Title: "Into the Wolves' Den: An Investigation of Predictors of Online Sexism"

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Abstract

Online sexism against female gamers is reportedly common and pervasive, causing serious problems. To help solve these problems, the study identified various predictors of online game sexism, which is hypothesized to predict actual in-game harassment. Different from previous studies, the study approaches the problems from the perspective of perpetrators rather than victims. We proposed a theoretical model that include three groups of predictors: offline sexist beliefs (masculine norms and hostile sexism), game-related factors (perceived territoriality, advancement, and competition), and environmental factors (peer harassment and play time). The model was tested against online survey data collected from a sample of 528 male gamers in South Korea with age range of 14 to 64 years (M = 34.70, SD = 12.81). The results showed that all the predictors, except competition and play time, were significantly associated with online game sexism, which mediated the relationships between the predictors and online sexual harassment. Perceived territoriality and peer harassment were found to have direct and positive effects on harassment. The findings are expected to contribute to developing more effective measures for preventing the hostility and aggression against female gamers by providing a new and more thorough diagnosis of the underlying causes of the problems.

Keywords: female gamers, online game sexism, perceived territoriality, peer harassment, in-game harassment

1. Introduction

Online games remain as a hostile environment for women, even though the number of female gamers has rapidly grown for the past decades and now accounts for nearly half of the total gaming population (Statista 2019). It has been documented that female gamers are being continually humiliated, threatened, stalked, and sexually harassed during and after playing games (Ashcroft 2019; Campbell 2018; Fox, Gilbert, and Tang 2018; McLean and Griffiths 2018; O'Halloran 2017). Recent studies have suggested that sexual harassments in online games are committed mostly by male gamers against female gamers (Kaye, Pennington, and McCann 2018; Salter and Blodgett 2012; Vermeulen, Castellar, Janssen, Calvi, and Van Looy 2016). For example, in South Korea, one of the countries with the largest per capita gaming populations (Huhh 2007; Jacobs 2015), players who play the female character *Mercy* in *Overwatch* are commonly called by an online slang, *Bo-Rcy*, which literally means "Mercy played by female genitals" and connotes that women are incapable to play the game. Also, a female professional gamer has been falsely accused of using an illegitimate tool simply because her win rate was too high for a woman (Webster 2018).

In the current online gaming culture, aggression, outrage, and exclusion are often not just allowed but rewarded or even encouraged, so that anyone could encounter potential perpetrators in online games (Cook, Conijn, Schaafsma, and Antheunis 2019; Huang, Yang, and Hsieh 2019; Tang and Fox 2016). In fact, online games have become one of the most hostile places among various online platforms, especially for those who are perceived as "not to belong here" (Nakamura 2009; Tang and Fox 2016; Yee 2014). Fox and Tang (2017) pointed out that although both male and female gamers could be victimized in online games, female gamers are more likely than male gamers to be exposed to severe harassment, which has been supported by empirical evidence (Chess and Shaw 2015; Cote 2017; Tang and Fox 2016). For instance, 33% of female gamers experienced

gender discrimination (Mahmood 2018), and 57% experienced severe sexual harassment after disclosing their genders (Ashcroft 2019). Furthermore, 64% of female *World of Warcraft* players answered that they experienced various in-game sexism such as *exclusion* (i.e., removing women from the game-play) or *gendered flaming* (i.e., using derogatory language specifically against female gamers) (Brehm 2013). Also, a report (Duggan, Rainie, Smith, Fuck, Lenhart, and Madden 2014) documented that women are exposed to worse forms of online harassment (e.g., stalking, physical threats, etc.) and that about 44% of Internet users, regardless of their sex, agreed that online gaming is "more welcoming toward men" (p. 8). Overall, it can be concluded that "video game culture is actively hostile towards women in the private as well as the professional spheres" (Paaßen, Morgenroth, and Stratemeyer 2017, p. 429).

The prevalence and severity of online sexual harassment, in particular, against female gamers, requires systematic investigations, which is expected to provide theoretical and empirical bases for developing preventive measures to reduce and prevent it. As part of such effort, the present study aims to examine possible predictors of online game sexism, which has been overlooked in previous research (Tang and Fox 2016). Plausible explanations for online sexism can be found in previous literature and summarized as follows. First, male gamers' sexist beliefs cultivated offline can be simply reproduced and reinforced in online games, resulting in male-dominant gaming cultures (Jenson and De Castell 2015; McClintock 2015). Second and related, online sexist attitudes and behavior can be attributed to various elements inherent in online games. Male gamers with biased perceptions of online games (i.e., *territoriality*) tend to treat female gamers as illegitimate intruders who deserve hostility. Also, the competitiveness enhanced and rewarded in online games may elevate sexist attitudes and behavior. Male gamers with strong motivations for *advancement* and *competition* (Yee 2006) tend to stereotype female gamers as too inept to play games with either as

partners or opponents (Shen, Ratan, Cai, and Leavitt 2016; Paaßen et al. 2017). Similarly, female gamers might be viewed as those who trespass on the territories owned by men (Brown and Zhu 2016; Kaye et al. 2018). Finally, sexist behavior can cascade in online game communities due to peer influences. Once sexist behavior is established as a group norm, group members are desensitized with it and more likely to show sexist behaviors, which they would not otherwise do, in order to feel accepted and valued by their peers, as the *Social Identity Theory* (Tajfel and Turner 1979) predicts. Indeed, some studies (e.g., Chen, Duh, and Ng 2009; Fox and Tang 2014; Tang and Fox 2016) made similar arguments and a recent study (Tang, Reer, and Quandt 2020) actually empirically verified the presumption by reporting that *gamer identity* was indeed a significant predictor of sexual harassment perpetration. This finding implies that the basic assumptions of the *Social Identity Model of Deindividuation Effects* (SIDE) (Lea and Spears 1991) can be applied to the context of in-game sexism against female gamers. From the perspective of the SIDE theory, male gamers in the "anonymous" gaming world tend to identify themselves as a member of "(male) gamers" rather than as an individual gamer, which results in antipathy toward those perceived as a member of an outgroup (in this case, female gamers).

Based on the discussion above, we propose an integrative model to explore possible causes of male gamers' sexism against female gamers in the next section and test the model against empirical data in the following section. In the final section, we discuss the implications of the current findings and the directions for future research. Meanwhile, in this article, online sexism refers to male gamers' negative attitudes towards female gamers, which possibly triggers actual hostile in-game behaviors against women in games (online harassment) (i.e., gendered flaming, sexual harassment).

2. Predictors of Online Game Sexism

2.1. Offline Sexist Beliefs

The first group of predictors of online game sexism is offline sexist beliefs and attitudes with the assumption that one's behavior shown in online games can be considered as the continuation of his/her beliefs formed and cultivated offline (Fox and Tang 2014; McLean and Griffiths 2018). This section focuses on the concepts of *masculine norms* and *hostile sexism* and discuss their relevance in the contexts of online sexism.

In feminist theory, the social status of being a "real man" or manhood is not immediately granted to all adult males. Instead, it must be achieved and maintained by conforming so-called *masculine norms*, defined as "the widely accepted standards of behavior that men are expected to adhere to in order to meet the prevailing societal definition of masculinity" (Hermann, Liang, and DeSipio 2018, p. 493). The masculine norms define a "real man" by the following characteristics: winning, emotional control, risk-taking, violence, dominance, playboy, self-reliance, primacy of work, power over women, disdain for homosexuals, and pursuit of status (Mahalik, Locke, Ludlow, Diemer, Scott, Gottfried, and Freitas 2003). It is important to note that these characteristics are mere stereotypes rather than real, because no one can live up to all of them. Nevertheless, the masculine norms are real in the sense that they shape the beliefs and behaviors of those who adopt them.

Previous studies showed that the masculine norms are closely related to online sexism (Feather and McKee 2012; Fox and Tang 2014). For instance, Fox and Tang (2014) provided empirical evidence supporting a positive relationship between masculine norms and online game sexism. They operationalized masculine norms as a multi-dimensional construct composed of *desire for power over women*, *need for heterosexual self-presentation*, and *social dominance orientation* (Pratto, Sidanius, Stallworth, and Malle 1994) and found that all the dimensions were significantly associated with online game sexism. In addition, Gabbiadini, Riva, Andrighetto,

Volpato, and Bushman's (2016) experimental study found that male gamers' masculine beliefs was positively associated with playing sexist games and significantly decreased the empathy for female victims of sexual harassment.

The other concept relevant to online sexism is *hostile sexism*, which is one of the two types of sexism conceptualized by Glick and Fiske (1996), the other being *benevolent sexism*. Although these two types of sexism are similar in the sense that both devalue and belittle women's nature and abilities, hostile sexism has been considered as to be more significantly related to sexist attitudes and behaviors against women (Begany and Milburn 2002; Fox and Potocki 2016; Glick, Diebold, Bailey-Werner, and Zhu 1997; Russell and Trigg 2004). Hostile sexism is referred to as "the rejection of women who defy traditional gender roles" (Hill and Marshall 2018, p. 423), or alternatively, "the typical antipathy that is assumed to characterize sexist attitudes" (Viki, Chiroro, and Abrams, 2006, p. 790). Empirical research has shown that hostile sexism is positively associated with various sexist perceptions and attitudes such as negative evaluation of women (Glick et al. 1997) and tolerance of harassment (Begany and Milburn 2002; Diehl, Rees, and Bohner 2012). The effects of hostile sexism have been replicated in previous studies on online games, confirming that hostile sexism contributes to male gamers' sexist beliefs and likely leads to harassment behaviors against female gamers (Fox and Potocki 2016; Fox and Tang 2014; Tang and Fox 2016). A recent study conducted by Tang and his colleagues (2020) also found that hostile sexism along with additional factors, such as social dominance orientation, Machiavellianism, psychopathy, and gamer identification predicts sexual harassment perpetration in online video games.

It is reasonable and straightforward to consider hostile sexism to be as a potential determinant of online sexism. As the *ambivalent sexism theory* (Glick and Fiske 1996; see also Glick et al. 1997) suggests, sexism among men is related to two polarized images of women: hostile sexism for "non-

traditional" women and benevolent sexism for "traditional" women. Given that there is little chance that female gamers are perceived as traditional, it would be plausible that only hostile sexism will be linked to online game sexism. In addition, based on the fact that gaming experience has been mainly associated with aggression and hostility (Sublette and Mullan 2012), it is reasonable to expect that hostile sexism would be a more salient determinant of online game sexism than benevolent sexism.

Our assumption that the sexist attitudes that male gamers already have will lead to in-game sexism against female gamers has been verified by an up-to-the-minute study by Tang and his colleagues (2020), at least to some extent. In their survey study targeting German Internet users, they proved that sexist predispositions such as hostile sexism and social dominance orientation are positively associated with sexual harassment (perpetration). Despite the differences in study subjects and contexts, these findings can be used as another good evidence supporting the assumption discussed so far.

2.2. Game-related Factors

The second group of predictors of online sexism to be discussed in this section is game-related factors, including *perceived territoriality* and *competitiveness*. The concept of *territoriality* is referred to as "one's behavioral expression of his or her feelings of ownership toward a physical or social object" (Huo, Yi, Men, Luo, Li, and Tam 2017, p. 1920). This concept was originally proposed to demonstrate hostile behavior that people often show to intruders on their territories in a similar manner that wild animals do so. It is worth noting that territoriality occurs even when territories are completely imaginary (Brown, Lawrence, and Robinson 2005; Kirk, Peck, and Swain 2017). For instance, students may feel intruded when someone else take the seats that they have taken for a while, even when every student is allowed to freely take their seats (Ashley and Noble 2014).

When applied to the context of online games, territoriality can be considered as another important predictor of aggressive behavior that male gamers show to female gamers. For a long time, online games have been dominated by male gamers and considered as "playgrounds for boys," that is, a territory owned by male gamers. For this reason, female gamers are often treated as illegitimate, and thus, unwelcome intruders, which rationalizes sexual harassment against female gamers in online games. Previous literature on women's gaming experience (e.g., Cote 2017; Crawford and Gosling 2005) commonly acknowledges that gaming has been recognized as men's exclusive property that female gamers are perceived as an "outlander," who might be easily subjected to various kinds of attacks. From this perspective, it is expected that male gamers' perceived territoriality or *psychological ownership* (Pierce, Kostova, and Dirks 2003) of online games has considerable impacts on forming their attitudes and behaviors towards female gamers.

Unfortunately, little has been known about how this novel and interesting concept, especially to the field of game studies, affects in-game sexism against women. To the best of our knowledge, no study has yet dealt with this topic in an empirical way. However, given that it is an instinct of almost all living things to react hostilely toward the "invaders" of their own territories (see Miyai, Sanches, Costa, and Barreto 2020), and that our daily observations can easily tell us that we are definitely not an exception (see Ashley and Noble 2014; Brown and Zhu 2016), it would be reasonable to assume that male gamers' perceived territoriality or psychological ownership (Pierce, Kostova, and Dirks 2003) of the gaming world will exercise considerable impact on their online game sexism against female gamers. Not only reasonable, but also it would be necessary, considering that if territoriality turns out to be a significant predictor, then it could mean that we might have to bring a drastic change in our ways to fight against in-game sexism.

Another and related element of online games relevant to online sexism is competitiveness, which is designed and enhanced by the rewarding systems built in many multi-user online games. Such systems reward gamers only when they defeat strong opponents or accomplish challenging tasks, and therefore, encourage them to obsessively look for strong opponents and skilled partners whom they can work with to defeat their enemies (Kahn, Shen, Lu, Ratan, Coary, Hou, Meng, Osborn, and Williams 2015). However, male gamers motivated by strong competitiveness tend to stereotype female gamers as too inept and inexperienced to play games with, refusing to accept female gamers either as qualified partners or opponents (Shen et al. 2016). Further, the refusal of female gamers is justified for creating and maintaining "desirable" game environments (Adachi and Willoughby 2011; Przybylski, Deci, Rigby, and Ryan 2014) and exercised in various forms of sexual harassment in online games.

2.3. Environmental Factors

As the third group of predictors of online sexism, this section focuses on peer influence through which one's beliefs, attitudes, and behaviors are passed on to others and eventually established as a norm within the peer group. Because most online games are designed to facilitate interactions among gamers, one's sexist beliefs and behavior can be easily imitated and reinforced by others in online games and possibly formed as group norms such as male-chauvinism (Chess and Shaw 2015; McClintock 2015). Male gamers who frequently and repeatedly observe sexual harassment are likely to become desensitized to online sexism, internalize sexist beliefs, and eventually acquire sexist behaviors of others. Recent studies support this idea, pointing out peer influence as another key predictor of online sexism and harassment (e.g., Brehm 2013; De Letter, Van Rooij, and Van Looy 2017). For example, Bossler, Holt, and May (2012) confirmed the significant effects of peer influences among teenagers on the likelihood that they commit sexual

harassment online. Also, De Letter and colleagues (2017) found that there exists a positive effect of peer influence on in-game harassment.

The influences of peers on sexist attitudes and behaviors in online games can be further elaborated by the *Routine Activity Theory* (Cohen and Felson 1979). As De Letter and her colleagues (2017) explained, the theory suggests the three conditions under which harassment against women to occur: 1) the potential offender needs to see what other offenders do to the victim, 2) there is no protection for the victim, and 3) the offender perceives the victim as an "easy" target. These conditions could be interpreted as the process of *desensitization* (Freedman 2002). Frequent observations of sexual harassment against female gamers will desensitize gamers to online sexism. Further, when such observations are repeatedly, gamers are likely to consider the victims of harassment as someone they can "toy with." As a result, gamers, who would not have done so otherwise, easily commit sexual harassment (Bossler et al. 2012; Brehm 2013; De Letter et al. 2017). Taken together, it is expected that male gamers' observation of sexual harassment will enhance their sexist attitudes toward female gamers. Also, the chance to observe sexual harassment will increase as gamers spend more time for playing.

The effects of peer influence on sexist behavior can be amplified when it is combined with strong gamer identification. Adopting the SIDE (Lea and Spears 1991), Tang and his colleagues (2020) argued that the dominant gamer identity is exclusively associated to heterosexual masculinity (see also Chen et al. 2009; Fox and Tang 2014; Tang and Fox 2016) and closely related to depersonalizing and stereotyping female gamers and others who were not identified as a gamer by peers. Their analysis revealed that strong gamer identification was a significant predictor of sexual harassment perpetration.

To summarize, the current gaming world is full of male-chauvinistic attacks toward female gamers (see Cote 2017; Fox et al. 2018; McLean and Griffiths 2018), and male gamers are already accustomed to the anti-female culture hence are highly likely to imitate those attacks, either voluntarily or involuntarily or both. Therefore, it can be hypothesized that the aforementioned two factors will positively predict male gamers' online game sexism.

2.4. Hypotheses

Based on the discussion in this section, we propose four hypotheses to identify the predictors of male gamers' online sexism. First, it is conceivable that sexist beliefs formed and cultivated offline will be positively associated with male gamers' in-game sexism (Fox and Tang 2014; Glick, Wilkerson, and Cuffe 2015; Tang and Fox 2016). Therefore, our first hypothesis is posited as follows:

H1. Male gamers' (a) masculine norms and (b) hostile sexism will be positively associated with their online game sexism.

Next, game-related factors will account for online game sexism. Male gamers are known to be more attached to the game and more eager to win than female gamers (Adachi and Willoughby 2011; Coyne, Chesney, Logan, and Madden 2009; Przybylski et al. 2014; Williams, Martins, Consalvo, and Ivory 2009). It is expected that male gamers with strong competitiveness would perceive online games as their own territories (Cote 2017; Crawford and Gosling 2005) and female gamers as incapable and uncompetitive intruders. Thus, we propose our second hypothesis as follows:

H2. Male gamers' (a) perceived territoriality, (b) advancement motivation, and (c) competition motivation will be positively associated with their online game sexism.

Further, male gamers' online game sexism can be explained by the degree to which they have learned and acquired sexist attitudes and behaviors from their peers (Behm-Morawitz and Schipper 2015; Fox et al. 2018; Kuznekoff and Rose 2013). More specifically, male gamers who are frequently exposed to others' sexist attitudes and behaviors are likely to display sexist attitudes and behaviors. Therefore, we propose our third hypothesis as follows:

H3. (a) Observation of sexual harassment and (b) playing time will be positively associated with their online game sexism.

Out final hypothesis intends to replicate the relationship between online sexist attitude and actual harassing behavior (Begany and Milburn 2002; Koepke, Eyssel, and Bohner 2014; Wiener, Hurt, Russell, Mannen, and Gasper 1997) as posited as follows:

H4. Male gamers' online game sexism will be positively associated with their harassment behavior.

Figure 1 present the integrative model of the current study that integrates the four hypotheses discussed above.

========== Insert Figure 1 Here ==========

3. Method

3.1. Data collection

An online survey was performed by a major research firm in South Korea, *Macromill Embrain* (http://www.embrain.com/eng/intro/intro1.asp), during the period from April 1 to 4, 2019. An all-male quota sample was recruited from the company's panel members regarding age and region to represent the Korean gaming population (Korea Creative Content Agency 2018).

Specifically, 627 out of 5,359 randomly selected email invitees initially finished the survey but after screening, the number shrunk to 528 with their age ranging from 14 to 64 (M = 34.70, SD = 12.81). Respondents who did not fully or sincerely (e.g., marked "1" for every question) answer the questionnaire and those who reported their average game-playing time was less than 10 minutes per day were all excluded from the analysis. Table 1 summarizes their demographic profiles.

========== Insert Table 1 Here ==========

3.2. Measures

To establish construct validity, most measurement items were adopted from pre-validated scales (e.g., Levant, Hall, and Rankin 2013; Glick and Fiske 1996). They were then rephrased to suit the context of the current study and were accessed on a 7-point Likert scale anchored on "1 = strongly disagree" and "7 = strongly disagree" mostly. However, in-game harassment and peer harassment was measured on a 5-point scale anchored on "1 = never" and "5 = always" following the original scale. Daily game-playing time was measured in minutes? All questionnaire items can be viewed in Appendix.

Masculine Norms were measured by the *Male Role Norms Inventory-Short Form* (Levant et al. 2013), which have been widely adopted in previous studies (e.g., DeLisle, Walsh, Holtz, Callahan, and Neumann 2019; Giaccardi, Ward, Seabrook, Manago, and Lippman 2017; McDermott, Levant, Hammer, Hall, McKelvey, and Jones 2017). Respondents were asked to indicate their levels of agreement to statements such as "A man should never admit when others hurt his feelings" (Cronbach's α = .92, M = 3.77, SD = 1.02).

Hostile Sexism was measured by the 11-item scale invented by Glick and Fiske (1996). The scale has validated and widely used in previous studies (e.g., Correia, Alves, Morais, and Ramos 2015; Stewart 2017; Tang and Fox 2016). Respondents were asked to indicate their levels of agreement to statements such as "Women exaggerate problems at work" (α = .93, M = 4.52, SD = 1.20).

Perceived Territoriality was measured by a 4-item scale adopted from previous studies (Ashley and Noble 2014; Brown and Zhu 2016; Karahanna, Xu, and Zhang 2015; Kirk et al. 2017). Respondents were asked to indicate their levels of agreement to statements such as "Online games are men's territory" (α = .84, M = 2.65, SD = 1.30).

Advancement was measured by the 6-item scale from Xu, Turel, and Yuan (2012). Respondents were asked to indicate their levels of agreement to statements such as "It is important for me to level up my game character as fast as possible" (α = .90, M = 4.17, SD = 1.29).

Competition was measured by the 3-item scale from Yee (2006). Respondents were asked to indicate their levels of agreement to statements such as "Winning is a big reason for me to play online games" (α = .89, M = 4.14, SD = 1.46).

Online Game Sexism was measured using a slightly modified version of the *Video Game Sexism Scale* (Fox and Tang 2014). Respondents were requested to indicate their levels of agreement to statements such as "Most women who play online games just do so with their boyfriends" (α = .96, M = 3.08, SD = 1.16).

Both *Harassment* and *Peer Harassment* were measured using the same 10-item scale from Tang and Fox (2016). Specifically, to assess the former, respondents were requested to answer how often they were involved in harassment behaviors such as swearing (e.g., "I said curse or swear words toward a female player") (α = .95, M = 1.50, SD = 0.65). However, following a prior study

(De Letter et al. 2017), wordings of the questions were all changed into third-person to measure the latter (e.g., "I saw a male player saying curse or swear words toward another female player") (α = .96, M = 2.38, SD = 0.84).

3.3. Data Analysis

The univariate and multivariate normality assumptions were verified prior to the main analysis. First, the univariate normality of the data was considered to be met since all the skewness and kurtosis absolute values stayed below the general cut-off points (Kline 2011). On the contrary, however, the multivariate normality assumption was found not to be satisfied (Mardia's coefficient = 16.536). To rectify this problem, the significance of every reported path weight was tested using the bootstrapping technique (5,000 samples, with a 95% bias-corrected confidence level) as past studies (e.g., Byrne 2010; Reer and Krämer 2018) suggested.

After calculating correlations among all variables in the research model (see Table 2), a path analysis with maximum likelihood estimation was conducted to answer the proposed hypotheses utilizing the AMOS 18 software. The correlations between predictors were included in the tested model. The model fit was judged using the chi-square statistics (χ^2 and relative χ^2), the root mean square error of approximation (*RMSEA*), the goodness of fit indexes (*GFI* and *AGFI*), the comparative fit index (*CFI*), and the *Tucker-Lewis index* (*TLI*), and their acceptable thresholds were set as follows: χ^2 ($p > .05$), χ^2/df (< 3), *RMSEA* (≤ .05), *GFI*, *AGFI*, *CFI*, and *TLI* (all > .95) (Byrne 2010; Hooper, Coughlan, and Mullen 2008; Kline 2011; Sharma, Mukherjee, Kumar, and Dillon 2005).

Finally, due to the unsatisfactory fit statistics of the initial model, modifications were made based on theoretical considerations and modification indices (see Table 3 for the revision history). As a whole, two paths were newly added: one from peer harassment to harassment and another from

perceived territoriality to harassment (see Figure 2 and 3). Here, the first path can be relatively easily justified given that individuals determine how they should behave by observing others and mimicking their behaviors (Bandura 1977). Similarly, considering that recognizing gaming as their own pursuit has been testified as one of the most prominent features of male gamers (Fox and Tang 2014; Gray 2012; Kaye et al. 2018), it would not be so irrational to assume the second association; if games are truly a men's domain, then the presence of a girl in the game itself will be highly likely to cause some territorial behaviors including harassment to "depend" their own territory (see Ashley and Noble 2014; Brown et al. 2005; Brown and Zhu 2016).

========== Insert Figure 2 and 3 Here ==========

4. Results

Table 1 presents demographic profiles of the survey respondents and Table 2 shows the means, standard deviations, and zero-order correlations among variables.

========== Insert Table 2 and 3 Here ==========

4.1. Final Analysis Model

As stated above, since the fit of the initially proposed model turned to be not very good (χ^2 = 164.102, df = 7, p < .001; χ^2/df = 23.443; *RMSEA* = .206; *GFI* = .944; *AGFI* = .639; *CFI* = .886; *TLI* = .416), the model was modified two times. After adding the peer harassment-harassment path, these numbers were much improved, but still failed to reach an acceptable level (χ^2 = 85.265, df = 6, p < .001; χ^2/df = 14.211; *RMSEA* = .158; *GFI* = .968; *AGFI* = .759; *CFI* = .943; *TLI* = .656). However,

the fit indices eventually reached a satisfactory level after adding the perceived territoriality-harassment path ($\chi^2 = 9.189$, $df = 5$, $p = .102$; $\chi^2/df = 1.838$; $RMSEA = .040$; $GFI = .996$; $AGFI = .966$; $CFI = .997$; $TLI = .978$). This final analysis model (see Figure 3) explains 60.7% of the variance in online game sexism ($R^2 = .607$) and 44.4% of the variance in in-game harassment ($R^2 = .444$).

4.2. Direct Effects

H1 anticipated that male gamers' sexist beliefs (masculine norms and hostile sexism) would be positively associated with their online sexism. Both of the hypotheses (H1a and H1b) were supported. The results showed that masculine norms ($\beta = .125$, $p < .001$) and hostile sexism ($\beta = .259$, $p < .001$) were positively associated with online game sexism. These findings generally suggest that the deep-rooted male-chauvinistic beliefs exert significant impacts even in the gaming world as they do in many different real-world settings (see De Judicibus and McCabe 2001; Martinez-Pecino and Durán 2019).

H2 anticipated that three game-related factors (territoriality, advancement, and competition) would be positively associated with online game sexism. Among them, two hypotheses (H2a and H2b) were supported. The results showed that both perceived territoriality ($\beta = .472$, $p < .001$) and advancement ($\beta = .102$, $p < .01$) were positively associated with sexism. On the contrary, H2c was not supported since there was no significant link between competition and the dependent variable ($\beta = -.021$, *n.s.*). The findings indicate that not only "traditional" beliefs but also game-related thoughts and attitudes can influence in-game sexism significantly as expected.

H3 anticipated that two peer-influence factors (peer harassment and playing time) would be positively associated with online game sexism. One of the hypotheses (H3a) was supported. The results showed that peer harassment ($\beta = .168$, $p < .001$) was positively associated with game

sexism. However, H3b was not supported since there was no significant link between playing time and the dependent variable (β = -.014, *n.s.*). This basically suggests that men's game-related sexist attitudes can be acquired or developed through the *social learning* (see Bandura 1971; 1977) or *cultivation* (see Gerbner and Gross 1976) process, at least, to some extent.

Finally, H4 anticipated that male gamers' online sexism would be positively associated with actual harassment behavior. This hypothesis was supported. The results showed that online game sexism (β = .100, p < .05) was positively associated with harassment as extant literature from various fields (e.g., Fox and Tang 2014; Koepke et al. 2014; Wiener et al. 1997) have repeatedly shown.

Meanwhile, concerning the newly added paths, the results showed that perceived territoriality (β = .403, p < .001) and peer harassment (β = .339, p < .001) were all positively associated with harassment. The findings will be discussed later more thoroughly.

4.3. Post-hoc Analysis: Indirect Effects

A bootstrapping with 5,000 bootstrap samples and a bias-corrected confidence level of 95% was performed to detect the indirect effects of predictors on in-game harassment via online game sexism. The results showed that in-game harassment was indirectly influenced by masculine norms (β = .012, p < .01, 95% bias-corrected CI = [0.003, 0.029]), hostile sexism (β = .026, p < .05, 95% bias-corrected CI = [0.006, 0.050]), perceived territoriality (β = .047, p < .05, 95% bias-corrected CI = [0.010, 0.088]), advancement (β = .009, p < .01, 95% bias-corrected CI = [0.002, 0.024]), and peer harassment (β = .016, p < .05, 95% bias-corrected CI = [0.004, 0.035]).

5. Discussion

Despite the rapid growth in number of female gamers in recent years, online games do not provide the gaming environments favorable for the women in games due to the male-dominated,

sexist culture. Female gamers are more than often treated as unwelcome intruders who deserve harassments and attacks (Fox et al. 2018; Fox and Tang 2017; McLean and Griffiths 2018; O'Halloran 2017; Vermeulen et al. 2016). From the very beginning of the introduction of the Internet, online sexism, in general, has been considered as one of the most important issues in the study of online participatory cultures. However, sexism in online games, in particular, has not received enough scholarly attention that it deserves. In this regard, the present study proposed a theoretical model that consist of three groups of predictors of male gamers' online game sexism, which in turn leads to actual harassment against female gamers (Begany and Milburn 2002; Koepke et al. 2014) and tested the model against empirical data.

The present study addresses the following question—why men show sexist attitudes toward women in online games, and examined three plausible explanations for it—(1) because they are already infected seriously with the traditional misogynistic ideas and ideologies, (2) because some characteristics of online gaming themselves nurture male gamers' sexist attitudes and behaviors, or (3) because harassing and torturing female gamers has become so ordinary in the current gaming culture that male gamers come to do such things quite free-heartedly. Our data analysis revealed that all these explanations above are valid, providing different perspectives on online sexism from the traditional feminist view that attributes all the problems to deep-rooted patriarchal beliefs and practices (see Butler 1999; Lerner 1986). The results suggested that other predictors, such as perceived territoriality and peer influences, had significant impacts on online sexism, even statistically greater than that of masculine norms. This implies that lessening of patriarchal beliefs and practices alone would not help in effectively improve the current female-unfriendly gaming environments. Rather, it would be more important and necessary for the stakeholders of online games, including individual gamers, game

companies, and law makers among others, to invest collective effort for reducing and preventing online sexism, focusing on male gamers' perception of female gamers and undesired peer influences among gamers.

More specifically, the results from the data analyses suggested that the three groups of predictors (sexist beliefs, game-related factors, and an environmental factor) sufficiently explained male gamers' online game sexism. Specifically, in line with prior investigations (e.g., Fox and Tang 2014; Fox and Potocki 2016; Tang and Fox 2016), it was confirmed that both masculine norms and hostile sexism were positively associated with online game sexism. In addition, it was found that territoriality and advancement motivation were positively associated with online game sexism, and in addition, territoriality was positively associated with actual harassment as well. This is noteworthy because this finding suggests that not just dispositional characteristics of individual gamers but also the environmental factors embedded in online games that they play may spur online sexism, contrary to what social constructivist feminists argue (e.g., Butler 1999; West and Zimmerman 1987). Finally, it was found that male gamers' accumulated in-game experiences of sexist behaviors was positively associated with online game sexism, which is consistent with the findings of prior studies (e.g., De Letter et al. 2017).

Concerning the relative contributions of the three groups of predictors to explaining endogenous variables in the current model, one interesting finding is that male gamers' perceived territoriality was the most powerful predictor of online game sexism. The standardized direct effect of territoriality on online game sexism ($\beta = .472$) was found to be far greater than those of other predictors, suggesting that the sexist attitudes against female gamers are primarily the result of the territorial behaviors of male gamers (see Ashley and Noble 2014; Brown and Zhu 2016). In other words, those who perceive female gamers as annoying "invaders" who needs to be kicked out as

quickly as possible tend to respond to female gamers more aggressively. This suggests a new solution for the current female-unfriendly gaming environments, which would be to make gaming boys perceive female gamers as "companions" who have the same right to enjoy the game as they do. This would be particularly so, given that territoriality was found to be related to actual harassment behaviors as well.

It is worth nothing that the observed effects of territoriality could vary depending on game genre and other characteristics of games played. In our conjecture, the effects of territoriality will be salient only if male gamers are dominant enough in number to claim their ownership of the game and justify their hostile behavior against female gamers. However, not all games are male gamer-dominant. For example, *Second Life* and *FarmVile* are played by as many female gamers as male gamers, if not more. In these games, male gamers are unlikely to perceive the games as their own territory, which is a necessary condition for aggressive territorial behavior (Brown and Zhu 2016; Miyai et al. 2020). Thus, it is expected that the effects of territoriality will be less significant or marginal at most in gender-balanced games. This conjecture suggests that game genre/characteristics would moderate the effects of territoriality as well as other predictors, which needs to be verified in the future research.

One important implication of the current findings for Korean society, where this study was carried out, is that online sexism, which is assumed to originate from sexist beliefs cultivated offline, can possibly reinforce the offline sexist beliefs, thus forming a vicious circle. In recent years, nationwide feminist movements, including *#MeToo* movement, have contributed to the growth of the gender sensitivity of the public, and sex scandals of politicians and celebrities promoted public awareness of gender issues in South Korea (Steger 2018a; 2018b). Nevertheless, the pervasiveness of sexism in online games suggests that the patriarchal ideologies deeply rooted in the society have not

been eradicated yet, but instead, temporally entered dormant status. If that is the case, online sexism should be more seriously considered as potential threats that can harm the society any time soon.

Another important finding of the current study is that male gamers' sexist attitudes are influenced by their in-game neighbors. Given that many in-game harassment policies are not being enforced strictly (Ashcroft 2019; Fox and Tang 2014), due attention must be paid here, because practically, this finding provides stakeholders (e.g., policy makers) with a good ground for strengthening existing punishment for in-game harassment. In other words, the proven influence of peer harassment affirms the importance of the gaming environments surrounding male gamers and in turn, requires a more intensified measure against in-game sexism and harassment for a deterrent effect.

As anticipated, male gamers' online game sexism was turned to be a significant predictor of harassment behaviors. This is in line with what prior investigations (e.g., Begany and Milburn 2002; Fox and Tang 2014; Koepke et al. 2014; Wiener et al. 1997) reported. However, in terms of effect size, the influence of online game sexism was not very huge ($\beta = .100$), suggesting that sexism may not the only trigger for male gamers' actual harassment behaviors. This is interesting because it contradicts, at least to some extent, the old belief on the "A-B (Attitude-Behavior)" relationship in behavioral psychology (Fishbein and Ajzen 1977; see also, Ajzen and Fishbein 1980). That is, even though male gamers form sexist attitudes, that does not necessarily lead to more attacks toward female gamers, just as Schwartz and Tessler (1972) criticized. Meanwhile, as the reported indirect effects suggest, since it was confirmed that many of the proposed predictors exerted some effects through the variable, a caution would be needed here not to make a hasty conclusion. Although its relative contribution to explaining the dependent variable was not as large as perceived territoriality or peer harassment, online sexism was still an important

variable in predicting actual in-game harassment behavior, mediating the effects of other predictors, such as hostile sexism, perceived territoriality, advancement, peer harassment, on harassment.

One of the important contributions of the current study is that this study focuses directly on the perpetrator of harassment against female gamers, namely, male gamers, which has been neglected in previous literature. Most previous studies focus either on hearing the miserable experiences of the persecuted and their possible detrimental effects (e.g., Fox et al. 2018; Kaye and Pennington 2016; Kaye et al. 2018) or on the potential hazards of the sexist gaming contents, which have been mostly "assumed" but not systematically examined (e.g., Behm-Morawitz and Schipper 2015; Ivory 2006; Yao, Mahood, and Linz 2010) with few exceptions (e.g., De Letter et al. 2017; Fox and Tang 2014). On the other hand, the focus of the present study lies on identifying the psychological reasons behind male gamers' sexist attitudes and behaviors against women in the game with the expectation that it will help produce more practical and efficient counter-measures against the misogynistic gaming culture.

In addition, the present study establishes theoretical connections between online sexism to the theoretical frameworks that have been hardly applied in previous literature, such as the SIT (Tajfel and Turner 1979), cultivation (Gerbner and Gross 1976), and social learning (Bandura 1971; 1977), thus expanding the theoretical scope of research on online sexism and enriching the academic discourses. In particular, paying attention to other kinds of predictors, such as territoriality and peer influence, our study provides new insights into understanding online sexism, providing the theoretical and empirical bases of developing practical measures of reducing and preventing online sexism and harassment

Nevertheless, the current study has several limitations to be acknowledged. First, the sample used in the study was biased because our sample consisted of all-male gamers and we recruited them from a private company's panel. Although the sampling strategy has been adopted and validated in previous studies (e.g., Choi and Kim 2016; Hwang et al. 2017) and it is the best option to access gamer populations, some caution is necessary to interpret the results and generalize the findings. Second, relying upon cross-sectional data, the current study failed to confirm the causal directions between predictors and endogenous variables. Regarding this limitation, longitudinal designs will be desirable in order to examine the evolving process in which online sexism arises from peer influences.

Despite its limitations acknowledged above, a unique contribution of the current study is that it focuses on the perpetrators rather than the victims of in-game sexist behaviors and identified significant predictors of online sexism. Our findings suggest that that it is important for game researchers and feminist scholars to pay as much attention to the perpetrators as to the victims of in-game sexist behaviors. We believe that perpetrator-focused studies can help identify the fundamental causes of online sexism and harassment behavior and thereby develop practical preventive measures for game developers, policy makers, and gamers themselves. From this perspective the current study can be extended in several directions. First, the observed associations between the predictors and the outcome variable in our model need to be confirmed by experimental studies to overcome the limitations of observational data. Alternatively, intervention studies can be implemented to support the observed associations. For example, the competitiveness of games, found to be a significant predictor of online sexism, can be adjusted by changing game rules or incentive systems. Also, gender neutralization or anonymization can help reduce perceived territoriality, found to be another significant predictor. Finally, the future research on online sexism should take into consideration the

dynamic relationship between perpetrators and victims that evolves over time. More specifically, the longitudinal observation of changes in sexist beliefs and attitudes of potential perpetrators as well as gradual desensitization of victims will be essential to gain better understanding of perpetrators-victims relationship.

Disclosure Statement

No competing financial interests exist.

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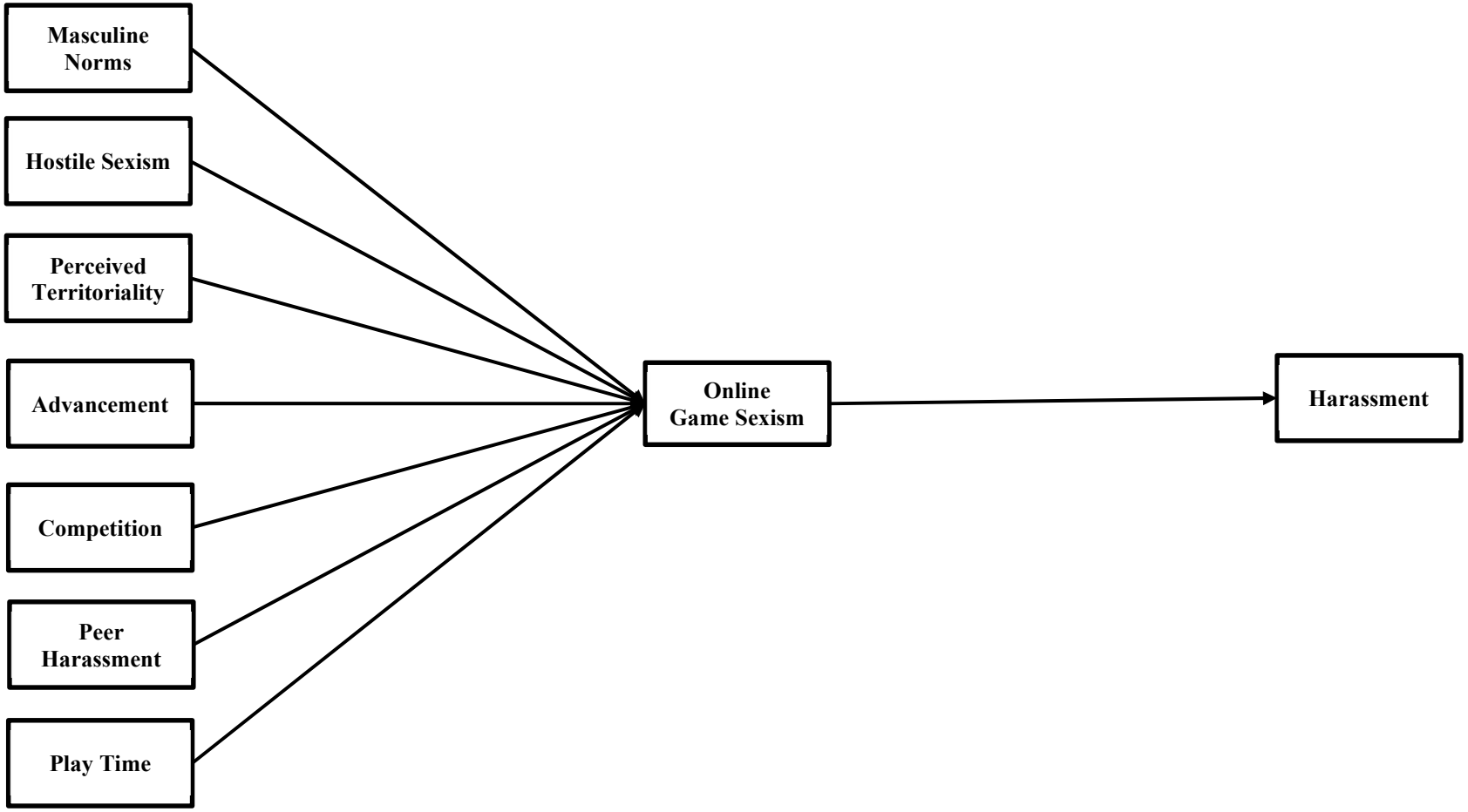

Figure 1. *Conceptual Model*

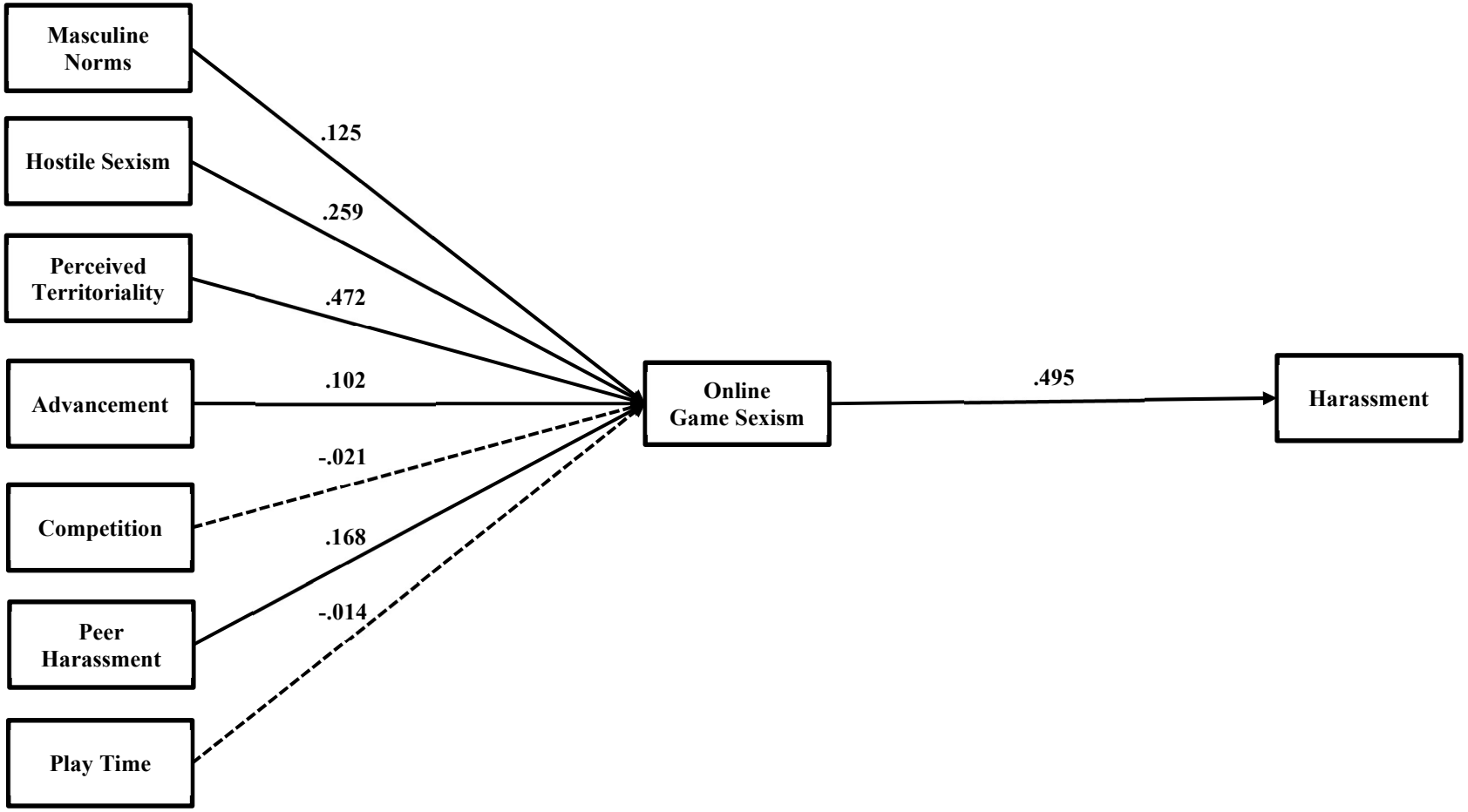

Figure 2. *Results before Modification (N = 528)*

Note. $\chi^2 = 164.102$, $df = 7$, $p < .001$; $\chi^2/df = 23.443$; *RMSEA* = .206; *GFI* = .944; *AGFI* = .639; *CFI* = .886; *TLI* = .416.

Numbers are standardized coefficients significant at .05 level. The dotted line represents a non-significant standardized coefficient.

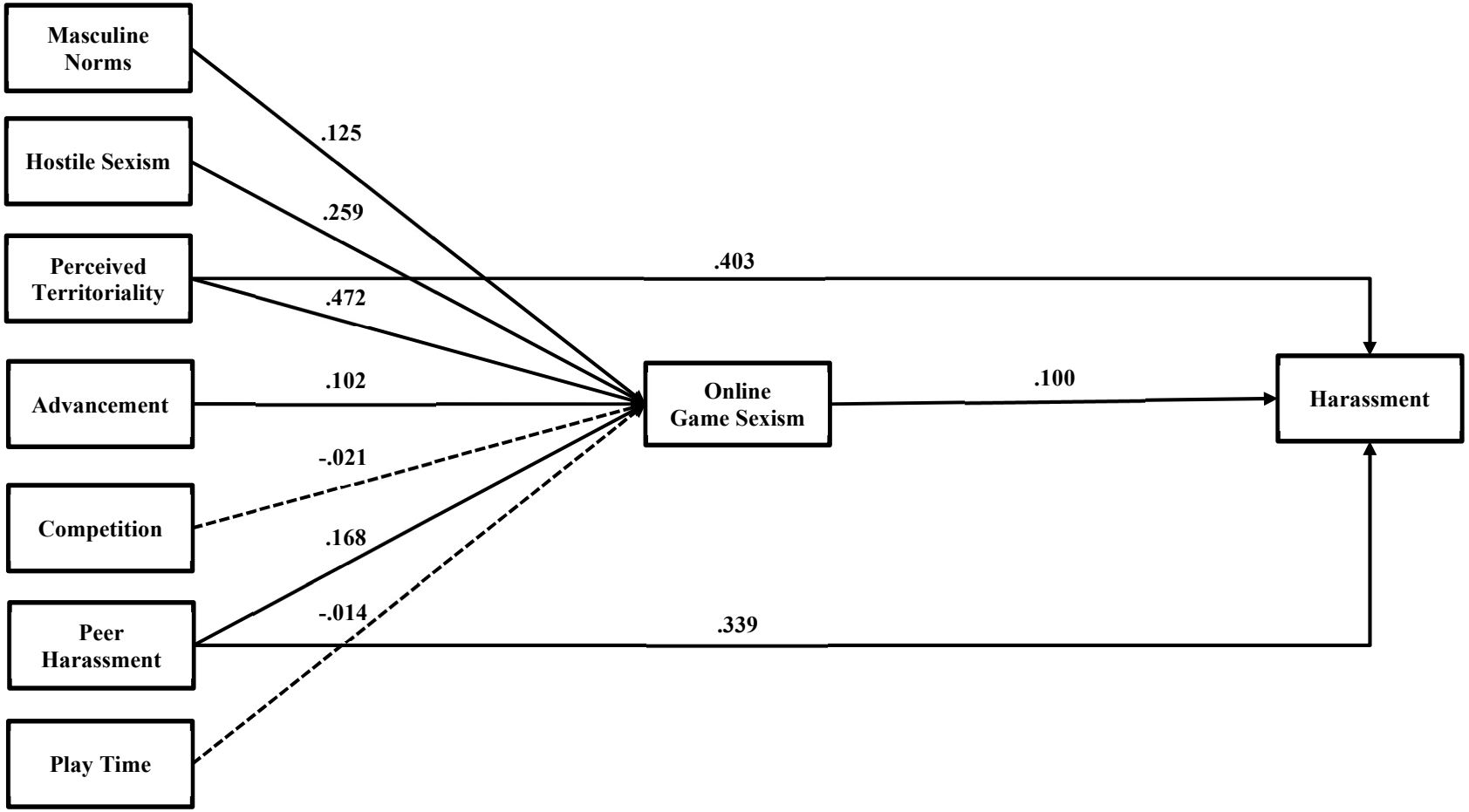

Figure 3. *Modified Model (N = 528)*

Note. $\chi^2 = 9.189$, $df = 5$, $p = .102$; $\chi^2/df = 1.838$; *RMSEA* = .040; *GFI* = .996; *AGFI* = .966; *CFI* = .997; *TLI* = .978.

Numbers are standardized coefficients significant at .05 level. The dotted line represents a non-significant standardized coefficient.

Table 1. *Demographic Profiles of the Respondents*

Characteristics		Frequency	%
Age	13 - 19	87	16.48
	20 - 29	130	24.62
	30 - 39	141	26.70
	40 - 49	71	13.45
	50 or above	99	18.75
Education	Junior high school degree or under	47	8.90
	High school degree or equivalent	127	24.05
	Bachelor's degree	318	60.23
	Master's degree or above	36	6.82
Employment Status	A student	142	26.89
	Employed for wages	283	53.60
	Self-employed	60	11.36
	Unemployed	36	6.82
	Not identified	7	1.33
Favorite Game Genre	MOBA	115	21.78
	MMORPG (including RPG)	98	18.56
	Casual	72	13.64
	Battle Royal	62	11.74
	Sports	44	8.33
	FPS (including Hyper-FPS)	37	7.01
	Action	35	6.63
	Strategy (including RTS and CCG)	35	6.63
	Racing	22	4.17
	Others	8	1.52

Note. MOBA = Multiplayer Online Battle Arena (e.g., *League of Legends*); MMORPG = Massively Multiplayer Online (e.g., *World of Warcraft*); Battle Royal (e.g., *PLAYERUNKNOWN'S BATTLEGROUNDS*); FPS = First-Person Shooting (e.g., *Sudden Attack*); RTS = Real-Time Strategy (e.g., *StarCraft*); CCG = Collectible Card Game (e.g., *Hearthstone*).

Table 2. *Mean, Standard Deviation, and Correlation Matrix of the Measured Variables*

	M	*SD*	1	2	3	4	5	6	7	8	9
1. Masculine Beliefs	3.72	1.06	---	.503**	.472**	.213**	.187**	.267**	.018	.541**	.354**
2. Hostile Sexism	4.45	1.27		---	.308**	.224**	.153**	.084	.064	.500**	.209**
3. Perceived Territoriality	2.56	1.31			---	.283**	.224**	.260**	.019	.679**	.559**
4. Advancement	4.08	1.38				---	.547**	.179**	.049	.338**	.239**
5. Competition	4.06	1.53					---	.188**	.020	.235**	.224**
6. Peer Harassment	2.30	0.87						---	.095*	.359**	.480**
7. Play Time	120.98	92.93							---	.034	.126**
8. Online Game Sexism	2.95	1.23								---	.495**
9. Online Game Harassment	1.47	0.64									---

Note. * $p < .05$ (two-tailed), ** $p < .01$ (two-tailed).

Table 3. *Summary of Model Revisions*

	χ^2	*df*	*p*	χ^2/df	*RMESA*	*GFI*	*AGFI*	*CFI*	*TLI*
Hypothesized Model	164.102	7	.000	23.443	.206	.944	.639	.886	.416
Revision 1 (a new path added) Peer Harassment → Harassment	85.265	6	.000	14.211	.158	.968	.759	.943	.656
Revision 2 (a new path added) Perceived Territoriality → Harassment	9.189	5	.102	1.838	.040	.996	.966	.997	.978

Note. *RMSEA* = the *Root Mean Square Error of Approximation*; *GFI* = the *Goodness-of-Fit Index*; *AGFI* = the *Adjusted Goodness-of-Fit Index*; *CFI* = the *Comparative Fit Index*; *TLI = Tucker-Lewis Index*.