The Influence of Sexualization of Female Characters on Purchase Intentions in MOBA Games
The Example of League of Legends

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ABSTRACT

The sexualization of female characters in video games has long been a prevalent issue. The gaming industry holds a belief that sexualized female character will attract their main audience: male players and boost sales. However, limited research has examined the economic implications of sexualized female characters in gaming. This study investigates how and to what extent the sexualization of female game characters in MOBA games influences male and female players' in-game purchase intention. Take the most popular MOBA game, League of Legends as an example, in which players compete by controlling different "champions". By using the framework of objectification theory and the theory of reasoned action (TRA), this study examines the effects of the sexualization of female champion skins (virtual products that can alter the appearance of champions) in League of Legends on players' purchase intention, with gender as a moderating variable and aesthetics and attitude as mediating variables.

A sample of 300 participants completed a survey as part of an experimental design. The findings reveal that higher levels of sexualization in female champion skins were associated with lower aesthetic perceptions and decreased purchase intention among male players. In contrast, the sexualization of female champion skins showed a positive impact on purchase intention but a negative effect on aesthetics in female players. The attitude toward purchasing champion skins and aesthetics do mediate the influence of sexualization on purchase intention, supporting the TRA and objection theory. The results suggest that male players neither find sexualized female champion skins aesthetically appealing nor exhibit a desire to purchase them, which contradicts the previous study. While female players may have a higher purchase intention with sexualized female champion skins, they still do not perceive them as aesthetically pleasing. This may be due to the reason that male players prefer sexualized female characters as secondary characters in video games but are not sexualized when they play as them. And women may have internalized the social norms of sexualization and tend to find sexualized female avatars aspirational. Besides, the study also validates the positive influence of attitude toward purchasing virtual goods on purchase intention.

KEYWORDS: *purchase intention, sexualization, League of Legends, aesthetics, MOBA*

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1. Introduction

League of Legends, produced by Riot Games, is the most popular multiplayer online battle arena (MOBA) game, with over 180 million players, including 125 million active players each month (Goodman, 2023). The game was the basis of its first animated series, Arcane, on Netflix in November 2021. The show was an instant hit that reached over 15 million households worldwide (Staff, 2023). Arcane successfully portrayed many female characters, including character named 'Vi' who breaks the traditional gender stereotypes by acting confident, brave, and aggressive. The animation's success made Vi one of the most popular champions in the game and attracted many new players to League of Legends (Staff, 2023). However, it was noticed that in-game VI was very different, wearing a revealing tight outfit with prominent breasts and hips but a slim waist (King, 2022). In fact, this kind of portrayal applies not only to Vi, but most of the female figures in League of Legends who are arguably inappropriately sexualized to varying degrees.

In the male-dominated video game region, male characters and non-human characters appear more often than female characters (Gestos et al., 2018). Female characters not only suffer from a lack of representation in video games but are also more associated with gender stereotypes (Gestos et al., 2018), they are more likely to be depicted in revealing and inappropriate clothing compared to male game characters, and they are often hypersexualized with exaggerated sexual bodies and behaviors, with minimal or revealing clothing (Downs & Smith, 2009; Stermer & Burkley, 2015). This sexualization overshadows other characteristics of female characters, such as personality and ability and serves as a means of pleasing the primarily male gaming audience (Robinson, 2017). This use of sexualization can be seen in not just the game character design, but also the advertisements and the cover art of video games to attract players (Near, 2012).

The utilization of female sexuality as a marketing strategy is a longstanding practice. Studies have found that women are six times more likely than men to be depicted in revealing clothing or sexual positions in advertising (Stankiewicz & Rosselli, 2008). The belief is that this excessive use of sexualized women will motivate consumers to purchase associated products (Gramazio et al., 2020). It is found that this strategy worked better for men, for men were significantly more positive than women in evaluating sexually attractive ads (Wirtz et al., 2017). Similarly, in video games, especially some male-oriented games, sales are positively correlated with the sexualization of non-central female characters but negatively correlated with just having a woman as the main character (Near, 2012). Additionally, being gendered as a "masculine-only space", video games overtly adopt a masculine perspective. Men influenced by such subjective norms and want to maintain this gendered space are likelier to purchase video games that enforce to space by sexualizing and marginalizing female characters (Near, 2012).

However, the assumption that "sex sells" has been challenged by some studies. Gramazio et al. (2020) examined Italian men's and women's perceptions of sexual advertisements and found that the sexualization of female models in marketing reduced women's product appeal and purchase

intentions, while this did not affect men. This suggests that hyper sexualization for females is unnecessary or even detrimental in marketing, and further points to the differences in the attitudes and behaviors of men and women regarding sexualized advertising. Moreover, in video games, players' attitudes toward female characters have also changed. Bell (2017) found that both female and male players would tend to not choose an overly sexualized avatar in a video game, suggesting that the era of hyper sexualization may be coming to an end.

Given the growing number of female video game players and changing attitudes, it is worth revisiting whether the sexualization of female game characters leads to economic growth in video games. League of Legends (LoL) is the most successful and representative MOBA game, in which players compete with each other by controlling different "champions" (Goodman, 2023). As a free-to-play game, LoL heavily relies on players' in-game purchases of skins, which are virtual products that can alter the appearance of champions, but not their skills and abilities. As a result, it is a purely aesthetic virtual good, and the appearance of the champion in the champion skins is a key factor to attract players to make purchases (Marder et al., 2019). League of Legends frequently sexualize their female champions in their skins (Anna, 2015). Additionally, as a highly successful video game, League of Legends possesses a large number of high-quality design champions (62 female champions) that each has multiple champion skins, making the champion skin an ideal object for studying the influence of sexualization on purchase intention. As a result, this thesis will use the example of League of Legends to examine the impact of the sexualization of female champion skins on players' purchase intention in MOBA games. The research question is:

How and to what extent does the sexualization of female game characters in MOBA games influence male and female players' in-game purchase intention?

1.1 Academic Relevance and Societal Relevance

Regarding the sexualization of female characters in video games. Previous research has focused chiefly on the adverse psychological effects of sexualized female characters in video games. These effects include increase of tolerance of sexual harassment and acceptance of rape myths (Dill et al., 2008; Driesmans et al., 2015), self-objectification and body-related thoughts in women (Skowronski et al., 2021; Vandenbosch et al., 2016), and online sexual harassment of women (Burnay et al., 2019), and the gender representation in video games (Anna, 2015; Gestos et al., 2018; Ivory, 2006). Only Near (2012) investigated whether "sex still sells" in video games with the cover of video game boxes. However, Near's research focus on paid video games that usually have only one manipulable game protagonist. Little research has studied the influence of sexualization on female characters on people's purchase intention in free-to-play games. Especially the MOBA game, in which players are allowed to choose from a variety of champions, which includes both female and male characters, for each match. Also, the MOBA game is still a relevant and popular video game genre that features

champion skins with aesthetics as a significant factor that contributes to players' purchase intention (Marder et al., 2019). The sexualization influence regarding aesthetics still remains unexplored in research in the context of video games, as few studies investigated players' aesthetics perception of the sexualization of female characters. As a result, this study decides to further fill the research gap by investigating the influence of sexualization on female champion skins in League of Legends on players' purchase intention with aesthetics as a mediator. In addition, considering the disparity in attitudes and perceptions of sexualization in males and females (Gramazio et al., 2020), this study took gender as a moderator.

The video games industry keeps holding a belief that the sexualization of female characters will attract male players and increase their engagement (Downs & Smith, 2009). Although it has been shown that hyper-sexualized female characters in video games may be a deterrent for female gamers (Hartmann & Klimmt, 2006), game publishers still continue to produce games they believe their main customers - male gamers will want to play (Reinhard, 2009). That is, they keep publishing games that are advertised with sexualized female characters, instead of offering diverse types of female characters for both male and female gamers (Reinhard, 2009; Robinson, 2017).

However, with the increasing number of female gamers (Yokoi, 2022), and the decreasing preference of male gamers for hyper sexualized female characters (Bell, 2017; Reinhard, 2009), the game industry and publishers may need to reconsider whether sexualized female characters will still bring success in sales. This is particularly relevant in the MOBA game industry, which boasts a significant female player base, with games like King of Glory, whose female players outnumber its male players (Gao & Shih, 2018). This study aims to examine the impact of the sexualization of female characters on people's willingness to purchase by taking the most popular MOBA game: League of Legends, a game with a large number of female players and female characters as an example. This study can not only provide insights for the MOBA game industry to understand its players' perceptions of female character portrayal but also help them learn which types of female champion skins players are willing to buy. Moreover, the study provides the gaming industry with an understanding of the current attitudes of male and female players toward the sexualization of female characters they play as, helping to provide theoretical implications for the gaming industry and game character design. The study can also provide advocacy groups and policymakers with the information they need to promote more inclusive and respectful media for all.

1.2 Chapter Outline

The remaining chapters of this study are structured as follows. Chapter 2 presents the theoretical framework, where the theory of the objectification and sexualization of women is discussed. Then it introduces the sexualization of female characters in video games, and League of Legends and the impact of sexualized female characters. This is followed by the Theory of Reasoned Action, which helps us to propose a conceptual model and corresponding hypotheses by linking attitudes, social

norms, and intention. In Chapter 3, "Methods," specific experimental design and measurement methods will be presented, including a description of stimulus materials, operationalization of variables, manipulation checks, data analysis, and validity and reliability of the scale. In the results of Chapter 4, the results and data from the validation of each hypothesis using SPSS are presented. Then, in the final chapter, Conclusions, possible reasons for these findings are explained with literature, and relevant academic and social implications are presented, as well as limitations of the study and directions for future research.

2. Theoretical Framework

2.1 Objectification Theory

Objectification theory suggests that sexual objectification is a form of reduction of a person to their body parts or sexual functions, in which they are treated as mere objects for decoration and evaluated solely based on appearance (Fredrickson & Roberts, 1997). Being influenced by feminist studies (Bartky, 1990; Nussbaum, 1995), objectification theory argues that women's lives are more permeated by sexual objectification due to Western societies' heteronormative and patriarchal nature (Gramazio et al., 2020). Women growing up in Western culture know that their bodies will be "looked at and evaluated" (Fredrickson & Roberts, 1997, p. 177). They have been socialized to think of themselves as objects by the daily media messages about the importance of female sexual attractiveness, such as the constant use of sexy women in commercials, advertisements, and video games (Downs & Smith, 2009).

Compared to traditional media, video games are highly interactive media in which people go beyond merely viewing sexualized content by actively engaging with or playing as these sexualized characters, leading to greater immersion in the virtual environment and identification with the characters, thus producing stronger effects than passive viewing (Yee & Bailenson, 2009). Through internalizing those sexualizing messages, women are prone to self-objectification, believing that their worth depends on their sexuality (Zurbriggen, 2007). The application of objectification theory in video games extends to various areas, such as character design, with a prevailing trend in which female characters are portrayed as supporting characters and characterized by increased attractiveness, sexiness, innocence, and a tendency to wear more revealing clothing (Miller & Summers, 2007). Accompanying all this societally are the negative effects of female character objectification on players, including increased tolerance of sexual harassment and acceptance of rape myths (Dill et al., 2008; Driesmans et al., 2015), self-objectification and body-related thoughts in women (Skowronski et al., 2021; Vandenbosch et al., 2016), and online sexual harassment of women (Burnay et al., 2019).

2.2 Sexualization of Female Characters in Video Games

According to American Psychological Association (2010), the definition of sexualization comprises the following:

> "Sexualization occurs when a person's value comes only from his or her sexual appeal or behavior, to the exclusion of other characteristics; a person is held to a standard that equates physical attractiveness (narrowly defined) with being sexy; a person is sexually objectified — that is, made into a thing for others' sexual use, rather than seen as a person with the capacity for independent action and decision making; and/or sexuality is inappropriately imposed upon a person. All four conditions need not be present; anyone is an indication of sexualization." (American Psychological Association, 2001, p. 1)

In the video game context, sexualized female characters could be summarized as those who exhibit “hyper-idealism” with unnatural and unnecessary sexuality, including dressing in revealing and inappropriate costumes and emphasizing specific body parts such as the breasts, waist, hips, shoulders, and buttocks. These characters often have abnormal body proportions, muscle definition, and exaggerated features, particularly in the abdominal region with extra-large breasts and buttocks (Bell, 2017; Matthews et al., 2016). They exist primarily as trophies or decorations that serve no purpose other than their appearance (Gestos et al., 2018) or as sexual objects that cater to the desires of the game's protagonist who are primarily male (Guggisberg, 2020).

Specifically, these female characters are often portrayed as weak and in need of rescue, fitting the "Damsel in Distress Trope" like the princess that needs to be saved in Mario and The Legend of Zelda (Hansen, 2018) and are consistently portrayed as helpless and wearing revealing clothes (Dickerman et al., 2008). Even when female characters are presented as protagonists in games, they are still vulnerable to gender stereotypes. A typical example is the protagonist Lara Croft in Tomb Raider that was released in 1996. Even though the presence of Lara Croft as a strong and brave female protagonist in an action-adventure video game was considered a breakthrough, her presence showcased that, if a female character in video games was portrayed as powerful and intelligent, she first needs to be beautiful and sexy (Bell, 2017; Jansz & Martis, 2007). This highlights that video games can be a significant contributor to the sexualization and objectification of women (Stermer & Burkley, 2015).

2.3 MOBA Games and League of Legends

The MOBA (Multiplayer Online Battle Arena) game is an action real-time strategy type of game that requires teamwork and cooperation (Davies et al., 2020). A game contains two teams, each with five players battling against each other. Each player picks and controls a character, known as a “champion”. Different champions have distinctive appearances, abilities, and styles of gameplay. By utilizing the champions’ unique skills, players fight each other for the team's success (League of Legends, n.d.). In MOBA games, players choose champions mainly based on their roles in the team, which are divided according to the different regions (lanes) on the map: top, mid, and bot (bottom), all leading to the enemy's base. The bot lane is designed for two players to collaborate, with one taking charge of the damage and the other serving as support, working together to achieve their objectives (Davies et al., 2020).

League of Legends (LoL) released in 2009 by Riot Games is the most popular free-to-play MOBA game (Goodman, 2023). Two opposing teams compete with each other on a map to win by taking down the enemy’s base and destroying their "Nexus". League of Legends is also the most popular game on live gameplay streaming platform Twitch, with over 1 billion hours of viewing per year from 2016 to 2019, the number reached 1.5 billion in 2020 and increased to 1.7 billion in 2021 (Robertson, 2022). The game’s popularity has extended beyond its PC version, as the game has also

launched a mobile version, a spin-off animation, and regularly hosts worldwide tournaments (Spezzy, 2023).

As a male dominated competitive MOBA game (Ratan et al., 2015), League of Legends (LoL) features 162 champions, with 62 females, 96 males, and four genderless characters (League of Legends, n.d.). Not only are female champions underrepresented, but they are also often associated with utility-supporting roles of healing, or long-distance fighting roles in a team, while male champions tend to fulfill the more aggressive tough melee champions, tank (heavy fighter) roles to sacrifice, and short-range combatant roles. It is found that all support roles are females (Song et al., 2021). Female support champions typically have slender and delicate builds, operating from a distance. Due to the scarcity of female characters in tank and fighter roles, female champions are often depicted as more delicate with slender bodies (Söderlund, 2015).

In terms of avatar selection, since MOBA games do not have a fixed image for players, players could change their champion or avatar selection for each game. It is found that female players tend to choose same-gender champions to play more often than male players and male players tend to choose gender-swap champions (female champions) more often than female players in League of Legends (Jenson et al., 2015; Ratan et al., 2019). This may be due to the fact that female players are more influenced by gender identity when choosing champions in a game (Ratan et al., 2019). As a result, female players tend to choose only female champions to play even though female champions are more functionally homogeneous with long-distance and supportive roles (Ratan et al., 2019; Song et al., 2021). Male players, on the other hand, are not influenced by gender identity in their choice of champions, and studies have shown that male players choose champions more for instrumental reasons in League of Legends (Gao et al., 2017).

Gender differences do not only exist for champion design but also in the demographics (male and female) of the players in League of Legends. LoL is still a male-dominated game with fewer female players, who on average play fewer matches than male players. Studies have shown that female players in LoL are equal to men in their gaming skills (Ratan et al., 2015). However, the stereotype is that men tend to level up their gaming skills more easily than women (Taylor et al., 2009), which makes female players in LoL who play on the same team as male players less confident in their skills and tend to choose to support heroes to help their teammates kill enemies rather than fight solely on their own (Ratan et al., 2015).

2.4 Sexualization in League of Legends

Despite League of Legends' being free to download, it has become one of the top 10 highest-grossing free-to-play games with over $20 billion gross since it came out, and $1.7 billion in a single year (Perez, 2023). The revenue of League of Legends mainly stems from the in-game purchases of its cosmetic virtual goods of champions, known as champion skins (Spezzy, 2023). These skins only change the visual appearance of the champions in the game and do not affect the abilities of the

champions or provide the player with any in-game advantage. They are purely for aesthetic purposes to enhance the visual experience for players. Bell (2017) analyzed female champion skins in LoL and categorized them into five, according to different levels of sexualization. Each champion's level of sexualization falls along a spectrum with varying degrees of sexualization. For instance, a female character wearing a t-shirt may be considered less sexualized compared to one wearing a bikini with more pronounced sexual features (Lethbridge, 2022). And here are the 5 different sexualization levels proposed by Bell (2017):

1. Non-sexualization refers to characters who do not exhibit clear sexual attraction or sexual behavior. They have very limited or even no traditional sexual appeal from physical appearance (or the physical attractiveness will intentionally be reduced or toned down in some way, making the character less sexually appealing), are not sexually objectified, and are not inappropriately forced into sexual roles (Bell, 2017).
2. Subtle sexualization involves the restrictive use of any elements related to sexualization. Characters may have some sexual attraction or display some sexual behavior, but only in a "reduced or incidental" way. The character may possess physical attractiveness in the traditional sense, but this kind of attractiveness will not be prioritized over other attributes such as physical strength, personality, or skills. The character is not designed to be a sexual object, and the character's sexuality is appropriately portrayed without detracting from other characteristics (Bell, 2017, p.66).
3. Overt sexualization involves obvious and direct elements that lead to sexualization. Characters who are overtly sexualized will have their sexual appeal prominently displayed, and their physical attractiveness will be shown "primarily to convey sexiness". These characters are overtly sexually objectified, and their sexuality is prioritized to the detriment of other characteristics such as physical abilities, skills, or competencies. This may include, for example, big breasts that are unnatural and inappropriate, which could lead to disadvantages in game tasks, or clothes that expose more skins, which clearly puts the character at risk in a hostile environment (Bell, 2017, p.66).
4. Hyper sexualization refers to the excessive or extreme use of the factors that lead to sexualization. In this case, characters are extremely sexualized through sexual attraction or behavior. This kind of sexual attraction is based solely on physical attractiveness and turns the character into a sex object primarily intended for sexual pleasure, and their sexuality is inappropriately forced upon them, mainly through unnaturally inappropriate and exaggerated appearance, costume, or position that would put the character in an extremely unfavorable situation in a battle (Bell, 2017).
5. Hypermax refers loosely to the skins that have been deliberately pushed to the boundaries of the definition of hyper sexualization by Bell. Three skins were chosen by Bell to demonstrate Hypermax levels: Battle Bunny Riven, Kitty Katarina, and Heartbreaker

> Vayne. They were all sexualized "far beyond what would be considered "normal" hyper sexualization", with characters wearing clothing that mimics the style of a cute or innocent animal with ears and tails or resembles erotic lingerie. They often show a significant amount of skin and – in their advertised depictions – pose in an overtly seductive way (Bell, 2017).

Of the 36 female champion skins examined, 27% were found to be hyper-sexualized and 31% were found to be overtly sexualized, while only 4 more childlike champions were not sexualized (Bell, 2017). Even female champions who are portrayed as trained and physically strong are still depicted with slender bodies and no prominent muscle definition. Furthermore, female monster champions are dressed in revealing clothing and pose in exaggerated ways that emphasize their sexiness and femininity, while male monsters are depicted simply as monsters (Söderlund, 2015). Female champions in LoL are often portrayed in a consistent pattern of appearance and posture in their skins, with an emphasis on showing off their curves, especially their breasts, hips, and buttocks (usually exaggerated, such as large breasts, hips, and narrow waists), through revealing and tight-fitting clothing. These characteristics are often highlighted within the champion skin, where all of these body parts are prominently visible (Bell, 2017; Söderlund, 2015). The combination of poses, attire, and camera angles work together to emphasize these body parts, reinforce feminine qualities, and frequently result in the objectification and sexualization of female characters.

2.5 The Efficacy of Sexualization

The use of female sexuality as a marketing tool is widespread. It is believed that this excessive use of sexualized women leads to favorable attitudes and motivates consumers to purchase the associated products (Gramazio et al., 2020). For example, completely nude models have been found to be more favorable than just topless models in sunscreen ads (Dudley, 1999). Also, compared to nonsexual ads, sexual ads can attract more attention and interest from the audience and be considered more likable (Reichert et al., 2001). "Sex sells" also seems to work in video games. Near (2012) found that in video games, especially some male-oriented games, sales are positively correlated with the sexualization of non-central female characters, but negatively correlated with having a woman as the main character.

However, other studies have proven that sexualized models and sex marketing do not necessarily lead to an increase in sales. Both male and female respondents did not positively respond to the use of strong overt sexual appeal in a print advertisement (LaTour & Henthorne, 1994). Gramazio et al. (2020) examined Italian men's and women's perceptions of sexual advertisements and found that both males and females showed no greater purchase intention for products with sexualized female models. Similarly, in MOBA games, Bell (2017) found that both female and male players would tend to not choose an overly sexualized avatar in a video game, and hyper max sexualized champions were considered ridiculous and should not be present on the battlefield.

As a result, this study proposed the following hypotheses:

H1: Players' purchase intention of the female champion skin in LoL is negatively influenced by the sexualization level.

Other studies have also found differences in the attitudes and behaviors of men and women toward advertisements featuring sexualized women. Men were significantly more positive than women in evaluating sexually attractive ads (Wirtz et al., 2017). Gramazio et al. (2020) replicated their study and found complementary results that the sexualization of female models in marketing reduced women's product appeal and purchase intentions, while this did not affect men. These findings highlight the disparity in attitudes between males and females and suggest that the sexualization of women in advertising may even have a negative impact on female consumers. Additionally, being gendered as a "masculine-only space", video games adopt a masculine perspective. Men influenced by such subjective norms and want to maintain this gendered space are likelier to purchase video games that sexualize and marginalize female characters (Near, 2012).

Consequently, the following hypothesis is proposed in this study:

H2: The influence of the sexualization of female champion skins in LoL on purchase intention is moderated by the gender of the player, such that sexualization positively influences male players' in-game purchase intention and negatively influences female players' in-game purchase intention.

2.6 Theory of Reasoned Action

The Theory of Reasoned Action (TRA) provides a valuable framework for understanding players' attitudes and behaviors regarding the sexualization of female characters in video games. According to TRA, behavior is determined by the intention to engage in the behavior, which in turn is influenced by attitudes towards behavior and subjective norms (Fishbein & Ajzen, 1975). TRA has been applied to investigate the purchase intentions of consumers in different contexts, including in virtual worlds (Cox et al., 2017) and free-to-play games (Shelstad, 2022). According to TRA, in the context of purchasing female champion skins in League of Legends, purchasing intention can be influenced by subjective norms and attitudes toward purchasing the female champion skin. Subjective norms refer to the perceived expectations and social pressures from one's social milieu, which contains social norms. The sexualization of women has become a social norm, under which men automatically expect women to please them as sexual objects, and women accept themselves being treated as sexual objects (Smolak & Murnen, 2011). These kinds of sexual norms vary from time and culture and are mainly conveyed through media and discipline from parents and peers (Levin & Kilbourne, 2009).

An attitude can be described as an individual's opinions or thoughts regarding a specific

behavior (Ajzen & Fishbein, 1980). It is found that attitudes toward purchasing virtual goods positively influence purchase intentions in various types of free-to-play games. Specifically, when players of the video game have positive attitudes toward in-game purchases of virtual goods, they are more likely to make such purchases (Luo et al., 2011; Hamari, 2015; Shelstad, 2022). In the case of buying champion skins in LoL, attitude toward behavior can be understood as an individual's positive or negative feelings about buying a particular champion skin, which is different from purchase intention but could determine the purchase intention of the champion skins. Linking the above the effects of sexualization, the following hypothesis can be proposed:

H3: The influence of the sexualization of female characters in video games on players' purchase intention is mediated by their attitude towards purchasing the specific champion skin.

2.7 Visual Aesthetics

Aesthetics play an important role in determining profitability (Candi, 2010) and influence the willingness of consumers to buy virtual goods in online video games (Ho & Wu, 2012). Marder et al. (2019) found that aesthetics is a significant factor in determining the purchasing behavior of champion skins of League of Legends players. This suggests that players may be more likely to purchase champion skins if they find them to be aesthetically pleasing.

The aesthetics of virtual goods in games include various sensory elements such as appearance, animation, and sound that enhance the entertainment value for players (Marder et al., 2019). In the context of this study, given the focus on the sexualization of female characters, aesthetics is defined primarily in terms of the physical attractiveness of the character's appearance. The appearance of female characters can significantly influence consumers' purchase intention of the game (Ye, 2022). Character attractiveness refers to how visually appealing and aesthetically pleasing players perceive the female champion in her skin. According to objectification theory, sexuality is perceived to enhance the attractiveness of women (Downs & Smith, 2009), and this social perception could form subjective norms that influence people's behavior. Based on the above, the following hypothesis is proposed:

H4: The influence of the sexualization of female characters in video games on players' purchase intention is mediated by their perception of aesthetics.

Additionally, it was found that sexualized female ads are less attractive to women than neutral ads. While the opposite applies for men since more sexualization in female models leads to more attractiveness (for men) in that advertisement (Gramazio et al., 2020). In video games, hyper-sexualized female characters were more attractive to male players than to female players (Reinhard, 2009). As a result, H5 is proposed with gender as a moderator for aesthetics:

H5: The impact of sexualization on the aesthetic appeal of female champion skins in LoL is moderated by the player's gender. Specifically, sexualization has a positive effect on the aesthetic appeal of male players, while it has a negative effect on the aesthetic appeal of female players.

3. Methods

3.1 Choice of Method

To examine the influence of the sexualization of female characters on players' purchase intention in League of Legends, a quantitative research design with an experimental research method was adopted to test the hypotheses. Quantitative research allows for the "top-down" approach, in which theory is first tested for possible explanations of an observed phenomenon (Fallon, 2016). This research used such an approach by proposing hypotheses based on previous theories and empirical findings, such as the Theory of Reasoned Action.

Furthermore, this study aims to examine potential cause-and-effect relationships between the sexualization of female characters and players' purchase intention using different levels of the sexualization of female champion skins as the independent variable, purchase intention on those skins as the dependent variable, gender as the moderator, and aesthetics and attitude as the mediator. A quantitative experiment was suitable since it could provide focused tests of the hypothesis that would provide evidence about causal relationships, by focusing on specific variables while excluding irrelevant variables in a specific setting (Neuman, 2014). Moreover, experiments were well-suited for narrow scope and micro-level examination of self-reported individual behavior, like players' purchase intentions towards sexualized female champion skins in League of Legends (Neuman, 2014).

3.2 Experimental Procedure and Survey Design

In the experimental design, two female characters from the game LoL were selected, each with five skins representing different levels of sexualization: no sexualization, subtle sexualization, overt sexualization, hyper sexualization, and hyper max. Two characters' skins of the same level were sequentially shown to participants, aiming to reduce bias towards any one kind of character rather than as distinct experimental conditions. This results in 5 experimental conditions comprising 5 different sexualization levels each featuring two champion skins.

A snapshot of the game was not presented to the participants as stimulus material to avoid any potential drawbacks to their responsiveness. The characters in the skin images may not have appeared in sufficient detail as in the snapshot, and the focus of the study is specifically to examine the influence of the design of the champion skin images. Additionally, the research aims to explore sexualization in games as a broader concept, rather than focusing solely on League of Legends. Therefore, it was decided not to include a snapshot in the study.

The experiment/survey was conducted in 5 stages (see Appendix A for a full survey). The survey began with participants being presented with the consent information and the aim of the study. Then, in the second step, participants were asked early in the survey to provide their gender (which will serve as a moderator in the analysis), particularly to avoid incomplete data due to participants' possibly dropping out midway through the experiment. In the third step, questions that

can serve as control variables were solicited by asking participants about their familiarity with MOBA games and League of Legends, how often they play, how often they choose female champions, their brand attitude towards League of Legends, and their attitude towards purchasing in-game virtual items. In the fourth step, participants were shown two female champion skins with one of the five levels of sexualization. Participants were placed into one of the five different conditions randomly to ensure a balanced assignment to each case and raise the confidence of the study by minimizing systematic variations between the groups (Neuman, 2014).

After seeing each of the champion skins, the respondents were asked about their attitude towards purchasing each skin, the purchase intention of each skin, and the attractiveness of each female character separately. That is, aesthetics will not be an experimental condition but will be measured by the respondents. In addition, they were also asked about their perceived level of the sexualization of each of the characters they saw (so asked twice), as a manipulation check to confirm the internal validity of the research. By checking their perception of the sexualization level, the measurement validity of the independent variables could be justified: that is, the sexualization level functioned as intended in each experimental condition, which could mitigate potential factors that could undermine internal validity (Neuman, 2014). Finally, remaining demographic questions such as age, nationality, income, and education level were included in the survey. The variables for purchase intention, attitude, and aesthetics perception for each level of sexualization were calculated by finding the mean of all the scales with both presented stimulus materials for that level. This allowed for a comparison of purchase intention between the five different levels of sexualization.

For ethical considerations, first, participants were informed of the purpose of the study, and there was no potential risk or discomfort in taking part in this experiment. The voluntary participation was achieved by stating in the introduction of the questionnaire that participants should be voluntary to join the survey, and that not participating will not affect them in any way. They were also informed that they have the right to withdraw from this experiment at any time without penalty. Only when the participants agree to voluntary participation in this experiment with the above information, they would continue with the following questions. Participants were also informed that all data obtained from this survey would be kept anonymous and confidential, since the survey did not ask about personal information including contact information or name, as a result, confidentiality and anonymity are achieved since the researcher cannot identify which response is from which participant (Babbie, 2021).

3.3 Sampling

The survey/experiment was deployed online using the Qualtrics platform, which allowed for the broad recruitment of participants. This online approach was chosen for its convenience, cost-effectiveness, and ability to reach a digitally engaged population, which was particularly relevant to the study of online video game purchase intention. Conducting the research online was therefore well

suited to target the group of respondents involved in the study (Van Selm & Jankowski, 2006). The target audience did not need to have any prior experience playing League of Legends. Both LoL players and non-players could participate in this experiment.

The participants were recruited using non-probability purposive and convenience sampling methods to allow the researcher to select participants who meet the criteria and to recruit participants who are easily accessible through social media platforms (Etikan, 2016). The questionnaire was available in both Chinese and English and distributed by Qualtrics through online social media platforms, including gaming communities (like the League of Legends community on Discord and The Gamer Lounge community on Reddit) and non-gaming communities and forums in Europe and China (like Twitter, Weibo, and Douban), to reach a wide range of participants and ensure a representative sample. Considering China is the largest single country gaming market in the world and for League of Legends (Wu, 2022), it is important to include Chinese participants and provide a Chinese version of the questionnaire that could be distributed through Chinese social media like Weibo and Douban (Chinese people could not access the most popular social media like Facebook, Instagram, Discord, and Reddit). The Chinese version of questionnaire is included in Appendix D.

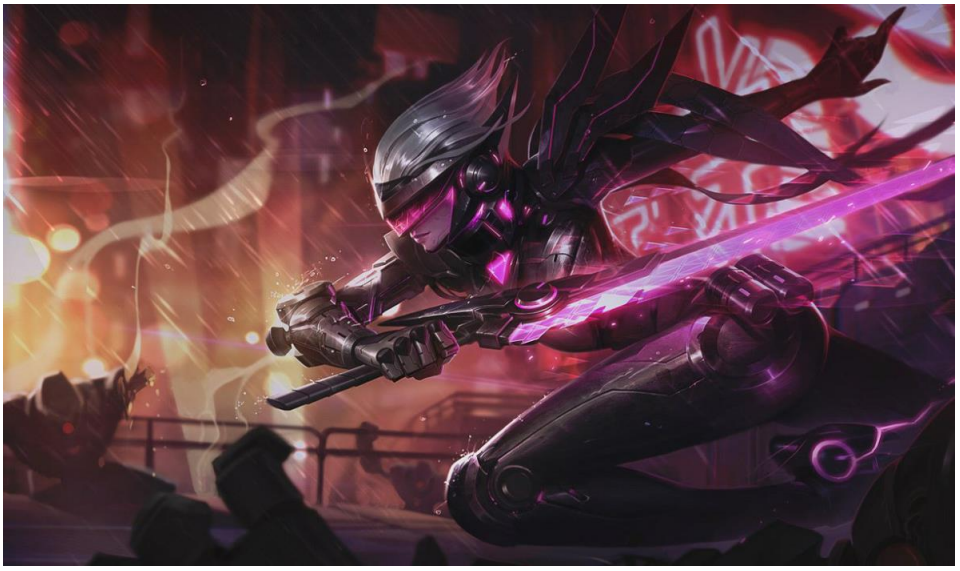
3.4. Operationalization of Variables

3.4.1. Levels of Sexualization

The main independent variable, levels of sexualization, will be represented by different female champion skins. Bell (2017) categorizes 37 skins of 19 female champions in League of Legends into five levels of sexualization: non-sexualization, subtle sexualization, overt sexualization, hyper sexualization, and hyper max sexualization. Based on the categorization proposed by Bell (2017), two champions from League of Legends, Riven (shown in Figure 1), and Fiora (shown in Figure 2) were selected. They both have sufficient champion skins to represent the five different levels of sexualization. Each champion included in the study is represented by five skins, with each skin representing a different level of sexualization. These skins were assessed by external evaluators (6 fellow students) to verify the distinct levels of sexualization according to the definition of Bell.

Figure 1. Examples of Stimuli Used in Experiment: ‘Battle Bunny Riven’ in Hyper Max Sexulization Levels

Figure 2. Examples of Stimuli Used in Experiment: ‘Project: Fiora’ in Non-sexualization Levels



In the experiment, two skins that share the same level of sexualization are presented together to participants. This methodology serves to eliminate any potential bias associated with one specific champion and ensures consistency in the quality of character design. Players were also informed that the skins do not affect the in-game performance and champion ability to avoid interference. Here are the skins that are chosen for 5 levels. Champion skins ‘Project: Fiora’ and ‘Broken Covenant Riven’ (see Appendix B) were chosen for the non-sexualization category. In these two skins, champions Riven and Fiora wear full, sturdy armor that covers most of their body parts, including their faces. The champions’ positions show a charging stance, indicating their bravery in the battle. Both of these two skins focus on the champions' bravery and strength instead of intentionally depicting their sexuality.

In the category of subtle sexualization, the skins ‘Faerie Court Fiora’ and ‘Pulsefire Riven’ (see Appendix B) have been selected. Even though these two skins portray the curvaceous body lines of Riven and Fiora, the focus is not emphasized on explicit sexual appeal. They pose the combat stances

with determined expressions, emphasizing their strength and resilience in battle instead of exposed skin or sexual behavior. In the overt sexualization category, the skins chosen are ‘Pulsefire Fiora’ and ‘Battle Bunny Prime Riven’ (see Appendix B). The champions wear tight-fitting outfits that outline their bodies and accentuate their chest and thigh contours in the two skins. Their poses are not designed to show their combat readiness but to show off their ideal body shape. In the case of 'Battle Bunny Prime Riven’, the champion is even adorned with bunny ears and a bunny tail, which is clearly inconsistent with the theme of combat and adds an erotic element to the outfit. For hyper sexualization, ‘NightRaven Fiora’ and ‘Dawnbringer Riven’ were chosen (see Appendix B). In both of these skins, the focus is on the champions' disproportionately large and exposed breasts. The clothes they wear accentuate the curves of their bodies, emphasizing their sexual appeal. Two skins were chosen as hyper max: one is ‘Battle Bunny Riven’, in which Riven wears an erotic bunny girl outfit, and the other is ‘Pool Party Fiora’ (see Appendix B), in which Fiora wears a bikini. These two outfits are totally unsuitable for a battle with the only purpose of sex appeal.

3.4.2. Aesthetics

The mediator aesthetics is defined as the physical attractiveness of the champion’s appearance in their skin and is measured by a 5-point Likert scale of 3 items adapted from Liao et al., (2019) ranging from 1 (strongly disagree) to 5 (strongly agree). The scale included the items: “The appearance of this champion skin is good-looking.”; “The appearance of this champion skin is attractive.”; and “The appearance of this champion skin is physically attractive.” to measure the overall physical attractiveness of the champion in the skin. In order to distinguish the attractiveness of the champion from the overall design of the picture, the item “I enjoy the overall graphic design” was added. Another two items were added to complement the scale for measuring the aesthetics appealing of the champion’s appearance: “The appearance of this champion's skin is artistically appealing.” and “The appearance of this champion skin is aesthetically pleasing.”

3.4.3. Purchase Intention

Purchase intention is the intended plan and willingness to purchase a product or service of a individual (Spears & Singh, 2004). It is widely accepted that intentions are positively correlated with actual behavior (Webb & Sheeran, 2006). Therefore, researchers studying the effects of sex in advertising often use purchase intention as a proxy for behavior because it serves as an indicator of the likelihood that individuals will engage in the desired purchase action.

Purchase intention – the primary dependent variable – was assessed using a 5-point Likert scale adapted from Ghazali et al. (2019), consisting of five items. Respondents were instructed to rate the relevance of the statements on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), based on how well they applied to their own opinions or beliefs. The items are as follows: “I intend to buy this champion skin in League of Legends in the future”; “I predict that I

will buy this champion skin in League of Legends"; "I would consider buying this champion skin in League of Legends in the future"; "I believe the sale of this champion skin in League of Legends is a positive thing."; and "I would consider spending real money to purchase this champion skin in League of Legends".

3.4.4 Attitudes Toward Purchasing the Champion Skin

The attitude toward the purchase of the champion skin is the respondents' positive or negative feelings towards the purchase of the champion skin they are shown in the experiment. It is adapted from a 5-point Likert scale including four items from Shelstad (2022)'s study, with answers ranging from 1 (strongly disagree) to 5 (strongly agree) including "I have positive feelings towards buying this champion skin from League of Legends"; "The thought of buying this champion skin from League of Legends is appealing to me"; "I approve of the sale of this champion skin in League of Legends"; and "I think the sale of this champion skin in League of Legends is a good thing".

3.4.5 Control Variables

Control variables include brand familiarity with MOBA games and League of Legends, frequency of playing MOBA games and League of Legends, frequency of choosing female avatars in MOBA games, and League of Legends. Also, the demographic information of age, educational background, and income were also used as control variables.

To test the brand familiarity with MOBA and LoL, two items were used: "Q1: How familiar are you with MOBA/LoL" and "Q2: What kind of MOBA/ LoL player are you?" The second question (Q2) was included to further and more accurately assess players' familiarity with the game. This question offered respondents a number of options to indicate their level of familiarity, including "Never heard of it before today"; "Heard of it before today but don't know how to play"; "Know how to play but have never played"; "Played it in the past but not currently" and "Play it currently". This segmentation of familiarity levels allowed for a more accurate understanding of respondents' experience with the game, overcoming the limitations of the traditional familiarity question (Q1).

3.4.6 Attitude Toward Purchasing Virtual Goods

The attitude toward the purchase of virtual goods is defined as the positive or negative feelings of an individual towards the purchase of in-game virtual goods (Kaburuan et al., 2009). Prior research found that purchase intentions of virtual goods in various types of free-to-play games were positively influenced by the attitude toward purchasing in-game virtual goods (Hamari, 2015). Also, in the context of mobile games, attitudes toward purchasing virtual goods emerged as the most strongly correlated construct with purchase intention (Shelstad, 2022). As a result, the study includes attitudes toward purchasing in-game virtual goods as a control variable to avoid confounding, in case some respondents are against any kind of in-game purchasing that will interfere with the results. A 5-

point Likert scale containing four items from Shelstad (2022)'s study was adapted to test the attitudes toward purchasing in-game virtual goods in this study, ranging from 1 (strongly agree) to 5 (strongly disagree), as the range was reversed. The items include "I have positive feelings towards buying in-game items"; "The thought of buying virtual goods in game is appealing to me"; "I approve of the sale of the virtual goods in game"; and "I think the sale of the virtual goods in game is a good thing".

3.4.7 Brand Attitude

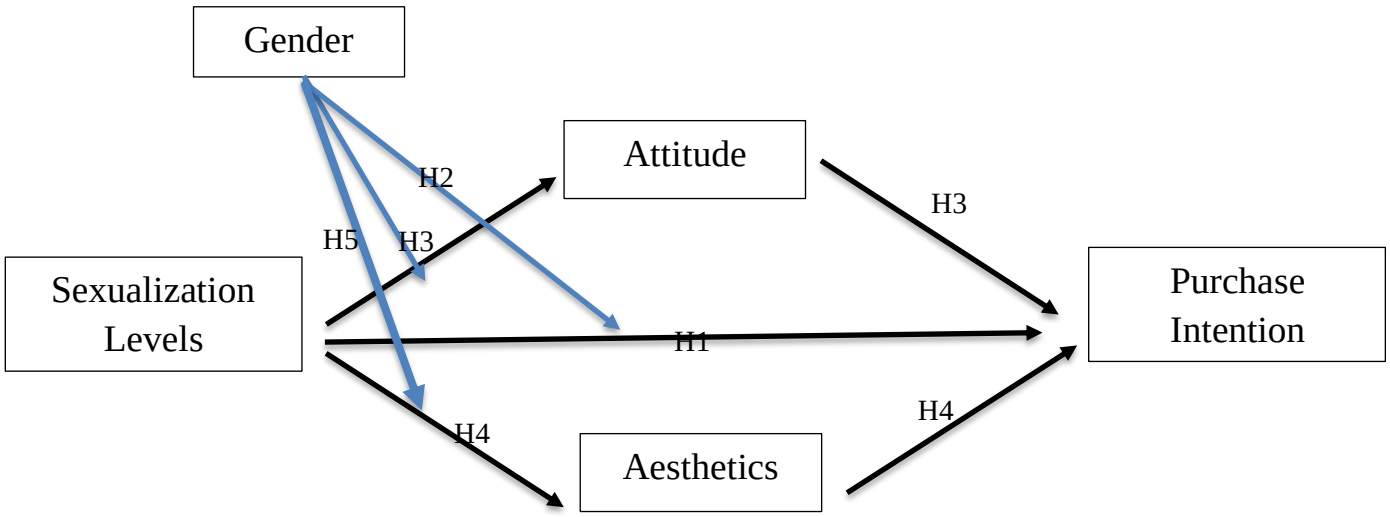
Studies have shown that a positive brand attitude can lead to purchase intention for a product in the online context (Belleau et al., 2007; Prendergast, Ko, & Yuen, 2010). In this context, if people have a positive attitude toward League of Legends, it is predicted that they will be more likely to purchase champion skins of all types. To avoid interfere, brand attitude toward League of Legends was also used as a control variable. The items measuring brand attitude were adapted from Martí-Parreño et al. (2012) using a 5-point Likert scale, including "I like League of Legends", "I think League of Legends is a good game", and "I have a favorable attitude towards League of Legends". The range was reversed with 1 (strongly agree) to 5 (strongly disagree).

3.5 Data Analysis

The data collected on Qualtrics was processed and analyzed in SPSS 25.0. First, the data was cleaned to exclude some incomplete answers due to the dropout in the middle. Then factor analysis and reliability tests were conducted to confirm the factor separations for purchasing intention, aesthetics, and attitude and the reliability of each scale. For H1, a single linear regression was used to the direct influence of sexualization on purchase intention. As regression analysis is a widely used method in data analysis to test whether there is a causal relationship between variables (Privitera, 2023). For H2 and H5, the moderation effect was tested through SPSS standardisation of the independent and moderation variables. For H3 and H4, Baron and Kenny's (1986) approach for mediation was employed. In addition to main effects tests, multiple linear regressions examined the influence of control variables.

According to the theoretical framework, the conceptual model is proposed in Figure 3. Little research has found a relationship between attitude and purchase intention under the influence of gender. Since it is predicted based on the theory that gender will moderate the purchase intention, and purchase intention is determined by attitude. It is then predicted that attitude is also moderated by gender (arrow from Gender to first mediation leg of H3 in Figure 3).

Figure 3. Conceptual framework



3.6 Validity and Reliability and Factor Analysis

Validity analysis involves assessing whether the measurement tool effectively measures the constructs the researcher intends to measure (Neumen, 2014). In this study, most of the scale items were adapted from existing similar studies, which were proven with good validity. Therefore, the measurement tool is expected to accurately measure the constructs under study. To ensure a comprehensive analysis and better validity, this research includes several control variables that could potentially affect the experimental results. By controlling these potentially confounding variables, the experiment's results could have increased internal validity, making it more likely that any observed differences in purchase intention are due to the level of the sexualization of the skin.

In order to obtain a representative sample of the target population with both current and potential gamers to realize external validity (Riege, 2003). The sampling methods intended to reach people who were active online and on game-related social media groups. Also, randomization in Qualtrics was used to assign participants to the five experimental conditions randomly and impartially to minimize bias. This helped to control the effect of potential variables on the experimental results, ensures equal distribution of the participant per experimental condition to increase validity.

Reliability tests were conducted for each scale using Cronbach's alpha, a commonly used measure for testing the reliability of Likert scales, which could provide insight into the consistency and stability of the measures used in the study. In this study, exploratory factor analysis was chosen to find the category of purchasing intention, aesthetics, and attitude. Through SPSS, all the Likert-scales items within each scale were performed using Principal Components extraction with Direct Oblimin rotation based on Eigenvalues (> 1.00). Since all the scales contain no less than 3 Likert-scales items, Kaiser-Meyer-Olkin’s measure of sampling adequacy index and Bartlett’s test of

sphericity of all 300 samples were then conducted to test if the scale is suitable for doing factor analysis and compare correlation coefficients between different variables. When the KMO value is above 0.9, the scale is believed to be perfect for doing factor analysis. Generally, if the KMO value was above 0.6, then the scale is suitable for doing factor analysis. A KMO value below 0.45 is not a good indication for conducting factor analysis.

3.6.1 Purchase Intention – Factor Analysis and Reliability

The first scale of purchase intention contains 10 items, 5 for measuring the purchase intention of champion Riven, and 5 for measuring the purchase intention of champion Fiora. The KMO value of the first scale is 0.92, with the chi-square value of Bartlett's sphericity test being 4067.77 (N =300, 45), $p < .001$, which means this scale is very suitable for factor analysis. Then the factor analysis was conducted, and items with factor loadings higher than or equal to 0.3 were selected. According to the results, overall, 87.79% of the variance in the purchasing intention for the champion skins in this study was explained by the model. Two clear factors were found: one is purchasing intention for the champion skin of Riven, and one is purchasing intention for the champion skin of Fiora, which aligned with the original literature. Then, the reliability test of the two factors was conducted. If Cronbach's alpha >0.8, the scale is considered to have good reliability. Both the two factors obtained high reliability with Cronbach's alpha = .96 and .97, respectively (see Table 1). No item being deleted could improve the reliability alpha. As a result, the scale for purchase intention was considered with good reliability.

The same procedures were conducted for the scale of aesthetics and attitude. The aesthetics scale includes 12 items, 6 for measuring aesthetics of champion Riven, and 6 for champion Fiora's aesthetics. The KMO value is 0.90, with the chi-square value of Bartlett's sphericity test being 3916.49 (N =300, 66), $p < .001$, which means this scale is very suitable for factor analysis. Then the factor analysis was conducted, overall, 78.40% of the variance in the aesthetics was explained by the model. Two factors were found: one is the aesthetics of champion Riven, and one is the aesthetics of champion Fiora, which aligned with the original literature. The results of the reliability test of both the two factors indicate good reliability with Cronbach's alpha = .94 and .95 (see Table 2). The reliability alpha could not be improved by deleting any item.

Lastly, the three scales regarding attitude including the brand attitude of LoL, attitude towards purchasing virtual goods, and attitude towards purchasing champion skins were put together to run factor analysis. The KMO value of the first scale was found to be 0.80, indicating the scale is suitable for factor analysis. The chi-square value from Bartlett's sphericity test was 3617.34 (N =300, 105), $p < .001$, which further supports the suitability for the factor analysis. The factor analysis showed an overall 79.08% variance in attitude. Four factors were found as shown in Table 3: the first one is the brand attitude, and the second one represents the attitude toward purchasing virtual goods. Both of the two factors demonstrated satisfactory reliability with Cronbach's alpha = .88 and .89. However,

the last two ones were not the attitude toward purchasing Riven's skin and Fiora's skins as expected. Instead, the first two items from the attitude towards purchasing champion Riven and Fiora's skins were grouped together and regarded as factor three: "I have positive feelings towards buying Riven's champion skin from LoL"; "The thought of buying Riven's champion skin from LoL is appealing to me"; "I have positive feelings towards buying Fiora's champion skin from LoL"; "I have positive feelings towards buying Fiora's champion skin from LoL." And the rest as factor four. This may be due to the fact that the first two items were adapted from the previous study by Shin (2008), and the last two were created to complete the scale by Shelstad (2022). After testing the reliability of the original scales, good internal consistency was found, Cronbach's alpha = .86 and .91 respectively. As a result, the original sales were retained with modifications.

Table 1. Factor Loadings Explained the Variance and Reliability of the Two Factors Found for the Scale 'Purchase Intention'.

	Purchase intention for Champion skin Riven	Purchase intention for champion skin Fiora
I intend to buy Riven's champion skin in LoL in the future	.91	
I predict that I will buy Riven's champion skin in LoL"	.92	
I would consider buying Riven's champion skin in LoL in the future	.98	
I believe the sale of Riven's champion skin in LoL is a positive thing.	.91	
I would consider spending real money to purchase Riven's champion skin in LoL	.86	
I intend to buy Fiora's champion skin in LoL in the future		.949
I predict that I will buy Fiora's champion skin in LoL		.98
I would consider buying Fiora's champion skin in LoL in the future		.95
I believe the sale of this Fiora's in LoL is a positive thing."		.90
I would consider spending real money to purchase Fiora's champion skin in LoL		.93
Eigenvalue	.15	.73
Cronbach's α	.96	.97

Table 2. Factor Loadings Explained the Variance and Reliability of the Two Factors Found for the Scale 'Aesthetics'.

	Aesthetics for Champion skin Riven	Aesthetics for champion skin Fiora
I enjoy the overall graphic design of Champion Skin Riven	.91	
The appearance of Riven's champion skin is good-looking.	.91	
The appearance of Riven's champion skin is attractive.	.89	
The appearance of Riven's champion skin is physically attractive.	.78	
The appearance of Riven's champion skin is artistically appealing.	.84	
The appearance of Riven's champion skin is aesthetically pleasing.	.87	
I enjoy the overall graphic design of Champion skin Fiora.		.91
The appearance of Fiora's champion skin is good-looking.		.95
The appearance of Fiora's champion skin is attractive.		.89
The appearance of Fiora's champion skin is physically attractive.		.86
The appearance of Fiora's champion skin is artistically appealing.		.88
The appearance of Fiora's champion skin is aesthetically pleasing.		.89
Eigenvalue	.16	.62
Cronbach's α	.94	.95

Table 3. Factor Loadings Explained the Variance and Reliability of the Four Factors Found for the Scale 'Attitude'.

	Brand Attitude	Attitude toward purchasing	Attitude toward purchasing	Attitude toward purchasing Fiora's skin

		virtual goods	Riven's skin	
I like LoL	.90			
I think LoL is a good game	.88			
I have a favorable attitude toward LoL	.92			
I have positive feelings towards buying in-game items.		.84		
The thought of buying virtual goods in game is appealing to me.		.84		
I approve of the sale of the virtual goods in game.		.84		
I think the sale of the virtual goods in game is a good thing.		.82		
I have positive feelings towards buying Riven's champion skin from LoL			.85	0.05
The thought of buying Riven's champion skin from LoL is appealing to me			.89	0.02
I approve of the sale of Riven's champion skin in LoL			.01	.88
I think the sale of Riven's champion skin in LoL is a good thing			.12	.79
I have positive feelings towards buying Fiora's champion skin from LoL			.72	0.24
The thought of buying Fiora's champion skin from LoL is appealing to me			.74	0.19
I approve of the sale of Fiora's champion skin in LoL			.06	.88
I think the sale of Riven's champion skin in LoL is a good thing			.13	.81
Eigenvalue	.17	.11	.09	.43

Cronbach's α	.88	.89	.86	.91

4. Results

4.1 Descriptive Statistics

Respondents to the questionnaire were recruited using Qualtrics from May 5 to May 13, 2023, with data from a total of 463 respondents' being collected. Excluding some people who dropped out and gave incomplete answers, a total of 300 answers were used in the following analysis. The gender distribution was balanced with 41.7% (*N* = 125) of male respondents, 47% (*N* = 141) respondents being female, and 6.7% (*N* = 20) identifying themselves as non-binary people. In terms of age, 81.7% of respondents were between the ages of 17-33 (*N* = 245), with 36.7% (*N* = 110) falling into the age group of 23-27. This is consistent with the age range of LoL players, as 77% of players are between the ages of 18-34 (Clement, 2022).

Since the experiment was conducted in English and Chinese, and distributed mainly through Chinese social media and English-speaking groups on Reddit and Discord, respondents mainly come from China (41.7%, *N* = 125) and English-speaking countries, 16.3% (*N* = 49) were American, 9.3% (*N* = 28) were Dutch, 5.3% (*N* = 16) were from the United Kingdom, and 3.7% (*N* = 11) were from Germany. Most of the respondents were highly educated, 71.68% (*N* = 215) of the respondents have obtained a degree. Bachelor's degree comes as the majority with a proportion of 37.67% (*N* = 113), follows by master's degree (26.67%, *N* = 80). 8.33% (*N* = 25) of the respondents were high school graduates and 2.33% (*N* = 7) had education levels below high school.

In terms of familiarity with MOBA games, 70% of the respondents (*N* = 210) have previous experience playing MOBA games, with 39.7% (*N* = 119) of them still playing it currently. Also, a proportion of 13.3 percent (*N* = 92) of people plays MOBA games every day. Similarly, for League of Legends (LoL), 94% of respondents (*N* = 282) said they had heard of it before. While 42.3% (*N* = 127) of respondents had never played LoL before. Among all the respondents, 30.7% (*N* = 92) were current players of LoL, with 10.7% (*N* = 32) playing it daily. Among those LoL players, 10% (*N* = 30) always chose a female avatar.

4.2 Hypothesis Testing

4.2.1 H1 – Sexualization Predicting Purchase Intention

As stated in the research design chapter, there were overall 5 levels of sexualization from non-sexualization to hyper max being tested. In order to test the hypotheses via regression, the sexualization levels (the main IV) were coded as 1 to 5, with non-sexualization being coded as 1, subtle sexualization being coded as 2, obvert sexualization being coded as 3, hyper sexualization being coded as 4, and hyper max as 5. The quantitative interpretation of sexualization's regression coefficient should bear in mind that it is an ordinal-level variable. Since the perceived sexualization levels varied across people, a filter was added to the selection of the respondents in order to reduce the bias and increase the reliability of the results: Only those respondents whose difference between the answers to the manipulation check (MC) question was selected for subsequent analysis. For this

filter, their perceived sexualization level and the actual experimental condition's sexualization levels (SL) was less than 0.5 (i.e. ABS(MC-SL) <= .5). Recall that there were two manipulation checks, one for each character. Thus, the MC variable is the average of these two perceived sexualization levels, which could yield a value of .5. Also, due to the insufficient non-binary gender sample in this experiment, only males and females were selected as subjects for the follow-up analysis.

To test H1, a simple linear regression analysis was conducted to verify the relationship between the sexualization levels of the champion skins and the purchase intention of champion skins. Linear regression results showed that the model was not significant, $F(1, 104) = 1.13$, $p = .29$ $R^2 = .01$. Thus, 1% variance was explained by the sexualization levels. While sexualization levels did not show a significant influence on purchase intention $B = -.11$, $p = .29$. H1 is rejected. Players' purchase intention of the female champion skin in LoL seemed not to be significantly influenced by the sexualization level. However, the direction of effect is at least in the hypothesized direction.

4.2.2 H2 – Gender Moderated Sexualization on Purchase Intention

Next, the moderation effect of gender was tested on the relation between sexualization levels and purchase intention to examine H2. A dummy variable of being female is created as isFemale = (gender = 2) to compare being female (1) and male (0). Then, the standardized version of the sexualization levels (ZSL) and the interaction term (isFemalexZSL) were created.

According to the results, the interaction effect of gender (being female) was found to be significant. As shown in Table 4, the main effect of (the pre-standardized) sexualization levels on purchase intention was significant ($p < .05$) with $B = -.39$, meaning sexualization levels negatively influence purchase intention (a +1 SD increase in SL contributed to -.39 purchase intention). Meanwhile, gender (isFemale) as a main effect was insignificant in its effect on purchase intention ($B = .44$, $p > .05$, *n.s.*), but still had a positive effect possibly due to the stimuli's being female skins. The moderating effect (ZSLxisFemale) was also found to be significant ($B = .46$, $p < .05$) meaning the moderator gender (isFemale) weakened / reversed the negative effect of sexualization levels on purchase intention. That is, the moderator gender has a significant weakening or inhibiting effect on the effect of sexualization levels on purchase intention for women.

However, this result was contrary to H2 in terms of the direction of moderation. After inserting the unstandardized regression coefficients of the independent variable, moderator, and interaction term in the Excel sheet created by Jeremy Dawson (2018), a graph of the moderation effect was created, from which the direction of the moderation could be found in Figure 4. According to the graph, the higher the sexualization levels, the lower the purchase intention for men, and the slightly higher the purchase intention for women. That is, sexualization negatively influences male players' in-game purchase intention while positively influencing female players' in-game purchase intention. The positive influence of sexualization levels on female players' purchase intention is suggestive, as there is only a small change in purchase intention with varying levels of sexualization. Moreover,

men are more likely than women to be influenced by the sexualization levels of purchase intentions.

The above results explain the insignificant sole effect of sexualization level (H1). The insignificance of its effect on purchase intention may be due to the offset effect observed between female participants and male participants, for the purchase intention of women tends to show an upward trend with the increase of sexualization level, while that of men shows a downward trend. Although males are more affected, due to the larger number of females in the sample, these opposing effects largely cancel each other out, resulting in a nonsignificant H1 result.

Figure 4. Moderation Effect of Gender on Purchase Intention

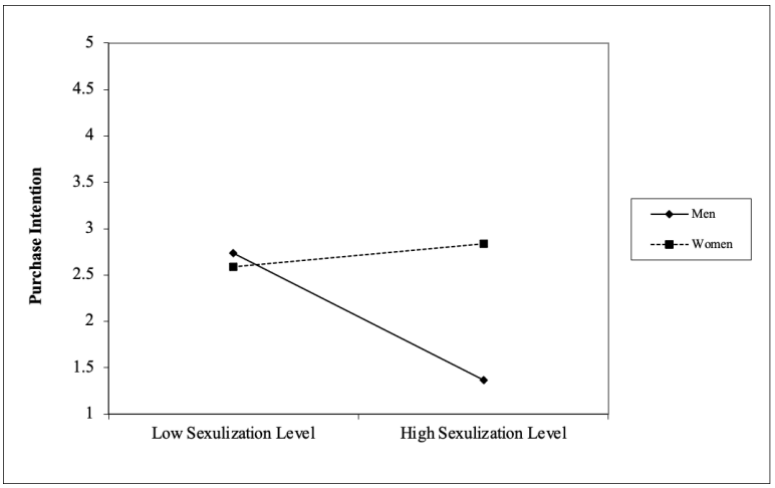


Table 4. Moderation of Gender on the Relation Between Sexualization Levels and Purchase Intention.

	B	*S.E.*	*t*	*p*
ZSL	-.39	.17	-2.34	.021
isFemale	.44	.23	1.95	.054
isFemalexZSL	.46	.22	2.08	.040

$N = 106$, $F(3) = 3.85$, $p = .032$ $R^2 = .08$

4.2.3 H5 – Gender Moderated Sexualization on Aesthetics

The same procedures were undertaken to the moderation of gender on aesthetics (DV) (H5), using the standardized sexualization levels and gender (isFemale) and their interaction as IVs. Similarly, the moderation effect of gender was also proved with $p < .05$, $B = .36$ in Table 5. The moderation effect was verified. However, the pattern did not fully support H5 (see Figure 5). Instead, both women's and men's aesthetics are negatively influenced by sexualization levels. As the level of sexualization increases, men's aesthetic to the female champion appeal decreases rapidly, while women's aesthetic appeal to the female champion decreases more slowly. Thus, H5 is partly supported.

Figure 5. Moderation Effect of Gender on Aesthetics

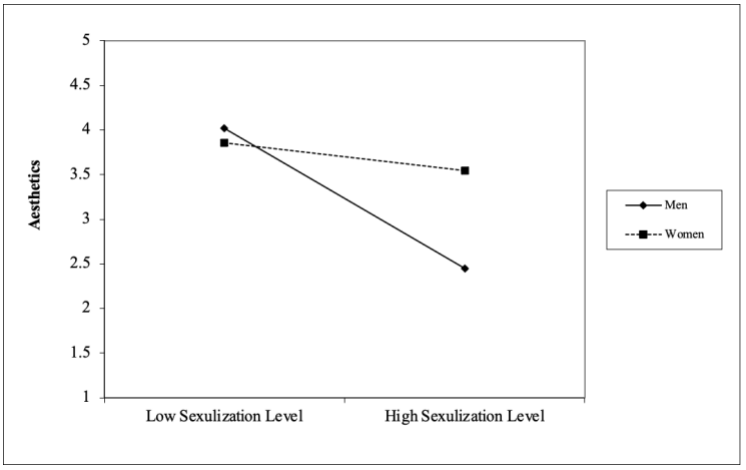


Table 5. Moderation of Gender on the Relation Between Sexualization Levels and Aesthetics.

	B	*S.E.*	*t*	*p*
ZSL	-.45	.13	-3.45	.001
isFemale	.30	.18	1.66	.100
isFemalexZSL	.36	.17	2.08	.040

$N = 106$, $F(3) = 4.91$, $p = .003$ $R^2 = .13$

4.2.4 H4 – Aesthetics Mediate Sexualization on Purchase Intention

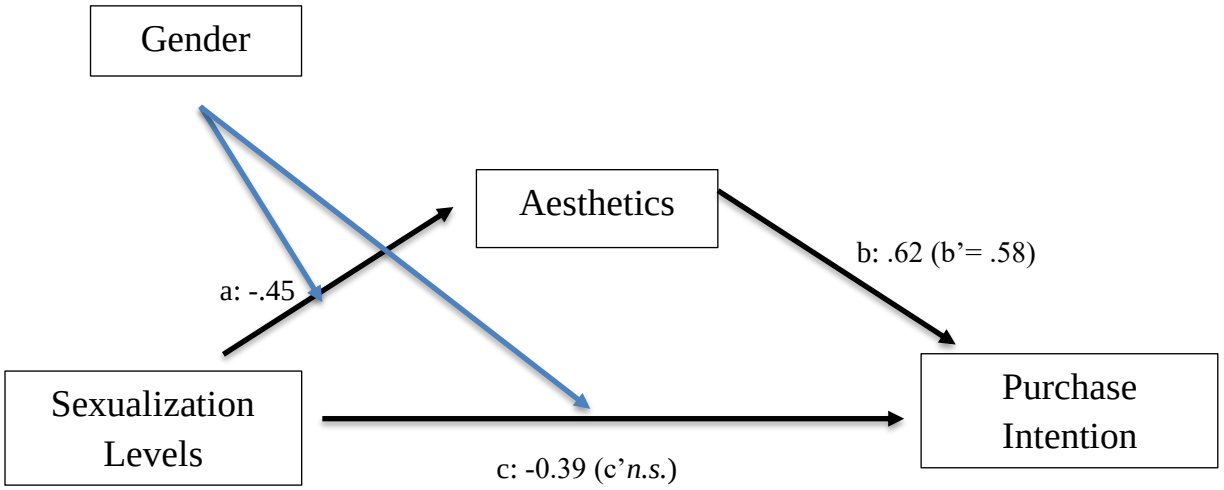
In order to test H4 - the mediation effect of aesthetics between sexualization levels and purchase intention - the Baron/Kenny method was employed. Since H1 is insignificant because the direct effect of sexualization levels on purchase intention was canceled by the moderation effect, H2's regression was instead integrated into the mediation testing to test the mediation effect with control of gender and moderation. The model is proposed as follows:

First, the first regression of mediation (a) Aesthetics = isFemale + ZSL + isFemalexZSL was conducted to test the effect of sexualization levels on aesthetics with control of gender and interaction. According to the results, the model was significant with $F(3, 102) = 4.91$, $p = .003$, $R^2 = .126$ (12.6% of the variance was explained). Sexualization levels negatively and significantly predicted aesthetics (controlling for gender and the moderation) $B = -.45$, $p < .01$. That is more sexualization led to less perceived aesthetics, controlling for gender and moderation. In addition, a bivariate regression of aesthetics and sexualization levels was also conducted without moderation (Aesthetics = ZSL) and obtained a similar result. This simpler model also displayed significance, $F(1, 104) = 7.41$, $p < .01$, $R^2 = .067$ (6.7% of the variance was explained). Sexualization levels showed a negative and significant influence on aesthetics, $B = -.24$, $p < .01$.

A supplementary regression (b) was tested: Purchase intention = Aesthetics. The result showed a significant model with $F(1, 104) = 33.75$, $p < .001$, $R^2 = .245$ (24.5% of the variance was explained). Aesthetics positively and significantly influence purchase intention ($B = .62$, $p < .001$).

The higher the perceived aesthetics, the more the purchase intention. The next regression for mediation (c) Purchase intention = isFemale + ZSL + isFemalexZSL was conducted to test sexualization levels on purchase intention under the moderation effect. The model was significant with $F(3, 102) = 3.06$, $p < .05$, $R^2 = .083$ (8.3% of the variance was explained). Sexualization levels have a negative and significant influence on purchase intention ($B = -.39$, $p < .01$). These findings were reported above for H2's test. Then, the final regression – producing the b' and c' coefficients through Purchase intention = isFemale + ZSL + isFemalexZSL + Aesthetics – was tested and included the mediator in the regression. The overall regression was significant with $F(4, 101) = 9.26$, $p < .001$, $R^2 = .24$ (24% of the variance was explained). The results showed that only aesthetics was found significant ($B = .58$, $p < .001$), and the p-value of sexualization levels was $p = .41$, $p > .05$, indicating the direct effect of sexualization levels on purchase intention disappeared after including the moderator Aesthetics. A full mediation effect was found ($c = -.39$, $p < .001$; $c' = -.13$, *n.s.*; *Sobel's Z* = -2.95, $p < .01$), see Figure 6. As a result, H4 was accepted.

Figure 6*:* Model for Aesthetics as Mediator



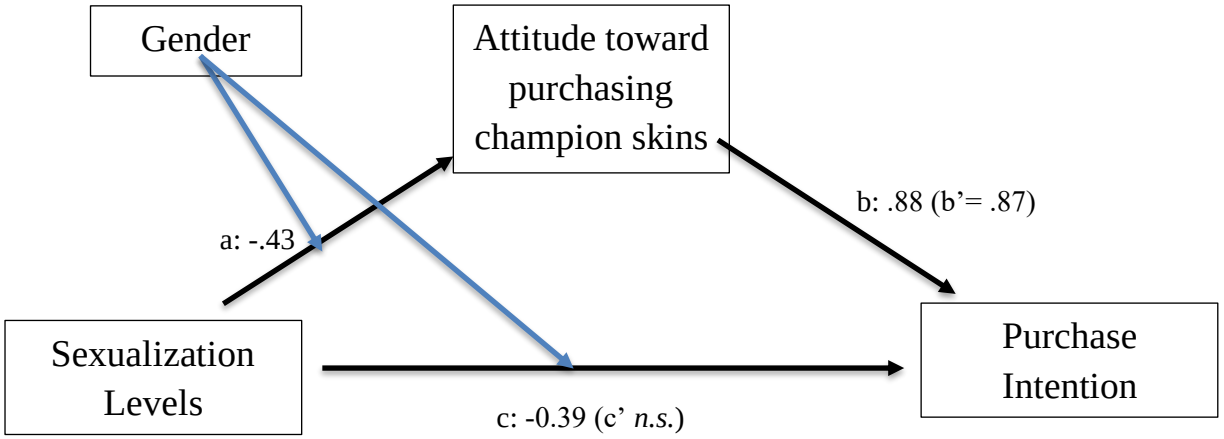
4.2.5 H3- Attitudes Mediate Sexualization on Purchase Intention

The same procedures were taken to test the variable 'attitudes toward purchasing the champion skin' as the mediator. First, (a) Attitudes toward purchasing the champion skin= isFemale + ZSL + isFemalexZSL was conducted. The model was significant with $F(3, 98) = 4.82$, $p<.01$, $R^2 = .129$ (12.9% of the variance was explained). Sexualization levels show a negative and significant influence on attitudes toward purchasing the champion skin (controlling for gender and moderation), $B = -.43$, $p < .01$. Then, the result of the additional regression (b): Purchase intention = Attitudes toward purchasing the champion skin showed a significant model with $F(1, 100) = 143.63$, $p < .001$, $R^2 = .59$ (59% of the variance was explained). Attitudes toward purchasing the champion skin positively and significantly influence purchase intention ($B = .88$, $p < .001$). The next regression for mediation (c) Purchase intention = isFemale + ZSL + isFemalexZSL remained the same as above

with a significant model: $F(3, 102) = 3.06$, $p < .05$, $R^2 = .083$ (8.3% of the variance was explained). Sexualization levels have a negative and significant influence on purchase intention ($B = -.39$, $p < .01$).

Then, the final regression – producing the b' and c' coefficients through Purchase intention = isFemale + ZSL + isFemalexZSL + Attitudes toward purchasing the champion skin – was tested and includes the mediator in the regression. The overall regression was significant with $F(4, 97) = 34.92$, $p < .001$, $R^2 = .59$ (59% of the variance was explained). The results showed that only attitudes toward purchasing the champion skin were found significant ($B = .87$, $p < .001$), and the p-value of sexualization levels was $p = .93$, $p > .05$, indicating the direct effect of sexualization levels on purchase intention disappeared after including the moderator attitudes toward purchasing the champion skin. The results indicated a full mediation effect ($c = -.39$, $p < .001$; $c' = -.01$, *ns*; *Sobel's* $Z = -2.94$, $p = .003$), see Figure 7. As a result, H3 was accepted.

Figure 7. Model for Attitude as Mediator



4.3 Additional Analysis - Control Variables

In addition, a hierarchical regression analysis was conducted with independent variable sexualization levels (ZSL), moderating variable gender (isFemale), and the interaction term (isFemalexZSL) added in the first block. Familiarity with MOBA games, attitude toward virtual goods, brand attitude (distinct from the attitude towards purchase), age, educational levels, and income levels were included in the second block as control variables. Since familiarity with MOBA games is similar to the frequency of playing MOBA and LoL, and familiarity with League of Legends, only the broader one 'familiarity with MOBA games' was chosen for regression.

When sexualization levels ($B = -.39$, $p < .05$), moderating variable gender ($B = .45$, $p > .05$), and the interaction term ($B = .48$, $p < .001$) were tested in the first block without the control variables, the model reached significance, $R^2 = .09$, $F(3, 99) = 3.08$, $p < .05$. When adding the six control variables in the second block, the predictive value of the model improved significantly $\Delta R^2 = .25$, F

(6, 93) = 5.73, $p < .001$. However, only attitude toward purchasing virtual goods ($B = .23$, $p < .05$), and educational levels ($B = .34$, $p < .01$) were significant positive predictors of purchase intention. Sexualization levels ($B = -.33$, $p < .05$) remained a significant negative predictor of purchase intention. Gender ($B = .28$, $p > .05$), interaction term ($B = .41$, $p > .05$), brand attitude ($B = .12$, $p > .05$), familiarity with MOBA games ($B = .12$, $p > .05$), income levels ($B = .03$, $p > .05$) and age ($B = -.12$, $p > .05$) did not reach significance.

The same analysis was conducted again with the dependent variable changed to aesthetics. The results show that when sexualization levels ($B = -.45$, $p < .01$), moderating variable gender ($B = .31$, $p > .05$), and the interaction term ($B = .33$, $p > .05$) were tested without the control variable, the model reached significance, $R^2 = .13$, F (3, 99) = 5.01, $p < .01$. When adding the six control variables in the second block significantly improved the predictive value of the model with $\Delta R^2 = .17$, F (6, 93) = 3.82, $p < .01$. However, only gender (isFemale) ($B = .45$, $p < .05$), familiarity with MOBA games ($B = .17$, $p < .05$), and brand attitude ($B = .27$, $p < .01$) were significant positive predictors of aesthetics. Sexualization levels ($B = -.40$, $p < .01$) still significantly and negatively predict purchase intention. Attitude toward purchasing virtual goods ($B = -.07$, $p > .05$), interaction term ($B = .34$, $p > .05$), age ($B = -.03$, $p > .05$), income levels ($B = .03$, $p > .05$) and educational levels ($B = -.01$, $p > .05$) did not show significance.

5. Conclusion

5.1 Summary of Findings

5.1.1 The Effect of Sexualization on Male Players

According to the results of H1, it is clear that sexualization levels alone do not have a direct effect on players' purchase intention of the female champion skins in League of Legends. However, when the moderation effect of gender is taken into account (H2), the effect of sexualization levels on purchase intention becomes significant. The reason is that due to the moderating effect of gender, male players' purchase intention for the female champion skins decreases with increasing sexualization levels, while female players' purchase intention slightly increases with higher sexualization levels. Because male players' purchase intentions are more significantly influenced by sexualization levels and female players take up a large proportion of the sample, the effects of sexualization levels on female players and male players cancel each other out.

Moreover, although the hypothesis of gender as a moderating variable is verified, the direction of the moderation was contrary to the previously hypothesized. According to previous studies, the sexuality of the female models inhibits women's purchase intentions and increases or does not affect men's purchase intentions (Wirtz et al., 2017; Gramazio et al., 2020), while this is reversed in the context of video games. According to the results of this study, the purchase intention of men is negatively and more significantly influenced by the sexualization of female champion skins. This result is more consistent with Bell's (2017) findings, where male participants overwhelmingly preferred non-sexualized avatars in terms of sexualized avatars, while female participants somewhat preferred subtle sexualized avatars and overtly sexualized avatars.

This may be due to the fact that when female characters act as secondary or subordinate roles in video games like victims, prizes for the hero, or ”Damsel in Distress Trope” type of character, the sexualization of them will lead to more purchase intention of male players. But when female characters act as the avatar that male players need to play, more sexualization will lead to less purchase intention. Moreover, male players found more sexualization less aesthetics pleasing (H5), meaning that when males are playing female avatars, they are not attracted to highly sexualized representations. This is also proved in Near’s study (2012) that sales of video games were positively correlated only with the sexualization of non-central female characters, but when women play as the main character, the sales went down. And male players do not perceive hyper sexualized female avatars as attractive (Reinhard, 2009). The possible reason behind this could be that non-sexualized champion skins are considered more “handsome” and masculine than sexualized skins. While sexualized skins contain more feminine elements. Male players may be more willing to play less gender feminine and more handsome female champions due to their preference for masculine qualities (Reinhard, 2009). Also, male players possess the stereotype that hyper sexualized female champions (avatars) were regarded as lack of combat ability and would negatively influence in-game performance (Bell, 2017). When choosing the avatar to play in a game, male players prioritize ability over appearance (Reinhard, 2009), and in games like

League of Legends, players typically choose champions based on instrumental reasons (Gao et al., 2017). Consequently, male players may not have a strong inclination to play highly sexualized female champions.

5.1.2 The Effect of Sexualization on Female Players

As we predicted before, women would not favor a sexualized female character. However, the results indicate that as the sexualization levels on champion skins increase, female players, despite finding them less aesthetically attractive (H5), still demonstrate a higher purchase intention (H2). Under the social norm of sexualizing women, men expect women to please them as sexual objects, and women accept themselves being treated as sexual objects (Smolak & Murnen, 2011). When women are frequently exposed to sexualized and objectified female images through media, they internalize these representations, not only using them as guides to shape and regulate themselves but also developing related expectations, aspiring to become the sexually attractive figures depicted in the media (Harrison & Hefner, 2008). As a result, not only will they feel dissatisfied with their own bodies but also wear revealing clothing to self-sexualize (Choi & DeLong, 2019; Ward, 2016). In addition, strong female characters in games are often depicted as sexy and attractive (Reinhard, 2009). If a female character in video games wants to be powerful and successful, she is expected to be attractive and sexy in appearance first (Bell, 2017; Jansz & Martis, 2007). As a result of internalizing these representations of female game characters, women players, and even non-gamers, may believe that a sexually appealing body is a prerequisite for a strong female character in video games.

Similarly, Reinhard (2009) found that even though women found the hyper sexualized female characters less attractive, they still identify with them. In the context of video games, female players tend to choose the same gender avatars more often than males, while male players use gender swapped avatars more often than women (Jenson et al., 2015). This is the same in League of Legends, the reason behind this could be that women have more pressure regarding identifying with their avatars since they are often encouraged to openly express their gender through some “self-objectifying external adornments” like makeup and dresses (Ratan et al., 2019, p1). This makes them more inclined to choose avatars with more feminine elements. e.g., more beautifully elegant female avatars wearing dresses rather than armor avatars. And sexualized female champions tend to have more non-combat decorative elements, such as wings, bunny ears, tails, etc., such light-hearted elements are more likely to appeal to female players than male players, making women find hyper sexualized female champions more aesthetically appealing compared to men (H5). In this context, they may think that sexualized female characters are normative and align with the social, especially male preferences and expectations for women. The aspiration of being a sexy and beautiful female character that aligns with what society expected makes them more inclined to buy sexualized female character skins. It is also worth noting that female players find the more sexualized one more aesthetically pleasing than men, indicating that women internalize the sexual norms more than men do and found it more aspirational.

5.1.3 Aesthetics and Attitude

The results from H3 and H4 indicate that purchase intention is mediated by people's attitude towards purchase and aesthetics perception, which validates TRA theory that intention is determined by attitudes towards behavior and subjective norms (Fishbein & Ajzen, 1975). This means that sexualization levels first influence players' aesthetic perception and their attitudes toward buying it, then influence their purchase intention. Higher sexualization leads to more negative attitudes and aesthetic perceptions, and then lower purchase intention. Thus, in general the less sexualized characters are considered more aesthetically pleasing and more likely to be purchased. However, like it is discussed above, women's purchase intention increase with higher sexualization levels. This contrast in psychology and action suggests that women seem to suppress their true preference to accede to socially normative expectations of female appearance that evolved through patriarchal history (Smolak & Murnen, 2011).

In terms of attitudes, the result shows that attitudes toward purchasing in-game virtual goods do show a positive influence on purchase intention, same as the previous studies (Luo et al., 2011; Hamari, 2015; Shelstad, 2022). Meaning that people who are more intend to purchase virtual goods in game have more purchase intention on champion skins. While, brand attitude did not show a significant influence on purchase intention as in previous studies (Belleau et al., 2007; Prendergast et al., 2010; Shelstad 2022). The reason could be that people who favor League of Legends more may have some pre-existing bias against champions. What is found is that brand attitude significantly influenced people's perception of aesthetics. People who like League of Legends more will find the champions more aesthetically pleasing. Also, familiarity with MOBA games also positively influenced people's aesthetic perception. This phenomenon may root in mere-exposure effect, that is the more familiar people are with a thing, the more they prefer them (Montoya et al., 2017).

5.2 Theoretical and Practical Implications

The study presents a new theoretical model on the influence of the sexualization of female characters on purchase intention. It indicates that purchase intention is mediated by individuals' attitudes toward the purchase and their perception of aesthetics. This finding supports the Theory of Reasoned Action (TRA), which suggests that intention is determined by attitudes toward the behavior and subjective norms (Fishbein & Ajzen, 1975). Furthermore, the study enriches the theoretical understanding of attitudes and purchase intentions toward sexualized female characters in MOBA games among male and female players. From the perspective of playing female characters, the research explores male players' expectations regarding the sexualization of these characters and compares them with expectations for secondary female characters in the game (Near, 2012). It is found that male players perceive female characters with lower levels of sexualization as more attractive and exhibit a higher purchase intention. On the other hand, female players demonstrate

negative aesthetic perceptions but positive purchase intentions towards sexualized female champions. This may be attributed to their internalization and conformity to subjective norms regarding women, suppressing their true preferences (Harrison & Hefner, 2008; Smolak & Murnen, 2011).

In terms of practical implications, the results of this study have great relevance for game developers and publishers and for the character design of MOBA games. The cultural perspective believes that there is a chain of "gatekeepers" between the producers and recipients (Peterson & Anand, 2004). In the video game industry, game designers are responsible for creating popular games, and game publishers are responsible for marketing and distributing the games they believe will be successful (Near, 2013). Thus, if designers and publishers believe that the sexualization of women in games will increase sales and help to attract their target audience, they will keep producing and promoting games containing sexualized female characters.

The result of this study indicates that male players find sexualized female avatars less aesthetically pleasing and have fewer purchase intentions toward them. This suggests that the sexualization of female characters that players play with in MOBA games serves no help for economic growth. Also, both males and females do not find highly sexualized female game characters attractive. Since women are more likely to identify with female game characters in MOBA games (Ratan et al., 2019), and men are not averse to using female characters for gaming, as long as they are strong (Jenson et al., 2015). Then, designing more female characters with low sexualization levels and strong abilities can attract both male and female players. The findings of this study provide us with a better understanding of how players perceive the portrayal of female characters in MOBA games. The result of this study provides some insights for MOBA game character designers in the future: reducing the sexualization of female champions and designing more diverse female champions. It also provides implications for the video game industry about the potential shifting in the perceptions of male players towards sexualized female characters.

5.3 Limitations and Suggestions for Future Studies

This study has several limitations that should be considered in future studies. Firstly, male players were asked to purchase female champion skin as the character they would play in the game. While the results indicated that male players are negatively influenced by the sexualization levels of women champions, it is important to acknowledge that male players may still prefer sexualized women as secondary characters in their games. The study's focus on men's willingness to play as sexualized women may not fully capture their overall preferences regarding sexualized female characters in gaming. Additionally, this study could have included follow-up questions or interviews with male and female respondents about their preference for female champion skins, which could help better understand the choices made in the survey/experiment. For male respondents, their preferences for the female champion skins of their female opponents or team members (vs. for themselves, as was inspected in this thesis) could be a topic for future studies to gain additional

insights into the dynamics of purchase intention.

Secondly, the perception of the sexualization levels varies among participants, leading to a difference in the sexualization levels they perceived in the manipulation check and in the actual experimental conditions. The variation in the perception of independent variables could introduce uncertainty and impact the accuracy of the results. For this study, only participants who responded with similar answers in the manipulation check and actual condition were selected, which should help raise the validity of the study and minimizing the influence of people's different interpretations. However, this not only leads to a reduction in sample size but also limited the sample to only participants who have similar perceptions of sexualization levels with the author. This study used the definition of sexualization levels from Bell (2017). However, different scholars have different definitions and there are no standard answers for it. It is important to note that if different ways of conceptualization were used, the findings might vary to some extent.

Different interpretations or operationalizations of sexualization levels could potentially lead to different outcomes in future studies. Also, the small set of external evaluators (6 fellow students) that helped to categorize the stimulus materials may have resulted in non-representative assessments of the stimuli's sexualization levels. The chosen stimulus materials may not have represented the level of sexualization it is supposed to represent. Future studies could consider giving the definition and some examples of each sexualization level to make a standard and unify participants' perceptions of sexualization levels. And have more experts in this field as external evaluators to better choose the stimulus materials. Another problem that should be considered for future studies is whether to follow the definition of the sexualization levels of other scholars or just use the perceived sexualization degrees from the participants.

Fourthly, the selection of champion examples was limited and not comprehensive enough. In order to control the influence of a certain champion of respondents' purchase intention. Only champions that possess all the levels of sexualization are chosen. Also, both chosen champions belonged to the same class of Skirmishers category, which in the game lacks high blast damage but has more sustainability. This has led to similar positioning, weapons, and appearance of the two characters. Both of them are characterized by short hair and dresses in armor more than feminine clothes, and the style is also more on the mech and dark rather than sweet and cute (Anna, 2015). It could lead to bias that certain people do not like this type of female character regardless of the sexualization levels. In order to have a more generalizable result, the future study could choose not only female champions with all levels of sexualization. Instead, choosing a few levels of sexualization with a more diverse set of female champions like those with different styles and classes, such as more feline and support-type champions. Moreover, the stimulus materials of the two champion skins were not shown in a random order, which could potentially influence participants' aesthetic perception. Further study should include a randomized order to reduce the influence of the presentation sequence on participants' responses.

Another limitation is the potential bias by participants who have the previous League of Legends gaming experience. People who have played LoL and know LoL well may have already established a list of the champions they used to play as and some champions they will never play. These preconceived notions or preferences for certain champions could influence their purchase intention. If some LoL player participants think they will never play Riven and Fiora, they may exhibit a lower inclination to purchase their champion skins due to this preexisted bias. Further studies could consider controlling the sample only with people who have no previous experience playing League of Legends or provide some original champions that are not shown in any games as stimulus materials. Also, a follow-up question asking about their perception of the champion character (sans the type of skin) could be regarded as a control variable to eliminate this kind of influence.

Sixthly, the study did not consider other factors that contribute to the purchase intention of the champion skins, such as sound effects and animations, and the price of the skins,. These additional features could also significantly impact players' purchase intention (Ho&Wu, 2012). The questionnaire should have contained explicit instructions saying that only the appearance of the champion should be taken into consideration when considering the purchase intention, and that the scenery should be ignored. If possible, further research could also have respondents play with the champion skin or see what they look like in the game to better stimulate the gaming condition with that champion skin.

Another limitation of the study is the sample, the plurality of which were Chinese participants (more than 40 percent), which limits the generalizability of the findings to a broader population. The catering of this survey to Chinese respondents raises several complications. For one, the questionnaire was translated from English to Chinese by the author, so some misunderstandings caused by the translation could have influenced participants' answers. Also, Chinese players could only play League of Legends on Chinese servers and have no connection with players from other countries. That is, in-game influences regarding sexualization norms are bounded by this technical constraint, and the specific cultural and contextual factors in the Chinese gaming community are different from others and may not be representative of other regions or demographics (Gackenbach et al., 2016). Chinese players also could not have access to most of the popular social media like YouTube, Discord, and Reddit, so reaching them would be harder for non-Chinese researchers, complicating the replicability of this study. Future studies could consider conducting the survey in China and other regions separately and comparing the results.

Educational levels are also shown to be a significant variable that positively influences the purchase intention of champion skins. Little previous research has found a relationship between higher education and in-game purchase intention, which still need further exploration. The last limitation of this study is this study only focused on the sexualization of female characters, while the sexualization of male characters in League of Legends also exists and is worthy of scientific

exploration.

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7. Appendix

Appendix A: Questionnaire

Q1 Dear participant, Thank you for your interest in our research. We invite you to participate in a questionnaire where you will be shown images of female champion skins from the League of Legends online video game and ask about your perception and purchase intention of the skin. The purpose of this study is to investigate how the level of the sexualization of female champions affects purchase intention. The questionnaire will take approximately 8 minutes to complete. We value your opinions and ask that you answer each question carefully and honestly. There are no right or wrong answers.
CONFIDENTIALITY OF DATA
All research data will be kept confidentially and collected anonymously. We will not be able to identify you, and there are no foreseeable risks or discomforts associated with participating in this research.
VOLUNTARY PARTICIPATION
Your participation in this research is voluntary. If you choose not to participate, it will not affect you in any way. If you decide to stop filling out the questionnaire at any point, you may do so without giving a reason.
FURTHER INFORMATION
If you have any questions about this research, either before or after participation, please feel free to contact the responsible researcher, Yutong Lu, via email at laiyitong666@gmail.com. If you understand the information provided and freely consent to participate in this study, please click the "I agree" button below to begin the questionnaire.

- ○ I agree

Q2 What gender do you identify with?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer not to say

Q3 How familiar are you with MOBA (Multiplayer Online Battle Arena) video games?

- ○ Not familiar at all
- ○ Slightly familiar
- ○ Moderately familiar
- ○ Very familiar
- ○ Extremely familiar

Q4 How often do you play MOBA (Multiplayer Online Battle Arena) video games?

- ○ Never
- ○ less than once a week
- ○ 1-2 times per week
- ○ 3-4 times per week
- ○ 5-6 times per week
- ○ Every day

Q5 What kind of MOBA player are you?

- ○ Never heard of it before today
- ○ Heard of it before today but don't know how to play
- ○ Know how to play but never played it before
- ○ Played it in the past, but not currently
- ○ Currently playing MOBA games

Q6 If you've ever played MOBA video games, how often do you pick a female avatar in MOBA

video games? (choose ‘Never’ if you’ve never played MOBA video games)

- ○ Never
- ○ Sometimes
- ○ About half the time
- ○ Most of the time
- ○ Always

Q8 How familiar are you with League of Legends?

- ○ Not familiar at all
- ○ Slightly familiar
- ○ Moderately familiar
- ○ Very familiar
- ○ Extremely familiar

Q9 What kind of League of Legends player are you?

- ○ Never heard of it before today
- ○ Heard of it before today but don't know how to play
- ○ Know how to play but never played it before
- ○ Played it in the past, but not currently
- ○ Currently playing League of Legends

Q10 How often do you play League of Legends?

- ○ Never
- ○ less than once a week
- ○ 1-2 times per week
- ○ 3-4 times per week
- ○ 5-6 times per week
- ○ Every day

Q11 If you've ever played League of Legends, how often do you pick a female avatar in League of Legends? (choose 'Never' if you've never played League of Legends)

- ○ Never
- ○ Sometimes
- ○ About half the time
- ○ Most of the time
- ○ Always

Q12 What's your attitude toward purchasing virtual goods in game?

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I have positive feelings towards buying in-game items.	○	○	○	○	○
The thought of buying virtual goods in game is appealing to me.	○	○	○	○	○
I approve of the sale of the virtual goods in game.	○	○	○	○	○
I think the sale of the virtual goods in game is a good thing.	○	○	○	○	○

Q13 What's your attitude toward League of Legends?

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I like League of Legends	○	○	○	○	○
I think League of Legends is a good game	○	○	○	○	○
I have a favorable attitude toward League of Legends	○	○	○	○	○

Imagine you are preparing to play League of Legends, where you will compete as a champion in a team of five against other human players. The goal of the game is for your team to capture the enemy's base. In the game, champion skins (outfits) are paid items that can be purchased through the in-game store, typically costing between 10 to 20 euros. While each champion has a free default skin, players are not required to purchase skins to play the game. Skins have their unique models and splash art and can alter a champion's appearance without affecting their abilities or other in-game attributes. Champion skins are intended to enhance the enjoyment and personalization of the game.

For the next questions, you will be presented with two champion skins from League of Legends. Please base your responses on each of the champion skin you see.

○ I understand

(Then comes the figures of different champion skins. For each sexualization level, two champion skins are shown. For specific champion skins, please see Appendix B.)

Qnon-a1 Based on the champion skin you just saw; please indicate to what extent you agree with the following statement. If you're not familiar with LoL or do not play it, then state your intention you

were to play the game and were playing the character.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I intend to buy this champion skin in League of Legends in the future	○	○	○	○	○
I predict that I will buy this champion skin in League of Legends	○	○	○	○	○
I would consider buying this champion skin in League of Legends in the future	○	○	○	○	○
The likelihood that I will buy this champion skin in League of Legends is high	○	○	○	○	○

I would consider spending real money to purchase this champion skin in League of Legends	○	○	○	○	○

Qnon-a2 What is your attitude towards the champion skin and its appearance?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I enjoy the overall graphic design.	○	○	○	○	○
The appearance of this champion skin is good-looking.	○	○	○	○	○
The appearance of this champion skin is attractive.	○	○	○	○	○
The appearance of this champion skin is physically attractive.	○	○	○	○	○
The appearance of this champion skin is artistically appealing.	○	○	○	○	○
The appearance of this champion skin is aesthetically pleasing.	○	○	○	○	○

Qnon-a3 What is your attitude towards buying this champion skin?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I have positive feelings towards buying this champion skin from League of Legends	○	○	○	○	○
The thought of buying this champion skin from League of Legends is appealing to me	○	○	○	○	○
I approve of the sale of this champion skin in League of Legends	○	○	○	○	○
I think the sale of this champion skin in League of Legends is a good thing	○	○	○	○	○

Qmax-bs1 What do you think is the sexualization level of this champion skin you see?

- ○ No sexualization at all
- ○ Subtle Sexualization
- ○ Obvious Sexualization
- ○ High Sexualization
- ○ Extreme Sexualization

(The following questions were asked again for the second champion skins of the same sexualization level.)

Q14 What is your age?

- ○ <17
- ○ 17–22
- ○ 23–27
- ○ 28–33
- ○ >33
- ○ prefer not to answer

Q15 What is your original country of nationality?

▼ Afghanistan ... Zimbabwe

Q16 What is the highest degree or level of education you have completed?

- ○ Less than high school
- ○ High school graduate
- ○ Some college/university but no degree
- ○ Bachelor
- ○ Master
- ○ Doctoral degree (PhD) & above
- ○ Prefer not to answer

Q17 Which of the following best describes your personal income or living fee last year?

- ○ Less than €10,000
- ○ €10, 000 to €24, 999
- ○ €25, 000 to €49, 999
- ○ €50, 000 to €74, 999
- ○ €75, 000 to €99, 999
- ○ €100, 000 or more
- ○ Prefer not to answer

Appendix B: Stimulus Materials Champion Skins

Figure B1. Broken Covenant Riven

Figure B2: Project: Fiora

Figure B3. Pulsefire Riven

Figure B4. Faerie Court Fiora

Figure B5. Battle Bunny Prime Riven

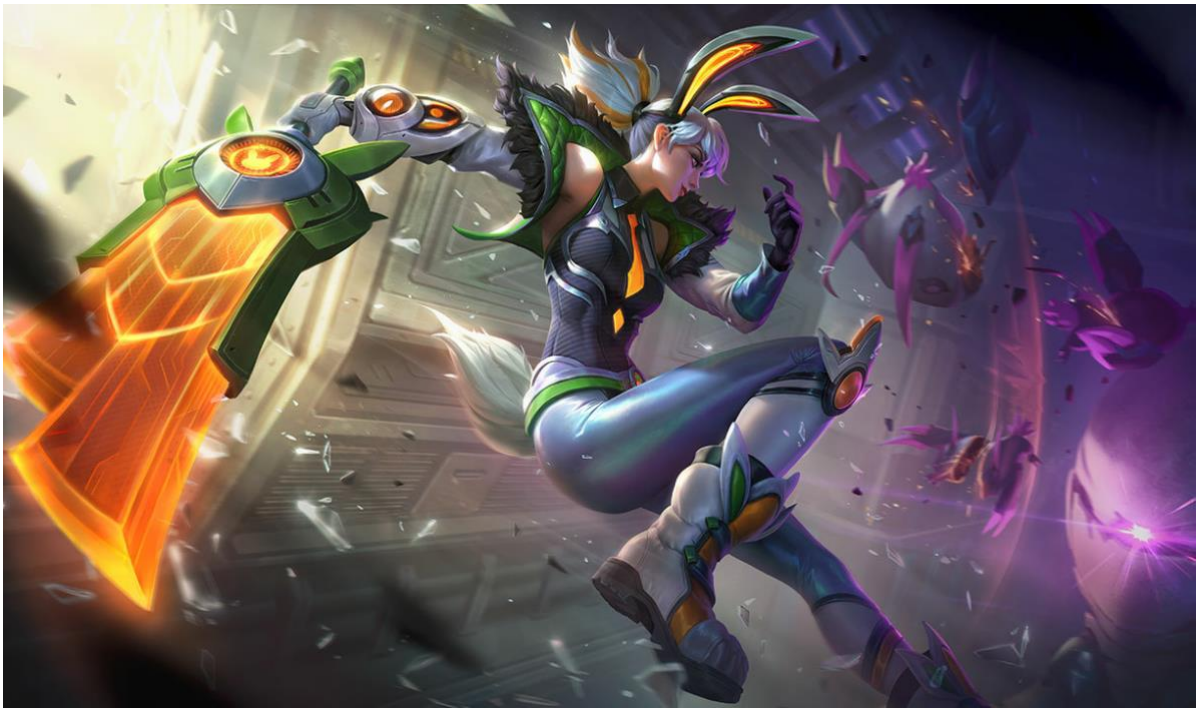

Figure B6. Pulsefire Fiora

Figure B7. Dawnbringer Riven

Figure B8. NightRaven Fiora

Figure B9. Battle Bunny Riven

Figure B10. Pool Party Fiora

Appendix C: SPSS Output

Figure C1. H1 Test Output

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.104[a]	.011	.001	1.15377	.011	1.131	1	104	.290

a. Predictors: (Constant), SL

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.505	1	1.505	1.131	.290[b]
	Residual	138.442	104	1.331		
	Total	139.947	105			

a. Dependent Variable: PI

b. Predictors: (Constant), SL

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.790	.268		10.415	.000
	SL	-.105	.099	-.104	-1.063	.290

a. Dependent Variable: PI

Figure C2. H2 Test Output

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.287[a]	.083	.056	1.12197	.083	3.058	3	102	.032

a. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.549	3	3.850	3.058	.032[b]
	Residual	128.398	102	1.259		
	Total	139.947	105			

a. Dependent Variable: PI

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.237	.182		12.275	.000
	Zscore(SL)	-.390	.166	-.338	-2.343	.021
	isFemale	.443	.228	.185	1.945	.054
	isFemalexZSL	.461	.221	.300	2.084	.040

a. Dependent Variable: PI

Figure C3. H5 Test Output

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.355[a]	.126	.101	.87475	.126	4.913	3	102	.003

a. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.278	3	3.759	4.913	.003[b]
	Residual	78.049	102	.765		
	Total	89.327	105			

a. Dependent Variable: Asthe

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.447	.142		24.257	.000
	Zscore(SL)	-.447	.130	-.485	-3.449	.001
	isFemale	.295	.177	.154	1.662	.100
	isFemalexZSL	.359	.172	.293	2.083	.040

a. Dependent Variable: Asthe

Figure C4. H4 a

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.355[a]	.126	.101	.87475	.126	4.913	3	102	.003

a. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.278	3	3.759	4.913	.003[b]
	Residual	78.049	102	.765		
	Total	89.327	105			

a. Dependent Variable: Asthe

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.447	.142		24.257	.000
	Zscore(SL)	-.447	.130	-.485	-3.449	.001
	isFemale	.295	.177	.154	1.662	.100
	isFemalexZSL	.359	.172	.293	2.083	.040

a. Dependent Variable: Asthe

Figure C5. Aesthetics = ZSL

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zscore(SL)[b]	.	Enter

a. Dependent Variable: Asthe

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.258[a]	.067	.058	.89541	.067	7.412	1	104	.008

a. Predictors: (Constant), Zscore(SL)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.943	1	5.943	7.412	.008[b]
	Residual	83.384	104	.802		
	Total	89.327	105			

a. Dependent Variable: Asthe

b. Predictors: (Constant), Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.644	.087		41.898	.000
	Zscore(SL)	-.238	.087	-.258	-2.723	.008

a. Dependent Variable: Asthe

Figure C6. H4 b

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.495[a]	.245	.238	1.00795	.245	33.748	1	104	.000

a. Predictors: (Constant), Asthe

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.287	1	34.287	33.748	.000[b]
	Residual	105.661	104	1.016		
	Total	139.947	105			

a. Dependent Variable: PI

b. Predictors: (Constant), Asthe

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.274	.401		.683	.496
	Asthe	.620	.107	.495	5.809	.000

a. Dependent Variable: PI

Figure C7. H4 c

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.287[a]	.083	.056	1.12197	.083	3.058	3	102	.032

a. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.549	3	3.850	3.058	.032[b]
	Residual	128.398	102	1.259		
	Total	139.947	105			

a. Dependent Variable: PI

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.237	.182		12.275	.000
	Zscore(SL)	-.390	.166	-.338	-2.343	.021
	isFemale	.443	.228	.185	1.945	.054
	isFemalexZSL	.461	.221	.300	2.084	.040

a. Dependent Variable: PI

Figure C8. H4 b' c'

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.518[a]	.268	.239	1.00686	.268	9.262	4	101	.000

a. Predictors: (Constant), isFemalexZSL, isFemale, Asthe, Zscore(SL)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.556	4	9.389	9.262	.000[b]
	Residual	102.391	101	1.014		
	Total	139.947	105			

a. Dependent Variable: PI

b. Predictors: (Constant), isFemalexZSL, isFemale, Asthe, Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.248	.426		.582	.562
	Asthe	.577	.114	.461	5.065	.000
	Zscore(SL)	-.132	.158	-.114	-.834	.406
	isFemale	.272	.207	.114	1.317	.191
	isFemalexZSL	.254	.203	.165	1.251	.214

a. Dependent Variable: PI

Figure C9. H3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.358[a]	.129	.102	.96446	.129	4.817	3	98	.004

a. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.442	3	4.481	4.817	.004[b]
	Residual	91.158	98	.930		
	Total	104.599	101			

a. Dependent Variable: Attitude

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.739	.159		17.254	.000
	Zscore(SL)	-.433	.143	-.426	-3.026	.003
	isFemale	.435	.199	.207	2.186	.031
	isFemalexZSL	.547	.193	.399	2.832	.006

a. Dependent Variable: Attitude

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.768[a]	.590	.585	.74716	.590	143.632	1	100	.000

a. Predictors: (Constant), Attitude

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.183	1	80.183	143.632	.000[b]
	Residual	55.825	100	.558		
	Total	136.008	101			

a. Dependent Variable: PI

b. Predictors: (Constant), Attitude

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.138	.233		-.590	.557
	Attitude	.876	.073	.768	11.985	.000

a. Dependent Variable: PI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.768[a]	.590	.573	.75805	.590	34.922	4	97	.000

a. Predictors: (Constant), Attitude, isFemalexZSL, isFemale, Zscore(SL)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.268	4	20.067	34.922	.000[b]
	Residual	55.739	97	.575		
	Total	136.008	101			

a. Dependent Variable: PI

b. Predictors: (Constant), Attitude, isFemalexZSL, isFemale, Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.152	.251		-.604	.547
	Zscore(SL)	-.010	.118	-.009	-.085	.933
	isFemale	.059	.160	.025	.370	.713
	isFemalexZSL	.019	.158	.012	.122	.903
	Attitude	.867	.079	.761	10.926	.000

a. Dependent Variable: PI

Figure C10. Control Variables

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.292[a]	.085	.058	1.12978	.085	3.075	3	99	.031
2	.576[b]	.332	.267	.99605	.247	5.728	6	93	.000

a. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL), bra_att, education, inconme, age, FamMOBA, vir_good

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.776	3	3.925	3.075	.031[b]
	Residual	126.364	99	1.276		
	Total	138.141	102			
2	Regression	45.874	9	5.097	5.138	.000[c]
	Residual	92.267	93	.992		
	Total	138.141	102			

a. Dependent Variable: PI

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

c. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL), bra_att, education, inconme, age, FamMOBA, vir_good

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.237	.184		12.190	.000
	Zscore(SL)	-.390	.167	-.334	-2.327	.022
	isFemale	.449	.231	.187	1.946	.055
	isFemalexZSL	.480	.226	.305	2.127	.036
2	(Constant)	-.261	.624		-.419	.676
	Zscore(SL)	-.332	.155	-.285	-2.141	.035
	isFemale	.276	.222	.115	1.242	.217
	isFemalexZSL	.404	.221	.256	1.830	.070
	FamMOBA	.120	.085	.137	1.413	.161
	bra_att	.121	.114	.104	1.063	.291
	vir_good	.225	.104	.221	2.173	.032
	age	-.124	.104	-.114	-1.188	.238
	education	.336	.098	.334	3.444	.001
	inconme	.034	.052	.060	.659	.512

a. Dependent Variable: PI

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	FamMOBA	.149[b]	1.495	.138	.149	.920
	bra_att	.258[b]	2.747	.007	.267	.984
	vir_good	.382[b]	4.098	.000	.383	.915
	age	-.036[b]	-.355	.723	-.036	.919
	education	.353[b]	3.815	.000	.360	.947
	inconme	.158[b]	1.606	.111	.160	.939

a. Dependent Variable: PI

b. Predictors in the Model: (Constant), isFemalexZSL, isFemale, Zscore(SL)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change
1	.363[a]	.132	.105	.88218	.132	5.005	3	99	.003
2	.551[b]	.303	.236	.81533	.172	3.817	6	93	.002

a. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL), bra_att, education, inconme, age, FamMOBA, vir_good

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.685	3	3.895	5.005	.003[b]
	Residual	77.046	99	.778		
	Total	88.731	102			
2	Regression	26.908	9	2.990	4.498	.000[c]
	Residual	61.823	93	.665		
	Total	88.731	102			

a. Dependent Variable: Asthe

b. Predictors: (Constant), isFemalexZSL, isFemale, Zscore(SL)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.447	.143		24.053	.000
	Zscore(SL)	-.447	.131	-.478	-3.420	.001
	isFemale	.307	.180	.160	1.703	.092
	isFemalexZSL	.332	.176	.263	1.884	.062
2	(Constant)	2.099	.511		4.111	.000
	Zscore(SL)	-.404	.127	-.432	-3.180	.002
	isFemale	.446	.182	.232	2.457	.016
	isFemalexZSL	.335	.181	.266	1.857	.067
	FamMOBA	.167	.069	.238	2.399	.018
	bra_att	.271	.093	.291	2.910	.005
	vir_good	-.070	.085	-.085	-.822	.413
	age	-.030	.085	-.035	-.357	.722
	education	-.009	.080	-.011	-.108	.914
	inconme	.026	.042	.058	.622	.535

a. Dependent Variable: Asthe

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	FamMOBA	.338[b]	3.677	.000	.348	.920
	bra_att	.341[b]	3.855	.000	.363	.984
	vir_good	.062[b]	.628	.531	.063	.915
	age	-.005[b]	-.052	.959	-.005	.919
	education	-.039[b]	-.400	.690	-.040	.947
	inconme	.077[b]	.800	.426	.081	.939

a. Dependent Variable: Asthe

b. Predictors in the Model: (Constant), isFemalexZSL, isFemale, Zscore(SL)

Appendix D: Chinese Questionnaire

Q1 亲爱的参与者，感谢您对我们的研究感兴趣。我们邀请您参加一个问卷调查，我们将向您展示《英雄联盟》中女性英雄皮肤的图片，并询问您对该皮肤的看法和购买意向。这项研究的目的是调查女性英雄的性化程度如何影响玩家的购买意向。问卷大约需要 5 分钟来完成。我们重视你的意见，并要求你认真和诚实地回答每个问题。答案没有对错之分。
 数据的保密性
 所有研究数据将被保密，并以匿名方式收集。我们将无法识别您的身份，而且参与这项研究没有可预见的风险或不适。
 自愿参与
 你对这项研究的参与是自愿的。如果你选择不参与，不会对你有任何影响。如果你在任何时候决定停止填写问卷，你可以不给出理由。
 进一步信息
 如果您在参与前或参与后对本研究有任何疑问，请随时通过电子邮件与负责的研究人员联系，laiyitong666@gmail.com。如果您了解所提供的信息并同意参与本研究，请点击下面的 "我同意 "按钮，开始问卷调查。

- ○ 同意

Q2 您认同什么性别？

- ○ 男性
- ○ 女性
- ○ 非二元/第三性别
- ○ 宁愿不说

Q3 您对于 MOBA（多人在线战术竞技游戏）有多熟悉？

- ○ 一点都不熟悉
- ○ 有点熟悉
- ○ 比较熟悉
- ○ 很熟悉
- ○ 极其熟悉

Q4 你多长时间玩一次 MOBA（多人在线战斗竞技场）游戏？

- ○ 没玩过
- ○ 一周少于一次
- ○ 一周 1-2 次
- ○ 一周 3-4 次
- ○ 一周 5-6 次
- ○ 每天都玩

Q5 您是什么类型的 MOBA 玩家？

- ○ 在今天之前从未听说过
- ○ 在今天之前听说过但不知道怎么玩
- ○ 知道怎么玩但没玩过
- ○ 之前玩过，但现在不玩了
- ○ 目前在玩

Q6 您在 MOBA 游戏中选择女性角色进行游戏的频率是多少？（如果没玩过 MOBA 游戏，请

选择“从不”）

- ○ 从不
- ○ 有时
- ○ 几乎一半时间
- ○ 大部分时间
- ○ 总是

Q8 您对于《英雄联盟》有多熟悉？

- ○ 一点都不熟悉
- ○ 有点熟悉
- ○ 比较熟悉
- ○ 很熟悉
- ○ 极其熟悉

Q9 您是什么类型的《英雄联盟》玩家？

- ○ 在今天之前从未听说过
- ○ 在今天之前听说过但不知道怎么玩
- ○ 知道怎么玩但没玩过
- ○ 之前玩过，但现在不玩了
- ○ 目前在玩

Q10 你多长时间玩一次《英雄联盟》？

- ○ 没玩过
- ○ 一周少于一次
- ○ 一周 1-2 次
- ○ 一周 3-4 次
- ○ 一周 5-6 次
- ○ 每天都玩

Q11 在《英雄联盟》中，您选择女性英雄进行游戏的频率大概是多少？（如果没玩过《英雄联盟》，请选择“从不”）

- ○ 从不
- ○ 有时
- ○ 几乎一半时间
- ○ 大多数时间
- ○ 总是

Q12 您对待购买游戏内虚拟物品的态度是什么？

	非常同意	有点同意	既不同意也不反对	不太同意	强烈反对
我对购买游戏内物品持积极态度。	○	○	○	○	○
购买游戏内虚拟商品的想法对我很有吸引力。	○	○	○	○	○
我同意在游戏中销售虚拟商品。	○	○	○	○	○
我认为游戏中虚拟商品的销售是一件好事。	○	○	○	○	○

Q13 您对待《英雄联盟》的态度是什么？

	非常同意	有点同意	既不同意也不反对	不太同意	强烈反对
我喜欢《英雄联盟》	○	○	○	○	○
我觉得《英雄联盟》是个好游戏	○	○	○	○	○
我对《英雄联盟》有好感	○	○	○	○	○

想象一下，您正在准备玩《英雄联盟》，在游戏中，您将以五人小队的形式与其他玩家竞争，作为一名英雄角色。游戏的目标是占领敌方基地。 在游戏中，英雄皮肤是可以通过游戏商店购买的付费物品，通常价格在 80 元左右。虽然每个英雄都有一个免费的默认皮肤，玩家不需要购买皮肤才能玩游戏。但皮肤具有独特的模型和画面，可以改变英雄角色的外观，而不影响其能力或其他游戏属性。英雄皮肤旨在增强游戏的乐趣和个性化。
 在接下来的调查中，您将看到两个《英雄联盟》的英雄皮肤。请根据您看到的每个英雄皮肤回答问题。

○ 我明白了

Qnon-a1 根据您刚刚看到的英雄皮肤，请指示您在多大程度上同意以下陈述。如果您不熟悉《英雄联盟》或不玩该游戏，则请说明如果您玩这个角色，你对以下陈述的赞同程度。

	强烈反对	不太同意	既不同意也不反对	有点同意	非常同意
我打算在未来购买这个英雄皮肤	○	○	○	○	○
我预计会购买这个英雄皮肤	○	○	○	○	○
我会考虑在未来购买这个英雄皮肤	○	○	○	○	○
我会很可能购买这个英雄皮肤	○	○	○	○	○
我会考虑花真钱购买这个英雄皮肤	○	○	○	○	○

Qnon-a2 您对该英雄皮肤及其外观有何想法？

	强烈反对	不太同意	既不同意也不反对	有点同意	非常同意
我喜欢整体的图片设计	○	○	○	○	○
这个英雄皮肤的外观很好看	○	○	○	○	○
这个英雄皮肤的外观很有吸引力	○	○	○	○	○
这个英雄的外表很有吸引力	○	○	○	○	○
这个英雄皮肤的外观很有艺术吸引力	○	○	○	○	○
这款英雄皮肤的外观非常具有美感	○	○	○	○	○

Qnon-a3 您对购买这个英雄皮肤有何态度？

	强烈反对	不太同意	既不同意也不反对	有点同意	非常同意
我对在《英雄联盟》购买这个英雄皮肤持有积极的看法	○	○	○	○	○
我觉得在《英雄联盟》购买这个英雄皮肤对我有吸引力	○	○	○	○	○
我赞成在《英雄联盟》销售这个英雄皮肤	○	○	○	○	○
我认为在《英雄联盟》销售这个英雄皮肤是一件好事	○	○	○	○	○

Qmax-bs1 您认为您所看到的这个英雄皮肤的性感程度如何？

- ○ 完全没有性化
- ○ 微妙的性化
- ○ 明显的性化
- ○ 高度性化
- ○ 极度性化

Q14 您的年龄是？

- ○ <17
- ○ 17–22
- ○ 23–27
- ○ 28–33
- ○ >33
- ○ 不想回答

Q15 您的国籍是哪里？

▼ 阿富汗 ... 津巴布韦

Q16 您的教育水平是多少？

- ○ 不到高中
- ○ 高中毕业生
- ○ 一些学院/大学但没有学位
- ○ 本科
- ○ 硕士
- ○ 博士学位（PhD）及以上
- ○ 不想回答

Q17 以下哪项最能描述您的个人月收入或生活费？

- ○ 少于 1000 元
- ○ 1000 元至 3000 元
- ○ 3000 至 5000 元
- ○ 5000 元至 7000 元
- ○ 7000 元至 10000 元
- ○ 10000 元以上
- ○ 不想回答