# Video Game Use, Acceptance, and Relationship Experiences: A Moderated Actor-Partner Interdependence Model

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**Abstract**

With video game use widely accepted and practiced in a wide variety of households worldwide, it is important for researchers to understand links between video game use and romantic relational experiences. Although unexplored within gaming literature, previous research has indicated the importance of attitudes of acceptance or approval within the couple relationship with acceptance of a partner's specific behavior being linked to relational outcomes. Using dyadic data from 6,756 couples ($N$ = 13,512) from 16 different countries, an actor-partner interdependence moderating model was employed to evaluate how acceptance of video game use moderated the link between video game use and dyadic adjustment, while controlling for mental health, relational characteristics, and other demographic variables. Results indicate that higher reports of individual video game use were linked with improved rates of partner dyadic adjustment. Further, results indicated that partner-interaction effects for acceptance of video game use moderated the relationships between video game use and dyadic adjustment. This supports the importance of considering contextual factors when examining gaming use and its links with other constructs.

*Keyword: acceptance, couples, video games*

# Video Game Use, Acceptance, and Relationship Experiences: A Moderated Actor-Partner Interdependence Model

Some estimate that total consumer spend on video gaming is approximately $36 billion annually and some estimate that gamers spend an average of six hours a week playing. [1, 2] Despite the prevalence of video game use, research evaluating use within the couple context and its associations with various relational outcomes is within its infancy.[3] In a recent review of existing literature one report concluded that although outcomes are mixed across various studies, enough evidence is prevalent to suggest that video game use is associated with various relational characteristics and outcomes of couple relationships.[3] Some previous research suggests that online gaming is associated with increased aggression, especially among men,[4-6] as well as increased conflict within the couple relationship because of gaming use patterns.[7,8] Other research suggests that online gamers experience no significant differences regarding friendships and social support when compared to those that do not game. [9] Some research suggests that when both romantic partners participate, online gaming may be linked with improved health among women as well as higher reports of relational satisfaction when contrasted with those relationships where only one partner uses video games.[4] These findings suggest that attitudes or behaviors that indicate a partner's acceptance of a participant's gaming behaviors may play a role in various relational outcomes.

This record of mixed findings of video game effects may indicate that other contextual factors need to be considered as suggested by Quandt and Kowert, "The contextualization of game use in everyday life matters, even when looking at games from the angle of a 'media effects' approach." [10] The present study seeks to add to the growing body of video game literature by examining an additional contextual factor, a partner's acceptance of video game

play, which may assist in more clearly understanding the link between video game use and relationship experiences, specifically, dyadic adjustment. Although unexplored within gaming literature, previous research has indicated the importance of attitudes of acceptance or approval within the couple relationship suggesting that increased acceptance of a partner's specific behavior may be linked to a varying degree of relational outcomes.[11,12] Acceptance is defined as the comfort level one may have toward their partner engaging in online video gaming. Dyadic adjustment is defined as a couple's consensus, cohesion, and satisfaction within their romantic relationship.[13,14]

The present study will evaluate the capacity of acceptance attitudes toward video game use as a buffer between actual video game use and reports of dyadic adjustment within a couple relationship. Specifically, through an actor-partner interdependence moderation model, we examine acceptance attitudes towards one's partner's video game use patterns as a moderator of the link between actual video game use and each partner's reports of dyadic adjustment within their relationship. Using previous research and Qaundt and Kowert's call for incorporating more contextual factors to understand video game use effects[10], the following hypotheses are proposed:

1. Higher rates of an individual's video game use will be significantly linked with self and partner reports of dyadic adjustment. However, direction of links cannot be hypothesized due to mixed findings among previous research.
2. Reports of a partner's acceptance of an individual's video game use will significantly moderate the link between the individual's frequency of video game use and individual/partner dyadic adjustment. Specifically, for partners who report moderate to high reports of acceptance of video game use, while an individual's video game use

increases from low to high, individuals/partners will be more likely to report higher reports of dyadic adjustment.

## Method

### Sample and Procedure

The present study uses couples from the Me, My Spouse, and the Internet: Meeting, Dating and Marriage in the Digital Age research project conducted by the Oxford Internet Institute and supported by a grant from eHarmony.com.[15] The purpose of this research study was to investigate the role of the Internet in the couple relationship. A valid sample of 23,860 research participants were gathered from across 18 countries by a professional Internet panel company. The participants were sent an email, asking to complete an online survey. Each participant was asked to complete the survey as a separate member of the couple. Participants that were selected had Internet access in their home, were in a cohabitating or marital different-sex relationship, and at least 18 years of age. Under the guidance of the university's Institutional Review Board, appropriate informed consent was received prior to participants' and their partners' completion of the surveys.

Data collection included two primary waves of different participants. The first wave consisted of a Pan-European sample of 16 European countries where the second wave included participants currently living in Japan and Brazil.[15] The countries selected were based on criteria of a population of at least 10 million and countries with at least 30% of its residents having Internet access. The researchers set parameters for age distribution to gather a representative sample from each country. For example, the researchers had no less than 10% and no more than 15% of participant respondents between the ages of 18 and 25, and the same for participant respondents 55 years of age and older. The researchers were attempting a sample size of at least

1,200 couples per country. The current research analysis used a subsample from the Pan-European sample of matched different-sex couples. For more information on the sample, subsample, and rationale for the subsample selection, please contact the first author. A total of 6,756 couples resulted ($N$ = 13,512) from Germany, France, United Kingdom, Italy, Spain, Netherlands, Greece, Portugal, Belgium, Sweden, Austria, Switzerland, Denmark, Finland, and Norway.

**Measures**

**Dyadic Adjustment Scale**. The dyadic adjustment scale is a validated, reliable measure of adjustment in couple relationships. It was assessed as a latent variable using the three subscales (consensus, cohesion, and satisfaction) from the revised version of the Dyadic Adjustment Scale[13,14] as factor loadings. The consensus subscale, which reflects couples' agreement for decision making, values, and affection, was measured using six items on a 6-point scale. The cohesion subscale, which represents couples' interconnection with activities and discussions, was measured using three items on a 6-point scale and one item on a 5-point scale. The satisfaction subscale, which reflects couples' relationship satisfaction, was measured using four items on a 6-point scale. Each subscale was summed, and reliability tests indicated adequate reliability (consensus $\alpha$ = .82; cohesion $\alpha$ = .75; satisfaction $\alpha$ = .79).

**Gaming Frequency.** One item was used to assess how often participants participate in online gaming. Participants were asked how often they use the internet to play online games (1 = *Never,* 2 = *Less than monthly,* 3 = *Monthly,* 4 = *Weekly,* 5 = *Daily,* 6 = *More than one time daily)*. Gaming frequency was converted to a *z*-score in order to test moderation.[16]

**Acceptance of gaming.** One item was used to assess the moderator, gaming acceptability. Participants were asked how comfortable would they be if they discovered their

partner had subscribed to an online gaming service (1 = *very uncomfortable*, 2 = *somewhat uncomfortable*, 3 = *somewhat comfortable*, 4 = *very comfortable*). Acceptance of gaming was converted to a *z*-score in order to test moderation.[16]

**Control variables.** Ten control variables were used. Relationship status was measured by asking participants, "What is your current relationship status" (1 = *cohabiting, serious relationship*, 2 = *cohabiting, engaged*, 3 = *civil partnership*, 4 = *married*). Age was calculated from asking "What year were you born." Income was calculated using one item, asking, "What is your current annual household income, including your partner" (1 = *less than £12,000*, 2 = *£12,500 to £25,000*, 3 = *£25,000 to £37,500*, 4 = *£37,500 to £50,000*, 5 = *£50,000 to £75,000*, 6 = *more than £75,000*). Education was calculated, by asking each participant, "What is the highest level of education that you have attained?" (1 = *primary school*, 2 = *secondary school*, 3 = *sixth form college*, 4 = *technical college*, 5 = *adult college*, 6 = *some college*, 7 = *undergraduate degree*, 8 = *graduate school*, 9 = *Ph.D. or postdoctoral*). Number of children was measured, by asking, "At this time, how many children live with you, from any relationship". Relationship length was measured by asking participants, "In what year did you and your partner begin living together." This was then used to calculate the length of the relationship. Country of origin was dummy coded from asking, "What country are you currently living in." To control for the association of mental health and dyadic adjustment, two mental health concerns were measured with 2 questions by asking participants along a 7-point Likert scale, (1 = *rarely*, to 7 = *almost always)*, "How often during the past month have you felt anxious/depressed." Social desirability was measured by asking participants using a 7-point Likert scale, 1 (*rarely*) to 7 (*almost always*), "It's important for me to be viewed as a successful person by others."

**Data Analysis**

To examine the hypotheses, an actor-partner interdependence moderation model (APIMoM) with MPlus 7 was used.[17] All data were normally distributed, as indicated by skewness (± 3) and kurtosis (±7) being within the acceptable ranges.[18,19] Therefore, full information maximum likelihood (FIML) estimation was used to handle missing data. Prior to assessing the final APIMoM, a confirmatory factor analysis for dyadic adjustment was tested, which indicated adequate model fit ($\chi^2(5) = 13.22$, $p < .05$ ; CFI = .99; TLI = .99; RMSEA = .02, 90% C.I. (.01–.03); SRMR = .001).[19,20]

The APIMoM was tested using the directions and steps outlined in previous literature.[22] First, the omnibus test of distinguishability[21] was conducted, prior to selecting the final model, and it was determined that men and women were empirically distinguishable. Consequently, the model could be evaluated without constraints of equality. Second, the moderator was identified as a mixed-moderator with four moderation interactions (men's gaming frequency X men's acceptability, men's gaming frequency X women's acceptability, women's gaming frequency X women's acceptability, women's gaming frequency X men's acceptability). These were then entered as predictors for men and women's dyadic adjustment. Third, using equality constraints and chi-square difference testing we assessed the best and most parsimonious fitting model. In the final model the actor and partner paths for gaming frequency and the mixed moderator interactions were constrained to be equal.

**Results**

The final model fit the data adequately ($\chi2(159) = 1342.22$, $p<.001$; CFI = .94; TLI = .91; RMSEA = .03, 90% C.I. (.03 - .04); SRMR = .02)[19,20]. The model accounted for 25.3% of the explained variance in men's dyadic adjustment and 27.2% for women's dyadic adjustment.

Generally, the strength of the path coefficients were small when judging the unstandardized betas of variables that have been converted to *z*-scores (see Table 1).

**Hypothesis #1**

First, we examined whether participants' reports of video game use were significantly linked with their own and/or their partner's reports of dyadic adjustment. Men's and women's gaming frequency was not significantly associated with their own reports of dyadic adjustment. However, women's reports of gaming frequency were significantly related to men's reports of dyadic adjustment ($b = .04$, $p < .05$; $\beta = .02$), where higher gaming frequency was related to higher reports of dyadic adjustment by men. Similarly, men's reports of gaming frequency were significantly related to women's reports of dyadic adjustment ($b = .04$, $p < .05$; $\beta = .02$), where higher gaming frequency of men was linked with higher reports of women's dyadic adjustment.

**Hypothesis #2**

Second, we examined whether participant's acceptance of their partner's video game use moderated the association between their partner's video game use and the participant's report of dyadic adjustment. Two actor interaction effects (participants' own gaming frequency by their own acceptance) and two partner interaction effects (their own gaming frequency by their partner's acceptance) were tested. The actor interaction effects were not significantly related to men's or women's reports of dyadic adjustment. However, both partner interaction effects were significantly associated with both men's and women's reports of dyadic adjustment, thus indicating significant moderating effects of partner's gaming acceptance.

Specifically, the association of both men's ($b = .09$, $p < .001$; $\beta = .05$) and women's ($b = .09$, $p < .001$; $\beta = .05$) gaming frequency on *their own* reports of dyadic adjustment were *moderated by their partner's* acceptability for gaming (see B&C in Figure 1). In other words, the relationship between men's gaming frequency and their own dyadic adjustment was negative

when women had low acceptability and positive when women had high acceptability (see B in Figure 1). Similarly, the relationship between women's gaming frequency and their own dyadic adjustment was negative when men had low acceptability and positive when men had high acceptability (see C in Figure 1).

Likewise, the association of men's ($b$ = .09, $p$< .001; β = .05) and women's ($b$ = .09, $p$ < .001; β = .05) gaming frequency on *their partner's* dyadic adjustment were also *moderated by their partner's* acceptability for gaming (see A&D in Figure 1). In other words, the relationship between men's gaming frequency and women's dyadic adjustment was negative when women had low acceptability and positive when women had high acceptability (see A in Figure 1). Similarly, the relationship between women's gaming frequency and men's dyadic adjustment was negative when men had low acceptability and positive when men had high acceptability (see D in Figure 1).

Other notable findings included women's acceptability was significantly associated with both their own ($b$ = .16, $p$< .001; β = .08) and their partner's dyadic adjustment ($b$ = .12, $p$ < .001; β = .07). In both cases, women's acceptability for online gaming was associated with higher reports of dyadic adjustment. Contrarily, men's acceptability was not significantly associated with either their own or their partner's dyadic adjustment.

## Discussion

These findings from 6,756 different sex couples partially aligns with previous literature with results suggesting that partner's acceptance of video gaming use moderates or buffers the association between frequency of video game use and dyadic adjustment. Specifically, higher rates of partner acceptance of video game use, while observing differences between low and high reports for frequency of gaming use, were linked with higher reports of dyadic adjustment for both the participant and partner. Previous literature has indicated many behaviors' links with

relational outcomes are at least partially dependent on the extent that their partner accepts or approves of the behaviors. [11,12] Additionally, higher rates of partner video game use were linked with higher reports of participant's reports of dyadic adjustment. This echoes Quandt and Kowert's emphasis on including contextual factors when examining gaming's links with other constructs, and that by doing so may provide greater understanding to mixed findings within the gaming literature.[10]

**Limitations and Future Directions**

Notwithstanding the present study's strengths, several limitations need to be understood when considering and applying the results. First, although findings in the present study were statistically significant ($p < .05$), effect sizes were small. Additionally, data in the present study were cross-sectional and non-experimental. Thus, findings do not suggest cause and effect but rather merely correlational in nature. Although social desirability and mental health factors were accounted for in the present study, data were still self-report and therefore behaviors or opinions could be under or over reported. Lastly, using a more thorough measure of gaming behavior, such as the Passion Scale [23,24,25], and then adapting it to a complimentary measure of acceptance, could be used in future research for a more comprehensive examination of these constructs.

Future research could evaluate different dimensions of gaming use, acceptance, and relationship characteristics such as the shared or differences in acceptance attitudes between partners. Additionally, future studies need to evaluate different types of game use (i.e. online play, violent games, team/multiplayer games, playing alone vs. with partner). Although this study consisted of 6,756 different sex couples from 16 countries, this sample is not internationally representative. Future research not only needs to be more representative, but also of differing types of relationships such as same-sex, polyamorous, and/or those dating. Lastly, in line with Quandt and Kowert's call for research that considers contextual factors surrounding

gaming, [10] it may suit future researchers to consult systemic theoretical frameworks such as the multi-theoretical, Couple and Family Technology Framework Model (CFTFM) as a guide when developing studies or assessments.[26] This model incorporates multiple perspectives (ecological, structural-functional, and interaction-constructionist) to systemically explain links between technology and personal relationships through concepts of boundaries, expanded social networks, and meaning making. [26]

## Conclusion

The present study utilized 6,756 different sex couples to examine the associations between gaming use, acceptance, and dyadic adjustment. Results suggest that higher rates of partner game use were linked with higher rates of dyadic adjustment. Additionally, higher rates of partner acceptance, while gaming use frequency increased from low to high, were linked to higher reports of dyadic adjustment for both the individual and the partner. This reinforces the importance of including contextual factors while seeking to understand how gaming use is linked with other constructs.

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Table 1

*Unstandardized Path Coefficients and Significance Levels for Structural Equation Model (N = 6,756 Couples)*

| | Women's Dyadic Adjustment | | Men's Dyadic Adjustment | |
|---|---|---|---|---|
| *Exogenous Variable* | *b* | *S.E.* | *b* | *S.E.* |
| Men's Accept | -.06 | .03 | -.02 | .03 |
| Women's Accept | **.16*** ** | .03 | **.12*** ** | .03 |
| Men's Gaming Freq | **.04*** | .02 | -.03 | .02 |
| Women's Gaming Freq | -.03 | .02 | **.04*** | .02 |
| Men's Freq X Men's Accept | -.03 | .03 | -.01 | .03 |
| Women's Freq X Women's Accept | -.01 | .03 | -.03 | .03 |
| Men's Freq X Women's Accept | **.09*** ** | .03 | **.09*** ** | .03 |
| Women's Freq X Men's Accept | **.09*** ** | .03 | **.09*** ** | .03 |

*Note:* Model Fit Indices are $\chi^2(159) = 1342.23$, $p < .001$; CFI = .94; TLI = .91; RMSEA = .03 (C.I. .03 - .04); SRMR = .02; Freq = Gaming Frequency. Accept = Acceptability of Online Gaming. For a full list of path coefficients for demographic variables, please contact the lead author.

*$p < .05$. **$p < .01$. ***$p < .001$ (two-tailed).

**FIG. 1.** Moderating effects of partner acceptability of gaming use on the association between frequency of gaming use and dyadic adjustment where Low Frequency = 1 *SD* below the mean and High Frequency = 1 *SD* above the mean. *Solid Lines* represent Low Acceptability, *Dashed Lines* represent Mean Acceptability, and *Dotted Lines* represent High Acceptability. A & D display the associations of participants' gaming frequency on *their partner's* dyadic adjustment as moderated by their *partner's acceptability for gaming*. B & C display the associations of participants' gaming frequency on *their own* reports of dyadic adjustment as moderated by *their partner's* gaming frequency.