

CIND 820

CAPSTONE PROJECT COURSE

EXTENDED ABSTRACT

By

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Determinants of Financial Well-Being in U.S.

Financial well-being is the ability of a household to meet all his/her financial responsibilities at the current time and in the future. However, there is not an agreed consensus about the definition of a financial-well-being, although it is studied in many areas such as economics, finance, consumer decision making, etc. Understanding the financial well-being and the factors that can affect it may help the consumers through encouraging and guiding families in their financial matters. This search will be beneficial not only for the consumers but also for the policymakers who have power to support families financially, so that the income distribution and eventually the economy will be healthier and in a better condition.

U.S. Consumer Financial Protection Bureau (CFPB) conducted a survey¹ and used 10 variables to form a financial well-being score for each respondent. This score varies between 0 to 100, higher values imply being in a good financial health and vice versa. Originally the data is composed of 217 attributes and nearly 6394 respondents. Other than the attributes used to form a financial well-being, there are attributes that give information about the respondent's demographic structure (such as age, gender, marital status, education level), income level, employment status, savings and safety nets, past financial experiences and financial behaviors and skills. These attributes are seen as the possible factors that may affect the individual's financial well-being. This survey was carried out for the year 2016.

My main research question is to find out which factors may influence an individual's level of financial well-being, so that the decision makers can make the household's financial lives easier and take actions according to these factors. In addition, if the demographic structure or various socioeconomic factors are controlled, will the financial behaviors be still significant in determining the financial well-being? For instance, if frequency of credit card usage is very effective when other factors are controlled, the decision makers may discourage credit card usage for the well-being of the individuals. The other question is that are there any factor that may work together to determine an individual's level of financial well-being or which factors are more effective.

In the literature, most of the studies focus on finding ways or methods for constructing a measurement for financial well-being. However, in this study, my aim is not finding an ideal financial well-being measurement but finding the possible factors that may affect the financial well-being, which is already been calculated by CFPB. Hence, the main contribution of this study will be implementing machine learning tools to this dataset in order to find out the determinants of individual's financial well-being. There is a study² using this dataset but focus on only descriptive statistics or trying to find out the distribution pattern in attributes that are effective in financial well-being.

The schedule I will be following is

- Firstly, I will analyze the dataset starting from observing the attribute types, existence of missing values, detecting outliers, checking correlations, and deciding the attributes with which I will continue in my study. If needed, dimensionality reduction may be performed.

¹ The link of this survey: <https://www.consumerfinance.gov/data-research/financial-well-being-survey-data/>

² A report was prepared by CFPB called 'Financial well-being in America' in September 2017. Link: https://files.consumerfinance.gov/f/documents/201709_cfpb_financial-well-being-in-America.pdf

- Secondly, since this data is labeled, I will use one of supervised learning algorithms: classification algorithms. To be more specific, I plan to use Naïve Bayes classifier, Decision trees and k-Nearest Neighbors (k-NN). I will do evaluation measurement performances to decide which method I should continue for interpretation.
- Lastly, I will interpret the findings and make recommendations accordingly.

Planned languages to be used: R, Python, SAS, SQL, Tableau

References:

Survey Dataset: <https://www.consumerfinance.gov/data-research/financial-well-being-survey-data/>