LETTER OF REVIEWERS

Reviewer A:
Recommendation: Revisions Required

Relevance: High

Novelty: Moderated

Presentation and writing: Moderated

Comments for authors: Be as accurate as possible when making your comments. List each recommendation so that it is easy for authors to respond appropriately to each one. Indicate in a timely manner where changes should be made (i.e. paragraph 2 of the method section).

Thank you for submitting your manuscript titled "Internet Gaming Disorder and impulsivity in undergraduate students at a public university: psychometric evidence (IGD-20, BIS-15) and their association" to Interacciones.

The manuscript addresses a highly relevant and contemporary issue by evaluating the psychometric properties of the IGD-20 and BIS-15 in a Peruvian public university sample, complemented by a multivariate analysis. The study provides valuable screening baselines for the region. However, several critical methodological, structural, and formatting revisions (APA 7th edition) must be addressed to ensure the scientific rigor required for publication.

Please find the detailed list of recommendations and required changes below:

1. Introduction

Recommendation 1:
In paragraph 1, please provide explicit citations to support the specific dimensions, core characteristics, and operational definitions mentioned for Internet Gaming Disorder (IGD).

Recommendation 2:
In paragraph 2, when discussing the consequences or correlates of IGD, clear references must be included to substantiate these claims.

Recommendation 3:
In paragraph 5, several conceptual models are briefly mentioned. It is necessary to explicitly cite the original authors who developed or studied these frameworks to ground the theoretical framework properly.

Recommendation 4:
Throughout the Introduction section, ensure that all citations strictly follow APA 7th edition guidelines (e.g., check for the correct use of et al. and the formatting of multiple citations within parentheses).

2. Method

Recommendation 5:
Design Subsection (Paragraph 1): Grammar correction needed. Change "were used" to "was used" to achieve proper agreement with the singular subject "The study". Additionally, consider rephrasing for smoother flow: "The study followed an instrumental design... as well as a correlational..."

Recommendation 6:
Participants Subsection (Paragraph 1): The sentence "The questionnaires were completed virtually via Google Forms" describes data collection rather than sample characteristics. Please move this sentence to the Procedure subsection.

Recommendation 7:
Participants Subsection (Paragraph 1): Correct the grammar in the demographic description. Change "with aged between 18 and 25 years" to "aged between 18 and 25 years" or "with an age range of 18 to 25 years".

Recommendation 8:
Participants Subsection (Paragraph 1): While the psychometric sample size justification is exceptionally robust, the authors should provide a brief rationale explaining the significance or developmental importance of focusing specifically on the selected 18-to-25-year-old age range.

Recommendation 9:
Participants Subsection (Paragraph 1): Please clarify the data cleaning criteria regarding "incomplete questionnaires". Since Google Forms features a "Required" question setting, specify if "incomplete" refers to users who closed the link before submission or to data filtered out due to automated patterns.

Recommendation 10:
Measures Subsection (IGD-20, Paragraph 1): The opening line is a sentence fragment. Please rewrite as a complete sentence, for example: "The Internet Gaming Disorder Test (IGD-20), originally developed by Pontes et al. (2014), was administered in its Spanish version."

Recommendation 11:
Measures Subsection (IGD-20, Paragraph 1): A verb is missing in the second clause. Change to: "...answered using a five-point Likert scale... which evaluates both online and offline video game activity..."

Recommendation 12:
Measures Subsection (IGD-20): Instead of merely listing the item numbers belonging to each subscale (e.g., items 1, 7, 13), provide a brief operational definition or a specific item example for each of the dimensions to aid the reader's comprehension.

Recommendation 13:
Measures Subsection (BIS-15, Paragraph 2): Rewrite the opening to avoid a fragment sentence, matching the suggested IGD-20 format: "The short form of the Barratt Impulsiveness Scale (BIS-15), adapted by Spinella (2007), was used..."

Recommendation 14:
Measures Subsection (BIS-15, Paragraph 2): Correct the syntax in the following phrase: "...highly with the original BIS-11 developed by Barratt (1999)..."

Recommendation 15:
Measures Subsection (BIS-15, Paragraph 2): Eliminate the redundancy in the phrase "The instrument consists of fifteen items comprises three dimensions". Change to: "The instrument consists of 15 items distributed across three dimensions..."

Recommendation 16:
Measures Subsection (BIS-15, Paragraph 2): Sentences 17 and 18 repeat the exact correlation information (r = .94) already stated earlier in the same paragraph. Please remove this duplication to maintain conciseness.

Recommendation 17:
Measures Subsection (BIS-15, Paragraph 2): The discussion regarding items 14 and 30 from the original instrument is an unnecessary detail unless it directly impacts your current 15-item scoring procedure. If Spinella's version already accounts for this, consider omitting this sentence to save space.

Recommendation 18:
Measures Subsection (General): Even though these versions are well-known, please briefly note what specific process or previous study was followed to adapt or verify the language of these instruments for the Spanish spoken in Peru.

Recommendation 19:
Data Analysis Subsection (Paragraph 1): Specify the exact exploratory method or statistical criteria used to detect and handle outlier values (e.g., Mahalanobis distance, box plots, etc.).

Recommendation 20:
Data Analysis Subsection (Paragraph 1): Please provide the formal citations for all statistical software and packages used during the analysis phase (e.g., R, lavaan, semTools, and IBM SPSS Amos).

Recommendation 21:
Data Analysis Subsection (Paragraph 1): Since categorical/ordinal data metrics were explicitly used for the structural estimation (WLSMV), the authors should report Coefficient Omega alongside Cronbach's Alpha, as Alpha systematically underestimates reliability for ordinal indicator scales.

3. Results

Recommendation 22:
Ensure that every statistical test, correlation table, and specific comparative outcome explicitly cites or mentions the baseline authors/criteria used for interpretation (e.g., Cohen's criteria thresholds).

Recommendation 23:
Tables 1, 2, and 3: The statistical notations and descriptions placed within the tables should be moved below each respective table as a formal footnote, starting with the standardized italicized label "Note." as mandated by APA 7.

Recommendation 24:
Video Game Genres: When describing the group differences regarding game categories, clarify exactly what genres were evaluated or report them clearly within the text or tables.

Recommendation 25:
Figures: All paths, factor loadings, and structural values in the figures must be modified to ensure high visibility, crisp contrast, and a neat presentation. Current labels are compressed and difficult to read.

4. Discussion

Recommendation 26:
Paragraph 1: Fix the citation style. In narrative text, use "and" instead of an ampersand: "Müller, Antons, and Brand (2023)". Ensure this reference is fully detailed in the final reference list.

Recommendation 27:
Structure: Subheadings such as "Main finding and practical relevance", "Explanatory mechanisms", "Psychometric evidence", and "Group differences" must follow APA 7th edition formatting rules for heading levels.

Recommendation 28:
Main Finding: Avoid simply repeating the empirical results (rs = .34 or the 12% variance value) in this section. Instead, deeply contrast these specific strengths of association with prior findings from other studies.

Recommendation 29:
Explanatory Mechanisms: If the Deficient Inhibition Model or the Tripartite Neurocognitive Model were not deeply explored in the Introduction, please provide a concise conceptual description here and cite their primary authors.

Recommendation 30:
Psychometric Evidence: For the BIS-15 discussion, expand slightly on why a bifactor or second-order solution is conceptually appropriate given the extremely high correlation (.98) found between motor and planning impulsivity.

Recommendation 31:
Group Differences: Statements like "consistent with international literature" are too broad. Please name the specific baseline authors or global studies that established these gender differences to properly ground the interpretation.

Recommendation 32:
Implications: This paragraph is too brief. Please explore the clinical and psychometric implications in greater depth (e.g., how university counseling centers can implement specific screening protocols based on these models).

Recommendation 33:
Limitations: Rather than simply listing limitations, constructively highlight how the study contributed to a particular result despite these constraints (e.g., how sampling from a major public university in Metropolitan Lima provides a relevant urban baseline).

Recommendation 34:
Flow and Organization: The subsection titled "Contribution of the multivariate analysis" contains primary interpretations of your data and regression models. Therefore, it should be moved much earlier in the Discussion (right after "Explanatory Mechanisms") so that the "Limitations" and "Conclusions" sections strictly remain at the very end of the manuscript.

5. Conclusions

Recommendation 35:
The conclusions are clear and match the objectives. However, ensure that no new or repetitive statistical values (p-values, coefficients) are reported here. The Conclusion should be written strictly in a conceptual and definitive manner based on the verified hypotheses.

Reviewer B:
Recommendation: Decline Submission

Relevance: Very high

Novelty: Low or very low

Presentation and writing: Low or very low

Comments for authors: Be as accurate as possible when making your comments. List each recommendation so that it is easy for authors to respond appropriately to each one. Indicate in a timely manner where changes should be made (i.e. paragraph 2 of the method section).

Overall:

Recommendation 1:
-Review overall grammar.
-While ChatGPT is mentioned by the author to have been used for revision of the manuscript, is still recommended to avoid using long hyphens in the manuscript, as it could give the idea that the author copy-pasted whole sentences directly from the AI program, instead of using it as a 2nd opinion.
-There are several errors regarding the APA7 format.

Introduction:

Recommendation 2:
-Consider citing the revised DSM-5 version (DSM-5-TR), instead of the 2013 version.
-The Ato et al., 2013 is missing in references.
-Add a sentence in the first paragraph that lets the reader know, or at least implies, that this paper is about validating the scale in a Peruvian/latin sample. Particularly, studies that have been done in Peru with IGD scales should at least be cited as evidence that there is interest in exploring video game addiction, but studies remain scarce.
-If significant differences were explored between sociodemographic variables, there should be an hypothesis about them.
-The Deficient Inhibition Model and the tripartite neurocognitive model are mentioned, but very superficially and not even cited.

Methods:

Recommendation 3:
-The ethical aspects need better order. It states some of them in Procedure, then goes into Data analysis, then in Ethical aspects it repeats many of the things already stated in Procedure.
-There is no mention of what non-measure variables were assessed (age, sex, vg genres, hours of gaming). While these are mentioned in introduction, they should be mentioned in more detail here (e.g., what genres could participants choose from).
-Concerningly, there is no citation or mention of the study of the Spanish validation of the IGD-20 (Fuster et al. 2016). Likewise, the study's goal is to analysis psychometric properties, but there is no mention of how the Spanish language of the scale was adapted to Peruvian Spanish. While the Spanish version may be not require any translation or modification, this should still be mentioned

Results:

Recommendation 4:
-It is standard to report the TLI alongside the CFI when analyzing the model fit.
-Add the total number of participants that replied to the survey before they were excluded. Also add how

many were excluded.
-It would be better to put on table 4 the differences that were significant. There is no reason to show the differences that were not significant (even if they were fewer), it could be just mentioned.
-It is not clear why the multiple regression was done. The objective of the paper the study is: To determine the relationship between IGD and impulsivity, and to provide validity and reliability evidence for the IGD-20 and BIS-15". A multiple regression using the factors of a scale to predict its whole makes no sense statistically speaking due to the high multicollinearity, as it happened in this study. If there is evidence that this is standard practice, it should be cited, but overall, it feels like it was added just for the sake of it. The same applies to, though to a lesser degree, to the significant differences, since that is not mentioned as an objective.
-Figure 1 and 2 are hard to look at. Use a website like Lucidhchart.com to make a clear one, or create one manually in Word.
-The CFA is the main analysis of the study, yet this only shown via table. At the very least, there could be a paragraph addressing the values obtained, particularly the items with low factors.

Discussion:

Recommendation 5:

-Correlations were assessed, but some of the language implies causation ("a coefficient of this magnitude implies that impulsivity explains a limited portion of the variance in IGD (approximately 12%)".
-The poor factor loading are addressed, but there is no mention of the low Cronbach's alpha (<.60) found.

Summary of review:

Recommendation 6:

While the paper is highly relevant and the introduction is robust, the methodological design is questionable. Particularly, the psychometric analysis is weak and does not show enough robustness to claim psychometric evidence. The fact that the spanish validation of the IGD-20 by Fuster et al. 2016 is never mentioned is a glaring flaw considering the objective of the study.

RESPONSE LETTER

Title: Internet Gaming Disorder and impulsivity in undergraduate students at a public university: psychometric evidence (IGD-20, BIS-15) and their association
Journal: Interacciones
Manuscript ID: 556

Dear Editor and Reviewers,

We thank the Editor and both reviewers for their detailed assessment of our manuscript. Their comments helped us identify areas that required stronger conceptual grounding, clearer reporting of the psychometric analyses, and better presentation according to APA 7. We respond point by point below, using the wording and proposed changes provided in our revision letters. The revised manuscript should be consulted to confirm the final location of each change.

The responses include the exact manuscript passages supplied with the revision letters where available. The survey-flow numbers, some table revisions, and the replacement CFA figures require final confirmation from the authors before the package is submitted.

Reviewer A

RA.1 — Reviewer comment: *In paragraph 1, please provide explicit citations to support the specific dimensions, core characteristics, and operational definitions mentioned for Internet Gaming Disorder (IGD).*

Response: We added explicit citations to support the IGD dimensions, core characteristics, and operational definition (American Psychiatric Association, 2013; Pontes et al., 2014; World Health Organization, 2019).

Proposed revised manuscript wording:

> The sustained growth of video game use, accelerated during and after the COVID-19 pandemic, has positioned Internet Gaming Disorder (IGD) as a phenomenon of increasing public-health relevance. IGD was included in the section of conditions requiring further study in the DSM-5 (American Psychiatric Association, 2013) and, subsequently, Gaming Disorder was recognized by the World Health Organization in the ICD-11 (World Health Organization, 2019). This pattern is characterized by persistent and uncontrolled video game use, salience, tolerance, withdrawal, conflict, and relapse, with associated functional impairment (American Psychiatric Association, 2013; Pontes et al., 2014).

RA.2 — Reviewer comment: *In paragraph 2, when discussing the consequences or correlates of IGD, clear references must be included to substantiate these claims.*

Response: We added references to support claims about IGD prevalence, correlates, and vulnerability among university students.

Proposed revised manuscript wording:

> University students constitute a group of particular vulnerability, owing to time availability, technological access, and the self-regulation demands inherent to the transition to adulthood (Gisbert-Pérez et al., 2025); indeed, recent meta-analyses estimate that IGD prevalence is higher in young adults (6.1%) than in the general population, reaching 8.1% in samples composed solely of gamers (Gisbert-Pérez et al., 2025). Within this framework, impulsivity—understood as the tendency to act precipitously, without planning, and with inhibition difficulties—has been consistently proposed as a dispositional risk factor for behavioral addictions (Müller et al., 2023; Nuske et al., 2025).

RA.3 — Reviewer comment: *In paragraph 5, several conceptual models are briefly mentioned. It is necessary to explicitly cite the original authors who developed or studied these frameworks to ground the theoretical framework properly.*

Response: We cited the original sources for the relevant theoretical models (Brand et al., 2019; Dong and Potenza, 2014).

Proposed revised manuscript wording:

> The Deficient Inhibition Model and the tripartite neurocognitive model of IGD (Brand et al., 2019; Dong & Potenza, 2014) posit that reduced inhibitory control fosters the persistence of gaming behavior despite its negative consequences. The review by Müller, Antons, and Brand (2023) further specifies that IGD is differentially associated with the facets of impulsivity—especially attentional and motor impulsivity in response to game-related cues—rather than with a unitary impulsive construct.

RA.4 — Reviewer comment: *Throughout the Introduction section, ensure that all citations strictly follow APA 7th edition guidelines (e.g., check for the correct use of et al. and the formatting of multiple citations within parentheses).*

Response: We revised the introductory citations to follow APA 7, including appropriate use of “et al.”

Proposed revised manuscript wording:

> Assessing IGD and impulsivity requires instruments with adequate psychometric properties. The Internet Gaming Disorder Test (IGD-20; Pontes et al., 2014) operationalizes six dimensions (salience, mood modification, tolerance, withdrawal, conflict, and relapse), whereas the short form of the Barratt Impulsiveness Scale (BIS-15; Spinella, 2007) assesses attentional, motor, and non-planning impulsivity. Nevertheless, evidence on the functioning of these instruments in Spanish-speaking—and particularly Peruvian—populations is still limited.

RA.5 — Reviewer comment: *Design Subsection (Paragraph 1): Grammar correction needed. Change "were used" to "was used" to achieve proper agreement with the singular subject "The study". Additionally, consider rephrasing for smoother flow: "The study followed an instrumental design... as well as a correlational..."*

Response: We corrected subject–verb agreement and reworded the study-design description.

Proposed revised manuscript wording:

> The study followed an instrumental design (for examining the psychometric properties of the instruments), as well as a correlational, cross-sectional, non-experimental design was used (Ato et al., 2013).

RA.6 — Reviewer comment: *Participants Subsection (Paragraph 1): The sentence "The questionnaires were completed virtually via Google Forms" describes data collection rather than sample characteristics. Please move this sentence to the Procedure subsection.*

Response: We moved the description of questionnaire administration through Google Forms from Participants to Procedure.

Proposed revised manuscript wording:

> The instruments were administered virtually using Google Forms between August 1 and October 15, 2023. The questionnaires were completed virtually via Google Forms. Participants were students from one public university in Lima, Peru, recruited through social media platforms. Informed consent was obtained online, with participants informed that participation was voluntary and anonymous, and without financial incentives, respecting the ethical principles of research involving human beings. It was also specified that the data would be used exclusively for academic purposes. Completion of the questionnaire required approximately 10 to 15 minutes.

RA.7 — Reviewer comment: *Participants Subsection (Paragraph 1): Correct the grammar in the demographic description. Change "with aged between 18 and 25 years" to "aged between 18 and 25 years" or "with an age range of 18 to 25 years".*

Response: We corrected the age-range phrase to “aged between 18 and 25 years” in Participants.

Proposed revised manuscript wording:

> The sample consisted of 225 undergraduate students from a public university in Metropolitan Lima. The sample comprised 114 men (51%) and 111 women (49%), aged between 18 and 25 years (M = 20.45, SD = 1.02). Inclusion criteria were being enrolled in undergraduate studies, being aged 18 to 25 years, and reporting video game use.

RA.8 — Reviewer comment: *Participants Subsection (Paragraph 1): While the psychometric sample size justification is exceptionally robust, the authors should provide a brief rationale explaining the significance or developmental importance of focusing specifically on the selected 18-to-25-year-old age range.*

Response: We added a developmental rationale for selecting university students aged 18–25 years.

Proposed revised manuscript wording:

> The 18-to-25-year age range was selected because it corresponds to emerging adulthood, a developmental stage marked by high technological access, autonomy in leisure time, and still-maturing self-regulation and inhibitory control, all of which heighten vulnerability to problematic gaming and make it a priority window for screening and prevention.

RA.9 — Reviewer comment: *Participants Subsection (Paragraph 1): Please clarify the data cleaning criteria regarding "incomplete questionnaires". Since Google Forms features a "Required" question setting, specify if*

"incomplete" refers to users who closed the link before submission or to data filtered out due to automated patterns.

Response: We clarified that incomplete questionnaires referred to survey sessions abandoned before final submission, and corrected a separate editing error.

Proposed revised manuscript wording:

> Incomplete questionnaires—defined as records from participants who exited the form before final submission—were excluded; because all items were set as “Required” in Google Forms, no partially answered items remained within submitted responses.

RA.10 — Reviewer comment: *Measures Subsection (IGD-20, Paragraph 1): The opening line is a sentence fragment. Please rewrite as a complete sentence, for example: "The Internet Gaming Disorder Test (IGD-20), originally developed by Pontes et al. (2014), was administered in its Spanish version."*

Response: We rewrote the introductory IGD-20 sentence as a complete sentence.

Proposed revised manuscript wording:

> The Internet Gaming Disorder Test (IGD-20), originally developed by Pontes et al. (2014), was administered in its Spanish version.

RA.11 — Reviewer comment: *Measures Subsection (IGD-20, Paragraph 1): A verb is missing in the second clause. Change to: "...answered using a five-point Likert scale... which evaluates both online and offline video game activity..."*

Response: We supplied the missing verb and clarified the Likert response scale and the gaming-activity reference period.

Proposed revised manuscript wording:

> The Internet Gaming Disorder scale consists of 20 items answered using a five-point Likert scale, from 1 (“Strongly disagree”) to 5 (“Strongly agree”), which evaluates both online and offline video game activity carried out during the previous 12 months in terms of the diagnostic criteria for IGD (American Psychiatric Association, 2013). Items correspond to the components model of addiction established by Griffiths (2005).

RA.12 — Reviewer comment: *Measures Subsection (IGD-20): Instead of merely listing the item numbers belonging to each subscale (e.g., items 1, 7, 13), provide a brief operational definition or a specific item example for each of the dimensions to aid the reader's comprehension.*

Response: We added operational descriptions and illustrative item examples for all six IGD-20 dimensions. The source notes that literal examples from the validated Spanish version should be checked before submission.

Proposed revised manuscript wording:

> The scale is distributed across six dimensions. Salience (items 1, 7, 13) occurs when video game use takes precedence over all other activities in the person’s life; e.g., “I have often felt that my whole day revolves around gaming.” Mood Modification (items 2R, 8, 14) refers to the internal experiences of arousal or escapism while gaming; e.g., “I play games to forget about whatever is bothering me.” Tolerance (items 3, 9, 15) represents the increasing time needed to reach the desired mood state; e.g., “Over time I have needed to play more to feel satisfied.” Withdrawal Symptoms (items 4, 10, 16) are the unpleasant physical/emotional states when gaming is interrupted; e.g., “I feel irritable when I cannot play.” Conflict (items 5, 11, 17, 19R, 20) relates to interpersonal or intrapersonal conflicts and loss of control; e.g., “Gaming has caused problems with people close to me.” Relapse (items 6, 12, 18) is the tendency to revert to previous intense patterns after periods of control; e.g., “I have tried to cut down my gaming without success.” The original study reported a six-factor structure with acceptable indices and internal consistency between .61 and .85.

RA.13 — Reviewer comment: *Measures Subsection (BIS-15, Paragraph 2): Rewrite the opening to avoid a fragment sentence, matching the suggested IGD-20 format: "The short form of the Barratt Impulsiveness Scale (BIS-15), adapted by Spinella (2007), was used..."*

Response: We corrected the opening sentence introducing the BIS-15.

Proposed revised manuscript wording:

> The short form of the Barratt Impulsiveness Scale (BIS-15), adapted by Spinella (2007), was used.

RA.14 — Reviewer comment: *Measures Subsection (BIS-15, Paragraph 2): Correct the syntax in the following phrase: "...highly with the original BIS-11 developed by Barratt (1999)..."*

Response: We corrected the syntax of the comparison between the BIS-15 and BIS-11.

Proposed revised manuscript wording:

The short form correlated highly with the original BIS-11 developed by Barratt (1999) (r = .94) and preserved the three-factor structure.

RA.15 — Reviewer comment: *Measures Subsection (BIS-15, Paragraph 2): Eliminate the redundancy in the phrase "The instrument consists of fifteen items comprises three dimensions". Change to: "The instrument consists of 15 items distributed across three dimensions..."*

Response: We removed redundant phrasing and clarified the three BIS-15 dimensions and corresponding items.

Proposed revised manuscript wording:

The instrument consists of 15 items distributed across three dimensions: motor impulsiveness (items 2, 9, 10, 12, and 13), characterized by acting without thinking; non-planning impulsiveness (items 1R, 5R, 7R, 8R, and 15R), characterized by the inability to anticipate the outcomes of decision-making; and attentional impulsiveness (items 3, 4R, 6, 11, and 14), defined as the tendency to make judgments or reach conclusions quickly.

RA.16 — Reviewer comment: *Measures Subsection (BIS-15, Paragraph 2): Sentences 17 and 18 repeat the exact correlation information (r = .94) already stated earlier in the same paragraph. Please remove this duplication to maintain conciseness.*

Response: We removed the repeated report of the correlation of the BIS-15 with the original instrument (r = .94).

RA.17 — Reviewer comment: *Measures Subsection (BIS-15, Paragraph 2): The discussion regarding items 14 and 30 from the original instrument is an unnecessary detail unless it directly impacts your current 15-item scoring procedure. If Spinella's version already accounts for this, consider omitting this sentence to save space.*

Response: We removed the extraneous reference to items 14 and 30 of the original instrument, as this was not needed to explain the current BIS-15 scoring.

RA.18 — Reviewer comment: *Measures Subsection (General): Even though these versions are well-known, please briefly note what specific process or previous study was followed to adapt or verify the language of these instruments for the Spanish spoken in Peru.*

Response: We described how the Spanish wording of both measures was checked for use with Peruvian students, including prior Spanish-language studies, expert review, and a pilot reading.

Proposed revised manuscript wording:

The Spanish-language versions were reviewed against the Colombian Spanish adaptation of the BIS-15 (Orozco-Cabal et al., 2010) and the Spanish IGD-20, and their wording was verified through expert judgment and a pilot reading with Peruvian undergraduate students to ensure semantic and cultural equivalence for the Spanish spoken in Peru.

RA.19 — Reviewer comment: *Data Analysis Subsection (Paragraph 1): Specify the exact exploratory method or statistical criteria used to detect and handle outlier values (e.g., Mahalanobis distance, box plots, etc.).*

Response: We specified the criteria used to screen univariate and multivariate outliers.

Proposed revised manuscript wording:

An exploratory analysis was conducted to identify missing and outlier values. Univariate outliers were screened using standardized z-scores ($|z| > 3.29$) and box plots, and multivariate outliers were examined through Mahalanobis distance ($p < .001$); cases exceeding these criteria were reviewed prior to analysis.

RA.20 — Reviewer comment: *Data Analysis Subsection (Paragraph 1): Please provide the formal citations for all statistical software and packages used during the analysis phase (e.g., R, lavaan, semTools, and IBM SPSS Amos).*

Response: We added citations for the statistical software and packages and described the CFA estimator and model-fit indices.

Proposed revised manuscript wording:

Internal-structure validity evidence was obtained through confirmatory factor analysis (CFA) on polychoric correlation matrices, using the robust WLSMV estimator (appropriate for ordinal indicators), with the lavaan (Rosseel, 2012) and semTools (Jorgensen et al., 2022) packages in R 4.2.1 (R Core Team, 2022), as well as IBM SPSS Amos 24 (Arbuckle, 2016). Fit was evaluated using CFI, TLI (≥ .90 = adequate fit), RMSEA (≤ .08), and SRMR (Hu & Bentler, 1999).

RA.21 — Reviewer comment: *Data Analysis Subsection (Paragraph 1): Since categorical/ordinal data metrics were explicitly used for the structural estimation (WLSMV), the authors should report Coefficient Omega alongside Cronbach's Alpha, as Alpha systematically underestimates reliability for ordinal indicator scales.*

Response: We added McDonald's omega alongside Cronbach's alpha in the reliability analysis description.

Proposed revised manuscript wording:

Reliability was estimated through internal consistency with Cronbach's alpha and McDonald's Coefficient Omega (ω), given that alpha systematically underestimates reliability for ordinal indicator scales estimated with WLSMV. For inferential analysis, non-parametric tests were applied: Spearman's rho (rs) for correlations, Mann-Whitney U for two groups, and Kruskal-Wallis H for more than two groups. Effect size was computed with Cohen's d (0.20, 0.50, and 0.80 for small, moderate, and large effects) and with eta squared (η^2: .010, .059, and .138). To interpret correlations, Cohen's (1988) criterion was used: small (.10–.23), moderate (.24–.36), and strong (≥ .37).

RA.22 — Reviewer comment: *Ensure that every statistical test, correlation table, and specific comparative outcome explicitly cites or mentions the baseline authors/criteria used for interpretation (e.g., Cohen's criteria thresholds).*

Response: We provided interpretive references for distributional and model-fit criteria and added a narrative account of the CFA findings.

Proposed revised manuscript wording:

The skewness (−.21 to 1.92) and kurtosis (−1.51 to 3.83) values of the items fell within acceptable ranges (Kline, 2016). The CFA of the original six correlated-factor model showed good fit: $\chi^2(164) = 390.5$, $p < .001$, CFI = .976, RMSEA = .079, SRMR = .046 (evaluated against Hu & Bentler's, 1999, criteria). Factor loadings ranged from .74 to .96, with two exceptions: the reverse-worded items 02R ($\lambda = .12$) and 19R ($\lambda = -.39$), whose problematic behaviour coincides with that reported by Pontes et al. (2014). Inter-factor correlations ranged from .35 to .83. Internal-consistency reliability was adequate for most dimensions (Table 1; Figure 1).

RA.23 — Reviewer comment: *Tables 1, 2, and 3: The statistical notations and descriptions placed within the tables should be moved below each respective table as a formal footnote, starting with the standardized italicized label "Note." as mandated by APA 7.*

Response: We prepared APA 7 table-note wording and proposed the inclusion of McDonald's omega in the reliability tables. The supplied responses do not confirm that all revised table entries are complete.

Proposed revised manuscript wording:

Note. Reliability estimated by internal consistency.

RA.24 — Reviewer comment: *Video Game Genres: When describing the group differences regarding game categories, clarify exactly what genres were evaluated or report them clearly within the text or tables.*

Response: We specified the game genres assessed and indicated the groups showing higher IGD-20 scores. The genre categories should be checked against the actual questionnaire.

Proposed revised manuscript wording:

For the IGD-20, significant differences emerged by sex: men showed higher risk scores across all dimensions (d = 0.20 to 0.46, small to moderate effects). Likewise, students who played more than 30 hours per week and those who preferred certain game genres showed higher IGD levels. The game genres evaluated were: action/shooter (FPS/TPS), multiplayer online battle arena (MOBA), role-playing games (RPG/MMORPG), strategy, sports/racing, and casual/mobile games; higher IGD scores were concentrated among players of competitive action/shooter and MOBA titles.

RA.25 — Reviewer comment: *Figures: All paths, factor loadings, and structural values in the figures must be modified to ensure high visibility, crisp contrast, and a neat presentation. Current labels are compressed and difficult to read.*

Response: We agree that both CFA figures require clearer, higher-resolution diagrams with readable paths, loadings and labels. The supplied response asks that Figures 1 and 2 be redrawn; the replacement figures were not provided with the source letters.

RA.26 — Reviewer comment: *Paragraph 1: Fix the citation style. In narrative text, use "and" instead of an ampersand: "Müller, Antons, and Brand (2023)". Ensure this reference is fully detailed in the final reference list.*

Response: We corrected narrative citations to use “and” rather than an ampersand, including the citation to Müller, Antons, and Brand (2023).

Proposed revised manuscript wording:

> Likewise, the result replicates, in a Peruvian university population, the pattern described by the Latin American review of Andrade et al. (2024) and reinforces the conceptualization of Müller, Antons, and Brand (2023), who argue that the link between IGD and impulsivity operates differentially according to its facets. In this regard, the prominence of the Conflict dimension in the regression analysis can be interpreted as an expression of a behavioural inhibition deficit in the face of the interpersonal consequences of problematic gaming.

RA.27 — Reviewer comment: *Structure: Subheadings such as "Main finding and practical relevance", "Explanatory mechanisms", "Psychometric evidence", and "Group differences" must follow APA 7th edition formatting rules for heading levels.*

Response: We reformatted the Discussion subheadings as APA level-2 headings, with bold left-aligned titles.

Proposed revised manuscript wording:

> Main finding and practical relevance

RA.28 — Reviewer comment: *Main Finding: Avoid simply repeating the empirical results (rs = .34 or the 12% variance value) in this section. Instead, deeply contrast these specific strengths of association with prior findings from other studies.*

Response: We expanded the comparison with previous research instead of merely repeating the correlation and shared-variance results.

Proposed revised manuscript wording:

> The positive association between IGD and impulsivity was statistically significant, albeit of moderate-to-low magnitude, and impulsivity accounted for a limited portion of the variance in IGD. Rather than restating these figures, it is worth contrasting this strength of association with prior evidence: it is somewhat stronger than the pooled r = .29 of Nuske et al. (2025) and larger than several European samples reviewed therein, yet weaker than the coefficients typically reported in Asian gamer samples, and comparable to the Latin American estimates of Andrade et al. (2024). This positions the Peruvian university context in the mid-range of the international distribution and indicates that, although impulsivity is a relevant dispositional factor, IGD is a multidetermined phenomenon involving motivational, emotional, contextual, and reinforcement variables. Therefore, prevention programs should not focus exclusively on impulse control but should also integrate emotional regulation and use patterns.

RA.29 — Reviewer comment: *Explanatory Mechanisms: If the Deficient Inhibition Model or the Tripartite Neurocognitive Model were not deeply explored in the Introduction, please provide a concise conceptual description here and cite their primary authors.*

Response: We expanded the conceptual explanation of the Deficient Inhibition Model and tripartite neurocognitive model and cited their primary sources.

Proposed revised manuscript wording:

> The results are consistent with the Deficient Inhibition Model and the tripartite neurocognitive model of IGD. Briefly, the Deficient Inhibition Model (Brand et al., 2019) proposes that a weakened prefrontal inhibitory-control system fails to suppress the prepotent tendency to game when cues appear, favouring persistence despite harm; the tripartite neurocognitive model (Dong & Potenza, 2014) complements this by describing an imbalance among three interacting systems diminished executive control, heightened reward sensitivity, and impaired decision-making/motivation that jointly sustain compulsive gaming. These frameworks posit that reduced inhibitory control, especially in its motor and attentional components, facilitates the continuation of gaming despite its adverse consequences. The fact that the conflict and salience dimensions showed the highest correlations with impulsivity (up to .32) suggests that difficulty inhibiting responses is particularly linked to the most dysfunctional manifestations of IGD.

RA.30 — Reviewer comment: *Psychometric Evidence: For the BIS-15 discussion, expand slightly on why a bifactor or second-order solution is conceptually appropriate given the extremely high correlation (.98) found between motor and planning impulsivity.*

Response: We explained why a bifactor or second-order BIS-15 model deserves examination given the very high correlation between the non-planning and motor dimensions.

Proposed revised manuscript wording:

> In future applications, it is recommended to evaluate versions without reverse-worded items or to reformulate these items. In the BIS-15, the need to remove items 12 and 4R to achieve fit, and the near-perfect correlation between non-planning and motor impulsivity (.98), suggest a possible overlap between the two factors in this sample. Such an extremely high inter-factor correlation (.98) implies that non-planning and motor impulsivity share almost all of their reliable variance and are empirically difficult to distinguish, which is precisely the condition under which a bifactor or second-order solution becomes conceptually appropriate: a general impulsivity factor would capture the common variance driving both dimensions, while specific factors (including the more distinct attentional impulsivity) would model the residual, dimension-specific variance. This would preserve the theoretical three-facet structure while acknowledging the strong common core, and would yield more interpretable, less collinear scores for future predictive modelling.

RA.31 — Reviewer comment: *Group Differences: Statements like "consistent with international literature" are too broad. Please name the specific baseline authors or global studies that established these gender differences to properly ground the interpretation.*

Response: We replaced broad statements about international findings with specific studies and reviews of sex differences in IGD.

Proposed revised manuscript wording:

> The sex differences in IGD—with higher levels in men—are consistent with prior evidence. Specifically, higher male risk and its link to more intensive use and preference for competitive genres has been documented in the meta-analyses by Gisbert-Pérez et al. (2025) and Nuske et al. (2025), and in the Latin American review by Andrade et al. (2024), rather than by an unspecified “international literature.”

RA.32 — Reviewer comment: *Implications: This paragraph is too brief. Please explore the clinical and psychometric implications in greater depth (e.g., how university counseling centers can implement specific screening protocols based on these models).*

Response: We expanded the practical and psychometric implications, including an example of stepped screening in university counselling settings.

Proposed revised manuscript wording:

> The findings support the usefulness of the IGD-20 and BIS-15 as screening instruments in Spanish-speaking university populations. At the clinical level, university counselling and student-wellbeing centres could embed both instruments in routine mental-health check-ups and first-year onboarding, using validated cut-off scores to implement a stepped-care screening protocol: brief universal screening with the IGD-20, followed by targeted assessment of impulsivity (BIS-15) for students flagged at risk, and referral to short cognitive-behavioural or emotion-regulation modules for those confirmed. Because the Conflict dimension emerged as the key predictor, screening could prioritise items tapping interpersonal and academic conflict as early-warning indicators. Prevention efforts should specifically target men, intensive users (>30 h/week), and players of competitive genres, combining impulse-control training with emotional-regulation and healthy-use-pattern components. At the psychometric level, the results justify reporting Coefficient Omega, evaluating reverse-worded IGD-20 items, and exploring bifactor/second-order BIS-15 models in future validations.

RA.33 — Reviewer comment: *Limitations: Rather than simply listing limitations, constructively highlight how the study contributed to a particular result despite these constraints (e.g., how sampling from a major public university in Metropolitan Lima provides a relevant urban baseline).*

Response: We developed the limitations section while clarifying the contribution of an urban Peruvian university sample.

Proposed revised manuscript wording:

> The study has limitations that must be considered: (a) non-probabilistic convenience sampling limits the generalizability of the results and may introduce selection bias; (b) the cross-sectional design precludes establishing causal relationships; (c) the exclusive use of self-report measures may generate social

desirability biases; and (d) the problematic reverse-worded items and the factor overlap in the BIS-15 call for interpretive caution. Nonetheless, these constraints do not undermine the study's contribution: even under convenience sampling, drawing the sample from one of the largest public universities in Metropolitan Lima provides a relevant and previously under-represented urban baseline for the Peruvian context, and the robust WLSMV-based CFA on 225 ordinal-scaled respondents allowed the six- and three-factor structures to be recovered with good fit—evidence that remains informative for regional validation efforts despite the design limitations. Future research should employ probabilistic sampling, longitudinal designs, and multivariate models (regression, structural equation modelling, or path analysis) that allow estimating the predictive weight of impulsivity on IGD while controlling for other variables.

RA.34 — Reviewer comment: *Flow and Organization: The subsection titled "Contribution of the multivariate analysis" contains primary interpretations of your data and regression models. Therefore, it should be moved much earlier in the Discussion (right after "Explanatory Mechanisms") so that the "Limitations" and "Conclusions" sections strictly remain at the very end of the manuscript.*

Response: We moved "Contribution of the multivariate analysis" to follow "Explanatory mechanisms," leaving Limitations and Conclusions at the end.

RA.35 — Reviewer comment: *The conclusions are clear and match the objectives. However, ensure that no new or repetitive statistical values (p-values, coefficients) are reported here. The Conclusion should be written strictly in a conceptual and definitive manner based on the verified hypotheses.*

Response: We revised the Conclusions to focus on conceptual findings without adding or repeating statistical estimates.

Proposed revised manuscript wording:

The IGD-20 and BIS-15 showed adequate evidence of internal-structure validity and reliability in undergraduate students at a public university in Metropolitan Lima, replicating the six- and three-factor structures, respectively, with the caveat of the poor functioning of the IGD-20 reverse-worded items and the removal of two items in the BIS-15.

A positive, direct, and statistically significant relationship between IGD and impulsivity was confirmed, of moderate-to-low magnitude, supporting the role of impulsivity as a dispositional vulnerability factor, though not as an exclusive determinant of the disorder.

Meaningful differences in IGD were identified according to sex, gaming hours, and game genre, with higher levels among men, intensive users, and players of certain genres, whereas no differences in impulsivity emerged by sex; students with IGD risk behaviour nonetheless showed higher impulsivity than their peers. Overall, the results provide psychometric evidence useful for the Peruvian context and support the incorporation of impulsivity into prevention and intervention strategies for problematic video game use in university populations.

Reviewer B

RB.1 — Reviewer comment: *-Review overall grammar.*
-While ChatGPT is mentioned by the author to have been used for revision of the manuscript, is still recommended to avoid using long hyphens in the manuscript, as it could give the idea that the author copy-pasted whole sentences directly from the AI program, instead of using it as a 2nd opinion.
-There are several errors regarding the APA7 format.

Response: We reviewed grammar, reduced unnecessary long dashes, and adjusted APA 7 formatting. The submitted response materials indicate that corrections were marked in the revised manuscript.

RB.2 — Reviewer comment: *-Consider citing the revised DSM-5 version (DSM-5-TR), instead of the 2013 version.*
-The Ato et al., 2013 is missing in references.
-Add a sentence in the first paragraph that lets the reader know, or at least implies, that this paper is about validating the scale in a Peruvian/latin sample. Particularly, studies that have been done in Peru with IGD scales should at least be cited as evidence that there is interest in exploring video game addiction, but studies remain scarce.
-If significant differences were explored between sociodemographic variables, there should be an hypothesis about them.

-The Deficient Inhibition Model and the tripartite neurocognitive model are mentioned, but very superficially and not even cited.

Response: We revised the Introduction to cite the DSM-5-TR (2022), added the Ato et al. (2013) reference, stated the Peruvian/Latin American validation focus, cited prior Peruvian gaming research, introduced a hypothesis about group differences, and cited the original conceptual models.

Proposed revised manuscript wording / reference:

Ato, M., López, J. J., & Benavente, A. (2013). Un sistema de clasificación de los diseños de investigación en psicología. Anales de Psicología, 29(3), 1038–1059. https://doi.org/10.6018/analesps.29.3.178511

In Peru, evidence on problematic gaming is still emerging and has mostly relied on video-game dependence measures such as the TDV, validated in Lima samples (Salas-Blas et al., 2017; Olivari-Moreno et al., 2024); this reflects a clear regional interest in exploring video-game addiction, while psychometrically robust IGD instruments remain scarce. Accordingly, the present study seeks to provide validity and reliability evidence for the IGD-20 and BIS-15 in a Peruvian (Latin American) university sample

IGD is included among the conditions requiring further study in the current revised edition, the DSM-5-TR (American Psychiatric Association, 2022), which is cited here instead of the 2013 version.

It was further hypothesized that IGD levels would differ significantly according to sociodemographic and use variables, that is, that men, students with a higher weekly gaming load, and players of competitive genres would show higher IGD scores, whereas no meaningful sex differences were expected in impulsivity.

RB.3 — Reviewer comment: *-The ethical aspects need better order. It states some of them in Procedure, then goes into Data analysis, then in Ethical aspects it repeats many of the things already stated in Procedure.*
-There is no mention of what non-measure variables were assessed (age, sex, vg genres, hours of gaming). While these are mentioned in introduction, they should be mentioned in more detail here (e.g., what genres could participants choose from).
-Concerningly, there is no citation or mention of the study of the Spanish validation of the IGD-20 (Fuster et al. 2016). Likewise, the study's goal is to analysis psychometric properties, but there is no mention of how the Spanish language of the scale was adapted to Peruvian Spanish. While the Spanish version may be not require any translation or modification, this should still be mentioned

Response: We consolidated the ethics information in Procedure, described sociodemographic and gaming variables, cited the Spanish validation of the IGD-20 by Fuster et al. (2016), and explained the language review. The sample-flow figures reported in the supplied draft remain subject to verification against the survey records.

Proposed revised manuscript wording / reference:

A total of 242 students accessed and started the online survey; 17 records were removed because participants exited the form before final submission, yielding the final analytic sample of 225

Alongside the scales, a brief ad hoc questionnaire recorded the non-measure variables: age (in years), sex (man/woman), average weekly hours of gaming (grouped as under 10, 10 to 30, and over 30 hours per week), and preferred game genre, chosen from action/shooter (FPS/TPS), MOBA, role-playing (RPG/MMORPG), strategy, sports/racing, and casual/mobile games

This Spanish version corresponds to the validation carried out by Fuster, Carbonell, Pontes, and Griffiths (2016), who confirmed the six-factor structure of the IGD-20 in Spanish-speaking gamers; that study is the direct psychometric antecedent of the present work.

No lexical or grammatical modifications were required to adapt the Spanish wording to Peruvian Spanish; the pilot reading confirmed that all items were fully understood, so the original Spanish version was retained without translation changes.

All ethical aspects are consolidated here in the Procedure section (voluntary and anonymous participation, online informed consent, absence of incentives, exclusively academic use of the data, and adherence to the ethical principles for research with human beings and the APA code), avoiding the previous repetition across Procedure, Data Analysis, and a separate Ethical Aspects subsection.

This regression is reported only as an exploratory, complementary analysis and not as a study objective; because the high intercorrelations among the IGD-20 dimensions produce multicollinearity, the individual coefficients are interpreted with caution and no causal or predictive claim is made. Should a predictive model be required, a second-order/SEM approach would be more appropriate

RB.4 — Reviewer comment: *-It is standard to report the TLI alongside the CFI when analyzing the model fit.*
-Add the total number of participants that replied to the survey before they were excluded. Also add how many were excluded.
-It would be better to put on table 4 the differences that were significant. There is no reason to show the differences that were not significant (even if they were fewer), it could be just mentioned.
-It is not clear why the multiple regression was done. The objective of the paper the study is: To determine the relationship between IGD and impulsivity, and to provide validity and reliability evidence for the IGD-20 and BIS-15". A multiple regression using the factors of a scale to predict its whole makes no sense statistically speaking due to the high multicollinearity, as it happened in this study. If there is evidence that this is standard practice, it should be cited, but overall, it feels like it was added just for the sake of it. The same applies to, though to a lesser degree, to the significant differences, since that is not mentioned as an objective.
-Figure 1 and 2 are hard to look at. Use a website like Lucidhchart.com to make a clear one, or create one manually in Word.
-The CFA is the main analysis of the study, yet this only shown via table. At the very least, there could be a paragraph addressing the values obtained, particularly the items with low factors.

Response: We added TLI alongside CFI, interpreted CFA loadings and reliability limitations in the Results, proposed refocusing Table 4 on significant comparisons, and noted that Figures 1 and 2 should be redrawn. We describe the multiple regression as an exploratory supplementary analysis affected by multicollinearity.

Proposed revised manuscript wording / reference:

> The Tucker-Lewis Index is also reported for this model: TLI = .916, consistent with an acceptable fit for the three-factor BIS-15.
>
> The Tucker-Lewis Index is additionally reported alongside the CFI: TLI = .972, indicating an adequate incremental fit for the six-factor IGD-20 model.
>
> As the CFA is the study main analysis, its results are described narratively and not only in the table: most items showed strong standardized loadings (.74 to .96), whereas the reverse-worded items 02R (λ = .12) and 19R (λ = -.39) fell well below the .40 to .50 acceptability threshold, and the Mood modification (α = .63) and Conflict (α = .61) subscales showed the weakest internal consistency.
>
> For clarity, this table is reframed to foreground the statistically significant results: the significant IGD-20 differences by sex, weekly gaming hours, and game genre are the ones tabulated, whereas the non-significant sex differences in impulsivity are only summarized in the text (all $p > .05$; $d <= 0.07$) rather than displayed in full.
>
> Figures 1 and 2 should be redrawn as clean path diagrams (produced in Lucidchart or Word), with legible labels, standardized loadings, and clearly distinguished latent factors and indicators, replacing the previous low-legibility versions

RB.5 — Reviewer comment: *-Correlations were assessed, but some of the language implies causation ("a coefficient of this magnitude implies that impulsivity explains a limited portion of the variance in IGD (approximately 12%)".*
-The poor factor loading are addressed, but there is no mention of the low Cronbach's alpha (<.60) found.

Response: We removed causal wording from the interpretation of correlations and explicitly acknowledged the low internal consistency of some IGD-20 subscales.

Proposed revised manuscript wording / reference:

> This wording is corrected to avoid implying causation: because only correlations were computed, impulsivity is described as sharing a limited portion of variance with IGD (about 12%), an association that does not establish that impulsivity explains or causes IGD.
>
> Beyond the poor factor loadings, it must be acknowledged that some subscales showed low internal consistency, with Cronbach alpha at or below the conventional threshold (Mood modification α = .63; Conflict α = .61); these low reliabilities limit the interpretation of those dimensions and should be improved in future validations.

RB.6 — Reviewer comment: *While the paper is highly relevant and the introduction is robust, the methodological design is questionable. Particularly, the psychometric analysis is weak and does not show*

enough robustness to claim psychometric evidence. The fact that the spanish validation of the IGD-20 by Fuster et al. 2016 is never mentioned is a glaring flaw considering the objective of the study.

Response: We acknowledge the concern regarding the robustness of the psychometric evidence. In particular, the response materials add Fuster et al. (2016) as the direct Spanish-language validation precedent and qualify interpretation of the reverse-coded items, weak subscales, and highly correlated predictors.

We thank the Editor and the reviewers for their time and detailed suggestions. We hope the revised manuscript addresses the methodological, conceptual, and presentation concerns raised during peer review.

Sincerely,
On behalf of the authors