





Predicting Problematic Internet Use via Impulsivity, Emotion Dysregulation, Reward-System Reactivity, and Loneliness Using SVM Models

José. Maldonado¹, Paula. Quiroga^{2*}, Ethan. Holloway³



¹ Department of Clinical Psychology, University of Puerto Rico, San Juan, Puerto Rico
² Department of Clinical Psychology, National University of Córdoba, Córdoba, Argentina
³ Department of Experimental Psychology, Western University, London, Canada

* Corresponding author email address: paula.quiroga@unc.edu.ar

Editor

Muhammad Rizwan
Associate Professor, Department of
Psychology, Haripur University,
Islamabad, Pakistan
muhammad.rizwan@uoh.edu.pk

Reviewers

Reviewer 1: Mohammad Salehi
Associate Professor, Department of Educational Management, Sari Branch, Islamic
Azad University, Sari, Iran. Email: drsalehi@iausari.ac.ir
Reviewer 2: Kamdin Parsakia
Department of Psychology and Counseling, KMAN Research Institute, Richmond
Hill, Ontario, Canada. Email: kamdinarsakia@kmanresce.ca

1. Round 1

1.1. Reviewer 1

Reviewer:

The combination of machine-learning methodology (SVM with different kernels and permutation feature importance) and psychologically meaningful predictors is a notable strength and adds methodological originality; however, this originality is not fully capitalized in the narrative. I suggest explicitly contrasting your approach with traditional linear regression models commonly used in the PIU literature, summarizing prior machine-learning work on PIU (if any), and clearly stating in the abstract and discussion what your study contributes beyond “better accuracy”—for example, whether your modelling strategy supports non-linear relationships, identifies differential importance of affective versus cognitive-control variables, or offers clinically actionable stratification of risk.

The discussion successfully links the empirical findings to clinical implications, notably emphasizing the centrality of emotion regulation and impulsivity and recommending DBT/CBT-informed interventions; however, the tone occasionally becomes prescriptive and somewhat causal given the likely cross-sectional design. Please moderate causal language (e.g., “reducing PIU by changing X”) and replace it with associational phrasing (e.g., “PIU is associated with X,” “targeting X may

help reduce PIU, pending longitudinal or intervention evidence”), explicitly acknowledge the cross-sectional design as a key limitation, and differentiate between evidence-based recommendations and more speculative suggestions.

Authors uploaded the revised manuscript.

1.2. Reviewer 2

Reviewer:

The literature review is impressively broad and up-to-date, spanning family processes, affective vulnerabilities, neurobiological findings, and comorbidity with mood and anxiety disorders; nonetheless, it currently reads somewhat as a dense catalogue of findings rather than a strongly synthesized argument. To enhance conceptual clarity, I recommend reorganizing the review into clearly labeled subsections (e.g., “Family and Contextual Factors,” “Affective and Regulatory Vulnerabilities,” “Reward Processing and Neurobiology”), ending each with a brief integrative paragraph that explicitly links the reviewed evidence to your selected predictors and to the rationale for using a multivariate SVM approach.

The methodological reporting of the SVM models is generally adequate but misses several details that are crucial for evaluating the robustness and reproducibility of the results. You should report (a) the exact sample size and train–test split ratio, (b) whether and how cross-validation was used for hyperparameter tuning (e.g., k-fold, grid vs. random search, parameter ranges for C and gamma, polynomial degree), © how potential class imbalance between high-PIU and non-high-PIU groups was handled (e.g., class weights, resampling), and (d) any preprocessing steps such as feature scaling, handling of missing data, and criteria for excluding cases, ideally in a dedicated “Machine Learning Procedures” subsection.

The use of permutation feature importance to quantify the relative contribution of emotion dysregulation, impulsivity, loneliness, and reward-system reactivity is methodologically sound and provides a compelling ranking that aligns with clinical theory; however, the interpretation of these importances remains somewhat superficial. It would strengthen the paper to (a) briefly clarify for readers how permutation importance differs from simple model coefficients, (b) discuss why reward-system reactivity—despite strong neurobiological emphasis in the literature—emerges as relatively less important in your model, and © provide complementary, more conventional analyses (e.g., hierarchical regression or partial correlations) as sensitivity checks to show that the SVM findings are not artefacts of a specific algorithm.

The overall quality of writing is high, with fluent English and a rich vocabulary, yet the prose sometimes drifts into a more rhetorical or metaphorical style than is typical for empirical reports (e.g., “digital pacifier,” “double-edged sword,” “trapped in a compulsive cycle”). I encourage you to streamline the text by reducing highly metaphorical expressions, shortening very long sentences, and favoring precise, technical language over evocative imagery, especially in the introduction and discussion, so that the argumentative flow and key methodological and conceptual points remain maximally clear to an international scientific audience.

Authors uploaded the revised manuscript.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.