordingly. In the context of the present study, players' levels of virtual assets and game skill constitute two of the most immediate and easily observable social signals available to teammates. The former is primarily reflected in high quality skins, Noble status levels, and rare virtual items, all of which can readily prompt inferences about a player's spending capacity, seniority, and social standing. The latter is reflected in performance related indicators such as rank tier, win rate, and MVP records, which directly shape teammates' expectations of that player's competitive competence and potential value in leading the team. Existing studies have shown that virtual items possess not only aesthetic and utilitarian value, but also functions of social display and status expression. At the same time, in task oriented groups, members who are expected to be highly capable are generally more likely to receive trust, respect, and cooperation. It may therefore be inferred that in the team based environment of Honor of Kings, players with higher levels of virtual assets or stronger game skill are more likely to receive more favourable evaluations, greater tolerance, and friendlier communicative responses from teammates at the initial stage of interaction, thereby generating a higher level of friendly experience. This is also consistent with the earlier argument that virtual assets and game skill are not merely personal attributes, but potential triggers for differentiated interactive attitudes within the team.

H1: Players' level of virtual assets has a significant effect on the friendly experience they receive in the game.

H2: Players' level of game skill has a significant effect on the friendly experience they receive in the game.

3.2 Mediating Effect Hypotheses

Although both the level of virtual assets and the level of game skill may directly influence the friendly experience that a player receives within a team, this influence is unlikely to operate as a simple stimulus response relationship. Rather, it is more likely to be realised through teammates' subjective interpretation of the player's status. According to social stratification theory and status characteristics theory, when group members lack complete information, they often rely on conspicuous attributes to infer others' resource possession and potential capacity to contribute, and then develop differentiated patterns of interaction accordingly. More specifically, the level of virtual assets may first activate perceived economic status, because

high spending virtual assets such as high level Noble badges and Glory Collection skins are themselves characterised by scarcity, visibility, and substantial monetary investment, making them readily interpretable as symbols of stronger financial resources and greater consumption power. When teammates perceive a player as someone with richer resources and a higher social position, they are more likely, following the logic of upward social comparison and deference to status, to respond with respect, restraint, and tolerance. At the same time, the level of game skill points more directly to perceived competence status. In ranked matches, rank tier, win rate, and performance records are not only summaries of past performance, but also predictive indicators of future contribution potential. For this reason, they are more likely to lead teammates to conclude that a given player is more worthy of trust and followership, and to respond with greater cooperation and goodwill during interaction. Furthermore, given that the halo effect tends to produce cross dimensional generalisation in rapid judgment contexts, the positive economic signals conveyed by virtual assets may also spill over into the domain of competence judgment. This may incline teammates to associate high spending and ownership of rare virtual assets with being more experienced, more capable, or more dependable. As established in the literature review, perceived economic status and perceived competence status should be treated as two related yet logically distinct psychological mechanisms. It was also noted that virtual assets may operate through both an economic pathway and a competence based pathway. Accordingly, the present study proposes the following mediating hypotheses.

H3: Perceived economic status mediates the relationship between players' level of virtual assets and friendly experience.

H4: Perceived competence status mediates the relationship between players' level of game skill and friendly experience.

H5: Perceived competence status mediates the relationship between players' level of virtual assets and friendly experience.

3.3 Moderating Effect Hypotheses

Although conspicuous signals can trigger status judgments, players do not respond to these signals with the same degree of sensitivity, nor do they exhibit the same intensity of interactional response. Dual process theory suggests that social judgment operates through two distinct pathways, namely heuristic processing and analytic processing. The former relies more heavily on surface cues and intuitive inference, whereas the latter is characterised by more careful evaluation and reflective adjustment. Related research on cognitive reflection and need for cognition further indicates that individuals with higher cognitive levels are generally less likely to be influenced by a single salient yet informationally limited external cue, whereas those with lower cognitive levels are more likely to rely on heuristic signals in forming rapid judgments. In the context of the present study, during the hero selection stage and the early phase of a match in Honor of Kings, skin quality, Noble status level, rank tier, and win rate all function as highly visible cues that are easy to interpret. As such, they are especially likely to amplify their social signalling effects under conditions of low cognitive investment. Put differently, the lower a player's cognitive level, the more likely that player is to make rapid status attributions on the basis of virtual assets and performance indicators, and to further translate these attributions into friendly or deferential interactive behaviour. By contrast, the higher a player's cognitive level, the more likely that player is to recognise that high spending does not necessarily imply high competence, and that the display of a high rank does not necessarily determine performance in the current match. This, in turn, weakens the extent to which surface cues drive status perception and interactive attitudes. As established in the literature review, players' cognitive level may systematically amplify or attenuate the strength of signal interpretation and behavioural response. Accordingly, the following hypotheses are proposed.

H6a: Game users' cognitive level moderates the relationship between players' level of virtual assets and perceived economic status.

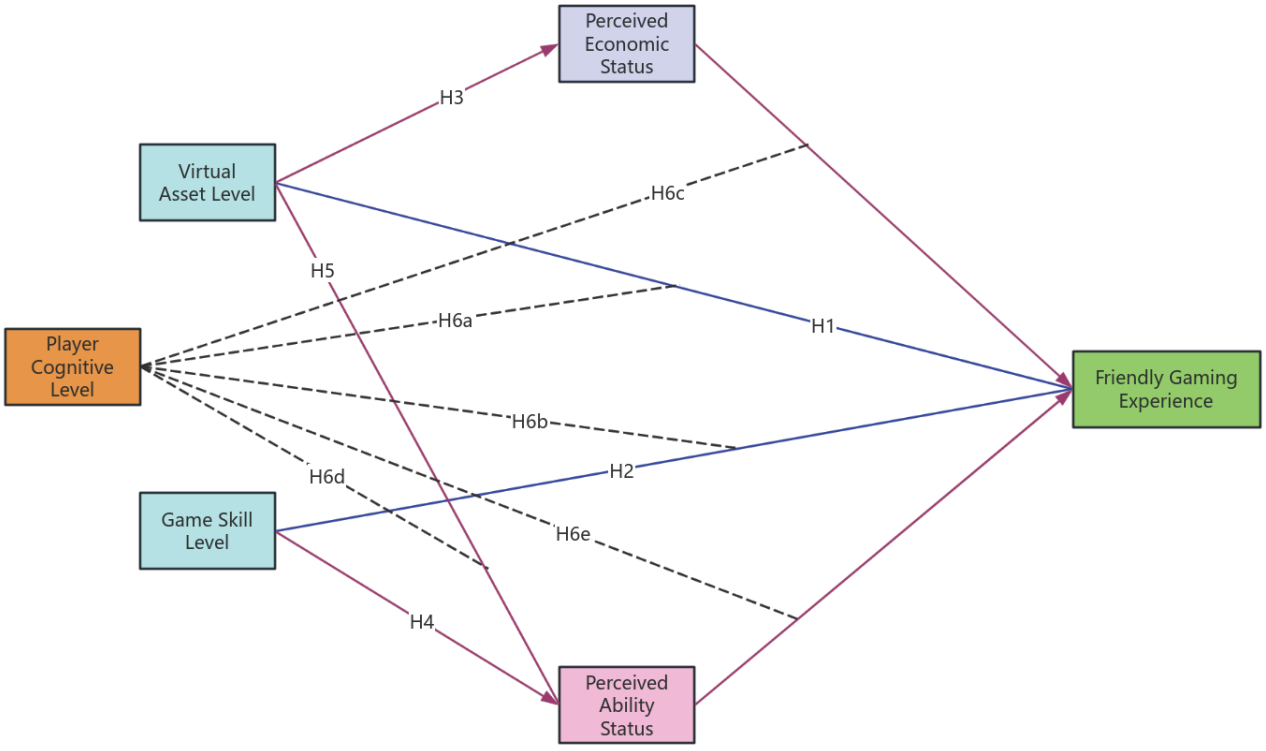
H6b: Game users' cognitive level moderates the relationship between players' level of game skill and perceived competence status.

H6c: Game users' cognitive level moderates the relationship between players' level of virtual assets and perceived competence status.

H6d: Game users' cognitive level moderates the relationship between perceived economic status and friendly experience.

H6e: Game users' cognitive level moderates the relationship between perceived competence status and friendly experience.

Graphic 2. Conceptual Framework



4. Empirical Study

4.1 Research Design

This study adopts a quantitative research design, with Honor of Kings players as the target population. All core variables examined in this study are latent constructs, which cannot be directly observed or measured through a single objective indicator, but must instead be indirectly captured through multiple observable items. More specifically, virtual asset level, game skill level, perceived economic status, perceived competence status, friendly experience, and cognitive level are all essentially abstract psychological or behavioural cognitive constructs. These theoretical concepts can only be transformed into analysable quantitative data through respondents' subjective evaluations of a series of relevant statements. Accordingly, this study employs a structured questionnaire as its primary research instrument in order to operationalise and measure each latent construct.

The measurement items in this study will be developed on the basis of established theories and the actual gameplay context of Honor of Kings. A five point Likert scale will be used to assess each latent variable, thereby enabling the systematic collection of players' perceptions of in game interaction, status judgment, and friendly experience. After the completion of data collection, the study will further conduct descriptive statistical analysis, reliability and validity testing, and structural model analysis in order to examine the direct effects, mediating effects, and moderating effects among the variables, thus providing empirical evidence for explaining the formation mechanism of friendly experience among Honor of Kings players.

4.2 Questionnaire Validation

As the questionnaire used in this study is a self developed scale designed specifically for the context of Honor of Kings, it is necessary to subject it to systematic testing prior to formal distribution in order to ensure the accuracy of item wording, contextual appropriateness, and overall measurement quality. First, the researcher invited experts in relevant fields as well as experienced players to review and evaluate the initial questionnaire, with particular attention paid to the clarity, representativeness, contextual authenticity, and content appropriateness of each item. Based on their feedback, items that were ambiguously worded, overly repetitive, or insufficiently representative were revised or removed. Second, a pilot test was conducted prior to the main survey in order to assess the overall comprehensibility of the questionnaire and its preliminary reliability. Finally, based on the pilot data, exploratory factor analysis was further carried out to examine whether the latent structure of the items was consistent with the theoretical constructs, and the questionnaire structure was subsequently

refined accordingly. Through these procedures, the study was able to provide the necessary methodological support for the development of the final questionnaire and to enhance the content validity and preliminary construct validity of the scale.

The questionnaire validation results indicate that the instrument used in this study is of sound overall quality and has provided an adequate basis for the formal survey. First, with regard to content validity, the study invited university teachers, researchers, and experienced Honor of Kings players to evaluate the questionnaire items jointly. The mean scores for most items ranged from 4.33 to 4.83, suggesting that the items performed well overall in terms of clarity of wording, representativeness of content, and fit with the gaming context. Although a small number of items, particularly those relating to perceived economic status and cognitive level, were identified as requiring further refinement or minor wording adjustments, there were, on the whole, no items that appeared clearly inappropriate or in need of deletion. This indicates that the overall content design of the questionnaire was reasonably sound.

Second, the pilot test results demonstrated strong reliability and a solid preliminary structural foundation. The Cronbach's alpha values for all variables were above 0.842, while the overall Cronbach's alpha for the full questionnaire reached 0.941, indicating a high level of internal consistency. Further item analysis showed that the corrected item to total correlation coefficients for all items exceeded 0.50, and that deleting any individual item would not materially improve the reliability of the scale, suggesting that all items contributed effectively to their respective constructs. At the same time, the KMO value reached 0.907, and Bartlett's test of sphericity was significant, indicating that the data were highly suitable for factor analysis. The communalities and factor loadings of the items were also generally at satisfactory levels, and all items were ultimately retained. Taken together, the questionnaire demonstrated good measurement quality in terms of content design, internal consistency, and preliminary construct structure, thereby providing a reliable foundation for the subsequent analysis of the formal sample.

Table 1. Basic Information of Expert Reviewers

No.	Identity Type	Specialisation/Background	Relevant Experience
E1	University Teacher	Management / Organisational Behaviour	More than 10 years of experience in questionnaire development and quantitative research
E2	University Teacher	Marketing / Consumer Behaviour	Extensive experience in scale development and SEM research
E3	Researcher	Digital Platform and Gaming Behaviour Research	Familiar with game interaction and user behaviour research
E4	Researcher	Psychological and Behavioural Measurement	Familiar with content validity assessment and pilot testing procedures
E5	Experienced Player	High-ranking Honor of Kings player	Has continuously participated in ranked matches / peak tournaments over the past three years
E6	Experienced Player	Frequent Honor of Kings player	Familiar with in-game social interaction, skins, and rank mechanisms

Table 2. Expert Evaluation Results for Each Questionnaire Item

Item	E1	E2	E3	E4	E5	E6	Mean Score	Suggestion
VA1	5	5	4	5	5	4	4.67	Retain
VA2	5	4	5	5	5	4	4.67	Retain
VA3	4	5	5	4	5	5	4.67	Retain
VA4	5	4	5	4	5	5	4.67	Retain
VA5	4	5	5	5	4	5	4.67	Retain
GS1	5	5	5	5	4	5	4.83	Retain
GS2	4	5	5	4	5	5	4.67	Retain

Item	E1	E2	E3	E4	E5	E6	Mean Score	Suggestion
GS3	5	5	4	5	5	5	4.83	Retain
GS4	5	4	5	5	5	4	4.67	Retain
GS5	5	5	5	4	5	5	4.83	Retain
EP1	4	5	4	4	5	5	4.50	Revise wording slightly
EP2	4	4	5	4	5	5	4.50	Revise wording slightly
EP3	4	5	4	4	5	4	4.33	Can be further improved
EP4	5	4	5	5	5	4	4.67	Retain
EP5	4	4	5	4	5	4	4.33	Can be further improved
AP1	5	5	4	5	5	5	4.83	Retain
AP2	4	5	5	4	5	5	4.67	Retain
AP3	4	5	4	5	5	4	4.50	Retain
AP4	5	4	5	4	5	5	4.67	Retain
AP5	5	5	4	5	5	4	4.67	Retain
FE1	5	5	5	4	5	5	4.83	Retain
FE2	5	5	4	5	5	5	4.83	Retain
FE3	4	5	5	4	5	5	4.67	Retain
FE4	5	4	5	5	5	4	4.67	Retain
FE5	5	5	5	4	4	5	4.67	Retain
FE6	5	5	4	5	5	5	4.83	Retain
CL1	4	5	4	4	5	4	4.33	Can be further improved
CL2	4	4	5	4	5	4	4.33	Can be further improved
CL3	5	4	5	4	4	5	4.50	Retain
CL4	4	5	4	5	4	5	4.50	Retain
CL5	4	4	5	4	5	4	4.33	Can be further improved

Note. VA = Virtual Asset Level; GS = Game Skill Level; EP = Perceived Economic Status; AP = Perceived Competence Status; FE = Friendly Gaming Experience; CL = Cognitive Level.

Table 3. Internal Consistency Test Results for Each Variable (Pilot Test)

Variable	No. of Items	Cronbach's α	Standardised α	Mean Inter-Item Correlation	Interpretation
Virtual Asset Level (VA)	5	0.891	0.893	0.626	Good
Game Skill Level (GS)	5	0.878	0.880	0.594	Good
Perceived Economic Status (EP)	5	0.864	0.867	0.565	Good
Perceived Competence Status (AP)	5	0.886	0.889	0.610	Good
Friendly Experience (FE)	6	0.903	0.905	0.609	Good
Cognitive Level (CL)	5	0.842	0.845	0.519	Acceptable and Good
Overall Questionnaire	31	0.941	0.944	—	Excellent

Table 4. Item Analysis Results for Each Item (Pilot Test)

Variable	Item	Corrected Item–Total Correlation (CITC)	Cronbach's α if Item Deleted	Result
VA	VA1	0.702	0.864	Retain
VA	VA2	0.741	0.855	Retain
VA	VA3	0.686	0.868	Retain
VA	VA4	0.713	0.861	Retain
VA	VA5	0.677	0.870	Retain
GS	GS1	0.691	0.849	Retain
GS	GS2	0.668	0.855	Retain
GS	GS3	0.704	0.846	Retain
GS	GS4	0.659	0.857	Retain
GS	GS5	0.717	0.843	Retain
EP	EP1	0.653	0.840	Retain
EP	EP2	0.671	0.836	Retain
EP	EP3	0.602	0.851	Retain
EP	EP4	0.688	0.832	Retain
EP	EP5	0.594	0.853	Retain
AP	AP1	0.704	0.863	Retain
AP	AP2	0.672	0.871	Retain
AP	AP3	0.648	0.876	Retain
AP	AP4	0.681	0.869	Retain
AP	AP5	0.719	0.861	Retain
FE	FE1	0.698	0.888	Retain
FE	FE2	0.724	0.884	Retain
FE	FE3	0.665	0.891	Retain
FE	FE4	0.683	0.889	Retain
FE	FE5	0.641	0.895	Retain
FE	FE6	0.736	0.882	Retain
CL	CL1	0.571	0.816	Retain
CL	CL2	0.596	0.809	Retain
CL	CL3	0.641	0.795	Retain
CL	CL4	0.618	0.802	Retain
CL	CL5	0.553	0.820	Retain

Table 5. KMO and Bartlett's Test Results for the Pilot Questionnaire

Test Item	Value
KMO Measure of Sampling Adequacy	0.907
Approximate Chi-Square of Bartlett's Test of Sphericity	2684.315
Degrees of Freedom (df)	465
Significance (p)	< 0.001

Table 6. Communalities of Items in the Exploratory Factor Analysis

Item	Initial Communality	Extracted Communality
VA1	1.000	0.692
VA2	1.000	0.741
VA3	1.000	0.673
VA4	1.000	0.708
VA5	1.000	0.661
GS1	1.000	0.688
GS2	1.000	0.652
GS3	1.000	0.701
GS4	1.000	0.636
GS5	1.000	0.712
EP1	1.000	0.624
EP2	1.000	0.646
EP3	1.000	0.559
EP4	1.000	0.671
EP5	1.000	0.548
AP1	1.000	0.703
AP2	1.000	0.658
AP3	1.000	0.621
AP4	1.000	0.665
AP5	1.000	0.718
FE1	1.000	0.684
FE2	1.000	0.711
FE3	1.000	0.643
FE4	1.000	0.662
FE5	1.000	0.601
FE6	1.000	0.724
CL1	1.000	0.521
CL2	1.000	0.548
CL3	1.000	0.611
CL4	1.000	0.587
CL5	1.000	0.503

Table 7. Results of the Exploratory Factor Analysis

Item	Highest Factor Loading	Communality	Deleted	Remark
VA1	0.801	0.692	No	Good performance
VA2	0.842	0.741	No	Good performance
VA3	0.776	0.673	No	Good performance
VA4	0.818	0.708	No	Good performance
VA5	0.754	0.661	No	Good performance
GS1	0.793	0.688	No	Good performance
GS2	0.761	0.652	No	Good performance
GS3	0.811	0.701	No	Good performance
GS4	0.734	0.636	No	Good performance
GS5	0.824	0.712	No	Good performance
EP1	0.748	0.624	No	Good performance
EP2	0.771	0.646	No	Good performance
EP3	0.684	0.559	No	Acceptable
EP4	0.792	0.671	No	Good performance
EP5	0.671	0.548	No	Acceptable
AP1	0.814	0.703	No	Good performance
AP2	0.773	0.658	No	Good performance
AP3	0.741	0.621	No	Good performance
AP4	0.768	0.665	No	Good performance
AP5	0.827	0.718	No	Good performance
FE1	0.781	0.684	No	Good performance
FE2	0.823	0.711	No	Good performance
FE3	0.756	0.643	No	Good performance
FE4	0.768	0.662	No	Good performance
FE5	0.713	0.601	No	Good performance
FE6	0.836	0.724	No	Good performance
CL1	0.662	0.521	No	Acceptable
CL2	0.689	0.548	No	Acceptable
CL3	0.753	0.611	No	Good performance
CL4	0.731	0.587	No	Good performance
CL5	0.641	0.503	No	Acceptable

4.3 Data Collection

Given that this study focuses on Honor of Kings players' perceptions and experiences within actual in game interaction contexts, the formal survey was restricted to respondents with genuine gameplay experience. To ensure a high degree of alignment between the sample and the research topic, the questionnaire included explicit screening criteria, and only respondents who met all of the following conditions were allowed to proceed to the main survey. First, the respondent must have played Honor of Kings. Second, the respondent must have engaged with the game within the past six months. Third, the respondent must have had experience of teaming up with strangers or non regular friends, so that they could provide valid evaluations of friendly experience, status perception, and cognitive judgment on the basis of real interaction contexts. For respondents who failed the screening questions, the system automatically terminated the survey. In terms of survey distribution, this study primarily adopted an online approach. The questionnaire was disseminated through Honor of Kings player communities, QQ groups, WeChat groups, social media platforms, and other online communication channels in order to improve the efficiency of sample recruitment and enhance the diversity of sample sources. After data collection, the returned questionnaires were subjected to rigorous screening. Samples that failed to meet the screening criteria, had clearly insufficient completion times, displayed obvious patterned responses such as repeatedly selecting the same option throughout the questionnaire, or contained substantial missing values or responses with clear logical inconsistencies were removed, so as to ensure the accuracy and reliability of the subsequent statistical analysis.

With regard to sample size, this study intended to conduct an a priori statistical power analysis using G*Power software, taking a multiple regression model as the basis for estimation. The minimum required sample size was calculated under a significance level of $\alpha = 0.05$, a statistical power of 0.95, and a small to medium effect size assumption. Given that the conceptual model in this study includes multiple latent variables as well as direct, mediating, and moderating effect paths, and that the formal dataset would also be used for reliability and validity testing, factor analysis, and structural equation modelling, an additional invalid response allowance of approximately 20 per cent was incorporated beyond the minimum sample requirement. On this basis, the study estimated that approximately 458 questionnaires would need to be collected in total in order to ensure that the final valid sample size would be sufficient to meet the requirements of statistical power and result robustness in the subsequent empirical analysis.

4.4 Demographic Analysis

Table 8 shows that this study obtained a total of 458 valid responses, with a relatively diverse sample structure. In terms of gender, male respondents accounted for 60.70 per cent and female respondents for 37.34 per cent, indicating that the sample was predominantly composed of male players. With respect to age, respondents were mainly concentrated in the 18 to 32 age range, among which the 23 to 27 group represented the highest proportion at 34.06 per cent. In terms of educational attainment, bachelor's degree holders accounted for 31.66 per cent, followed by respondents with senior secondary or technical secondary education and those with junior college education, suggesting that the overall educational level of the sample was relatively high. As for occupational status, corporate employees constituted the largest group at 36.24 per cent, followed by students at 20.96 per cent. Monthly disposable income was mainly concentrated in the RMB 3,001 to 8,000 range.

From the perspective of gaming characteristics, most respondents had relatively extensive gaming experience. More than 60 per cent had been playing Honor of Kings for over three years, with 31.88 per cent reporting more than five years of experience. Overall gaming frequency was relatively high, with a substantial proportion of players engaging in the game at least three times per week, while daily play duration was mainly concentrated between 30 minutes and 2 hours. Rank tiers were primarily distributed across Platinum, Diamond, and Star, with Eternal Diamond representing the largest single category at 25.76 per cent. In terms of teaming mode, the dominant patterns were playing both solo queue and team queue frequently, and mainly playing solo queue. Cumulative spending was concentrated largely below RMB 500, although notable variation in expenditure still existed across players. With regard to the display of skins or identity markers, a relatively large proportion of respondents reported that they either almost never or only occasionally displayed such signals.

Table 8. Results of Demographic Analysis

Item	Category	Frequency	Percentage (%)
Gender	Male	278	60.70
	Female	171	37.34
	Prefer not to disclose	9	1.97
Age	Under 18	26	5.68
	18–22	118	25.76
	23–27	156	34.06
	28–32	94	20.52
	33 and above	64	13.97
Highest Educational Attainment	Junior secondary school and below	48	10.48
	Senior secondary school / technical secondary school	126	27.51
	Junior college	112	24.45
	Bachelor's degree	145	31.66
	Master's degree and above	27	5.90
Occupational Status	Student	96	20.96
	Corporate employee	166	36.24
	Self employed / freelancer	63	13.76
	Civil servant / public institution employee	24	5.24
	Professional / technical personnel	39	8.52
	Other	70	15.28
Monthly Disposable Income	Below RMB 3,000	72	15.72
	RMB 3,001–5,000	102	22.27
	RMB 5,001–8,000	109	23.80
	RMB 8,001–12,000	84	18.34
	RMB 12,001 and above	34	7.42
	No fixed income at present	57	12.45
Length of Game Exposure	Less than 6 months	31	6.77
	6 months–1 year	42	9.17
	1–3 years	103	22.49
	3–5 years	136	29.69
	More than 5 years	146	31.88
Weekly Gaming Frequency	Less than once a week	38	8.30
	1–2 times a week	96	20.96
	3–4 times a week	131	28.60
	5–6 times a week	86	18.78
	Almost every day	107	23.36
Daily Gaming Duration	Less than 30 minutes	61	13.32
	30 minutes–1 hour	132	28.82
	1–2 hours	145	31.66
	2–3 hours	89	19.43
	More than 3 hours	31	6.77

Item	Category	Frequency	Percentage (%)
Main Rank Tier	Bronze / Silver	39	8.52
	Gold	64	13.97
	Platinum	96	20.96
	Diamond	118	25.76
	Star	89	19.43
	King and above	52	11.35
Teaming Mode	Mainly solo queue	151	32.97
	Mainly duo / trio queue	108	23.58
	Mainly five stack queue	38	8.30
	Both solo queue and team queue frequently	161	35.15
Cumulative Spending Level	Never spent	102	22.27
	RMB 1–100	96	20.96
	RMB 101–500	91	19.87
	RMB 501–1,000	73	15.94
	RMB 1,001–3,000	56	12.23
	RMB 3,001 and above	40	8.73
Frequency of Displaying Skins / Identity Markers	Almost never	118	25.76
	Occasionally	122	26.64
	Sometimes	99	21.62
	Often	65	14.19
	Always	54	11.79

4.5 Results of Data Analysis

The measurement model results indicate that all latent constructs in this study demonstrate strong internal consistency and satisfactory convergent validity. First, Cronbach's alpha values ranged from 0.870 to 0.939. Specifically, the value was 0.870 for cognitive level, 0.934 for friendly gaming experience, 0.932 for game skill level, 0.928 for perceived competence status, 0.904 for perceived economic status, and 0.939 for virtual asset level. All values were substantially above the commonly accepted threshold of 0.70, while the corresponding T values were all high and the P values were all 0.000, indicating that each scale exhibited a high level of reliability. Second, the average variance extracted values for the constructs ranged from 0.657 to 0.804, all of which exceeded the recommended threshold of 0.50. This suggests that the items explained the variance of their respective latent constructs well and that convergent validity was satisfactory. Among these constructs, virtual asset level recorded the highest AVE at 0.804, whereas cognitive level showed the lowest AVE at 0.657, although this still remained within the acceptable range. Finally, the composite reliability values, expressed as rho_c, ranged from 0.905 to 0.953, all of which were well above 0.70, further confirming the high stability and consistency of the measurement instrument. Overall, the results presented in Tables 9 to 11 indicate that the scales used in this study achieved sound standards of reliability and convergent validity, thereby providing a robust measurement foundation for the subsequent structural model analysis.

Table 9. Cronbach's Alpha: Mean, Standard Deviation, t-Value, and p-Value

	(O)	(M)	(STDEV)	(|O/STDEV|)	P
Cognitive Level	0.870	0.870	0.009	95.788	0.000
Friendly Gaming Experience	0.934	0.934	0.005	198.888	0.000
Game Skill Level	0.932	0.932	0.005	195.195	0.000
Perceived Competence Status	0.928	0.928	0.005	172.021	0.000
Perceived Economic Status	0.904	0.904	0.007	131.340	0.000
Virtual Asset Level	0.939	0.939	0.004	230.344	0.000

Table 10. Average Variance Extracted (AVE): Mean, Standard Deviation, t-Value, and p-Value

	(O)	(M)	(STDEV)	(|O/STDEV|)	P
Cognitive Level	0.657	0.653	0.022	30.475	0.000
Friendly Gaming Experience	0.752	0.752	0.013	57.262	0.000
Game Skill Level	0.786	0.786	0.012	66.956	0.000
Perceived Competence Status	0.778	0.777	0.013	59.952	0.000
Perceived Economic Status	0.724	0.724	0.014	50.751	0.000
Virtual Asset Level	0.804	0.804	0.010	76.701	0.000

Table 11. Composite Reliability (rho_c): Mean, Standard Deviation, t-Value, and p-Value

	(O)	(M)	(STDEV)	(|O/STDEV|)	P
Cognitive Level	0.905	0.903	0.017	54.307	0.000
Friendly Gaming Experience	0.948	0.948	0.003	271.016	0.000
Game Skill Level	0.948	0.948	0.003	276.488	0.000
Perceived Competence Status	0.946	0.946	0.004	245.600	0.000
Perceived Economic Status	0.929	0.929	0.005	196.245	0.000
Virtual Asset Level	0.953	0.953	0.003	322.379	0.000

From the structural model results, both players' game skill level and virtual asset level emerged as important antecedents of friendly gaming experience, and both effects were significantly positive. Specifically, game skill level exerted a significant positive total effect on friendly gaming experience ($\beta = 0.448$, $T = 13.286$, $P = 0.000$) and also had a significant positive effect on perceived competence status ($\beta = 0.665$, $T = 25.456$, $P = 0.000$). Virtual asset level likewise significantly enhanced friendly gaming experience ($\beta = 0.335$, $T = 8.415$, $P = 0.000$) and significantly strengthened perceived economic status ($\beta = 0.674$, $T = 25.343$, $P = 0.000$), whereas its effect on perceived competence status was not significant ($\beta = 0.003$, $T = 0.090$, $P = 0.928$). At the same time, both perceived competence status ($\beta = 0.305$, $T = 6.024$, $P = 0.000$) and perceived economic status ($\beta = 0.144$, $T = 3.061$, $P = 0.002$) had significant positive effects on friendly gaming experience, indicating that both forms of status perception play a constructive role in the formation of a friendly in game atmosphere. By contrast, the total effect of cognitive level on friendly gaming experience was not significant ($\beta = 0.038$, $T = 1.043$, $P = 0.297$). However, cognitive level had significant negative effects on both perceived competence status ($\beta = -0.117$, $T = 3.521$, $P = 0.000$) and perceived economic status ($\beta = -0.104$, $T = 2.880$, $P = 0.004$), suggesting that the higher the player's cognitive level, the less likely that player is to form status perceptions on the basis of game skill or virtual assets.

In addition, none of the interaction term paths reached statistical significance, indicating that the moderating effect of cognitive level was generally weak or unsupported. Furthermore, the results of the inner model collinearity diagnostics showed that all VIF values ranged from 1.001 to 2.041, with the highest upper bound of the confidence interval reaching only 2.549. All of these values were well below the commonly accepted thresholds of 3.3 or 5.0, suggesting that the model did not suffer from any substantial multicollinearity problem. Overall, the structural model estimates therefore demonstrate satisfactory stability and interpretive credibility.

Table 12. Total Effects: Mean, Standard Deviation, t-Value, and p-Value

	(O)	(M)	(STDEV)	(|O/STDEV|)	P
Cognitive Level -> Friendly Gaming Experience	0.038	0.037	0.036	1.043	0.297
Cognitive Level -> Perceived Competence Status	-0.117	-0.119	0.033	3.521	0.000
Cognitive Level -> Perceived Economic Status	-0.104	-0.105	0.036	2.880	0.004
Cognitive Level x Game Skill Level -> Friendly Gaming Experience	0.036	0.037	0.053	0.676	0.499

	(O)	(M)	(STDEV)	(|O/STDEV|)	P
Cognitive Level x Game Skill Level -> Perceived Competence Status	0.009	0.009	0.031	0.304	0.761
Cognitive Level x Perceived Competence Status -> Friendly Gaming Experience	-0.045	-0.044	0.053	0.856	0.392
Cognitive Level x Perceived Economic Status -> Friendly Gaming Experience	-0.004	-0.001	0.048	0.088	0.930
Cognitive Level x Virtual Asset Level -> Friendly Gaming Experience	-0.001	-0.003	0.053	0.013	0.990
Cognitive Level x Virtual Asset Level -> Perceived Competence Status	0.056	0.056	0.034	1.643	0.100
Cognitive Level x Virtual Asset Level -> Perceived Economic Status	-0.032	-0.032	0.034	0.915	0.360
Game Skill Level -> Friendly Gaming Experience	0.448	0.449	0.034	13.286	0.000
Game Skill Level -> Perceived Competence Status	0.665	0.666	0.026	25.456	0.000
Perceived Competence Status -> Friendly Gaming Experience	0.305	0.305	0.051	6.024	0.000
Perceived Economic Status -> Friendly Gaming Experience	0.144	0.145	0.047	3.061	0.002
Virtual Asset Level -> Friendly Gaming Experience	0.335	0.335	0.040	8.415	0.000
Virtual Asset Level -> Perceived Competence Status	0.003	0.002	0.034	0.090	0.928
Virtual Asset Level -> Perceived Economic Status	0.674	0.674	0.027	25.343	0.000

Table 13. Inner Model Collinearity Statistics (VIF): Confidence Intervals

	(O)	(M)	2.5%	97.5%
Cognitive Level -> Friendly Gaming Experience	1.056	1.079	1.036	1.137
Cognitive Level -> Perceived Competence Status	1.003	1.013	1.002	1.036
Cognitive Level -> Perceived Economic Status	1.001	1.006	1.000	1.022
Cognitive Level x Game Skill Level -> Friendly Gaming Experience	2.027	2.095	1.731	2.536
Cognitive Level x Game Skill Level -> Perceived Competence Status	1.036	1.050	1.007	1.129
Cognitive Level x Perceived Competence Status -> Friendly Gaming Experience	2.041	2.106	1.741	2.549
Cognitive Level x Perceived Economic Status -> Friendly Gaming Experience	1.664	1.725	1.461	2.084
Cognitive Level x Virtual Asset Level -> Friendly Gaming Experience	1.682	1.744	1.464	2.120
Cognitive Level x Virtual Asset Level -> Perceived Competence Status	1.044	1.059	1.012	1.141
Cognitive Level x Virtual Asset Level -> Perceived Economic Status	1.012	1.017	1.001	1.048
Game Skill Level -> Friendly Gaming Experience	1.911	1.958	1.736	2.220
Game Skill Level -> Perceived Competence Status	1.071	1.083	1.033	1.149
Perceived Competence Status -> Friendly Gaming Experience	1.885	1.931	1.706	2.195
Perceived Economic Status -> Friendly Gaming Experience	1.874	1.917	1.687	2.194
Virtual Asset Level -> Friendly Gaming Experience	1.915	1.960	1.720	2.242
Virtual Asset Level -> Perceived Competence Status	1.082	1.093	1.042	1.160
Virtual Asset Level -> Perceived Economic Status	1.013	1.017	1.001	1.048

In terms of explanatory power, the model yielded R^2 values of 0.460, 0.465, and 0.457 for friendly gaming experience, perceived competence status, and perceived economic status, respectively. These results indicate that the antecedent variables explained approximately 45.7 to 46.5 per cent of the variance in the three endogenous constructs, suggesting a moderate to moderately strong level of explanatory power overall. The corresponding T values were all high and the P values were all

0.000, indicating that the model possessed relatively stable predictive and explanatory capability. In terms of effect size, game skill level exerted the strongest effect on perceived competence status ($f^2 = 0.772$, P = 0.000), while virtual asset level also showed a highly significant and strongest effect on perceived economic status ($f^2 = 0.826$, P = 0.000), suggesting that these two variables were the core drivers of their respective mediating constructs. With regard to the formation of friendly gaming experience, perceived competence status ($f^2 = 0.091$, P = 0.006), game skill level ($f^2 = 0.058$, P = 0.012), and virtual asset level ($f^2 = 0.054$, P = 0.023) all demonstrated a certain degree of explanatory influence, although these effects were generally in the small to medium range. By contrast, the effect of perceived economic status on friendly gaming experience was relatively weak and did not reach statistical significance ($f^2 = 0.021$, P = 0.150).

In addition, cognitive level and all of its interaction terms generally exhibited very low and non significant f^2 values, indicating that both its direct effect and its moderating effects were weak. Overall, the model demonstrated relatively robust explanatory power, while the truly pivotal roles were played by game skill level and virtual asset level, which influenced friendly gaming experience through different status perception pathways.

Table 14. R-Squared: Mean, Standard Deviation, t-Value, and p-Value

	(O)	(M)	(STDEV)	(|O/STDEV|)	P
Friendly Gaming Experience	0.460	0.471	0.032	14.372	0.000
Perceived Competence Status	0.465	0.471	0.034	13.860	0.000
Perceived Economic Status	0.457	0.461	0.035	12.954	0.000

Table 15. f-Squared: Mean, Standard Deviation, t-Value, and p-Value

	(O)	(M)	(STDEV)	(|O/STDEV|)	P
Cognitive Level -> Friendly Gaming Experience	0.014	0.016	0.012	1.167	0.243
Cognitive Level -> Perceived Competence Status	0.025	0.029	0.015	1.700	0.089
Cognitive Level -> Perceived Economic Status	0.020	0.023	0.014	1.366	0.172
Cognitive Level x Game Skill Level -> Friendly Gaming Experience	0.001	0.004	0.005	0.210	0.834
Cognitive Level x Game Skill Level -> Perceived Competence Status	0.000	0.002	0.003	0.060	0.952
Cognitive Level x Perceived Competence Status -> Friendly Gaming Experience	0.002	0.004	0.005	0.339	0.734
Cognitive Level x Perceived Economic Status -> Friendly Gaming Experience	0.000	0.002	0.003	0.006	0.995
Cognitive Level x Virtual Asset Level -> Friendly Gaming Experience	0.000	0.003	0.004	0.040	0.968
Cognitive Level x Virtual Asset Level -> Perceived Competence Status	0.005	0.007	0.007	0.738	0.460
Cognitive Level x Virtual Asset Level -> Perceived Economic Status	0.002	0.004	0.005	0.351	0.726
Game Skill Level -> Friendly Gaming Experience	0.058	0.061	0.023	2.510	0.012
Game Skill Level -> Perceived Competence Status	0.772	0.783	0.109	7.087	0.000
Perceived Competence Status -> Friendly Gaming Experience	0.091	0.095	0.033	2.758	0.006
Perceived Economic Status -> Friendly Gaming Experience	0.021	0.023	0.014	1.440	0.150
Virtual Asset Level -> Friendly Gaming Experience	0.054	0.057	0.024	2.270	0.023
Virtual Asset Level -> Perceived Competence Status	0.000	0.002	0.003	0.006	0.995
Virtual Asset Level -> Perceived Economic Status	0.826	0.838	0.121	6.842	0.000

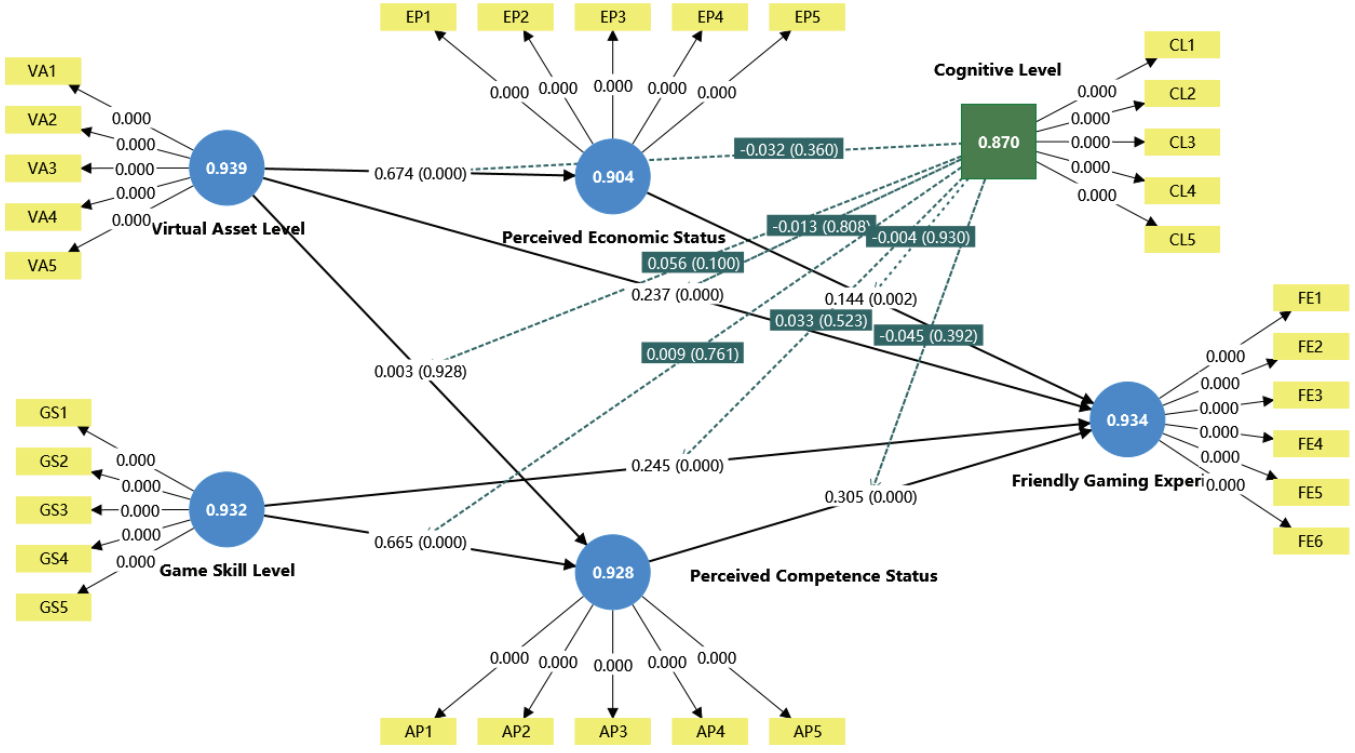
From the model fit results, the overall model in this study demonstrated a good level of fit. First, the SRMR values for the saturated model and the estimated model were 0.033 and 0.035, respectively, both of which were well below the commonly accepted threshold of 0.08. At the same time, the original sample values did not exceed their corresponding 99 per cent

quantile values, indicating that the model residuals were small and that the overall fit was satisfactory. Second, the d_ULS values for the saturated model and the estimated model were 0.531 and 0.607, respectively, both of which were below their corresponding 95 per cent and 99 per cent quantile thresholds. The d_G values for the saturated model and the estimated model were 0.255 and 0.254, respectively, and these were likewise below the corresponding 95 per cent and 99 per cent quantiles. These results suggest that the discrepancy between the specified model and the sample data remained within an acceptable range.

Table 16. Model Fit

Fit Index	Model Type	Original Sample	Sample Mean (M)	95%	99%
SRMR	Saturated Model	0.033	0.030	0.033	0.034
SRMR	Estimated Model	0.035	0.032	0.036	0.039
d_ULS	Saturated Model	0.531	0.457	0.544	0.588
d_ULS	Estimated Model	0.607	0.505	0.637	0.750
d_G	Saturated Model	0.255	0.272	0.301	0.315
d_G	Estimated Model	0.254	0.273	0.302	0.316

Graphic 3. Model Graphic Output (Smart-PLS 4.1.14)



4.6 Hypothesis Testing

From the empirical path results, the core mechanism proposed in this study received relatively clear support. First, both virtual asset level and game skill level exerted significant positive effects on friendly gaming experience, with the direct effect of game skill level being stronger. This suggests that, in the context of MOBA games, signals of competitive performance are more powerful than signals of virtual consumption in directly shaping the friendliness of the interaction a player receives. Second, the two forms of status perception played important transmitting roles in the model. Virtual asset level had a significant positive effect on perceived economic status, which in turn positively influenced friendly gaming experience. Likewise, game skill level had a significant positive effect on perceived competence status, and perceived competence status also significantly enhanced friendly gaming experience. These findings indicate that players do not receive better interactive treatment simply because they possess high level virtual assets or strong game skills. More importantly, teammates form

judgments about their economic position or competence value on the basis of these conspicuous signals, and then adjust their communication style, willingness to cooperate, and degree of tolerance accordingly. At the same time, the effect of virtual asset level on perceived competence status was not significant, indicating that high value virtual assets primarily activate associations with economic resources rather than being effectively translated into perceptions of competitive competence. In addition, none of the interaction effects involving cognitive level reached statistical significance, suggesting that its moderating role was not empirically supported in the present sample.

With regard to hypothesis testing, Table 17 shows that of the ten hypotheses proposed in this study, H1, H2, H3, and H4 were supported, whereas H5 and H6a to H6e were not supported. More specifically, all direct effect hypotheses were confirmed, indicating that virtual asset level and game skill level are indeed important antecedent variables of players' friendly experience. In terms of mediating effects, perceived economic status successfully mediated the relationship between virtual asset level and friendly experience, while perceived competence status successfully mediated the relationship between game skill level and friendly experience. This suggests that different types of conspicuous signals operate through different pathways of status perception. However, H5 was not supported, which means that virtual asset level cannot indirectly enhance friendly experience through perceived competence status. In other words, players are not consistently regarded as more capable teammates merely because they possess high quality skins, Noble status markers, or rare virtual items. Even more notably, none of the moderating hypotheses was supported, indicating that cognitive level did not significantly alter players' response strength to signals related to virtual assets, game skill, or status perception. Overall, this study supports the basic analytical framework linking conspicuous signals, status perception, and friendly experience. However, this mechanism is mainly reflected in two relatively independent pathways: virtual asset level influences friendly experience through perceived economic status, while game skill level influences friendly experience through perceived competence status, rather than through a more complex mechanism involving cross pathway generalisation or cognitive moderation.

Table 17. Results of Hypothesis Testing

Hypothesis	Hypothesis Statement	Corresponding Empirical Result	Conclusion
H1	Players' virtual asset level has a significant effect on their friendly gaming experience.	Virtual Asset Level → Friendly Gaming Experience: β = 0.335, T = 8.415, P = 0.000	Supported
H2	Players' game skill level has a significant effect on their friendly gaming experience.	Game Skill Level → Friendly Gaming Experience: β = 0.448, T = 13.286, P = 0.000	Supported
H3	Perceived economic status mediates the relationship between virtual asset level and friendly gaming experience.	Virtual Asset Level → Perceived Economic Status: β = 0.674, T = 25.343, P = 0.000; Perceived Economic Status → Friendly Gaming Experience: β = 0.144, T = 3.061, P = 0.002	Supported
H4	Perceived competence status mediates the relationship between game skill level and friendly gaming experience.	Game Skill Level → Perceived Competence Status: β = 0.665, T = 25.456, P = 0.000; Perceived Competence Status → Friendly Gaming Experience: β = 0.305, T = 6.024, P = 0.000	Supported
H5	Perceived competence status mediates the relationship between virtual asset level and friendly gaming experience.	Virtual Asset Level → Perceived Competence Status: β = 0.003, T = 0.090, P = 0.928	Not Supported
H6a	Cognitive level moderates the relationship between virtual asset level and perceived economic status.	Cognitive Level × Virtual Asset Level → Perceived Economic Status: β = -0.032, T = 0.915, P = 0.360	Not Supported
H6b	Cognitive level moderates the relationship between game skill level and perceived competence status.	Cognitive Level × Game Skill Level → Perceived Competence Status: β = 0.009, T = 0.304, P = 0.761	Not Supported
H6c	Cognitive level moderates the relationship between virtual asset level and perceived competence status.	Cognitive Level × Virtual Asset Level → Perceived Competence Status: β = 0.056, T = 1.643, P = 0.100	Not Supported

Hypothesis	Hypothesis Statement	Corresponding Empirical Result	Conclusion
H6d	Cognitive level moderates the relationship between perceived economic status and friendly gaming experience.	Cognitive Level × Perceived Economic Status → Friendly Gaming Experience: β = -0.004, T = 0.088, P = 0.930	Not Supported
H6e	Cognitive level moderates the relationship between perceived competence status and friendly gaming experience.	Cognitive Level × Perceived Competence Status → Friendly Gaming Experience: β = -0.045, T = 0.856, P = 0.392	Not Supported

5. Conclusion

5.1 Core Findings

The most explanatory and, indeed, most disruptive finding of this study is that friendly experience in Honor of Kings is determined less by whether players themselves are rational or mature, and more fundamentally by conspicuous signals that can be rapidly identified before the match begins, together with the status judgments these signals evoke. On the one hand, game skill level exerted the strongest influence on friendly experience and operated significantly through perceived competence status, indicating that in the high pressure and highly collaborative context of MOBA games, the players who are most readily respected and treated well by teammates are, above all, those perceived as capable of leading the team to victory. On the other hand, although virtual asset level not only directly enhanced friendly experience but also strongly shaped perceived economic status, it was almost entirely unable to translate into perceived competence status. This empirical result directly challenges the common assumption that expensive skins and high spending naturally lead others to regard a player as highly skilled. Instead, the findings show that players clearly distinguish between being wealthy and being capable. It should also be noted that perceived competence status had a stronger effect on friendly experience than perceived economic status. Although the latter path was statistically significant, its effect size was relatively modest. This suggests that consumption related symbols can indeed bring more favourable social treatment, but what more consistently sustains a friendly interactive climate is the functional status associated with competitive competence.

The study also found that cognitive level neither significantly enhanced friendly experience nor significantly moderated any of the core paths, although it did significantly weaken players' tendency to form status judgments on the basis of game skill and virtual assets. This indicates that players with higher cognitive levels are not more likely to receive friendly treatment, but are simply less likely to be guided by surface signals. Taken together, friendly interaction in MOBA games is not merely a mild outcome driven by individual character or personal civility. Rather, it is a form of social evaluation deeply embedded in a chain of signal recognition, status categorisation, and interactional allocation. Within this process, game skill generates competence based respect, while virtual assets generate economically inflected courtesy. The two operate in parallel, yet they do not converge. Cognitive level, contrary to expectation, does not reshape this order. Instead, its limited role indirectly demonstrates that status based judgment in game social interaction exerts a more stable and powerful influence than individual rationality.

5.2 Implications

For players, what can truly and consistently earn friendly treatment in MOBA games is not the image of being affluent conveyed through high spending, but genuine competitive ability that can be recognised and trusted by teammates. Compared with virtual assets, game skill has a stronger effect on friendly experience and is more capable of further enhancing teammates' respect, patience, and cooperation through perceived competence status. Players should therefore avoid relying excessively on consumption related symbols such as skins and Noble status markers to construct their image, and should instead place greater emphasis on operational skill, team awareness, communication quality, and actual in game contribution. At the same time, players should reduce their tendency to make rapid judgments about others' status on the basis of conspicuous markers, and should strive to adjust their interactive attitudes according to actual performance rather than surface signals, thereby promoting more rational and equitable teamwork.

For gaming platforms, improving the friendliness of the gaming environment cannot depend solely on appeals to civility or players' self-discipline, but should also involve mechanism design aimed at reducing the influence of conspicuous signals

on the allocation of interaction. Since players' friendly experience is shaped by status judgments triggered by signals of both game skill and virtual assets, platforms should place greater emphasis on indicators that reflect genuine collaborative value, such as team contribution, coordination performance, and participation in team fights, in order to strengthen competence oriented positive evaluation. At the same time, platform designers should handle the display mechanisms associated with Noble status markers, rare skins, and high spending indicators with caution, so as to avoid intensifying the social stratification produced by economic symbols. The focus of platform governance should shift from merely urging players to be more rational towards reducing the triggering force of status based judgments through institutional design, thereby optimising the overall gaming ecosystem at its source.

5.3 Research Limitations

Although this study has conducted a relatively systematic empirical examination of the relationships among virtual asset level, game skill level, status perception, and friendly experience among Honor of Kings players, and has obtained satisfactory statistical results at both the measurement model and structural model levels, several limitations remain. First, this study relies on cross sectional questionnaire data. While such data can reveal correlations and structural relationships among variables, they do not provide direct temporal evidence for the dynamic evolution of causal mechanisms. In particular, the process through which players continuously revise their status judgments on the basis of conspicuous signals across different stages of a match has not been fully captured. Second, the data were derived primarily from players' self-reports. Although the questionnaire underwent expert review, pilot testing, and reliability and validity assessment, the results may still have been influenced by common method bias, perceptual subjectivity, and social desirability effects. Third, this study focuses on Honor of Kings as a representative MOBA mobile game. While this enhances contextual specificity and explanatory depth, the applicability of the findings to other game genres, platform environments, and cultural contexts remains to be further examined. Finally, although the study confirms that virtual assets and game skill influence friendly experience through different status perception pathways, the explanatory power of the model for friendly experience remains at a moderate to moderately high level. This suggests that, beyond the variables included in the present study, factors such as players' personality traits, immediate win loss situations, communication styles, matchmaking mechanisms, and the intensity of platform governance may also exert important effects on friendly interaction, and therefore merit inclusion in a more comprehensive analytical framework in future research.

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The authors declare that there is no conflict of interest regarding the publication of this paper.

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Appendix: Questionnaire

Questionnaire on Honor of Kings Players' Virtual Asset Level, Game Skill Level, and Friendly Experience in the Gaming Environment

Dear Respondent,

Hello.

This questionnaire is designed to understand how Honor of Kings players perceive the interaction climate among teammates during gameplay, and to examine how factors such as virtual assets, game skill, status perception, and cognitive level may influence friendly experience. The questionnaire is intended solely for academic research. All data will be used only for statistical analysis and will not be used for any commercial purpose. The questionnaire is anonymous, and all personal information will be kept strictly confidential. Please answer each question on the basis of your actual gameplay experience and genuine feelings. There are no right or wrong answers.

Thank you very much for your support and cooperation.

Part I Screening Questions

S1. Have you ever played Honor of Kings?
1 = Yes
2 = No
S2. Have you played Honor of Kings within the past six months?
1 = Yes
2 = No
S3. Have you ever played ranked matches or peak tournament matches with strangers or non-regular friends?
1 = Yes
2 = No

Instruction: If the answer to any of S1, S2, or S3 is No, the questionnaire should be terminated.

Part II Basic Personal Information

Instruction: The following information is collected for statistical analysis only. All responses will be processed anonymously and will not involve any disclosure of personal privacy. Please answer according to your actual situation.

D1. What is your gender?
1 = Male
2 = Female
3 = Prefer not to disclose

D2. Which of the following age ranges do you belong to?
1 = Under 18
2 = 18–22
3 = 23–27
4 = 28–32
5 = 33 and above

D3. What is your highest level of education?
1 = Junior secondary school and below
2 = Senior secondary school / technical secondary school
3 = Junior college
4 = Bachelor's degree
5 = Master's degree and above

D4. What is your current occupational status?
1 = Student
2 = Corporate employee
3 = Self-employed / freelancer
4 = Civil servant / public institution employee
5 = Professional / technical personnel
6 = Other

D5. What is your approximate monthly disposable income?
1 = Below RMB 3,000
2 = RMB 3,001–5,000
3 = RMB 5,001–8,000
4 = RMB 8,001–12,000
5 = RMB 12,001 and above
6 = No fixed income at present

D6. Approximately how long have you been playing Honor of Kings?

1 = Less than 6 months
2 = 6 months–1 year
3 = 1–3 years
4 = 3–5 years
5 = More than 5 years

D7. Over the past six months, how often have you played Honor of Kings on average per week?
1 = Less than once a week
2 = 1–2 times a week
3 = 3–4 times a week
4 = 5–6 times a week
5 = Almost every day

D8. On average, how much time do you spend playing Honor of Kings each day?
1 = Less than 30 minutes
2 = 30 minutes–1 hour
3 = 1–2 hours
4 = 2–3 hours
5 = More than 3 hours

D9. What is your current main rank, or the main rank you held in the most recent season?
1 = Bronze / Silver
2 = Gold
3 = Platinum
4 = Diamond
5 = Star
6 = King and above

D10. Which teaming mode do you use most often in the game?
1 = Mainly solo queue
2 = Mainly duo / trio queue
3 = Mainly five-stack queue
4 = Both solo queue and team queue frequently

D11. What is your approximate cumulative spending in Honor of Kings?
1 = Never spent
2 = RMB 1–100
3 = RMB 101–500
4 = RMB 501–1,000
5 = RMB 1,001–3,000
6 = RMB 3,001 and above

D12. How often do you display skins, Noble level, or personalised identity markers in the game?

1 = Almost never
2 = Occasionally
3 = Sometimes
4 = Often
5 = Always

Part III Core Measurement Items

Instructions for completion:
Please evaluate the following statements on the basis of your actual experience in Honor of Kings.

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

A. Virtual Asset Level
This section is intended to measure the level of virtual assets that teammates can perceive a player to possess in Honor of Kings.

VA1 I own a relatively large number of high-quality skins in Honor of Kings.
VA2 Among the skins I own, a relatively high proportion are high-value skins, such as Legendary, limited edition, Unparalleled, or Glory Collection skins.
VA3 The Noble level or related identity markers I display in the game are usually relatively high.
VA4 The skins, Noble level, or displayed content on my account usually give others the impression that I have invested heavily in it.
VA5 When teammates see the visible content on my account, they can usually sense that my level of virtual assets is relatively high.

B. Game Skill Level
This section is intended to measure players' competitive ability and the level of skill performance that can be recognised by teammates.

GS1 My current rank or highest historical rank is usually at a relatively high level.
GS2 The win rate of my frequently used heroes, or my overall match win rate, is usually relatively high.
GS3 I often achieve good match records in Honor of Kings.
GS4 I usually perform well in hero control, situational judgment, and team coordination.
GS5 When teammates see my rank, win rate, or match record, they usually regard my game skill level as relatively high.

C. Perceived Economic Status (Mediating Variable 01)
This section is intended to measure whether respondents believe that teammates infer stronger real-life spending power or better economic conditions from consumption-related cues such as displayed skins and Noble level in Honor of

Kings.

EP1 When I use Glory Collection, Unparalleled, or other high-quality skins, teammates often think that I am someone willing to spend money in the game.
EP2 In Honor of Kings, players with a higher Noble level or a larger skin collection are usually more likely to be seen by others as having stronger real-life spending power.
EP3 When teammates see that I have rare skins, a relatively high Noble marker, or a more complete skin display, they may think that my real-life circumstances are quite good.
EP4 When selecting heroes or entering a match, the skins and Noble information displayed by a player influence how others judge that player's economic conditions.
EP5 The consumption-related traces I display in the game, such as skins and Noble level, influence teammates' impressions of whether I have financial strength.

D. Perceived Competence Status (Mediating Variable 02)
This section is intended to measure whether respondents believe that teammates regard them as more capable, more trustworthy, and more worthy of cooperation because of competence-related cues such as rank, win rate, and match record.

AP1 When teammates see that I have a relatively high rank, a high peak tournament score, or a strong win rate, they usually think that I am more capable.
AP2 In Honor of Kings, players with better match records or stronger skills are generally more likely to be treated by teammates as core members of the team.
AP3 When I display a relatively high rank, a high win rate, or particularly impressive hero records, teammates are usually more willing to trust my judgment and follow my calls.
AP4 During team formation or in the course of a match, the level of skill a player displays influences that player's standing in the eyes of teammates.
AP5 When I demonstrate strong ability, teammates are usually more willing to follow my rhythm and coordinate with my style of play.

E. Friendly Experience
This section is intended to measure the extent to which respondents perceive friendliness, respect, tolerance, and cooperation from teammates during Honor of Kings matches.

FE1 During matches, teammates usually communicate with me in a normal and friendly manner.
FE2 Even when I make mistakes in the game, teammates generally do not immediately blame, mock, or speak to me sarcastically.
FE3 During gameplay, I am usually able to feel that teammates show me basic respect.
FE4 Teammates are usually willing to communicate with me and maintain cooperation during the match.
FE5 Even when the situation is unfavourable or the team is falling behind, teammates usually remain relatively restrained and cooperative.
FE6 Overall, I am usually able to experience a relatively positive team interaction climate in Honor of Kings matches.

F. Cognitive Level
This section is intended to measure whether players are more inclined to rely on intuitive judgment or to engage in

analysis and reflection when confronted with conspicuous information.

CL1 When judging a player, I usually do not draw conclusions easily on the basis of surface information alone, such as skins, Noble level, or rank.
CL2 When confronted with conspicuous cues in the game, I usually go on to consider whether such information truly reflects the player's actual ability or level.
CL3 When evaluating teammates, I am more inclined to make an overall judgment based on their actual mechanics, game awareness, and coordination.
CL4 I usually consider a player from multiple angles rather than making a one-sided judgment based on a single piece of information.
CL5 Even if a player's displayed profile appears highly prominent, I will continue to revise my judgment on the basis of that player's subsequent actual performance.

END OF THE SURVEY THANK YOU