

Peer Review

Review of: "Are Bidding Behaviors of Jeopardy! Gameshow Contestants Influenced by Gender/Sex?"

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QEIOS REVIEW**Are Bidding Behaviors of Jeopardy! Gameshow Contestants Influenced by Gender/Sex?**

The study addresses a well-defined and relevant question in behavioral research: whether gender/sex influences risk-taking behaviors in a high-stakes, real-world setting (Jeopardy!). The use of Daily Doubles as a measure of risk-taking is clever and ecologically valid. The analysis spans nearly four decades (1984–2022), allowing the authors to assess not only gender differences but also potential changes over time, a valuable contribution to understanding how social and cultural shifts may affect risk behaviors. The authors clearly describe their data collection process, including sources (Pluto TV, KXAN), time frame, and how they handled years with varying episode availability. They also openly acknowledge limitations related to sampling and measurement. The use of t-tests and mixed-design ANOVA is suitable for the research questions. The authors properly account for multiple comparisons and temporal groupings, and they present results clearly with figures and statistics. The discussion thoughtfully situates the null findings within broader debates about gender and risk-taking, citing relevant literature and acknowledging the complexity of gender as a spectrum. The authors avoid overinterpreting trends that were not statistically significant.

This is a well-designed, transparent, and thoughtfully discussed study that makes a meaningful contribution to the literature on gender and risk-taking. Its longitudinal approach and real-world context are strengths, though limitations in sampling, gender measurement, and generalizability temper the broader impact of its null findings. The study is methodologically sound in many respects, addresses an interesting question with appropriate analyses, and its discussion is nuanced and citation-rich. My assessment of the study is positive even though there are some concerns that need to be addressed.

1. The reliance on publicly available episodes introduces potential selection bias, as the sample may not be fully representative of all Jeopardy! episodes or contestants. The authors acknowledge this, but it remains a significant limitation;
2. Gender was coded based on perceived gender/sex from recordings, which is a crude and binary measure. This ignores non-binary identities and may misclassify some contestants, limiting the study's applicability to contemporary understandings of gender;
3. The authors did not assess inter-rater reliability in coding gender or wager amounts, which raises concerns about consistency and objectivity in data collection;
4. Jeopardy! contestants are a highly selective group—knowledgeable, competitive, and likely not representative of the general population. This limits the generalizability of findings to broader risk-taking contexts;
5. The study does not control for other factors that could influence wagering, such as contestants' scores at the time of the Daily Double, category familiarity, or gameplay strategy beyond gender;
6. Grouping episodes into “approximate decades” with uneven ranges (e.g., 1984–1994 vs. 2015–2022) may obscure more nuanced temporal trends and reduces statistical power.

Suggested Methods to Address Selection Bias

1. Construct a Stratified Random Sample

Instead of taking all available episodes, I wonder if the authors could design a sampling frame that ensures representation across key variables:

Method: Stratify the universe of Jeopardy! episodes by: decade/year (to ensure temporal spread).

Season to account for potential “Tournament of Champions” or special episodes where behavior might differ.

Outcome of the game (e.g., wins by large vs. small margins, which could influence risk-taking in Daily Doubles).

Host era (Alex Trebek's early, middle, late years; post-Trebek era).

Application: Even if only 30% of episodes from a given stratum are publicly available, randomly select from within that available subset for each stratum. This controls bias better than taking whatever is available.

1. Use Propensity Score Matching (PSM) or Weighting

This advanced statistical method can help correct for bias if you know the characteristics of the full population (all aired episodes).

Method: Obtain metadata for all Jeopardy! episodes (e.g., air date, contestants' names, initial scores, maybe categories) from a comprehensive source like J!Archive (see below).

Compare the characteristics of your sample (publicly available episodes) to the full population.

Calculate propensity scores (the likelihood an episode is in your sample based on its characteristics).

Weight your statistical analyses by the inverse of these propensity scores. This gives more weight to episodes in your sample that are under-represented types, making your sample more "look-alike" to the full population.

Application: If, for example, episodes from the 1990s or episodes with female champions are under-represented in your available sample, PSM can statistically adjust for this.

1. Conduct a Missing Data Analysis

Formally test whether the "missingness" of episodes (i.e., not being publicly available) is related to your outcome variable.

Method: Using the full episode list, code episodes as "In Sample" or "Not in Sample." See if you can predict sample inclusion based on variables you can observe for all episodes (e.g., year, season, perhaps contestant gender from names). If "missingness" is completely random (Missing Completely at Random - MCAR), bias is minimal. If it's predictable (Missing at Random - MAR), methods like PSM (above) can help. This analysis itself strengthens the study by quantifying the potential bias.

I find the paper suitable for publication with minor revisions, particularly encouraging future studies to use more rigorous gender measures and representative sampling where possible.

Declarations

Potential competing interests: No potential competing interests to declare.