Finding Happiness in Marriage with The Help of Decision Networks

Israel Nolazco
israelnolazco@lewisu.edu
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Lewis University

I. Introduction

The premise of a monogamist marriage is one that holds an endearing value to many people around the globe. Typically, we are taught an example of a perfect monogamist marriage revolves around a loving and caring partner. One that must be chosen for a lifelong commitment. It is a commitment that requires faith, courage, and intimacy. And because humans are mortal, there is a tremendous amount of pressure to choose the right partner[1]. The tv show Married at First Sight is a reality tv series air on the Lifetime Network. The show features couples being partnered by a series of experts based on their likes/dislikes, personality, personal goals, and if everything goes right marry each other. Then, after a couple of weeks, it is up to the couples to decide whether or not remain together or divorce[2]. In this document, we will build a decision network and measure the utility of a potential viewer who wishes to entrust the same model of the tv series Married at First Sight. From there, we are going to examine whether these professionals are actually the best option to achieve the perfect partner.

II. Methods

The software Netica was is going to be utilized during this analysis. The tv series as of the year 2020 has run for 11 seasons. The data was compiled and gathered from the website Kaggle[3]. The dataset, however, only holds data up to the 10th season. The dataset holds several key details such as locations, names, Names of the Experts, and much more. However, some of these details were not necessary for our calculation. Therefore, the following are the categories recorded for our analysis: Age, Gender, Decision, Current Status, Expert Dr. Pepper Schwartz, and Pastor Calvin Roberson. The expert Dr. Pepper Schwartz has been featured in all episodes of the show Married at Frist Sight. As for Pastor Calvin Roberson, he has been featured in all episodes from seasons four and on.

Additionally, to further emulate the behavior of an educated versus a casual viewer we build two decision networks. Both being measured with the utility scored at the same level. Figure 1. Displays the utility scores for a decision network for a casual viewer versus an educated one. After trimming our data and determining the utility scores; the information was then loaded into the software Netica.

Attending Show	Married	Happy Marriage
Yes	Yes	100
Yes	No	20
No	Yes	70
No	No	50

A)

Attending Show	Status	Happy Marriage
Yes	Married	100
Yes	Divorced	20
No	Married	70
No	Divorced	50

B)

Figure1. A)Utility measurement for a casual viewer and B)utility measurement for an educated viewer.

III. Analysis

The Netica software provided a graphical representation of the Decision Network created with the data collected. The first network being analyzed is the casual viewer. Figure 2. Shows a decision network built out of the information gather from the show. In the image, we are shown the nodes with the following variables age, gender, and experts being the link into the Married node. The married node represents the final decision of the couples being featured in the show. Finally, the decision node determines whether or not our casual viewer desires to attend the show based on the utility in Figure 1a. Furthermore, the values of the utility node can be explained as the following. If the viewer were to attend the show and ends up married. Then the utility is at its max. If the viewer attends the show and does not end up married, then the utility is at the lowest. If the viewer decides to not attend the show and but marries

anyways. Then the utility is high, because the ultimate goal to find a partner is still present. Albeit there is still some doubt if an expert opinion would have made a difference. Finally, the utility of not attending the show and not being married then it must be at an equilibrium given the no effect on a person's life.

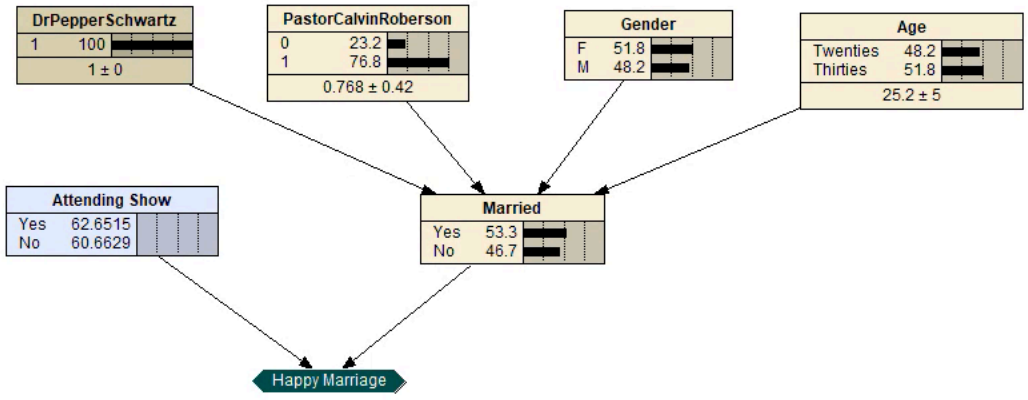


Figure2. Decision Network based on the shows data

Netica's true potential is shown by computing the alternative probabilities within different scenarios. In this case, we are going to explore how would a decision to attend the show change. In this experiment, we are going to remove the insight of Pastor, narrow our potential viewer to a male in their twenties. This can be better shown in figure 3.

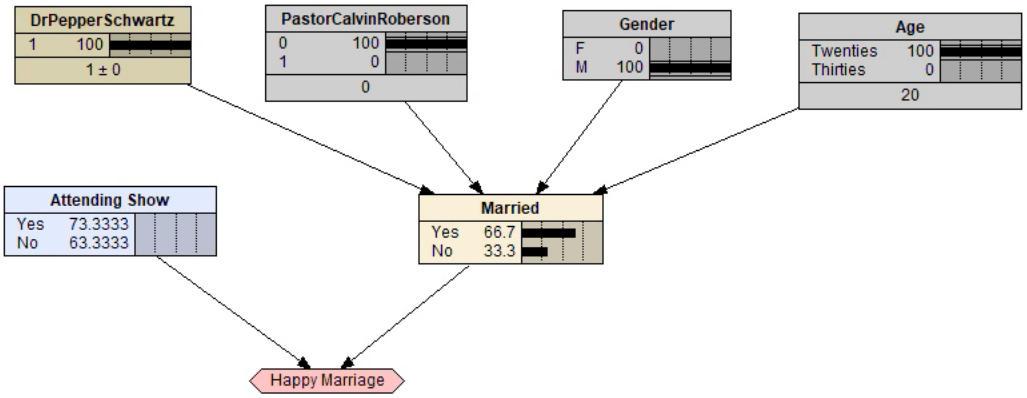
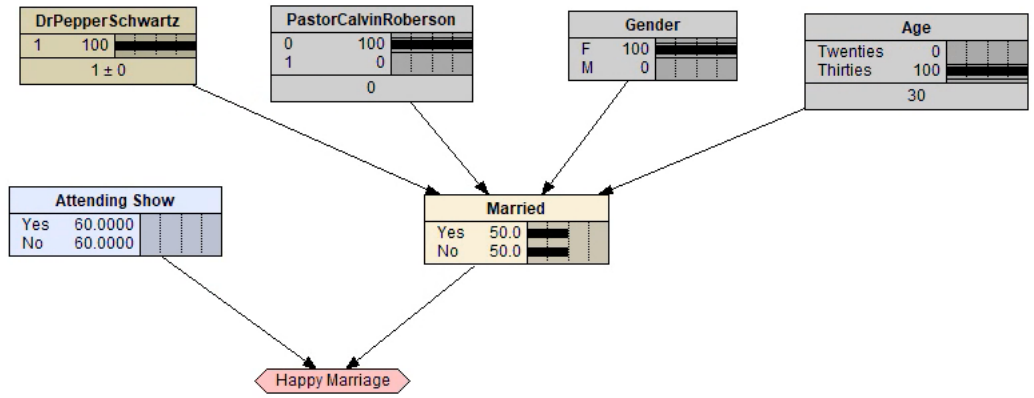
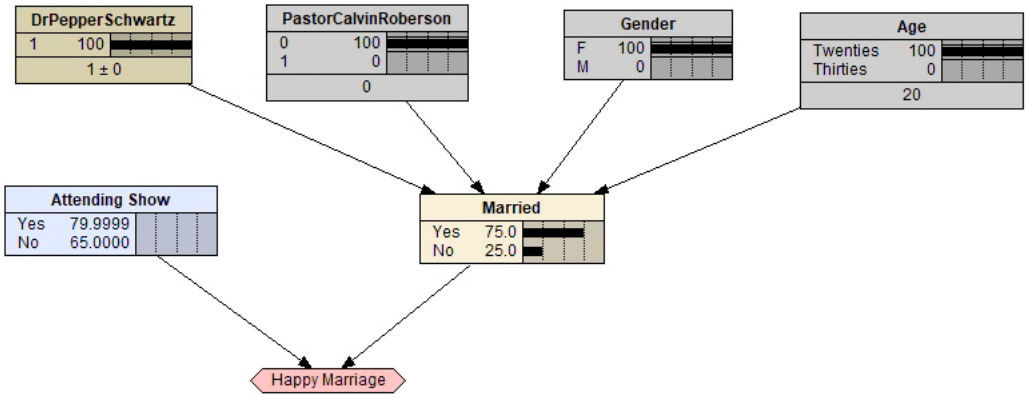


Figure 3. Decision Network for Males in their 20s and excluding the Pastor's advice

Based on figure 3. Results, we see a higher probability in the couples deciding to get married along with the utility score. Now, if we were to change the age range to a male in his thirties then there is no change in the results and therefore not included in this report. Now, let us explore the same scenario for a female group. Figure 4a. Shows a much higher probability of a successful couple agreeing to get married. Thus, increasing the decision to participate in the show. However, for figure 4b. We see an equal distribution for either a couple agreeing to get married and attending the show.



b.



a.

Figure 4. A)Decision network for a female group in their twenties and without the advice of a Pastor. B)Decision network for a female group in their thirties and without the advice of a pastor.

Finally, we are going to review the decision network from the point of view of an educated viewer. In this case, the educated viewer is primarily looking at the current status of those who attended the show and are currently married or divorced. As previously mentioned, the utility will remain the same. However, before proceeding it interesting to note the couples who are currently married are low compared to the divorced rate. Figure 5. Shows the decision network for an educated viewer.

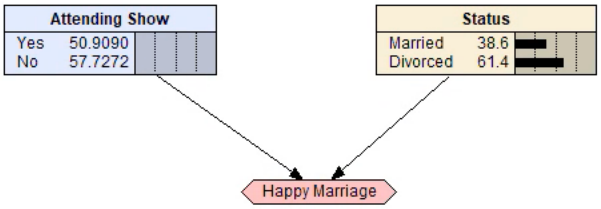
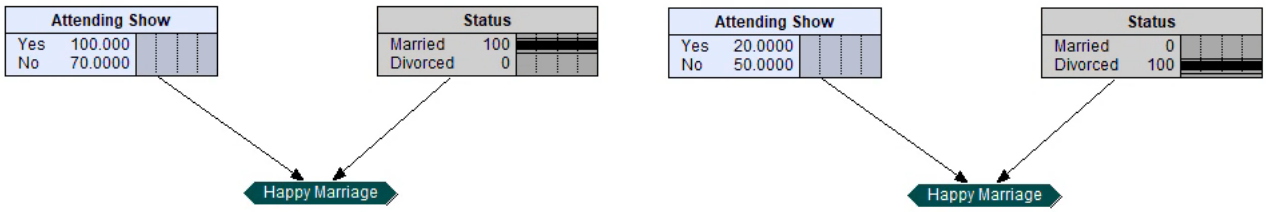


Figure5. Decision Network for an educated viewer.

Lastly, as expected, if were to maximize either extremity of the married and divorced rates we encounter some interesting facts. Figure 6a. Shows the decision for attending the show at a maximum. Although, the decision to not attend the show also increases. This can be explained by a disbelief factor. As a human, one hundred percent seems rather unbelievable and almost impossible. Figure 6b. On the other hand, shows a low utility for deciding to attend the show. However, it is not zero. This can be explained by the curiosity factor. The individual deciding to attend the show may be discouraged to attend the show but may try to change the outcome.



a. b.

Figure 6. A)Decision network with a perfect rate of marriage. B)Decision network with a perfect divorced rate.

IV. Conclusion

Decision Networks are great mathematical tools for evaluating complex and thought-provoking datasets. In this case, we were able to find the utility values in putting faith with the experiment the reality tv series Married at First Sight has proposed. Our analysis not only shows a high probability of being married for a female casual viewer versus their male counterpart. As for an educated viewer, we can see although the marriage rate is low the utility of attending the show is almost at a split 50/50. Therefore, it is best to get advice from a professional than finding a partner blindsided.

References

[1] "Monogamy | BetterHelp", Betterhelp.com, 2020. [Online]. Available: https://www.betterhelp.com/advice/monogamy/. [Accessed: 23- Nov- 2020].

[2] "Lifetime UK", Lifetime UK, 2020. [Online]. Available: https://www.mylifetime.com/shows/married-at-first-sight. [Accessed: 23- Nov- 2020].

[3] Risdal, M., 2020. Married At First Sight. [online] Kaggle.com. Available at: <https://www.kaggle.com/mrisdal/married-at-first-sight> [Accessed 23 November 2020].