

Development and Psychometric Evaluation of the Digital Native Identity Scale among Upper Secondary School Students in Tehran

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E d i t o r	R e v i e w e r s
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1. Round 1

1.1. Reviewer 1

Reviewer:

In the qualitative-method paragraph, the statement “Using purposive sampling and the snowball technique, 24 experts were selected” requires substantially greater detail. The manuscript should specify the experts’ disciplinary distribution, academic qualifications, professional experience, institutional affiliations, age range, and eligibility criteria. It should also explain how the initial participants were identified, how snowball referrals were managed, and how the research team determined that data saturation had been achieved. Reporting only the final number of experts is insufficient to establish the adequacy and diversity of the qualitative sample.

The manuscript states that “The validity and trustworthiness of the qualitative findings were established through member checking, peer review, and triangulation,” but the procedures are described only in general terms. The authors should report exactly how member checking was conducted, what materials were returned to participants, whether participants reviewed interview transcripts, codes, categories, or the final thematic structure, and how their feedback changed the analysis. Similarly, the roles and qualifications of the three peer reviewers should be clarified, and the type of triangulation should be specified because consulting theoretical sources is more accurately described as theoretical triangulation than as general triangulation.

The sentence “Intercoder agreement, calculated using Cohen’s kappa coefficient, was 0.86” should be supported by a transparent account of the coding process. The authors should specify how many transcripts or coded segments were independently coded by both coders, how the coding units were defined, whether the coding framework was developed before or during double coding, and how disagreements were resolved. Cohen’s kappa is meaningful only when readers know the number of categories, the proportion of data double-coded, and whether the coders worked independently. A brief interpretation threshold for the reported coefficient should also be stated.

In the CFA paragraph, the authors state that maximum likelihood estimation was used. Because the items were scored on a five-category ordinal scale, the appropriateness of conventional maximum likelihood estimation should be justified. The authors should report multivariate normality statistics, including Mardia’s coefficient or relevant skewness and kurtosis indices. If multivariate normality was violated, robust maximum likelihood or an estimator designed for ordinal data, such as weighted least squares mean- and variance-adjusted estimation, may have been more appropriate. The selected estimator can materially affect factor loadings, standard errors, and goodness-of-fit indices.

Table 2 reports $\chi^2 = 1842.36$ with 854 degrees of freedom for a 21-item model, but these degrees of freedom appear implausibly high for a conventional first-order CFA based solely on 21 observed items. A covariance matrix with 21 observed variables contains only 231 unique elements, so a model with 854 degrees of freedom would require clarification. This suggests that the reported degrees of freedom may be incorrect, that additional indicators were included but not described, or that the model was specified differently from the account provided. The authors should recheck the AMOS output and report the exact measurement-model specification, including the number of observed variables, latent variables, correlated residuals, and estimated parameters.

Authors uploaded the revised manuscript.

1.2. Reviewer 2

Reviewer:

The manuscript reports that “Following the transcription of the interviews, the qualitative data were analyzed using thematic analysis through systematic open, axial, and selective coding procedures.” This description combines terminology from thematic analysis with coding procedures more commonly associated with grounded theory. The authors should clarify the actual qualitative analytic framework. If thematic analysis was used, the stages should be described according to a recognized thematic-analysis procedure. If open, axial, and selective coding formed the primary analytic strategy, the method should be identified accordingly. The current formulation creates conceptual ambiguity regarding the epistemological and procedural foundations of the qualitative phase.

Table 1 presents six dimensions, 18 components, and multiple operational indicators, but the transition from 47 initial codes to 18 components and then to 21 scale items is not adequately explained. The authors should add a detailed item-development procedure describing how codes were converted into item statements, how redundant or overlapping indicators were removed, how many preliminary items were generated, and how the final 21 items were selected. It is also necessary to report whether experts evaluated item relevance, clarity, simplicity, and cultural appropriateness and whether quantitative content-validity indices, such as the content validity ratio and content validity index, were calculated.

The manuscript reports a six-dimensional scale containing 21 items, but Table 1 lists 18 components, several of which appear to require more than one item for adequate representation. Some components may therefore be measured by a single item, which raises concerns about content coverage and construct representation. The authors should present the complete item-to-component mapping and explain how each of the 18 components is represented by the 21 items. Components assessed by only one item should be identified and justified, because single-item representation may weaken reliability and restrict the interpretability of component-level scores.

In the quantitative-method paragraph, the authors state that “Using multistage cluster sampling and Cochran’s formula, 402 students were selected.” Cochran’s formula addresses sample size but does not account for the design effect created by cluster sampling. Because students were nested within classes and schools, observations may not have been statistically independent.

The authors should report whether a design effect was considered when determining sample size and whether intraclass correlation was examined. If clustering was ignored, standard errors and fit statistics may be underestimated. The manuscript should discuss this issue or justify why conventional single-level analyses were considered acceptable.

The sampling description states that “six districts representing northern, southern, eastern, western, central, and suburban Tehran were randomly selected from the city’s 22 municipal districts.” This procedure is not fully clear because the geographical categories appear to have been imposed before random selection. The authors should explain whether districts were first stratified by geographical region and then randomly sampled within strata, or whether six districts were selected through simple random sampling and subsequently described geographically. The exact district numbers should be reported, as should the number of participating schools, classes, and students recruited from each district.

The participant characteristics are inadequately reported. Although the abstract identifies 206 girls and 196 boys, the manuscript does not provide a complete demographic table. The authors should include age, mean age and standard deviation, grade level, field of study, school type, socioeconomic indicators, access to digital devices, average daily internet use, and primary social media platforms. These variables are directly relevant to digital native identity and would help readers evaluate sample representativeness, potential confounding, and the external validity of the scale.

The manuscript states that students responded on a five-point Likert scale, but it does not explain how the initial instrument was piloted before full administration. The authors should report whether cognitive interviews or a pilot study were conducted to assess item comprehension, wording, reading level, ambiguity, and completion time. This is particularly important because the target population consists of adolescents and the scale contains abstract constructs such as networked thinking, digital responsibility, cultural resistance, and digital self-concept. Evidence that students interpreted these items as intended would strengthen face validity.

Authors uploaded the revised manuscript.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.