

Thesis Project Portfolio

Defining Value in Population Health: Evaluating Program Impact and Outcomes
(Technical Report)

***The Bachelor's* Impact on Audience Members' Perception of Love**
(STS Research Paper)

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Sociotechnical Synthesis

All designers of organizations and technology have made decisions that align with their original goals, however, sometimes that focus can lead to unexpected outcomes. My Capstone project, 'Defining Value in Population Health: Evaluating Program Impact and Outcomes', evaluated and found ways to improve the quality of UVA's Population Health program, Interactive Health Monitoring. My team undertook this topic due to an evident misalignment between the program's goals and its outcomes. My STS research paper, '*The Bachelor's* Impact on Audience Members' Perception of Love', dives into the ways in which the reality TV show, *The Bachelor*, has impacted modern perceptions of romance. Raising awareness of this can then encourage audience members to create distance between the show and their own reality. Although UVA Population Health and The Bachelor franchise are not directly related, they both can be evaluated from a systems engineering perspective. Specifically, both Population Health and The Bachelor franchise are systems that have design tradeoffs between goals which lead to unintended consequences that they should be made aware of.

The Population Health program within UVA Health, Interactive Home Monitoring (IHM), has had trouble proving to themselves and their executive board the value that they bring to patients and to UVA Health. My Capstone team is working to prove this value both quantitatively through data analysis and qualitatively through interviews of IHM clinicians, patients, and its director. By analyzing performance and demographic related data and presenting it in a digestible manner, Population Health's executive board could get a sense for how the program has been performing and what framework to follow moving forward to continue to track value through performance. The results from the interviews were not only used to qualitatively prove the value of the program through patient anecdotes, but to evaluate whether all of the

stakeholders involved had the same definition of ‘value’ when it came to IHM. In order to analyze the quantitative data, the team used R and MiniTab. For the qualitative data, the team derived coding categories and extracted common themes throughout the interviews.

Our analysis revealed several key insights about the effectiveness of UVA Health’s IHM program in reducing hospital readmissions, length of stay, and emergency department (ED) visits. Quantitative data showed a trend toward improved outcomes among enrolled patients, including reduced 30-day readmission rates, shorter average lengths of stay, and lessened ED visits compared to non-enrolled patients. However, due to limitations in data completeness and inconsistent documentation of interventions, we were unable to go more in depth on what interventions specifically had the greatest impact on the patients’ outcomes. Qualitative interview analysis with Population Health team members emphasized the value of emotional support, care coordination, and continuous patient engagement, highlighting that program success often relies on more than just clinical metrics. We proposed a multi-layered framework for evaluating intervention effectiveness, which includes tracking IHM-specific KPIs while aligning them with broader Population Health objectives. Additionally, we recommended improvements to data visualization through a detailed dashboard allowing IHM stakeholders to view data on a patient by patient basis in addition to overall trends. In finding alignment in the goals of the program and evaluating their current state, our team set the framework for future teams to continue to build off of and to be able to continuously prove the program’s value to its executive board.

My STS paper responded to the following question, ‘How has *The Bachelor* impacted its audience’s perception of romance in real life?’. *The Bachelor* is a reality TV dating show involving one man and 25-30 women looking to get engaged. Although romance as a genre dates

back to Shakespearean times, *The Bachelor* was the first game-show romance reality television series to emerge in 2002. Since its beginnings, it has developed multiple spinoffs and started spreading its influence to social media, which is why it is important to understand its cultural impact. Despite mirroring parts of reality with its real characters and settings, the majority of the show is heavily scripted and controlled by production. These unrealistic portrayals of love and relationships then lead to unrealistic expectations amongst audience members. It is important to draw awareness to these effects and the messages that the producers are pushing through the show's content in order to keep the audience's perception of love realistic, while still allowing them to enjoy its entertaining nature. To accomplish this, I have synthesized and analyzed critic reviews and performed a literature review through the lens of Gerbner's Cultivation Theory and Script Theory.

This research paper reveals how by glamorizing "love at first sight," idealizing romantic partners, and promoting the idea that fulfillment is only attainable through heterosexual relationships, the show reinforces unrealistic expectations of romance. The concept of 'love at first sight' is pushed through the show rewarding connections with a large spark at the very beginning. *The Bachelor* also encourages the idealization of partners and heterosexual relationships by putting great pressure on the individuals and the outcome of an engagement. Cultivation Theory and Script Theory suggest that repeated exposure to these narratives may cause viewers to internalize them, leading to dissatisfaction with their own relationships or an unhealthy urgency to rush the pursuit of romantic connections. Ultimately, this paper highlights the need for greater media literacy so that audience members can critically evaluate romantic narratives in reality TV and detach entertainment from reality. Being grounded in their approach to love and relationships will then encourage overall fulfillment and satisfaction.