Executive Summary - The Second Shift Phenomenon

The working paradigm in America has undergone a significant transformation with the largest impact being that both members in a marriage or partnership are required to seek full time paid work to maintain the financial stability required to protect their health, home, and family. The Second Shift Phenomenon is a phrase that entered into American culture in 1989, drawing its main inspiration from the work of Arlie Russell Hochschild.[1] The Second Shift Phenomenon is most succinctly described as the unpaid work that American women perform to maintain their homes and families. Such work includes child care, cleaning, cooking, and family health management. Although the Second Shift Phenomenon applies to any caregiver that works a full time job only to return home and continue working to support their family and home, it most typically impacts women. The purpose of our study of the Second Shift Phenomenon is to understand what sacrifices American women must make while caring for their family and home. Specifically we aim to understand if American women who are part of a child caring family unit, spend less time caring for themselves, as compared to American women who are not part of a child caring family unit. Additional avenues of study include examining if there exist different levels of impact of the Second Shift Phenomenon on American women versus American men.

The United States Department of Labor conducted a survey spanning between the years 2003 to 2015. The American Time Use Survey polled 170,000 Americans regularly for over a decade to gain a fundamentally robust understanding of how the average American spends their time throughout the day. Participants were asked to keep a time journal, in which they logged time spent in minutes performing daily activities. The survey grouped related daily activities into 17 time modules, ranging from caring for children and family, cleaning and maintaining the home, education, exercise, leisure, and working a day job. In total, the survey covered 431 time activities, resulting in four of the time modules remaining largely unpopulated. Specifically, the exercise module includes 77 different activities. The exercise module is capable of capturing almost every way that an average American may exercise, however, the emptiness of the data introduces some data analysis challenges. In addition to the time modules, the survey captured demographic information ranging from education, family size and details, gender, home location and type, and socioeconomic status. Advanced statistical techniques were applied to account for errors in the data that are common in self-reporting surveys[2].

The Second Shift Phenomenon is a complicated concept, therefore we have broken our study of how this concept impacts American women into two phases. The goal of phase one is to develop methods to prepare the information in the time survey such that it can be directly applied to answering our research questions in phase two[3].

Household related activities such as child care, cleaning, cooking, and home maintenance, are directly related to the Second Shift Phenomenon. The number of household related activities represented in the survey can lead to difficult to interpret results from any basic analysis of the raw data. To begin answering how the Second Shift Phenomenon impacts American women, we first applied data reduction techniques to how time was spent caring for the household. These techniques effectively combined similar variables, into easy to understand components or factors, which still capture the most important

[1] Hochschild, A. R., & Machung, A. (1989). The second shift: Working parents and the revolution at home. New York, N.Y: Viking

[2] Variable weights to account for self-report bias were not applied in our initial exploration of the time survey.

[3] Phase two is not covered in this preliminary version of the study.

pieces of information. The darker purple bars in Figure 1 represent activities most likely associated with the Second Shift Phenomenon. Our reduction techniques transformed the time activities of interest from 152 separate activities to a more manageable 8 components or factors. The combination of related factors helps bring to the forefront, the most valuable parts required for answering our question, while discarding the noise that has little to contribute to understanding the Second Shift Phenomenon.

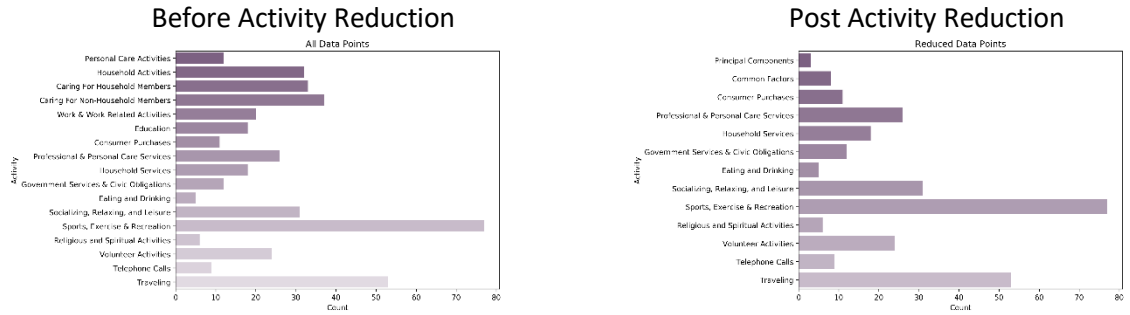

Figure 1

The answer to how the Second Shift Phenomenon impacts American women comes in two parts. On the left side, we have demographic and life stage information. This information includes age, education, employment type and status, family type and size, and gender. The right side of the answer includes how time was spent. More specifically, how time was spent performing both “second shift”, and “non-second shift” activities. Two reduction techniques, Principal Component Analysis (PCA), and Common Factor Analysis (CFA), were conducted to help wrangle the large number of time activities on the right side of our answer. The results of the PCA focused on time spent caring for the children of a household as well as the children’s friends, and time spent performing chores in the household. The results of the CFA built upon the PCA results, by adding in time spent sleeping, working, and acting as the family’s health care ambassador. Both the PCA and CFA techniques reduced the number of time activities from the hundreds to the tens, while maintaining the ability to account for how most Americans spent their time performing second shift activities. Canonical Correlation Analysis (CCA) is a complicated technique that helps define how the two sides of our answer relate to each other. The results of the CCA built upon the PCA and CFA results to help us understand what relationships or differences exist between how time is spent if an individual is highly educated, is single or married, if they have children, or if they are younger or older. Linear Regression (LR) is a predictive analysis technique, and it severs as the final part of phase one, and our entry into phase two of this study. LR aims to select a parameter of interest, for example, a person who is female, and married, has two children, and works a full time job, and then predict how they are most likely to spend their time on a day to day basis. When we first applied LR to the raw data, we achieved less than ideal performance when attempting to find, and therefore predict, relationships between second shift related activities, and the demographic details often associated with those who are impacted by the Second Shift Phenomenon. However, our efforts spent on the LR exploration confirmed that the use of predictive models to answer our research question is feasible.

Prediction is the cornerstone to answering questions related to the Second Shift Phenomenon in phase two of our study. The results of the reduction techniques (PCA and CFA), and the relationship discovery technique (CCA), effectively transformed an expansive collection of time activity data points, into a concise package of easy to understand components and factors. These easy to consume data chunks will be used in predictive models during phase two of our study, to answer how the Second Shift Phenomenon impacts the lives and wellbeing of American women.