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As our nation grapples with responding to trillions of dollars in student loan debt, bankruptcy courts make daily decisions about whether to free individuals from these monetary obligations. To analyze factors that influence discharge decisions and to see whether prior findings of gender biases are replicated within the bankruptcy context, we scored and analyzed a sample of 667 student loan discharge cases for potential predictors of case outcome. Findings demonstrate that female debtors who are single parents are significantly more likely to have their student loans discharged than similarly situated male debtors, but females are significantly less likely than males to obtain a discharge when they allege a medical condition. Additionally, having attorney representation significantly increases debtors' odds of having their student loans discharged. Results are discussed in connection with the influence of debtor gender and potential gender biases that influence judicial decision-making.

Keywords: Brunner Criteria, decision-making, gender, gender bias, student loan bankruptcy

Despite its goal of equal justice, differential treatment based on party's characteristics, including gender, is nonetheless an issue facing the judicial system. For example, gender has been found to influence decisions in child custody cases and workplace discrimination cases; decision-makers in such cases may be guided by gendered ideologies of women in caregiving roles and in the workplace (Miller, 2019). Both historic and recent research confirm the pervasiveness of gender biases, defined here as being predisposed to decide in favor or against a particular group of people in accordance with their perceived gender, and endorsement of relevant stereotypes in the courts (Lonsway, 2002; Miller, 2019). Some recent findings of differential treatment of men and women specifically cite subtle biases as a catalyst for the behavior (Tran et al., 2019). For example, many studies investigating gender reveal that men more so than women seem to influence judges and juries in the courtroom, resulting in differential treatment on the basis of gender. This stems partially from a perception of men being more credible than women (Helgeson, 2009).

This apparent bias against women, however, is dependent upon case context and may at times disappear or show an opposite effect (Eagly & Diekman, 2005; Price et al., 2004). Owing to changing laws and social mores, one context experiencing an influx of females in the past century is debt (Dwyer et al., 2013). Lower wages and fewer promotions relative to their male counterparts in industry tend to leave women in more financially vulnerable positions (American Association of University Women, 2021). Further, as women begin to overtake men in university attendance, they have come to shoulder the burden of 2/3 of the country's outstanding student loan debt. Should any of these women find themselves unable to pay off student loan debts, they can seek relief through the bankruptcy courts to request a discharge of their debt (*Brunner v. New York State Higher Educ. Servs. Corp.*, 1985). What is unclear is whether women and men receive similar treatment during this process.

Student Loan Bankruptcy

Student loans are not discharged within the course of a typical bankruptcy proceeding. The discharge of these loans requires a separate adversary proceeding. Specifically, to discharge student loan debt in a bankruptcy proceeding, a debtor must pass the "undue hardship" test where the court weighs various factors to determine whether the debt poses an undue hardship on the individual (Taylor, 2012). Although there is no set standard for

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determining "undue hardship," a majority of U.S. Bankruptcy Courts follow what is known as the Brunner test (*Brunner*, 1985) for determining whether student loans should be discharged (Michon, 2021). This test consists of three prongs or criteria: (a) The debtor cannot maintain, based on current income and expenses, a "minimal" standard of living for the debtor and the debtor's dependents if forced to repay the student loans; (b) Additional circumstances exist indicating that this state of affairs is likely to persist for a significant portion of the repayment period of the student loans; and (c) The debtor has made good faith efforts to repay the loans (*Brunner v. New York State Higher Educ. Servs. Corp.*, 1985, p. 1).

Other tests, such as the Totality of Circumstances test, have been applied to student loan discharge decisions. However, given the widespread prevalence of the Brunner Test (Congressional Research Service, 2019), we focus on cases in which the Brunner test was used as criteria for discharge decisions.

An Opening for Extralegal Factors

In most legal decisions, including bankruptcy discharge decisions, gender is not an explicit factor to be considered by the courts and its influence is thus considered extralegal. Indeed, none of Brunner's three prongs explicitly reference gender (*Brunner v. New York State Higher Educ. Servs. Corp.*, 1985). In analyzing these factors, however, courts in the United States enjoy significant latitude in their decision-making. For instance, the "additional circumstances" wording of the second prong allows for a weighing of various other factors at the discretion of the judge. Although there exists a wide range of potential factors for consideration, a few factors are consistently reported as the rationale for discharge decisions across various bankruptcy courts (*In re Bard*, 2004; *In re Bott*, 2005; *In re Cagle*, 2011). These include dependents, medical conditions and evidence of such, and ability to pursue a job that maximizes income (Congressional Research Service, 2019; Pardo & Lacey, 2005; Taylor & Sheffner, 2016).

Critically, the presence of the extralegal factors that appear neutral or unbiased on their face, like medical conditions and presence of dependents, could nonetheless permit gender bias to creep into decisions. The influence of gender can be overt, as some studies have found judges may favor members of their own gender and others may favor female litigants (Rudman & Goodwin, 2004; Wistrich & Rachlinski, 2017). However, research has shown that, beneath the surface, a debtor's gender can become an extralegal factor in many court decisions through what appear to be nongendered factors (e.g., Resnik, 1993). For instance, when the Ninth Circuit Gender Bias Task Force reviewed the credibility of women's testimony, they found that female litigants were assumed to be less credible than their male counterparts and their testimony was thought to revolve around trivial complaints about life, rather than as true legally-relevant injuries (Resnik, 1993). This line of thinking may have implications for women testifying as to a medical ailment or disability they possess.

Women may similarly face biases when it comes to medical treatment. Research into health care disparities between women and men in terms of pain treatment reveal that emotionality stereotypes can generate beliefs that women tend to dramatize medical conditions and overemphasize pain levels (Lloyd et al., 2020). This can lead to women's medical concerns being dismissed or overlooked by medical professionals. Medical and disability conditions are salient criteria considered by the bankruptcy court to determine the presence of "additional circumstances," as set out by the second prong of the Brunner Criteria. Discounting of medical conditions in women may be especially detrimental in bankruptcy proceedings given that presence of a medical condition has been shown to be extremely influential in discharge decisions, potentially increasing odds of securing a discharge by 140% (Pardo, 2008).

Despite research suggesting women may be at a disadvantage, there is also a possibility that, within the context of bankruptcy court, the potential introduction of traditional gender roles via the extralegal factors would bias judges toward favoring female debtors. For example, women are traditionally viewed as filling the role of "caregivers" (Miller & Borgida, 2016). The responsibility for bearing and raising children has been largely assigned to women, whereas men are responsible for the financial stability of the household as the "bread-winners." These gender norms have potential implications within the bankruptcy court where debtors have to explicitly document they earn insufficient income to pay off their student loans. For example, male debtors who have a job may be seen as more deserving than those who do not and women raising children may be seen as more deserving than women who are not raising children. Violations of these stereotypes can alternately make a litigant more or less pitiable depending on the particular context and judge adherence to traditional gender roles (Miller, 2019; Resnik, 1993). Debtors may thus be judged as more or less deserving of discharge depending not solely on their gender but, instead, on their adherence to traditional gender roles.

However, it is important to recognize that many studies only find gender to be an influencing factor where gender is made salient in the case (e.g., Allen & Wall, 1987; Boyd, 2013; Boyd et al., 2007; Farhang, 2004; Perisie, 2005; cf. Walker & Barrow, 1985). Without such an explicit reference to gender within the Brunner framework, gender may not play a role in student loan discharge decisions.

Putting decision making in the hands of a judge does not ensure that bias will be avoided. Gender bias has been shown to shape decision-making for judges and laypersons (e.g., jurors) alike. For instance, Miller (2019) compared laypersons' and sitting trial court judges' decisions and accompanying rationales for two mock court cases: a divorce case involving a custody dispute and a sex discrimination case. The plaintiff was presented as either a man or a woman. In the sex discrimination case, which involved a denied promotion following parental leave, judges who supported traditional gender roles were more likely to rule against a female plaintiff, relative to their layperson counterparts, although laypersons still showed the same pattern of results. For the divorce case, which involved a child custody battle, judges and laypersons alike who held beliefs consistent with child rearing gender roles gave more custody time to the mother, though the father was equally qualified to care for the children. Propensity to agree with traditional gender roles may thus bias judges, consistent with congruity models of discrimination (Manzi, 2019; Miller, 2019). In other words, decision makers may be inclined to decide in favor of parties in line with traditional gender roles (Miller, 2019).

Gender may influence judicial decisions even beyond the factors considered by the court in rendering its decision. Indeed, prior work has considered whether the gender of either the judge or the attorneys

influences case outcomes. Research on the role of attorney gender is largely mixed, with some studies finding no effect of gender or an interactive effect of gender and case type (Nelson, 2004). The effects of judge gender, like gender of a litigant and gender of an attorney, are mixed. There exist societal constraints on the literature as there have historically been fewer women in the judiciary. Yet, studies that do examine the differences in decisions by male and female judges do not reveal a clear pattern of results (Coontz, 2000). Differential decision-making occurs across judge gender as a result of lived experience (Johnson, 2014). For example, if a judge had personally or vicariously experienced discrimination on the basis of gender, this is likely to affect their decision in a gender discrimination case. Additionally, some research suggests an interaction between judge gender and defendant gender, whereby defendants matching the judge's gender are dealt harsher penalties than those of an opposite gender (Yourstone et al., 2009).

The literature on decision-making within the legal arena derives predominately from arenas outside of bankruptcy court, focusing largely on criminal law but also on civil proceedings. As noted earlier, context is of utmost importance when examining the influence of gender and, as such, the unique context of bankruptcy court, particularly student loan proceedings with their focus on debtors' financial, familial, and medical stability, presents a unique area within which to study gender biases. Further, bankruptcy trial judges are particularly understudied, as they are neither district nor magistrate judges, who are the primary focus of most previous literature involving the influence of gender in the federal courts. Presently, little archival analysis exists regarding of the influence of gender in bankruptcy case outcomes and no analysis of the influence of gender in student loan discharge cases. Expanding prior research to include the influence of gender on bankruptcy and specifically student loan discharge decisions is increasingly important as more women enter the bankruptcy courts as litigants, lawyers, and judges.

The Present Study

The present project is an archival analysis of more than 900 student loan bankruptcy case discharge opinions spanning the years 1985 to 2020. The study sought to analyze whether gender moderated differential decisions on the discharge of student loan debt. To this end, various legal and extralegal factors were scored from the discharge opinions rendered by U.S. Bankruptcy judges. These factors include but are not limited to: the gender of debtors, their attorneys, and judges; medical and disability claims; amount of debt; and factors pertaining to dependents. The nongender factors were determined a priori based on those stated as relevant to the Brunner Criteria in judicial opinions and earlier research, as well as factors pertaining to the gender of several key players (attorneys, debtors, judges, etc.). The discharge opinions permitted us analysis of judicial decision-making as the opinions are written from the perspective of the judge and include those factors the judges deemed salient in the decision.

It was anticipated that results would fall in line with one of two distinct possibilities based on competing theoretical perspectives. One possibility is that the general bias against women's credibility results in women debtors having their student loans discharged at a lower rate than their male counterparts, irrespective of the underlying evidence presented in support of the *Brunner* factors. The other possibility is that women are advantaged in student loan discharge decisions and receive more leniency from judges, resulting

in greater discharge rates relative to male debtors. Should this occur, this may result from men having to violate traditional gender norms of being the breadwinner to show sufficient financial hardship to have their loans discharged, whereas such testimony from women may conform with traditional norms of women being in the caregiving roles for child dependents (Miller, 2019). Under this theoretical perspective, we would thus expect women to reveal an advantage with the gender-normed factors that are pertinent to the second prong of the Brunner test when they present with child dependents. Results from this study will thus inform not only decisions within the bankruptcy context but our overall theoretical understanding of how gender biases arise and influence decisions about men and women.

Method

Nine hundred thirty-eight bankruptcy student loan discharge opinions that mentioned the Brunner test were identified using the Westlaw database, encompassing opinions from 1985 to 2020. Westlaw is a legal research database that indexes legal documents and judicial opinions. Judicial opinions for these types of cases typically contain many details about the debtor's financial situation, medical or familial background, and educational debts. Cases from more than 100 bankruptcy, district, and appellate courts were used for the current analysis. Below we report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

A Westlaw database search returned 938 cases that mentioned the search term "Brunner Criteria." This search was conducted based on search terms determined by a federal bankruptcy judge and their law clerks. Identified cases were excluded from final analysis if the judge(s) did not reach a decision on the merits as to whether the student loans should be discharged. For example, a case may have been dismissed for improper filing by an attorney, the debtor did not meet the criteria to try the case under the appropriate legal statute, or the case was remanded to a lower court. Cases where the debtors were couples were also excluded from the present analysis as their debts were held jointly rendering researchers unable to score for individual factors pertinent to a single debtor (e.g., gender). Last, cases citing legal standards other than Brunner as a basis for the discharge decision (e.g., cases using the Totality of the Circumstances test) were excluded from final analysis. For a hierarchical table of exclusion criteria and the corresponding frequencies in the initial data set see Table 1. The total number of case opinions included for analysis, after exclusions, was 671.

A majority of debtors in the sample were women (63.6%, n = 426). Most debtors retained an attorney (66.7%; n = 448), whereas 33.2% of debtors represented themselves (n = 223). Of those debtors with representation, the majority were represented by male attorneys (81.3%, n = 364); the remaining 18.8% (n = 84) of debtors with legal representation were represented by female attorneys. Attorney gender was scored as male or female majority in cases where there was more than one attorney. Only nine cases had debtors represented by multiple attorneys; of these only one was majority female, and the other eight were majority male. Male judges adjudicated most cases in the sample (77.4%, n = 519). It is important to note that because the judges rarely, if ever, mentioned certain demographic characteristics, such as race and ethnicity, we were not able to score reliably debtor's race or ethnicity.

Table 1
A Hierarchy of Exclusion Criteria

Exclusion criterion	*N* of cases	Percentage of total cases
Court declined to reach a judgment on the merits on a motion pursuant to Federal Rule of Civil Procedure 12b—Motion to Dismiss	29	3.1
Court declined to reach a judgment on the merits on a motion pursuant to Federal Rule of Civil Procedure 56 – Summary Judgment	31	3.3
Appellate court remanded the case to the trial court for further consideration - Appellate remand	67	7.1
Debtors were couples	83	8.8
Totality of the Circumstances test was used	46	4.9
No discharge decision mentioned	15	1.6

Note. These exclusions were made on a hierarchical basis proceeding from the order in which they are listed in this table. Some cases excluded from final analysis present with multiple exclusion criteria, but they were originally excluded for failing to meet the first criterion in the hierarchy. Duplicates, not included in the present hierarchy were also removed.

Only 38.1% of the cases in the sample received either a full (*n* = 213) or partial discharge (*n* = 83). Amount of debt at the time of the discharge ranged from $874.00 to $432,593.00 (*M* = $79,992.82, *SD* = $77,193.76). Debtors included in the sample were seeking relief from undergraduate and graduate student loan debt. Additionally, some debtors were seeking relief from debt accumulated from licensing programs.

Scoring

In line with prior research coding large samples of judicial opinions (DeMatteo & Edens, 2006; DeMatteo et al., 2014; Vitacco et al., 2012), an objective checklist or comprehensive scoring form was created for purposes of scoring. To identify appropriate factors for scoring the data, a team of six researchers, comprised of one undergraduate student, three graduate students, and two PhD-level researchers (one of whom additionally possesses a JD and served as a federal law clerk), read a subset of opinions and discussed how to best score the judicial orders as they relate to the decision-making process in student loan bankruptcy cases. Researchers agreed on broad categories of factors relating to the judge(s), debtor(s), attorney(s), the debt, and the discharge decision. From these discussions, an extensive scoring checklist was formatted as a Qualtrics form for ease of scoring the judicial opinions.

To ensure that the scorers were proficient in extracting key information from the relevant judicial opinions, all researchers participated in initial group sessions for both the creation of and the training on the scoring checklist. Scorers individually completed practice cases that were then reviewed in group training sessions to develop proficiency.

After agreement on the factors for scoring was reached, the checklist created, and the researchers were all sufficiently trained, the judicial opinions were divided among the six researchers for scoring. If a researcher, while scoring, had a question or there was a lack of clarity within the judicial opinion, they consulted with one or both of the PhD-level researchers. Many of these scoring questions revolved around legal language or case logistics.

Factors Relating to Judges and Attorneys

The presence of an attorney (0 = no attorney, 1 = attorney[s]) was scored, as well as the gender of the attorney(s), if applicable (0 = male or male majority, 1 = female only or female majority). The same coding was used to score the gender of the judge(s). Gender of the judge(s) and attorney(s) was inferred through the name provided in the judicial order. If the name was ambiguous (e.g., "Taylor"), researchers did a web search of the name in connection with the stated court or law firm for other information relevant to gender (e.g., gendered pronouns used in biographical writing).

Factors Relating to Debtor

The debtor factors included: number of debtors (couple or single; couples later excluded), gender (0 = man, 1 = woman), age in years, highest level of education (1 = some form of postsecondary education, but less than a bachelor's degree, 2 = pursuit of bachelor's degree, 3 = pursuit of graduate degree), whether or not the highest degree pursued was obtained (1 = degree obtained, 2 = no degree obtained), alleged disability and/or medical condition (0 = no disability/medical condition alleged, 1 = presence of a disability/medical condition alleged), presence of youth dependent(s) (0 = no youth dependents, 1 = presence of youth dependent[s]) and characteristics of these dependents (e.g., disabled, number of, etc.), child support obligations (0 = not paying child support, 1 = paying child support, 2 = not applicable), and single parent status (0 = not a single parent, 1 = single parent). Debtor gender was inferred through pronoun use in the case opinion. This permitted analysis of the gender that the judge used to identify the debtor, but not the self-stated gender identity of the debtor.

Non-Debtor Related Factors

Factors relating to the debt itself included: the amount of debt relevant in the decision, how much, if any, of that debt was discharged, the year the decision was rendered, and whether the judge(s) deemed that the conditions of the debt met the Brunner Criteria: (a) debtor cannot presently maintain a minimal standard of living, (b) present inability to meet minimal standard of living will likely persist in the foreseeable future and (c) debtor has made a good faith effort to repay the debt. Cases were scored for the first of the factors that was not met if they did not receive a discharge. For a complete list of factors scored, see Table 2.

Table 2
Factors Coded in Student Loan Bankruptcy Case Opinions

Factor	Descriptives
Pertaining to the judge(s)	
Gender of judge(s)	Male = 77.4%, *ns* = 58, Female = 22.3%, *ns* = 30
Jurisdiction of the court	113 different courts
Pertaining to the attorney(s)	
Legal representation: Did the debtor have an attorney present?	Yes = 66.7%, No = 33.2%
Gender of the attorney(s)	Male = 54.2%, Female = 12.1%
Pertaining to the debtor	
Age of debtor (in years)	*M* = 45.73, *SD* = 10.46
Type of school	Some college = 9.5%, *ns* = 64
	Undergraduate = 25.5%, *ns* = 169
	Graduate = 49.4%, *ns* = 332
Did the debtor allege a disability?	Yes = 21.6%, No or Not Mentioned = 78.4%
Did the debtor allege a medical ailment?	Yes = 48.5%, No or Not Mentioned = 51.4%
Dependents present	Yes = 38.6%, No or Not Mentioned = 61.4%
Youth dependent; is the dependent under the age of 18?	Yes = 36.2%, No or Not Mentioned = 63.8%
Single parent; is the debtor a single parent?	Yes = 21.3%, No or Not Mentioned = 78.7%
Gender of debtor(s)	Male = 36.4%, Female = 63.6%
Factors relating to the debt and decision	
Amount of debt seeking to be discharge in dollars	*M* = $79,992.83, *SD* = $77,193.76
Discharge decision: What was the decision of the court? (discharge, or no discharge)	Discharge = 38.3%, No Discharge = 61.7
Year the decision was rendered	Min = 1,985, Max = 2,020, *SD* = 7.15

Note. The list of factors above is of the scored factors only. Most of the variables mentioned above had a "Not mentioned" response option to account for where the case opinion did not explicitly state that information which was collapsed with the "no" response.

Scoring Rules

Each factor was scored only once, although it could have been mentioned in the case opinion multiple times. If contradictory information was found (e.g., regarding amount of debt), researchers went by the most specific amount/descriptor. For example, if the debt was first described as around $40,000 but a later total gave a more specific value of $41,350, the latter, more specific value would be scored. Where information for certain factors was not available within the case facts, researchers scored the given factor as "not mentioned." For later analysis, "not mentioned" was collapsed with "no" or "none" responses. In the event multiple debtors were mentioned in a single case and their individual debts could be parsed in the opinion, each debtor was scored separately. Where debts could not be parsed, the case was scored as a couple and was excluded as previously described.

Transparency and Openness

The authors have made the recommended efforts to ensure that all data, program code, and other methods developed by other researchers have been appropriately cited in the text and subsequently listed in the References section. The authors have also reported (a) how the sample size was determined, (b) all data exclusions, (c) all manipulations, and (d) all study measures within the content of the Method section. This study was not preregistered. Qualtrics scoring form, data, and relevant syntax for statistical analysis are available on the Open Science Framework (OSF).

Results

Descriptive Statistics and Handling of Missing Data

As an inclusion criterion for our analyses, we only included cases that had complete data on our target outcome of interest:

discharge. As such the final sample for all analyses presented below is *n* = 667. Table 3 presents means, standard deviations, and covariance coverage for all variables in our final logistic regression model, stratified by debtor gender. Note that our outcome of interest, discharge, and the majority of our predictors of interest are dichotomous variables coded 0/1. With this coding, the means reported for these binary variables in Table 3 indicate the proportion of individuals coded 1 on those variables (e.g., the proportion of individuals discharged, in the case of our outcome of interest).

The covariance coverage table indicates the proportion of cases with complete data observed for each individual variable (on the main diagonal) and for each pair of variables (in the off-diagonals). It can be easily observed from this table that most variables and variable pairs contain complete data. However, in certain cases (e.g., the pairwise relationship between debtor age and highest education among female debtors), as much as 48% of the data are missing.

To further clarify the nature of missing data in this dataset, Table 4 presents all observed missing data patterns across our model variables, with entries coded "O" indicating "observed" and entries coded "M" indicating "missing." This table reveals that all debtors in the dataset had complete data on the majority of model variables. Specifically, *N* = 369 individuals had complete data on every model variable (pattern 1), *N* = 248 individuals had complete data on all but a single variable (patterns 2–4), an additional *N* = 57 individuals had complete data on all but 2 variables (patterns 5, 7, and 9), and only 23 individuals were missing data on three variables. Succinctly stated, 369 debtors had complete data whereas the remaining 298 debtors had complete data on all but three or fewer variables in the (12 predictor) model.

These missing data patterns presented a problem: Traditional listwise deletion methods drop from one's analysis any row of the dataset containing a missing value on even one variable (see

Table 3
Mean, SD, and Covariance (Pairwise Proportion of Data Present) by Gender of Debtor

Variable	M	SD	Covariance coverage (Pairwise proportion of data present)											
			1	2	3	4	5	6	7	8	9	10	11	12
Male debtors														
1. Gender of the judge (M = 0, F = 1)	0.25	0.43	1.00											
2. Debtor has disability (0 = No, 1 = Yes)	0.25	0.43	1.00	1.00										
3. Debtor has medical condition (0 = No, 1 = Yes)	0.48	0.50	1.00	1.00	1.00									
4. Male and no rep vs. female attorney (M & NR = 0, F = 1)	0.11	0.31	1.00	1.00	1.00	1.00								
5. Presence of attorney (0 = Yes, 1 = No)	0.39	0.49	1.00	1.00	1.00	1.00	1.00							
6. Amount of debt	100,842.83	85,021.22	0.85	0.85	0.85	0.85	0.85	0.85						
7. Case year	2,007.21	6.93	1.00	1.00	1.00	1.00	1.00	0.85	1.00					
8. Age of debtor	44.67	10.73	0.70	0.70	0.70	0.70	0.70	0.63	0.70	0.70				
9. Debtor has children (0 = Yes, 1 = No)	0.76	0.43	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.70	1.00			
10. Debtor is single parent (0 = No, 1 = Yes)	0.09	0.29	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.70	1.00	1.00		
11. Highest level of education obtained (1 = some college, 2 = undergraduate, 3 = graduate)	2.58	0.65	0.84	0.84	0.84	0.84	0.84	0.74	0.84	0.63	0.84	0.84	0.84	
12. Discharge (0 = No, 1 = Yes)	0.35	0.48	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.70	1.00	1.00	0.84	1.00
Female debtors														
1. Gender of the judge (M = 0, F = 1)	0.21	0.41	1.00											
2. Debtor has disability (0 = No, 1 = Yes)	0.20	0.40	1.00	1.00										
3. Debtor has medical condition (0 = No, 1 = Yes)	0.49	0.50	1.00	1.00	1.00									
4. Male and no rep vs. female attorney (M & NR = 0, F = 1)	0.13	0.33	1.00	1.00	1.00	1.00								
5. Presence of attorney (0 = Yes, 1 = No)	0.30	0.46	1.00	1.00	1.00	1.00	1.00							
6. Amount of debt	68,634.93	70,031.96	0.86	0.86	0.86	0.86	0.86	0.86						
7. Case year	2,006.41	7.19	1.00	1.00	1.00	1.00	1.00	0.86	1.00					
8. Age of debtor	45.72	10.50	0.70	0.70	0.70	0.70	0.70	0.62	0.70	0.70				
9. Debtor has children (0 = Yes, 1 = No)	0.56	0.50	1.00	1.00	1.00	1.00	1.00	0.86	1.00	0.70	1.00			
10. Debtor is single parent (0 = No, 1 = Yes)	0.28	0.45	1.00	1.00	1.00	1.00	1.00	0.86	1.00	0.70	1.00	1.00		
11. Highest level of education obtained (1 = some college, 2 = undergraduate, 3 = graduate)	2.39	0.71	0.84	0.84	0.84	0.84	0.84	0.74	0.84	0.62	0.84	0.84	0.84	
12. Discharge (0 = No, 1 = Yes)	0.40	0.49	1.00	1.00	1.00	1.00	1.00	0.86	1.00	0.70	1.00	1.00	0.84	1.00

Note. For binary (0/1) variables, the mean equals the proportion of cases coded 1. Amount of debt is given in U.S. dollars. For covariance coverage, values on the diagonal indicate the proportion of cases present on each variable, whereas values on the off-diagonals indicate proportion of data present for each pair of variables.

Enders, 2010; Little & Rubin, 2002). Thus, in the present study, this would mean deleting all 298 cases from debtors with partially complete data, reducing the total sample size for analysis from $N = 667$ to $N = 369$. This is concerning, considering that discarding 298 real data points with complete information on most model variables not only risks impacting the accuracy of our logistic regression model results but also guarantees a dramatic reduction in statistical power to detect true effects.

To mitigate the potential deleterious effects of missing data, we multiply imputed our data (Little & Rubin, 2002; Rubin, 1987) under the assumption that the data were Missing At Random (MAR, Rubin, 1976), conditional on the observed data in the model[1]. Specifically, we generated 20 imputed data sets using Blimp software (Enders et al., 2018; Enders & Keller, 2020; see also Hayes, 2019), using specialized latent probit imputation methods designed to generate appropriate imputations for dichotomous and ordinal outcomes (Wu et al., 2015). We chose to use Blimp software for generating our imputations both because it allowed us to impute our categorical outcomes using these state-of-the-art methods and because it allowed us to impute the data separately by debtor gender, thereby preserving all gender-specific relationships in the data rather than forcing them to be treated as equal across genders (for details on BYGROUP imputation, see Enders

& Gottschall, 2011). We analyzed and pooled all logistic regression model results using Mplus software (Muthén & Muthén, 2017) as described below.[2]

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[1] Note that it is also good practice to search for potential *auxiliary variables* (Collins et al., 2001) in one's data—variables outside of one's analysis model that may either be true causes of missing data or that, alternatively, may help recover lost power. However, due to the nature of our logistic regression models, with 12 predominantly categorical (dichotomous) predictors and a dichotomous outcome, we multiply imputed on the basis of only our analysis model variables only for two reasons: (a) our substantive model already included the predictors from our dataset that we suspected might be plausible causes of missing data, and, more pragmatically, (b) it was difficult to achieve multiple imputation convergence in this model using the 13 model variables, and even more difficult to achieve convergence when adding additional imputation predictors. Thus, convergence considerations represented a *ceiling effect* on the number of auxiliary predictors that we could include.

[2] We note in passing that the variables imputed—that is, the variables with "M" entries in Table 4—did not exert significant effects in the logistic regression models reported below. However, multiply imputing these variables allowed us to retain the 298 cases that would otherwise have been dropped from our analyses, thereby estimating the effects of our other model variables with increased statistical power and improved accuracy, using all available data on those variables to inform the analysis.

Table 4
Missing Data Patterns

Pattern	Judge gender	Debtor gender	Debtor has disability	Debtor has medical condition	Male and no rep. vs. female attorney	Presence of Attorney	Amount of debt	Case year	Age of debtor	Debtor has children	Debtor is single parent	Highest education	Discharge	Frequency
1	O	O	O	O	O	O	O	O	O	O	O	O	O	369
2	O	O	O	O	O	O	O	O	M	O	O	O	O	125
3	O	O	O	O	O	O	M	O	O	O	O	O	O	48
4	O	O	O	O	O	O	O	O	O	O	O	M	O	45
5	O	O	O	O	O	O	O	O	M	O	O	M	O	33
6	O	O	O	O	O	O	M	O	M	O	O	M	O	23
7	O	O	O	O	O	O	M	O	M	O	O	O	O	21
8	O	O	O	O	O	O	M	O	O	O	O	M	O	3

Note. O = Observed, **M** = Missing. Frequency indicates the number of individuals in the sample with each missing data pattern. Variable coding remains as displayed in Table 2.

Logistic Regressions by Debtor Gender

Analytic Approach

Our primary aims concerned assessing potentially differential outcomes for male versus female debtors in the judicial system. In statistical terms, we hypothesized that debtor gender may *moderate* the influence of other factors on debtor discharge. With a categorical (binary) moderator, this hypothesis may be assessed statistically in two different ways. Most traditionally, one may run a single (logistic) regression model, capturing moderation by specifying multiplicative interaction terms for each effect thought to be moderated by debtor gender (see, e.g., Aiken & West, 1991; Cohen et al., 2003; Hayes, 2013). A benefit of this approach is that it is familiar to most researchers. A drawback, however, is that one must include multiplicative interaction terms for all effects that might be moderated and subsequently decompose all significant interactions using standard methods (as in Aiken & West, 1991). The aims of the present research were to explore the possibility that any of several predictors may exert different influences for male and female debtors. As such, adding multiplicative interactions of debtor gender with all other model predictors would rapidly increase the complexity of the model and potentially hinder the ease of interpretation of model results.

A second approach to categorical moderation obviates these problems. Instead of adding numerous multiplicative interaction terms in a single logistic regression model, moderation may be implicitly captured by running separate logistic regressions for male and female debtors. Running the same logistic regression model stratified by debtor gender allows the effects of all predictors on debtor discharge to be estimated freely, with the result that some effects might reveal to be similar and others dissimilar across genders. For example, some effects may emerge as significant among male debtors but not among female debtors, and vice versa. Moreover, the resulting logistic regression coefficients obtained from these models may appear the same, or nearly the same, across debtor genders, suggesting an absence of moderation, or may appear quite different across debtor genders, suggesting that the exact nature of such effects depends on (is moderated by) debtor gender.

These gender-specific logistic regressions may be estimated in several equivalent ways—for example, by first selecting cases for male and then female debtors and running logistic regressions for each, or, alternatively, by splitting one's datafile by debtor gender and comparing logistic regression results by group, for example, in SPSS (IBM Corp, 2020). We chose to run our gender-specific logistic regressions using debtor gender as a grouping variable in a Multiple group Structural Equation model (MG-SEM, Jöreskog, 1971) using Mplus software (Muthén & Muthén, 2017).[3] Although the interpretation of these multiple group logistic regression models is identical to the separate logistic regressions one might obtain from standard software packages like SPSS, the MG-SEM approach has the benefit of estimating both logistic regressions simultaneously, using all available $n = 667$ datapoints to inform the maximum likelihood estimation used to obtain the model coefficients and standard errors, rather than splitting our datafile into separate, smaller male-debtors-only and female-debtors-only data sets, consisting of only $n = 244$ and $n = 423$ cases, respectively.

Table 5 presents the pooled results of our multiply imputed logistic regression analyses by debtor gender. To aid in model interpretation, in addition to logistic regression coefficients, we also report odds ratios, calculated by exponentiating each logistic regression coefficient, and percent change in the odds (%Δ), calculated using the formula

$$\%\Delta = \left(e^{b_j} - 1\right) \times 100, \qquad (1)$$

where Δ indicates change, $e \approx 2.718$ is Euler's number, and b_j is the jth logistic regression coefficient (see, e.g., Long, 1997, p. 81; Pampel, 2000, p. 23). In the present context, whereas the odds ratio indicates the multiplicative factor change in the odds of discharge resulting from a unit change in the jth predictor holding the others constant, the %Δ formula provides the percentage change in the odds of discharge expected for each unit increase in the jth predictor. For example, in Table 5, the odds of discharge are 1.93

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[3] For readers familiar with Mplus, we note that to obtain multiple group results with a logistic (rather than probit) link function, we specified ANALYSIS: TYPE = MIXTURE; and set KNOWNCLASS = DebtorGender(DebtorGender = 0 DebtorGender = 1). These commands instruct Mplus to run a multiple class model in which the classes (debtor gender = male or female) are known (observed, fixed, manifest) rather than unknown (unobserved, estimated, latent). The resulting model is an MG-SEM estimated using logistic regression methods, compatible with interpretation in terms of odds, odds-ratios, and percent change (%Δ).

Table 5
Logistic Regressions Predicting Discharge by Debtor Gender

Measure	b	OR	%Δ	SE	z	p
Male debtors						
(Intercept)[a]	−0.50	1.65	64.54	1.14	0.44	.662
Judge gender (M = 0, F = 1)	−0.31	0.73	−26.88	0.37	−0.85	.395
Debtor has disability (0 = No, 1 = Yes)	0.56	1.74	74.37	0.37	1.49	.135
Debtor has medical condition (0 = No, 1 = Yes)	0.66	1.93	92.51	0.32	2.06	.039
Female attorney vs. male and self-rep. (0 = M/SR, 1 = F)	0.09	1.09	8.98	0.46	0.19	.852
Self-representation (0 = No, 1 = Yes)	−0.92	0.40	−60.03	0.35	−2.61	.009
Amount of debt (z-scored)	−0.34	0.71	−29.11	0.20	−1.69	.091
Case year (mean centered)	−0.03	0.97	−3.34	0.03	−1.30	.194
Age of debtor	0.01	1.01	1.21	0.02	0.69	.489
Debtor has children (0 = No, 1 = Yes)	−0.08	0.92	−7.50	0.43	−0.18	.854
Debtor is a single parent	0.34	1.40	40.07	0.61	0.55	.579
Highest education	0.03	1.03	2.74	0.30	0.09	.927
Female debtors						
(Intercept)[a]	−0.21	1.23	23.37	0.80	0.26	.794
Judge gender (M = 0, F = 1)	−0.16	0.85	−14.79	0.27	−0.58	.558
Debtor has disability (0 = No, 1 = Yes)	0.61	1.83	83.31	0.28	2.14	.033
Debtor has medical condition (0 = No, 1 = Yes)	−0.21	0.81	−18.94	0.23	−0.90	.368
Female attorney vs. male and self-rep. (0 = M/SR, 1 = F)	0.05	1.05	5.34	0.32	0.16	.869
Self-representation (0 = No, 1 = Yes)	−1.01	0.36	−63.54	0.26	−3.90	<.001
Amount of debt (z-scored)	0.00	1.00	0.30	0.16	0.02	.987
Case year (mean centered)	−0.03	0.97	−3.15	0.02	−1.80	.071
Age of debtor	0.03	1.03	2.53	0.01	1.82	.069
Debtor has children (0 = No, 1 = Yes)	0.30	1.35	35.39	0.33	0.93	.353
Debtor is a single parent	0.81	2.24	123.89	0.33	2.44	.015
Highest education	−0.32	0.73	−27.39	0.19	−1.70	.090

Note. Both regressions were estimated simultaneously, using Multiple group Structural Equation Modeling (MG-SEM). *OR* = odds ratio; %Δ = percentage change in the odds for a 1-unit change in the predictor, holding others constant; *SE* = standard error. Highest Education coded 1 = some college, 2 = undergraduate, 3 = graduate.
[a] Intercept values = −1 times the threshold values reported by Mplus.

times greater among male debtors reporting a medical condition than they are among male debtors reporting no medical condition. Equivalently, rounding to the nearest integer, among male debtors, reporting a medical condition leads to a 93% increase in the odds of discharge compared with reporting no medical condition, holding the influence of the other predictors constant.

With this in mind, examining Table 5, several results are worth noting. First, reporting a disability leads to a significant increase in the log-odds of discharge among women (*b* = .61, *p* = .033) but not among men (*b* = .56, *p* = .135). Yet, note that the logistic regression coefficients are similar across debtor genders, as are the odds ratios and %Δ values corresponding to this predictor. For example, for female debtors, the model predicts that having a disability results in an odds of discharge 1.83 times greater than the odds of discharge without a disability whereas for male debtors, the model predicts that having a disability results in an odds of discharge 1.74 times greater than the odds of discharge without a disability (although this latter effect did not technically reach significance). Equivalently, one might state that among women, reporting a disability led to an expected 83% increase in the odds of discharge whereas among men, reporting a disability led to an expected 74% increase in the odds of discharge. Given the similarity in these estimates in conjunction with the smaller group sample size observed for male (*N* = 244) compared with female (*N* = 423) debtors, the difference in significance across genders may merely reflect a difference in statistical power across groups. Thus, despite the differential significance in women versus men, the similarity in coefficients and interpretations across groups suggests that the

effect of disability on discharge may not have been meaningfully moderated by debtor gender.

For both debtor genders, having an attorney present (Self-Representation = no) significantly increased the log odds of discharge (for male debtors *b* = −.92 and *p* = .009, whereas for female debtors *b* = −1.01 and *p* < .001).[4] Once again, these effects appeared visibly similar among male and female debtors. Among male debtors, retaining an attorney resulted in a 60% increase in the odds of discharge whereas among female debtors, retaining an attorney led to a 64% increase in the odds of discharge compared with forgoing legal representation.

Not all effects were so similar across debtor genders, however. One effect that appeared to differ markedly across men and women was the effect of being a single parent. The effect of this variable differed dramatically across genders, both in significance and in the relative size of the coefficient in each group. Specifically, the effect of being a single parent was highly significant among female debtors (*b* = .81, *p* = .015) and far from significant among male debtors (*b* = .34, *p* = .579). Among female debtors, being a single parent led to an expected 124% increase in the odds of discharge compared with not being a single parent (i.e., being

[4] Note: the "Female and Male Attorney vs. Self-Rep." and "Self-Representation" variables in Table 4 are a set of two dummy-coded variables representing three groups: female attorney (Female and Male Attorney vs. Self-Rep = 1, Presence of an Attorney = 0), male attorney (Female and Male Attorney vs. Self-Rep = 0, Presence of an Attorney = 0), and self-representation (Female and Male Attorney vs. Self-Rep = 0, Presence of an Attorney = 1).

part of a two-parent household, or having no dependents, with this latter distinction captured by the dummy-coded variable "Debtor Has Children" reported in Table 5). By contrast, among men, the model predicts that being a single parent would result in only a 40% increase in the predicted odds of discharge compared with not being a single parent. Although this effect did not achieve significance in our sample of 244 male debtors, even if one imagined that it could achieve significance in a larger sample, the estimated 40% increase in the predicted odds of discharge among men differs so starkly from the 124% increase in the odds estimated among women that it seems clear that this effect manifests itself differently in each of these two groups of debtors—that is, that debtor gender moderated the effect of being a single parent on the predicted odds of discharge.

Conversely, the effect of reporting a medical condition resulted in a significant increase in the log odds of discharge among male debtors ($b = .66$, $p = .039$)[5] but a statistically nonsignificant *decrease* in the log odds of discharge among female debtors ($b = -.21$, $p = .368$). As passingly noted above in the context of demonstrating the %Δ formula, among men, reporting a medical condition led to an approximately 93% change in the predicted odds of discharge compared with reporting no medical condition. By contrast, among women, reporting a medical condition led to a statistically nonsignificant expected 19% decrease in the predicted odds of discharge. Based on the differences in the (a) magnitude, (b) sign, and (c) significance of this effect across groups, it seems clear that the model predicts unique, debtor gender-specific effects of reporting a medical condition—that is, that the effect of reporting a medical condition on the expected odds of discharge depends on the gender of the debtor.

Predicted Probabilities of Discharge at Specific Combinations of the Predictors

In addition to describing model predicted logits (log odds) and odds, it is useful to describe our substantive results in terms of the predicted probabilities of discharge. Log odds are notoriously abstruse and difficult to interpret (Agresti, 2013; Long, 1997; Pampel, 2000) and odds—defined as the ratio of the probability of "success" (of being a 1 rather than a 0 on the binary outcome) to the probability of "failure" (of being a 0 rather than a 1)—are only minimally more intuitive to many researchers in the social sciences. Predicted probabilities of discharge, by contrast, have an intuitive logic and inherent appeal.

Unfortunately, in contrast to logistic regression coefficients, which quantify the constant change in the log odds of success uniquely predicted by each unit increase in a given predictor, and odds ratios (exponentiated logistic regression coefficients), which quantify the constant multiplicative change in the odds of success predicted by each unique increase in a given predictor, there is no single coefficient or transformed coefficient that quantifies a constant change—additive or multiplicative—in predicted probabilities incurred by each 1-unit change in a given x. Because predicted probabilities are inherently nonlinear (characterized by S-shaped logistic curves, as visualized in standard textbooks; see, e.g., Agresti, 2013; Long, 1997; Pampel, 2000), the rate of change in predicted probabilities will vary across values of the predictors. As such, to obtain model results on the metric of predicted probabilities, experts advise computing a set of y-hat

values at meaningful combinations of predictor values, and then converting these into predicted probabilities using standard formulas (e.g., $1/[1+e^{-(y\text{-hat})}]$; see Agresti, 2013; Long, 1997; Pampel, 2000).

With this in mind, Table 6 presents the predicted probabilities of discharge for men and women at each combination of our significant predictors. When computing y-hat values to convert to predicted probabilities, we held all nonsignificant predictors constant at 0 (if dichotomous) or at their means (otherwise). Given their nonsignificance, holding these control variables constant at other chosen values would be expected to produce predicted probabilities equivalent (near-identical) to those displayed in Table 6. In addition to including our significant model predictors, we present these predicted probabilities stratified at two different years: 1988 and 2008, corresponding to 10 years prior to and 10 years following the implementation of Consumer Bankruptcy Reform Act in 1998. Although there was not a significant constant, linear effect of year on the log odds of discharge, we expected that the time period before the implementation of these bankruptcy reform measures would be characterized by higher predicted probabilities of discharge for both men and women whereas the time period after these reforms had taken effect would be characterized by uniformly lower predicted probabilities of discharge. Examining the rows of Table 6, this is exactly the pattern that we find.

Examining Table 6, several additional trends are worth noting. First, mirroring the overall model results, predicted probabilities of discharge are notably higher for both male and female debtors defended by an attorney than for debtors who opted to represent themselves in court. Second, once again mirroring our interpretation of the overall model results, the predicted probabilities for female single parents are consistently higher than the predicted probabilities for female debtors who are not single parents in comparable conditions. For example, in 1988, among female debtors who retained legal counsel, those who were not single mothers had a predicted probability of discharge of .520 whereas those who were single mothers had a predicted probability of discharge of .708. Equivalently stated, according to the model, approximately 71% of single mothers represented by an attorney in 1988

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[5] Although the MG-SEM employed in our study assesses logistic regressions for two separate groups, we emphasize that both logistic regressions were estimated simultaneously in one model informed by all of the data for both male and female debtors. Thus, we did not run two separate models (one for male and one for female debtors); rather, we estimated a single model whose results were partitioned by group. For this reason, in many published studies utilizing MG-SEM, there are no statistical corrections made (see Shi et al., 2018; Yeh et al., 2012; for multiple group analyses with gender as the grouping variable). However, authors acknowledge there exists an argument for such corrections (Klesel et al., 2019). With a Bonferroni correction applied, the effect of reporting a medical condition would become nonsignificant, $p > .05$. Additionally, we note that when the effects of a given predictor, such as reporting a medical condition, differ by group, this implies that the effect is moderated by group. In this way, the group-specific coefficients in our MG-SEM represent group-specific (e.g., debtor gender-specific) simple slopes. Thus our MG-SEM allows us to test for moderation across a range of variables in a flexible, streamlined manner that provides significance tests for all relevant simple slopes in a single model, thereby obviating the need to include numerous product terms representing all interactions of our model predictors with a debtor gender dummy code in a single-group logistic regression and subsequently perform simple slope tests for the conditional regression lines implied by each significant interaction.

Table 6
Predicted Probabilities of Discharge at Select Combinations of Predictor Values

Case year	Self-representation	Debtor is a single parent	Debtor has medical condition	Debtor has disability	p_{Male}	p_{Female}
1988	No	No	No	No	0.503	0.520
1988	No	No	No	Yes	0.638	0.665
1988	No	No	Yes	No	0.661	0.467
1988	No	No	Yes	Yes	0.773	0.616
1988	No	Yes	No	No	0.586	0.708
1988	No	Yes	No	Yes	0.712	0.816
1988	No	Yes	Yes	No	0.732	0.662
1988	No	Yes	Yes	Yes	0.826	0.782
1988	Yes	No	No	No	0.288	0.283
1988	Yes	No	No	Yes	0.414	0.420
1988	Yes	No	Yes	No	0.438	0.242
1988	Yes	No	Yes	Yes	0.576	0.369
1988	Yes	Yes	No	No	0.362	0.469
1988	Yes	Yes	No	Yes	0.497	0.618
1988	Yes	Yes	Yes	No	0.522	0.417
1988	Yes	Yes	Yes	Yes	0.655	0.567
2008	No	No	No	No	0.339	0.363
2008	No	No	No	Yes	0.472	0.511
2008	No	No	Yes	No	0.497	0.316
2008	No	No	Yes	Yes	0.633	0.459
2008	No	Yes	No	No	0.418	0.561
2008	No	Yes	No	Yes	0.556	0.701
2008	No	Yes	Yes	No	0.580	0.509
2008	No	Yes	Yes	Yes	0.707	0.655
2008	Yes	No	No	No	0.170	0.172
2008	Yes	No	No	Yes	0.263	0.276
2008	Yes	No	Yes	No	0.283	0.144
2008	Yes	No	Yes	Yes	0.408	0.236
2008	Yes	Yes	No	No	0.223	0.318
2008	Yes	Yes	No	Yes	0.334	0.460
2008	Yes	Yes	Yes	No	0.356	0.274
2008	Yes	Yes	Yes	Yes	0.491	0.409

Note. P(Discharge) = the predicted probability of discharge, conditional on the combination of predictor values in each row. When calculating predicted probabilities, all other dichotomous predictors in the model were held constant at 0 and all other ordinal and continuous variables were held constant at their means.

were discharged, whereas approximately 52% of women who were not single mothers were discharged when represented by an attorney in that same year.

Perhaps even more interestingly, men who reported a medical condition had visibly higher predicted probabilities of discharge than women who reported a medical condition across all values in Table 6. That is, regardless of women's levels of any other factor, their discharge rates were visibly lower than those of men who had reported a medical condition. It is only among individuals who did not report a medical condition that female debtors' predicted probabilities of discharge equaled or, at times, exceeded those of men. Taken together, the results displayed in Table 6 demonstrate the types of complex interactions that may arise when estimating group specific logistic regressions.

Discussion

More than 600 student loan bankruptcy case opinions in which a discharge or no discharge decision was rendered based on the Brunner Criteria were scored for various legal and extralegal factors. The association between these factors and judicial decisions was analyzed, with a focus on the moderating role of gender. Owing to the archival nature of the research, conclusions drawn are based on the relative strengths of associations between variables. Although this study does not represent the first foray into gender biases in the bankruptcy courts, it does explore how gender can be correlated with student loan discharge decisions, an area that has seen a rise in female debtors as women pursue a college education at higher rates than ever before.

The influence of gender has been demonstrated in experimental research on judicial decision-making, showing that the patterning of gender results is complex and highly dependent on the type of case (Miller, 2019). Most notably, researchers have discovered that when gender is made a salient factor in a case, outcomes differ as a function of whether the litigant is a man or woman (e.g., Allen & Wall, 1987; Boyd, 2013; Boyd et al., 2007; Farhang, 2004; Perisie, 2005; cf. Walker & Barrow, 1985). As evidenced in the current study, gender did play a role in whether student loans were discharged. Contrary to theories that would predict an overall gender effect, the influence here, however, was subtle and attached to case-specific factors. Here, the results reveal key differences in judges' treatment of certain case facts including medical ailments and single parenthood. In other words, although there was no obvious main effect of gender on the overall decision to discharge student loan debt, gender still played a moderating role.

Differential decisions were seen once facts relevant to the Brunner Criteria were considered. One particularly striking finding was

that female debtors alleging a medical condition fared more poorly than their male counterparts in obtaining a discharge from the court. Specifically, men were 93% more likely to obtain a discharge when they disclosed a medical condition and women did not benefit significantly from the same disclosure (and in fact their discharge rates were lower, though not significantly so). This finding echoes research conducted in the medical domain, where female patients' pain is consistently taken less seriously than the same pain levels in male patients, resulting in treatment disparities (Lloyd et al., 2020). At first blush, one might posit that a similar phenomenon of disbelief or discounting of women's medical ailments generally may be taking place within the present data. Such general discounting of credibility, however, was not found here, as the discounting effect was specific to particular types of evidence.

An alternative theoretical explanation for these observed effects revolves around the impact of traditional gender roles norms, specifically stereotypes of "brave men" and "emotional women" (Samulowitz et al., 2018). These stereotypes suggest that men are perceived to be "brave" and minimize the true impact of their ailment, whereas women are perceived to be "emotional" and exaggerate their ailment. In line with this, our results indicated that if there was a documented disability, women and men received similar treatment, but when the alleged medical condition was not validated in such a way, men were advantaged.

Further supporting the idea that traditional gender roles may be at play in gender differences in student loan discharge decisions is the influence of the extralegal factor of single parenthood. Although male debtors seem to have the advantage in the impact of reporting a medical ailment, female single parents had a higher likelihood of discharge relative to male single parents. As Miller and Borgida (2016) point out, women are disproportionately perceived as the caregivers in a family setting relative to men. Men, in contrast, are seen as the "breadwinners." In the context of the present archival data set, female debtors with child dependents often violate this caregiving role due to a lack of financial resources. This lack of financial resources may be perceived as hindering the debtor's ability to provide for their family. Rather than be punished for this violation of a traditional gender role, this may make the debtor more worthy of a discharge so they can fulfill their role. In cases where the debtor is a single parent, this stereotype of a female caregiver can be especially poignant as we see in the present data set with female single parents being three times more likely to receive discharge relative to male single parents. Even among only female debtors, single mothers show a distinct advantage in securing a discharge, amounting to nearly a 20% increase in discharge rates over women who are not single mothers.

There are a number of other factors that could enter into the relation between a debtor's single parent status and discharge that are likely not captured fully within the case opinions or our scoring system, such as whether the debtor is the custodial parent or not. Findings by the Pew Research Center (2011) indicate that women are more likely to be the custodial parent, although this is not necessarily attributable to winning custody in court. In more than half of child custody cases, the parents mutually agree on the mother as the custodial parent. Single mothers similarly possess the advantage in other areas of family court as well: Judges deciding on hypothetical child custody cases also allocated more parenting time to the mother than to the father (Miller, 2019). Courts

may thus presume or consider factors that are not captured by the archival analysis.

Gender was not the only extralegal factor influencing a bankruptcy court's decision to discharge student loan debt in our dataset. Simply having an attorney present increased a debtor's likelihood of obtaining a discharge regardless of the gender of the debtor or attorney (60% increase in odds for male debtors and 64% increase in odds for female debtors). This effect is well-supported by existing literature: Having an experienced attorney representing the client significantly improves case outcomes in both civil and criminal cases (Anderson & Heaton, 2012; Miller et al., 2015; Poppe & Rachlinski, 2015). Contrary to prior research finding bias against female trial attorneys (Lee, 2016), the gender of the attorney does not seem to influence case outcome, though debtors were more often represented by male attorney (or male majority team of attorneys; 54.2%) as opposed to a female attorney (or female majority team of attorneys; 12.1%). Attorneys likely help with the discovery, organization, and presentation of relevant case facts. Attorneys specializing in bankruptcy law are cognizant of factors the courts rely on to make their discharge decisions and can maximize the likelihood of discharge by prominently presenting critical case factors to the court.

Limitations

As a consequence of the reliance on judicial opinions in the present study, conclusions drawn are limited by the information presented within the court opinions. Court opinions go through numerous layers of filters. The court opinions, rendered by judges, center around information that the attorney chose to present that the judge then deemed relevant to their decision. Information deemed unimportant or irrelevant to the judge's decision was likely left out of the opinion. For this reason, we are unable to explore the influence of factors such as attractiveness or emotionality on the stand that are otherwise explored in experimental research involving implicit bias and which often intersect with gender effects (Ahola et al., 2009; Downs & Lyons, 1991; Salerno & Peter-Hagene, 2015; Salerno et al., 2018). Likewise, we were not privy to any potentially influential case facts that were not recorded in the opinions.

Another limitation in the present study is that some subsamples of data were too small, causing an underpowered comparison. For this reason, analysis of certain variables was excluded from the results. For example, for variables involving nonyouth dependents, the sample size was too small for appropriate analysis. The limitations present in the current research set the stage for experimental research into judicial decision-making in student loan cases.

Future Directions

Future research should examine the pervasiveness of gender stereotypes within the bankruptcy court and how these biases affect decision-making. For example, because the present sample relied on judicial opinions, we did not have appropriate opportunity to examine race, ethnicity, intersectionality, or gender as a self-identified construct. Future research should pursue a line of inquiry to investigate disclosure and perception of gender identity in a courtroom setting. Additionally, research should endeavor to explore the intersectionality of race and gender in the bankruptcy

courts and in relation to student debt. A review of existing literature indicates that ethnicity, race, and gender intersect in many areas of the legal system and influence case outcomes (Lindholm & Cederwall, 2010). Although the judicial opinions did not permit us to score race, it may be possible to extract this information from other legal documents, such as the original bankruptcy petitions filed by debtors. Lastly, work by Miller (2019) has recently endeavored to explore differences between expert and novice decision-making using judges and lay persons. The same line of work can be extended into the realm of student loan discharge decisions to highlight differences or similarities in decision-making between bankruptcy judges and student participants.

Conclusion and Implications for Policy

The present research represents an initial foray into the influence of gender on student loan bankruptcy judicial decision-making. As a consequence of the archival nature of the data, we are only able to offer speculation as to the root causes of such decisions. Further investigation is needed to understand where and how gender results in differential decisions in the bankruptcy court. However, the present archival analysis can serve as an educational resource for bankruptcy judges about the potential biasing effects of debtor gender on their discharge decisions. The first step in combatting unconscious bias is acknowledging its potential to influence decision-making.

In light of present findings and previous research, gender seems to exert some influence on judicial decision-making in the courts, although this relation is complex and appears to vary depending on case context. In the present student loan bankruptcy framework, the influence of gender appears to be indirect and particularly influential when traditional gender roles are invoked, influencing the evaluation of factors such as alleging a medical condition or single parenthood which, in turn, influence case outcome. As more women enter into litigation as attorneys, litigants, and judges, there does seem to be a corresponding reduction in explicit bias (Lee, 2016). More subtle, or implicit biases, however, remain and have the potential to indirectly influence case outcome.

Providing low-cost or free legal counsel to those with limited financial resources may help to reduce disparities in discharge outcomes. Legal representation in student loan bankruptcy cases can increase likelihood of discharge by as much as 64%. It is important to point out that, unlike in criminal cases, civil cases do not guarantee representation where it cannot be financially afforded. It is likely that many debtors who elected to represent themselves pro se did so because they could not afford an attorney. Those who represent themselves pro se should be provided with guidance as to which factors to include within the presentation of their case to ease the burden of case organization and presentation.

In addition to education, greater distinction between legal rules and legal standards and greater emphasis on the former may be most beneficial to alleviating the biasing effects of gender. Legal "rules," or explicit directions about how to correctly decide the outcome of a particular case, may be more successful at minimizing the influence of extralegal factors than legal "standards," which direct decision-makers to make inferences about culpability or deservingness of a litigant based on case facts. Girvan (2016) found this to be the case when student participants were instructed to study either legal rules or standards and decide a case. Participants

who studied the legal rules were less swayed by perceived warmer traits of the parties than those who studied the legal standards. Further, a closer examination of "objective" criteria for contesting a discharge decision is warranted, given that some current criteria can be greatly influenced by gender (Foohey et al., 2021).

As witnessed in the present archival study, the influence of gender is incredibly complex and appears to mediate the influence factors like presence of a medical condition and single parenthood on discharge decision. Taken together with previous literature, the results of the present archival analysis call for further experimental research in the area. The results of this study also stress the need for educating judges on the influence of debtor gender and the importance of quality legal representation for all litigants, regardless of income level.

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