Review of: "Determining Affinity of Social Network using Graph Semirings"

E. M. Elsayed[1]

1 King Abdul Aziz University

Potential competing interests: No potential competing interests to declare.

Referee Report on the paper

General Comments:

The manuscript presents a novel approach to assess network stability in complex social networks using graph theory metrics, specifically focusing on the $\pmb\beta_G$ metric and average vertex degree ($A_{d(G)}$). While the concept is innovative, there are areas that need improvement to enhance the clarity, context, and relevance of the work.

Specific Recommendations:-

Title and Abstract:

It is recommended to revise the title to make it more concise while maintaining clarity regarding the work's focus. Additionally, the abstract could be more specific in presenting the core findings and objectives of the study.

1. Introduction and Metric Justification:

The manuscript should provide a clearer context for the selection of graph theory metrics, such as the $\pmb\beta_G$ metric and average vertex degree. Explain why these metrics were preferred over others and how they relate to the problem being addressed.

2. Generalized Algorithm:

While the presented algorithm for assessing network stability is commendable, consider presenting a more generalized algorithm alongside the specific context algorithm. This would enhance the article's utility for a wider scientific community.

3. Empirical Validation:

To strengthen the credibility of the proposed approach, consider providing empirical validation. Real-world examples or case studies where the algorithm has been applied and compared with actual network behavior would significantly enhance the manuscript.

4. Discussion of Limitations:

It is important to include a discussion on the limitations and potential biases of the algorithm. This acknowledgment is

crucial for a comprehensive assessment of the work.

Conclusion:

In conclusion, the manuscript offers a unique and innovative approach to assess network stability in complex social networks using graph theory metrics. With the suggested improvements, including a revised title, a more concise abstract, and a more comprehensive presentation of the algorithm, the article would be of great interest to a wide range of the scientific community. I accept the article for publication subject to the consideration of above suggestions.