




Predicting Women's Psychological Flourishing Using XGBoost: The Relative Importance of Self-Compassion, Resilience, Emotional Intelligence, and Social Support

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1. Round 1

1.1. Reviewer 1

Reviewer:

In the second paragraph of the Introduction, the authors write that “flourishing is understood as the result of complex interactions among emotional, cognitive, interpersonal, and motivational capacities.” This is an important theoretical premise, but the manuscript does not later test actual interactions among predictors. The authors should either include interaction-oriented SHAP dependence analyses or revise the wording to avoid implying that interaction effects were empirically demonstrated.

In the Introduction paragraph on self-compassion, the authors define self-compassion appropriately but should distinguish more clearly between total self-compassion and its positive and negative subcomponents. Since the Self-Compassion Scale includes both adaptive and maladaptive dimensions, using only a total score may obscure differential relations between self-kindness, mindfulness, isolation, and over-identification. The authors should justify the use of the total score or consider supplementary subscale-level analyses.

In the resilience-related Introduction paragraph, the manuscript states that resilience is “now widely recognized as a dynamic process involving cognitive, emotional, behavioral, and social resources.” However, the study operationalizes resilience using a single self-report scale at one time point. The authors should acknowledge the gap between the dynamic theoretical framing and the static cross-sectional measurement strategy.

In Section 2.2, all instruments are described in general terms, but the manuscript does not report the internal consistency values obtained in the current sample. The sentence “reliability coefficients exceeding the recommended threshold of 0.70” is insufficient. The authors should provide Cronbach’s alpha and, if claimed, composite reliability values for each measure in the Results section or a measurement table.

In Section 2.2, the manuscript does not clarify how total scores were computed for each instrument, especially the Self-Compassion Scale, where negatively worded subscales require reverse coding. The authors should state the scoring procedure for each scale, including possible score ranges, reverse-scored items, handling of missing item-level responses, and whether mean or sum scores were used.

Authors revised the manuscript and uploaded the document.

1.2. Reviewer 2

Reviewer:

In the emotional intelligence section, the sentence “Emotional intelligence generally refers to the ability to perceive, understand, regulate, and effectively utilize emotions in oneself and others” requires more conceptual precision. The authors use the Schutte Self-Report Emotional Intelligence Test, which reflects trait or self-perceived emotional intelligence rather than performance-based emotional ability. The manuscript should consistently refer to “self-reported emotional intelligence” unless ability-based measures were used.

In the social support paragraph, the authors state that social support provides “emotional, informational, and instrumental assistance,” but the measure used later is the Multidimensional Scale of Perceived Social Support, which assesses perceived support from family, friends, and significant others rather than directly measuring informational and instrumental support. The authors should align the theoretical description with the measurement model or clarify that the study examines perceived social support rather than objective support availability.

In the final gap paragraph of the Introduction, the authors write that “few studies have employed machine learning approaches to identify which strengths exert the greatest influence on flourishing.” This is a relevant gap, but the manuscript should more explicitly justify why XGBoost is preferable to more interpretable models when the predictor set contains only four variables. With such a small feature set, the authors should explain the expected methodological advantage of a complex ensemble algorithm.

In Section 2.1, the phrase “Study design and Participant” should be revised to “Study Design and Participants.” Beyond grammar, the section should provide a clearer recruitment flow, including the number who opened the survey, the number excluded for incomplete data, the number excluded for eligibility reasons, and the final analytic sample. A CONSORT-style or STROBE-style participant flow description would improve transparency.

In Section 2.1, the sentence “The sample represented diverse educational, occupational, and socioeconomic backgrounds, thereby enhancing the generalizability of the findings” is stronger than the evidence presented. The manuscript reports education, employment, marital status, and province categories, but it does not report socioeconomic status indicators such as income, neighborhood deprivation, ethnicity, migration background, or rural/urban residence. The authors should either provide these data or soften the generalizability claim.

In Section 2.1, the manuscript states that the study “received approval from a university research ethics committee in Canada,” but it does not provide the name of the committee or an approval code. For research involving human participants, especially online survey research, the ethics approval identifier should be reported. This is also important because the authors’ affiliations are listed in Iran, while the ethics approval is described as Canadian.



Authors revised the manuscript and uploaded the document.

2. Revised

Editor's decision: Accepted.

Editor in Chief's decision: Accepted.