Financial, demographic, and psychological differences between chapter 13 bankruptcy filers and non-filers

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Abstract

This study finds financial, demographic, and psychological differences between Chapter 13 filers and non-filers. Financial training reduces the likelihood of filing for personal bankruptcy. Males are twice as likely as females to be filers. Blacks are twice as likely as Whites to be filers. A single person is 38% less likely to file than a married person. Homeowners are five times as likely as renters to be filers. Increases in education, religious commitment, and parents' income reduce the likelihood of filing. Increases in the psychological factors, self-efficacy, locus of control, and self-control, reduce the likelihood of filing for Chapter 13 bankruptcies. These results can be used to influence public policy to reduce personal bankruptcy. © 2021 Academy of Financial Services. All rights reserved.

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I. Introduction

Personal bankruptcy occurs frequently and is a significant problem in the United States. Evans and Bauchet (2017) state that each year, hundreds of thousands of U.S. households choose to file for bankruptcy and accept the longer-term effects that bankruptcy has on their credit reputation over the challenges of dealing with collectors and/or creditors. According

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to the U.S. Courts, in 2019, there were 752,160 non-business bankruptcies (Chapters 7, 12, and 13) in the United States, with 281,702 (38%) classified as Chapter 13. During the same period, there were 13,092 non-business bankruptcies in North Carolina (state for this study), with 7,960 (61%) being classified as Chapter 13 (http://www.uscourts.gov/statistics-reports/caseload-statistics-data-tables).

Bankruptcy can occur because of mismanagement, lifestyle, consumption patterns, economic conditions, or unpredictable misfortunes such as unexpected medical expenses and layoffs. There are different ways to deal with insolvency, including reduction of spending, consolidation of loans, obtaining consumer credit counseling, surrendering of collateral, relocation to lower costs areas, and/or filing for bankruptcy. Filing for bankruptcy reduces financial stress and provides a financial lifeline.

Even though filing for bankruptcy is a lifeline, it is still a difficult and major financial decision with long-lived impact on a consumer's credit profile. The motivation for this study is to find out more about the factors that correlate with this major financial decision. Another motivation is the limited research done on the differences between Chapter 13 bankruptcy filers and non-filers. This study expands the literature in this area. We look for relationships between demographic, psychological, and financial variables and filing for bankruptcy. We have not seen psychological variables utilized in bankruptcy filings research. In addition, we include two variables not seen in the literature. They are parents' income, and parents' education, representing intergenerational relationships. This study uses data from Chapter 13 bankruptcy filers in North Carolina and compares them to people in the state who have not filed for bankruptcy. The results from this study can be used by institutions, like the U.S. Courts, to reduce the number of personal bankruptcies in the state of study or the country. For example, we find that males are twice as likely as females to be filers, so financial literacy intervention programs can be targeted more to males to reduce their likelihood of filing for bankruptcy.

2. Literature review

2.1. Theoretical foundation

Several theoretical models are used to explain personal financial behavior. Miller, Levin, Whitaker, and Xu (1998) discuss sequential and life events models that can be used to explain financial behavior. Samuelson (1937) develops the discounted utility model where future cash flows are discounted and utilized to make financial decisions. Efrat (1998) advocates for the adoption of a multiutility model that includes two distinct sources of utility that shape the individual's behavior—pleasure and morality.

The human ecological model explains financial decisions in the context of the ecological environment, which is separated into four systems (the microsystem - immediate family and friends, the mesosystem - immediate family and friends and other systems; the exosystem - groups and institutions influencing microsystem; and the macrosystem - inclusion of all systems) (Bronfrenbrenner, 1979). Deacon and Firebaugh (1988) use the human ecological

model and systems theory to provide a context for understanding the goal-directed behavior of families, using inputs, throughputs, and outputs. This sequential managerial process, outlined by Deacon and Firebaugh, is similar to the financial planning process recommended by the Certified Financial Planners Board of Standards (establish goals, gather data, analyze information, develop a plan, implement the plan, and monitor progress toward the goal; Schuchardt et al., 2007). Thaler and Shefrin (1981) develop the theory of self-control that can also explain financial behavior. This theory suggests that individuals have personality traits to be either a planner who is concerned with lifetime utility or a doer who is focused on the present. Later, Shefrin and Thaler (1988) proposed the behavioral life cycle hypothesis suggesting that individuals practice mental accounting, meaning that they have different propensities to save in different categories of accounts.

Schuchardt et al. (2007) provide the trans-theoretical model of behavior change (TTM) that can be used to explain financial behavior. The stages of change are precontemplation (no intention to change behavior), contemplation (aware of problem but not committed to changing behavior), preparation (intending to change within a month), action (changing the problem behavior by employing a variety of strategies), and maintenance (working to prevent relapse). Research has shown that successful self-changers use a variety of strategies to achieve their goal. In terms of filing for bankruptcy, the theory gives some structure of what a filer may be going through, from not wanting to file, contemplating to file, filing, receiving financial training (using strategies to change behavior), and hopefully not relapsing into a second filing.

We have reviewed the sequential model, the live event model, the discounted utility model, the human ecological model, the theory of self-control, and the trans-theoretical model of behavior change. These different models and theories can be used to explain financial behavior in general. We have not seen any theory that directly explains personal bankruptcy behavior.

2.3. Personal bankruptcy

2.3.1. Demographic and financial factors. Domowitz and Sartain (1999) find that medical and credit card debt are the strongest contributors to bankruptcy, with homeownership playing an important role with respect to both the decision to declare bankruptcy and the alternative choice of bankruptcy (e.g., debt consolidation). Chakravarty and Rhee (1999) find several factors affecting an individual's decision to file for bankruptcy. These factors include age of the head of household; past problems with money management; the gender of a single head of household; the (un)employment status of the household head; the length of employment of the household head; (bad) health; (the lack of) Medicare/Medicaid protection; household income; and the dollar benefit level of filing for bankruptcy. Clements, Johnson, Michelich, and Olinsky (1999) study 60 people who file for bankruptcy in Southern Ohio Federal District Bankruptcy Court. Their results reveal that the reason most often cited for filing is overuse of credit for clothing, household goods, paying bills, and cash advances. They find that most filers are embarrassed about their situation and have desires to learn about setting goals and about the difference between wants and needs.

Loibl, Hira, and Rupured (2006) study the difference between first-time versus repeat filers, using a sample of 489 participants from Georgia. Results indicate that repeat filers are more likely than first-time filers to start an emergency fund, to reduce spending, and to write a spending plan. Evans and Lown (2008) also study predictors of Chapter 13 completion rates. The completion of a Chapter 13 repayment plan is not associated with a debtor's monthly income or expenses. The factors, never married, having dependent children, having a previous filing, and having a higher mortgage arrears, increase the likelihood of dismissal from the program.

Caputo (2008) study marital status and other factors associated with personal bankruptcy using data from 1986 to 2004 from the National Longitudinal Survey. In 2004, those who are divorced are most likely to have declared bankruptcy (16.4%), followed by those who are separated (13.9%), married with spouse present (11.2%), and never-married (7.0%). Marital status is associated with likelihood of declaring bankruptcy in only six of the 14 survey years. Never-married persons at the time of declared bankruptcy are less likely than married persons to declare. Formerly married persons, whether divorced or separated, are more likely than married persons to declare for bankruptcy.

Beck, Hackney, Hackney, and McPherson (2014) find that religion is the driving force behind the abnormally high level of Chapter 13 filings in the southern United States. Lefgren and McIntyre (2009) look at cross-state differences in bankruptcy rates. Using zip-code level demographic research data, they find that the major differentiating factors include wage garnishment restrictions and the frequency of Chapter 13-style bankruptcy claims. Zhu (2011) studies household consumption and personal bankruptcy in Delaware using data from 2003. She finds that household expenditures on durable consumption goods, such as houses and automobiles, contribute significantly to personal bankruptcy filings. Also, medical conditions lead not only to personal bankruptcy filings, but to other adverse events, such as divorce and unemployment.

Williams, Kehiaian, and Bird (2017) find significant differences in financial actions between Chapter 13 bankruptcy filers and non-filers. Non-filers do the following significantly more often than filers: pay their bills on time; avoid living paycheck-to-paycheck; review their credit more frequently per year; pay more than the minimum on their credit card; save money to prepare for home ownership; track their expenses before budgeting; review their total financial situation; use cash for all purchases; evaluate their insurance needs; understand the true cost of credit; and have more knowledge of the components that make up their credit score.

Fisher (2019) finds that bankruptcy filers are middle income, more likely to be divorced, more likely to be Black, more likely to be veterans, less likely to be immigrants, and more likely to have only a high school degree or some college education. Filers are more likely to be employed. The bankruptcy population is aging faster than the U.S. population as a whole. Individuals are likely to get divorced in the years before bankruptcy and then remarry. He also finds that income falls before bankruptcy and rises after bankruptcy.

2.3.2. Psychological factors.   Danes, Casas, and Boyce (1999) study the impact of a financial planning curriculum on self-efficacy and find a significant increase in confidence in managing money after taking the curriculum. Asaad (2015) finds that financial confidence is a critical component of financial literacy and financial behavior.

Perry and Morris (2005) find that locus of control impacts financial decisions. They find that consumers' propensity to save, budget, and control spending depends partly on their level of perceived control over financial outcomes. Miotto and Parente (2015) study the level of control in Brazilian households and find that different levels of control are linked to various levels of exercising discipline in their spending habits.

In summary, these studies have found several demographic, and financial variables related to bankruptcy. Research on psychological variables and bankruptcy are not seen in the literature.

3. Data and methodology

3.1. Data and sample selection

Primary data are collected in the Middle District of North Carolina (NC) and include the cities of Winston-Salem, Greensboro, and Durham. The sample has 559 participants, with 314 Chapter 13 filers and 245 non-filers. The sample of Chapter 13 filers is collected by one of the authors, who is an experienced trainer of Chapter 13 bankruptcy filers in North Carolina. He asks the filers to complete the financial literacy quiz and the questionnaire at the beginning of the training sessions. This is done voluntarily.

The data on filers are collected based on convenience sampling. However, we are confident that the data represent the filers adequately. We compare the sample with the population. In terms of race, our sample of filers and non-filers has 55% Whites and 40% Blacks. Winston-Salem has 56.3% Whites and 34.8% Blacks; Durham has 50.91% Whites, and 39.46% Blacks; and Greensboro has 57.03% Whites and 36.03% Blacks (https://www.census.gov/quickfacts/fact/table/). In terms of education, both filers and non-filers have high levels of education above high school (94.6%, and 97.6%, respectively) with the state having 88.2%. As important, the bankruptcy administration enrolls filers in the financial literacy workshops based on the day of their creditors' meetings. No other grouping criteria, like age, gender, or race, are used.

The data for the non-filers are also collected by the same author. He samples a wide cross section of participants from the same area. He uses an online survey created on Survey Monkey. The survey is advertised at various Cold Stone Creamery stores, and at Steals and Deals, an online advertising firm selling a wide assortment of goods and services, in the Middle District of North Carolina. This publication is distributed widely across the region studied. In addition, letters are sent to churches, and schools in the region. There are 142 non-filers who complete the survey online. The remaining non-filers include 34 from the First Pentecostal Church, 33 from the Cathedral of Faith, 20 from the Neighbor's Grove School, and 17 other individuals, all from the Middle District of NC. Those non-filers who complete the survey receive a $15 coupon for Cold Stone Creamery and a complimentary financial management class. The data for non-filers are collected across a wide base to replicate the population. For example, a wide cross-section of the population uses the Steals and Deals online advertising publication.

The data collected include two parts: a questionnaire and a financial literacy quiz. The questionnaire includes sections for demographic data, psychological data, and financial data. The variables in the questionnaire are measured using ordinal or categorical scales. A Likert scale (1 = *least* to 5 = *most*) is used for the ordinal variables. The financial literacy quiz includes 63 multiple choice questions on a wide range of personal finance topics. Some of the topics covered include financial goals, credit card usage, insurance, Rule of 72, insurance, and returns on investments. The questions are basic financial literacy questions. The score received on this quiz represents the level of personal finance knowledge. Both filers and non-filers take this quiz before the financial literacy class.

3.2. Dependent variable

The dependent variable is filer/non-filer. It is binary, with a filer coded as 1 and a non-filer coded as 0.

3.3. Independent variables

The independent variables include 17 demographic variables, 15 psychological variables, and 3 finance variables. These are listed below.

3.3.1. Demographic variables. The 17 demographic variables are: gender, age, highest level of education, race, total years of work experience, level of career, level of personal income, income potential, marital status, number of times married, number of children, number of children living at home, type of religion, level of religious commitment, primary residence (rent or own), parents' highest education level, and parents' highest income level.

3.3.2. Psychological variables. The 15 psychological variables are divided into four areas: self-efficacy (confidence in one's ability to perform), locus of control, motivation; and self-control. Self-efficacy includes three variables, general confidence level, financial confidence level, and education confidence level. Locus of control include seven variables. They are: I have had very little control over life; I have had many negative experiences with my household finances; I have very little control over my household finances; I have little control over my income level; I have no control over my savings; I have little control over my expenses; and, I believe the way I manage my money will affect my future. Motivation includes three variables. They are: I plan to take more financial education courses; I plan to substantially increase my income; and I plan to increase my net worth. Self-control includes two variables. They are: How important is immediate gratification to you? and How important is financial planning to you?

3.3.3. Financial variables. The financial variables are utilized as control variables. They are financial knowledge, financial training, and financial work experience.

3.4. Research hypotheses

We want to determine if there are significant differences between Chapter 13 filers and non-filers. To do this we analyze demographic, psychological, and financial factors.

The hypotheses are as follows:

Hypothesis 1: Demographic variables are related to filing for Chapter 13 bankruptcy.
Hypothesis 2: Psychological variables are related to filing for Chapter 13 bankruptcy.
Hypothesis 3: Financial variables are related to filing for Chapter 13 bankruptcy.

The demographic, psychological, and financial variables are stated above. This list of variables is reduced to account for correlation.

3.5. Empirical specifications

3.5.1 Correlation and endogeneity analyses. Correlation analysis is used to adjust the number of independent variables to address potential multicollinearity problems in the regression analysis. To test for endogeneity, we conduct a correlation analysis between the residuals from the binary logistic regression and the independent variables. No significant correlations imply no issues with endogeneity in the model.

3.5.2. Binary logistic regression. Binary logistic multiple regression is used to analyze the data. The dependent variable is a binary variable, representing filers and non-filers. The independent variables include the reduced number of demographic, psychological, and financial variables. The estimated regression coefficients for the independent variables are used to calculate the odds ratios, which are used to predict the likelihood of a person being a filer when there is a small change in each independent variable, holding all other variables constant. All analyses are done using the statistical software, SPSS 26.

4. Results

4.1. Descriptive results

4.1.1. Descriptive statistics for demographic variables. Descriptive statistics are presented for the demographic variables (Table 1). Filers are 43.3% males and 56.7% females, whereas non-filers are 29.3% males and 70.7% females. Eighty eight percentage of filers are 35 years or older, compared with 63.4% for non-filers. Filers are comprised of 51.9% Whites and 43.6% Blacks, whereas non-filers are comprised of 58.5% Whites and 35.8% Blacks. Whites and Blacks account for more than 90% of the sample of filers and non-filers. A high school education is the highest level of education achieved by 41.1% of filers compared with 18.7% of non-filers. Nineteen percentage of filers have financial education compared with 32.9% of non-filers. Those with 15 years or more of work experience account for 88.2% of filers compared with 67.1% for non-filers. For income, 22.6% of filers earn more than $45,000 per year compared with 35.8% of non-filers. Eighty-four percentage of filers are married compared with 65.0% of non-filers. Most filers (88.9%) have at least one child, compared with 71.5% of non-filers. Sixty percentage of filers have children living at home compared with 49.2% for non-filers. The three religious groups, Baptists, Nondenominational, and Protestants, make up more than 90% of both filers and non-filers. Eighty three percentage of filers are homeowners, compared with 59% of non-filers. Of all filers, 75% of them have parents with an education level of high school or less compared with 48.8% of non-filers. About 51.3% of filers have parents with income level of $30,000 or less per year compared with 34.5% of non-filers.

Table 1   Demographic characteristics for Chapter 13 filers and non-filers

Demographic and financial variables Codes	Filers (n = 314) (percent)								Non-filers (n = 246) (percent)							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1. Gender (1 = male, 2 = female)	43.3	56.7							29.3	70.7						
2. Age (1 = 18 to 25, 2 = 26 to 35, 3 = 36 to 50, 4 = 51 to 60, and 5 = 61+)	1.3	11.1	47.5	27.1	13.1				19.1	17.1	32.1	19.9	11.4			
3. Highest level of education (1 = middle school graduate, 2 = high school graduate, 3 = some college, 4 = community college graduate, 5 = four year college graduate, 6 = masters level graduate, and 7 = doctorate level graduate)	5.4	35.7	29.3	13.7	11.5	3.5	1.0		2.4	16.3	31.3	13.4	22.4	11.8	2.4	
4. Race (1 = White, 2 = Black, 3 = Hispanic, 4 = Asian, and 5 = Other)	51.9	43.6	2.5	0.3	1.3				58.5	35.8	0.8	1.2	3.7			
5. Total years of work experience (1 = 0–3, 2 = 4–6, 3 = 7–10, 4 = 11–15, 5 =16–25, and 6 = 26+)	3.2	2.5	6.1	20.4	23.2	44.6			11.4	8.9	11.4	14.6	17.1	35.4		
6. Level of career (1 = entry level, 2 = experienced worker, 3 = supervisor level, 4 = manager level, and 5 = executive level)	10.8	51.6	20.1	15.0	2.5				16.7	50.0	13.0	14.2	6.1			
7. Level of personal income (1 = <$20k, 2 = $21–$30k, 3 = $31–$45k, 4 = $46–$75k, 5 = $76–$150k, 6 = >$150k)	19.7	24.8	32.8	18.5	3.5	0.6			26.0	19.1	28.0	15.4	10.2	1.2		
8. Income potential (1 = high, 2 = medium, 3 = low, 4 = none, and 5 = retired)	7.3	35.7	36.0	13.7	7.3				13.8	38.6	32.1	8.1	7.3			
9. Marital status (1 = married, 2 = partner, 3 = single, 4 = divorced, 5 = widowed, 6 = separated)	65.6	18.2	11.8	1.0	2.5	1.0			52.8	12.2	30.9	2.0	1.2	0.8		
10. How many times have you been married (1 = once, 2 = twice, 3 = three times, 4 = never)	57.6	25.5	5.4	11.5					47.2	18.3	4.1	28.9				
11. Number of children (1 = none, 2 = 1, 3 = 2, 4 = 3, 5 = 4, and 6 = 5+)	11.1	22.3	36.3	14.3	9.6	6.4			28.5	19.1	24.8	15.0	7.3	5.3		

Table 1   (Continued)

Demographic and financial variables Codes	Filers (n = 314) (percent)								Non-filers (n = 246) (percent)							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Demographic variables:																
12. Number of children living at home (1 = none, 2 = 1, 3 = 2, 4 = 3, 5 = 4, and 6 = 5+)	40.4	30.6	19.1	6.1	3.8				50.8	24.0	16.3	6.5	1.2	1.2		
13. Type of religion (1 = Protestant, 2 = Catholic, 3 = Mormon, 4 = Friends, 5 = Baptist, 6 = non-denomination, 7 = Methodist, 8 = Muslim, Jewish, Lutheran, Buddhist, and don't believe	9.2	2.5	0.3	0.3	54.5	27.4	1.6	4.0	16.7	4.9	0.4	3.3	23.2	47.6	1.2	3.7
14. Level of religious commitment (1 = none, 2 = low, 3 = somewhat, and 4 = high)	7.0	20.4	29.9	42.7					5.3	13.8	25.2	55.7				
15. Primary residence (1 = own, and 2 = rent)	83.4	16.5							58.5	41.5						
16. Parents' highest education level (1 = none, 2 = middle school grad, 3 = high school grad, 4 = some college no degree, 5 = community college graduate, 6 = four year college graduate, 7 = masters level graduate, and 8 = doctorate level graduate)	5.7	19.4	49.7	10.8	5.1	6.4	2.5		0.4	12.6	35.8	19.9	8.5	13.0	8.5	1.2
17. Parents' highest income level (1 = <$20k, 2 = $21–$30k, 3= $31–$45k, 4 = $46 – $75k, 5 = $76–$100k, 6 = $100–$150, and 7 = >$150k)	19.1	32.2	22.0	14.3	8.3	2.9	1.3		13.4	21.1	21.5	18.3	13.8	6.5	4.9	0.4
Financial variables:																
1. Financial training (yes = 1, no = 2)	18.8	81.2							32.9	66.7						
2. Financial work experience (yes = 1, no = 2)	11.1	88.9							22.8	77.2						
3. Financial knowledge (total = 63)	40.49								42.37							

Note: This table provides the frequency distribution in percentage of demographic characteristics for Chapter 13 filers and non-filers. All data are measured using a Likert scale.

4.1.2. Descriptive statistics for finance variables.   For financial training, 18.8% of filers have financial training compared with 32.9% of non-filers. For financial work experience, 11.1% of filers have financial work experience compared with 22.8% of non-filers. For financial knowledge, of the 63 questions, the mean financial literacy quiz scores for the Chapter 13 filers and non-filers are 40.49 and 42.37, respectively.

4.1.3. Descriptive statistics for psychological characteristics.   The descriptive statistics for the psychological characteristics are presented below. The percentage representing "High" or "Agree" is the percentages of responses that are coded as 4 s and 5 s from the data for each variable. For self-efficacy, filers generally have lower levels of confidence than non-filers (Table 2). Of all filers, 53.5% of them have a high level of general confidence level compared with 63.9% of non-filers. (Table 2). Corresponding statistics for financial confidence and education confidence are (20% of filers, and 29.1% of non-filers), and (46% of filers and 60.1% of non-filers), respectively. For locus of control, non-filers seem to have higher levels of control than do filers (Table 2). For "I have had very little control over life," 28.4% of filers agree compared with 23.2% of non-filers. For "I have had many negative experiences with my household finances," 35.1% of filers agree compared with 25.6% of non-filers. For motivation, the variable, "I plan on substantially increasing my income," 46.8% of filers agree compared with 50.4% of non-filers. For "I plan to increase my net worth," 60.2% of filers agree compared with 72.4% of non-filers. For self-control, the variable, "How important is immediate gratification to you?"; 35.7% of filers strongly agree versus 26.4% of non-filers. For commitment, about 43% of filers have high levels of commitment compared with 55.7 for non-filers.

4.3. Logistic regression results

4.3.1. Correlation results.   Because of high correlations ($\rho > 0.300$), a reduced set of demographic, psychological, and financial variables are included in the regression analysis. The nine demographic variables included are gender, education, years of work, religious commitment, religious faith, home ownership, parents' income, race, and marital status. The five psychological variables included are: financial confidence for self-efficacy; control over life, negative experience with finances, and money management affecting my future for locus of control; taking financial education in the future for motivation; and importance of immediate gratification for self-control. The three financial variables included are finance knowledge, finance training, and importance of financial planning.

4.3.2. Endogeneity testing results.   A correlation analysis is done between the residuals from the logistic regression estimation and each of the independent variables and no significant correlation is found. This implies that endogeneity is not an issue with the logistic regression model.

4.3.3. Binary logistic regression results for demographic variables.   For gender, the odds of a male filing for bankruptcy is 2.075 times the odds for a female filing (Odds Ratio [OR] = 2.075, *p*-value = 0.004; Table 3). For race, the odds ratio for a Black person to file for bankruptcy is 2.264 times the odds of other races (primarily Whites) filing (OR = 2.264, *p*-value = 0.003). For marital status, a single person filing for bankruptcy is 0.377 times the odds of a married person filing for bankruptcy (OR = 0.377, *p*-value = 0.002). For education,

Table 2 Psychological characteristics for Chapter 13 filers and non-filers

Psychological characteristics Codes	Filers (n = 314) (percent)					Non-filers (n = 246) (percent)				
	1 = Least	2	3	4	5 = Most	1 = Least	2	3	4	5 = Most
1. Self-efficacy:										
a. General confidence level	5.4	8.6	32.5	32.5	21.0	4.5	4.9	26.8	40.7	23.2
b. Financial confidence level	13.7	22.3	45.5	14.0	4.5	14.2	18.3	38.2	21.1	8.1
c. Education confidence level	3.8	8.9	41.1	31.5	14.6	1.6	7.3	30.9	39.8	20.3
2. Locus of control:										
a. I have had very little control over life	17.5	18.5	35.7	16.9	11.5	29.7	23.6	23.6	17.1	6.1
b. I have had many negative experiences with my household finances	8.0	20.4	36.6	16.9	18.2	20.7	26.8	26.8	14.2	11.4
c. I have very little control over my household finances	15.9	26.8	36.9	13.4	7.0	33.7	24.4	23.2	10.2	8.5
d. I have very little control over my income level	13.1	24.2	37.9	14.3	10.5	27.2	27.2	28.5	11.0	6.1
e. I have no control over my savings	20.7	25.5	35.0	8.9	9.9	43.5	24.0	17.9	9.3	5.3
f. I have little control over my expenses	18.5	22.0	39.5	12.4	7.6	40.7	24.4	18.3	9.8	6.9
g. I believe the way I manage my money will affect my future	6.1	6.4	19.1	20.4	48.1	5.7	6.5	15.4	24.4	48.0
3. Motivation:										
a. I plan to take more financial education courses	16.6	14.6	31.2	17.2	20.4	16.7	20.3	26.4	19.9	16.7
b. I plan on substantially increasing my income	11.1	14.6	27.4	23.2	23.6	7.3	13.4	28.9	20.7	29.7
c. I plan to increase my net worth	7.6	9.2	22.9	30.3	29.9	4.9	9.8	24.0	26.0	35.4
4. Self-control:										
a. How important is immediate gratification to you?	12.1	52.2	28.7	7.0		21.1	52.4	18.7	7.7	
b. How important is financial planning to you?	2.2	28.0	53.8	15.9		2.0	33.3	41.5	23.2	

Note: This table provides the frequency distribution in percentage of psychological characteristics for Chapter 13 filers and non-filers. All data are measured using a Likert scale.

Table 3   Binary logistic regression results for demographic differences between filers and non-filers

	Demographic characteristics	B	SE	Sig.	Exp(B)
Demographic variables:					
1.	Gender (female = 0, male = 1)	0.730	0.253	0.004	2.075**
2.	Education	−0.247	0.090	0.006	0.781**
3.	Years of work	0.280	0.080	0.000	1.323***
4.	Level of religious commitment (1 = none, 2 = low, 3 = somewhat, and 4 = high)	−0.306	0.132	0.021	0.737**
5.	Primary residence (0 = own, and 1 = rent)	1.602	0.270	0.000	4.963***
6.	Parents' highest income level (1 = <$20k, 2 = $21–$30k, 3 = $31–$45k, 4 = $46–$75k, 5 = $76–$100k, 6 = $100–$150, and 7 = >$150k)	−0.140	0.078	0.072	0.869*
7.	Race (White = 0, (benchmark))			0.013**	
	Race (Black = 1, Whites and other races = 0)	0.817	0.278	0.003	2.264**
	Race (other races = 1, Whites and Blacks = 0)	0.592	0.538	0.270	1.808
8.	Marital status (married = 0, benchmark))			0.017**	
	Marital status (1 = partners, 0 = all other categories)	0.069	0.312	0.826	1.071
	Marital status (1 = single, 0 = all other categories)	−0.976	0.323	0.002	0.377**
	Marital status (1 = other, 0 = all other categories)	−0.151	0.535	0.778	0.860
9.	Religion (Baptist = 0, (benchmark))			0.000***	
	Religion (non-denominational faiths = 1, all other categories = 0)	−1.389	0.266	0.000	0.249***
	Religion (Protestants = 1, all other categories = 0)	−1.826	0.378	0.000	0.161***
	Religion (Catholic = 1, all other categories = 0)	−0.753	0.581	0.195	0.471
	Religion (other = 1, all other categories = 0)	−1.303	0.466	0.005	0.272**

Table 3 (Continued)

Psychological and financial characteristics:	B	SE	Sig.	Exp(B)
Psychological variables:				
1. Self-efficacy				
a. Financial confidence level	−0.239	0.113	0.033	0.787**
2. Locus of control:				
a. I have had very little control over life	0.030	0.095	0.752	1.031
b. I have had many negative experiences with my household finances	0.333	0.099	0.001	1.395**
c. I believe the way I manage my money will affect my future	−0.027	0.100	0.784	0.973
3. Motivation:				
a. I plan to take more financial education courses	0.124	0.092	0.179	1.132
4. Immediate gratification:				
a. Importance of immediate gratification	0.384	0.153	0.012	1.468**
Control variables (financial variables):				
a. Finance training (no = 0, yes = 1)	−0.668	0.267	0.013	0.513**
b. Importance of financial planning	0.033	0.166	0.840	1.034
c. Financial literacy quiz	−0.002	0.018	0.896	0.998

Note: This table provides the results for the differences between Chapter 13 filers and non-filers for sub-categories of psychological characteristics. Each sub-category for the psychological variables has several variables. All data are measures using a Likert scale. Binary logistic regression testing (filers = 1, non-filers = 0 for the dependent variable) is used to test the difference between the two groups. All psychological, demographic and financial variables are the independent variables. For sub-category, self-efficacy, financial confidence is significant. For locus of control, having many negative experiences with finances is significant. For the sub-category, motivation, there are no significant differences. Immediate gratification is significant. The control variable, finance training, is significant. ***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

the odds of a person whose education goes up by one level to file for bankruptcy is 0.781 times the odds for a person whose education has not changed (OR = 0.781, *p*-value = 0.006). For years of work, a one-year increase in years of work increases the odds of being a filer by 1.323 times (OR = 1.323, *p*-value = 0.000). For homeownership, the odds of a homeowner to file for bankruptcy are 4.963 times higher than the odds of a nonhomeowner to file (OR = 4.963, *p*-value = 0.000). This is a highly significant result. For parents' income, an increase by one level, the odds for the son or daughter to file for bankruptcy is 0.869 times the odds if the parents' income does not increase (OR = 0.869, *p*-value = 0.072). This inter-generational relationship that is not seen in the literature. For religious commitment, if a person's religious commitment increases by one level, the odds of that person filing for bankruptcy is 0.737 times the odds of filing for bankruptcy with no increase (OR = 0.737, *p*-value = 0.021). The odds of a person from a Protestant faith to file for bankruptcy is 0.161 times the odds of filing by the other faiths studied (OR = 0.161, *p*-value = 0.000). The odds of a person from a nondenominational faith filing is 0.249 times the odds of a person from another faith filing (OR = 0.249, *p*-value = 0.000). These results for different faiths impacting bankruptcy filing are not seen in the literature.

    4.3.4. Logistic regression results for psychological variables.   For self-efficacy, the odds that a person with an increase in financial confidence filing is 0.787 times the odds before the increase (OR = 0.787, *p*-value = 0.033; Table 5). For locus of control, the odds of a person who has an increase in negative experiences with his household finances filing is 1.395 times the odds of that person filing before the increase in negative experiences (OR = 1.395, *p*-value = 0.001). For self-control, the odds of a person with an increase in the importance of immediate gratification filing is 1.5 times the odds for that person before the increase (OR =1.468, *p*-value = 0.012). Motivation is not significant.

    4.3.5. Logistic regression results for financial variables.   The odds of a person who receives financial training to be a filer is 0.513 times the odds of someone who does not receive financial training (OR = 0.513, *p*-value = 0.013).

5. Discussion

    This study compares Chapter 13 bankruptcy filers and non-filers using demographic, psychological, and financial variables. The significant demographic variables are gender, education, religious faiths, religious commitment, racial group, homeownership, parent's income, and marital status. The significant psychological variables are self-efficacy, locus of control, and self-interest. The significant financial variable is financial training.

5.1. Demographics

    For gender, we find that males are twice as likely as females to file for bankruptcy. Chakravarty and Rhee (1999) find that the gender of a single head of household appears to be an important predictor of bankruptcy filing. For education, we find that increasing education is likely to reduce the odds of filing for bankruptcy. Fisher (2019) finds that people with lower education are more likely to file for bankruptcy. For years of work, we find that an

increase in years of work is likely to increase the odds of filing for bankruptcy. We have not seen this result in the literature for personal bankruptcy. By having more years of work, a person's income usually increases. This can trigger the accumulation of more debt, which can lead to filing for bankruptcy.

We find that homeowners are five times more likely to be filers than renters. This is a highly significant result. Home ownership puts a heavy financial strain on a homeowner and, if he or she were to have a loss of employment or a major medical occurrence, the likelihood of filing for bankruptcy increases sharply. Also, the Chapter 13 Bankruptcy Law is structured such that, a person can keep the home while implementing a restructured debt repayment plan. This benefit from home ownership increases the likelihood to file for Chapter 13 bankruptcy. Domowitz and Sartain (1999) and Zhu (2011) find that homeownership impacts the decision to file for bankruptcy.

For racial groups, Blacks are twice as likely to file for bankruptcy than Whites. This is a highly significant result. Fisher (2019) finds that Blacks and other minority groups are more likely to file for bankruptcy. For parents' income, an increase in the parents' income reduces the likelihood of the son or daughter to file for bankruptcy. We have not seen this result in the literature. There is a high correlation between a parent's income and education. These two factors show an intergenerational positive financial effect of reducing the odds of filing for Chapter 13 bankruptcy by a son or daughter. For marital status, singles are significantly less likely to be filers than married people. This is a reasonable result as married people generally have more debt (including a mortgage), more children, and more children living at home. Caputo (2008) finds that single people, at the time of declared bankruptcy, are less likely than married persons to declare bankruptcy.

We find than an increase in religious commitment reduces the likelihood of filing for bankruptcy. Increased religious commitment can instill principles of discipline, moderation and caring, which can lead to better money management and less filing for bankruptcy. Nondenominational and Protestant faiths are less likely to file for bankruptcy than other faiths. According to The Economist (02/2018), Protestants embrace the notion that diligence and self-improvement are pleasing to God. They tend to be more disciplined with their money management, which leads to less filing for bankruptcy. This supports our finding that Protestants are less likely to file for bankruptcy than other faiths. Khan (2010) studies faith and finance and finds that religion has a strong impact on economic behavior. Beck et al. (2014) find that religion is a driving force behind the abnormally higher Chapter 13 filings compared with Chapter 7 filings in the southern United States. There is a high concentration of Evangelicals and Fundamentalists in the southern United States. People of these faiths prefer to file for Chapter 13 bankruptcy because they feel that it is their moral obligation to honor their debt commitments with a new repayment plan rather than to pass them on to creditors and society at large.

5.2. Psychological factors

For self-efficacy (belief that one can accomplish a goal), we find that those with more financial confidence are less likely to be filers. Danes, Casas and Boyce (1999) and Asaad

(2015) find that financial confidence is a critical component of financial behavior. An increase in financial confidence is likely from more financial literacy education. This will likely lead to fewer personal bankruptcies. For locus of control, an increase in negative experiences with household finances increases the odds of filing for bankruptcy. Perry and Morris (2005) and Miotto and Parente (2015) also find that locus of control impacts financial decisions. Our study takes it further by showing the relationship between locus of control and the financial decision of filing for bankruptcy. For self-control, we find that an increase in the importance of immediate gratification (implying less self-control) increases the odds of filing for bankruptcy. This result is not seen in the literature. Miotto and Parente (2015) find that more self-control does lead to more savings and less financial defaults. This is a reasonable result as a person with high immediate gratification needs will spend more on satisfying these needs and pay less attention to good budgeting practices and future needs.

5.3. Financial factors

We find that financial training reduces the likelihood of filing for bankruptcy by about 50%. This result shows the importance of financial training to reduce Chapter 13 bankruptcy filing. Again, we have not seen this result in the bankruptcy filings literature. Collins (2010) study financial literacy of lower income families and find that financial education increases long-term savings and long-term credit scores. Our results show the importance of financial literacy to address the bankruptcy problem in the United States.

6. Conclusion

Filing for bankruptcy is not an easy decision, yet thousands file each year to reduce the debt pressure in their lives. We find several demographic, psychological and financial differences between filers versus non-filers of Chapter 13 bankruptcy. The significant demographic variables are gender, education, religious faiths, religious commitment, Blacks, homeownership, parent's income, and marital status. The significant psychological variables are self-efficacy, locus of control, and self-control. The significant financial variable is financial training. The variables not seen in the literature are the demographic variable, parents' income, the psychological variables, self-efficacy, locus of control and self-control, and the financial variable, financial training.

There are several implications from this study. We find a negative relationship between financial literacy and filing for bankruptcy. This implies that an increase in financial literacy is likely to reduce personal bankruptcy. We recommend that government (local, state, and federal), educational institutions, and lending institutions, especially for home purchases, provide more financial literacy education to address the personal bankruptcy situation in the society. Ongoing financial literacy education, particularly for adults, may be more effective. We find that males are twice as likely as females to be filers. We recommend targeting more males with financial literacy training to reduce bankruptcy. We find that Blacks are more likely to be filers than Whites. We recommend that more financial literacy education be offered to

Blacks to reduce bankruptcy filings. We find that an increase in education reduces the odds of filing for bankruptcy. Reduced bankruptcy is another benefit from more education. We also find that an increase in religious commitment reduces the odds of filing for bankruptcy. Hence, the encouragement to increase one's religious commitment is recommended. Religious leaders may be able to promote this finding. We also find that increases in parents' income (and education) reduce the likelihood of a son or daughter filing for bankruptcy. Information on the parents' education or income may help in the risk assessment for bankruptcy for a son or daughter applying for a mortgage or other big financial commitment. That is, lending institution can ask the question, "What do your parents do for a living?" We find that a homeowner is five times more likely to file for bankruptcy than a nonhome owner. We recommend that homeowners create a bigger financial cushion for emergencies than non-homeowners. We also recommend that homeowners take more financial literacy training, especially budgeting. These actions will reduce the likelihood of filing for bankruptcy. These actions are also relevant for married people as they are more likely to file for bankruptcy than single people.

There are also implications from the psychological results. We find that an increase in a person's financial confidence reduces the odds of filing for bankruptcy. We also find that an increase in negative experiences with household finances increases the odds of filing for bankruptcy. One recommendation to address these two findings is to increase financial literacy education. With more financial knowledge, one should become more financially confident and should have fewer negative financial experiences. This should reduce personal bankruptcies. We find that filers have higher levels of immediate gratification (less self-control) compared with non-filers. We recommend financial discipline training, especially budgeting, to alleviate the situation.

A limitation of this study is that the data are taken from the Middle District of North Carolina and hence the results may not be applicable elsewhere The results may be acceptable for places with high percentage of Whites and Blacks. Caution is required to apply the results to other states like Florida, New York, and California, where the population has a different mix of racial groups, including higher percentages of Latinos, Italians, Caribbean Blacks, African Blacks, and/or Asians. Also, we do not have the data of a few other variables that could expand to the model. These could include debt, wealth, principal balance on mortgage, and health status. Further studies can be done by looking at these demographic, psychological, and financial variables in other communities across the country or abroad. This will add more robustness to the results found in the few studies done on bankruptcy filing. In the present economic environment with unprecedented unemployment and loss of income resulting from the coronavirus pandemic, more research on personal bankruptcy is recommended.

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