

LightGBM-Based Prediction of Marital Commitment Using Sexual Satisfaction, Trust, Emotional Intimacy, and Attachment Security

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1. Round 1

1.1. Reviewer 1

Reviewer:

The paragraph beginning with “One of the most influential determinants of marital commitment is sexual satisfaction” would be strengthened by incorporating a more detailed theoretical framework explaining the mechanisms through which sexual satisfaction influences commitment. The discussion currently relies primarily on empirical associations rather than integrating theories such as Interdependence Theory, Social Exchange Theory, or the Investment Model of Commitment.

In the section discussing trust, the sentence “Trust represents another essential foundation of committed relationships” is supported by relevant literature; however, the manuscript does not explain whether trust is conceptualized as a predictor, mediator, or constituent component of commitment. The theoretical positioning of trust within the proposed predictive framework should be clarified.

Within the Measures section, the psychometric properties of each instrument are described only in general terms. The manuscript should report Cronbach’s alpha, composite reliability, and preferably confirmatory factor analysis results obtained specifically from the current sample rather than relying solely on previous studies.

The paragraph stating that “all instruments used in the study had previously demonstrated acceptable reliability and validity” lacks sufficient methodological rigor. The authors should include a dedicated table summarizing internal consistency indices, average variance extracted (AVE), composite reliability (CR), and discriminant validity measures for all constructs in the present dataset.

In the Data Analysis section, the authors report that missing values accounted for less than 3% of observations and were addressed through multiple imputation. However, no details are provided regarding the imputation model, number of imputations, or convergence diagnostics. These methodological details are necessary to ensure reproducibility.

Response: Revised and uploaded the manuscript.

1.2. Reviewer 2

Reviewer:

The paragraph introducing emotional intimacy describes intimacy as “feelings of closeness, mutual understanding, emotional disclosure, empathy, and connectedness between partners.” Given the strong conceptual overlap between emotional intimacy and marital commitment, the authors should address potential construct redundancy and explain how discriminant validity between these constructs was established.

The attachment security section would benefit from a more comprehensive discussion of attachment dimensions. The manuscript refers broadly to “attachment security,” yet the measurement instrument assesses anxiety and avoidance dimensions. The authors should explain how these dimensions were transformed into a single attachment security variable and provide justification for this analytical decision.

The statement that “relatively few studies have applied LightGBM to the prediction of marital commitment” represents an important rationale for the study; however, the literature review does not provide a systematic overview of prior machine-learning applications in relationship research. Including a concise synthesis of comparable predictive studies would better establish the novelty of the current work.

In the Study Design and Participants section, the authors indicate that a “stratified convenience sampling strategy” was used. This methodology requires additional detail. Specifically, the manuscript should explain the strata employed, how participants were allocated across strata, and whether proportional sampling procedures were implemented. Without this information, the representativeness of the sample cannot be adequately evaluated.

The authors report that participants were recruited from Buenos Aires, Córdoba, Rosario, and Mendoza. However, the manuscript does not provide the regional distribution of participants. Given potential cultural and socioeconomic variability across these urban centers, descriptive statistics by recruitment region would improve transparency and enhance external validity.

The exclusion criterion stating that “individuals currently undergoing divorce proceedings or experiencing severe psychiatric disorders” were excluded requires clarification. The authors should explain how psychiatric disorders were assessed, whether formal diagnostic criteria were used, and whether exclusions were based on self-report or clinical evaluation.

Response: Revised and uploaded the manuscript.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.