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Pain and Suffering Damages in Wrongful Death Cases: An Empirical Study

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Most jurisdictions in the United States award pain and suffering damages to spouses of victims in wrongful death cases. In several East Asian countries, spouses, parents, and children of the victim can all demand pain and suffering damages. Despite the prevalence of this type of damages, and the oft-enormous amount of compensation, there has been no large-scale empirical study on how judges achieve the difficult task of assessing pain and suffering damages. Using a unique data set containing hundreds of car accident cases rendered by the court of first instance in Taiwan, with single-equation and structural-equation models, we find the plaintiffs' ad damnum has a statistically significant influence on the court-adjudicated pain and suffering damages. That could be evidence for the anchoring effect. Nevertheless, courts are very sensitive to the possibility of pushing defendants into financial hardship. When defendants' out-of-pocket payments of pecuniary damages, divided by defendants' income, are positive, this amount has a negative effect on the amount of pain and suffering damages, whereas when they are negative (this could happen because the amount of compulsory insurance payment had to be deducted), the amount in absolute value has a positive effect. Not all next-of-kin received the same amount. Spouses of the victim received more than other next-of-kin, and adult children received the least among eligible relatives. Parents, however, tended to be awarded a high amount of pain and suffering damages when they were the only familial group suing the defendant.

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I. Introduction

Pain and suffering and other noneconomic damages awarded by courts have generated much normative and policy debate in the United States (see, e.g., Leebron 1989; Croley & Hanson 1995; Geistfeld 1995, 2005; McCaffery et al. 1995; Vidmar et al. 1998; Niemeyer 2004; Rabin 2005; Sharkey 2005; Avraham 2006; Sugarman 2006; Viscusi 2007) and elsewhere (Karapanou & Visscher 2010; Flatscher-Thöni et al. 2013, 2014). In wrongful death cases, most states in the United States award spouses of the dead victim pain and suffering damages for loss of spousal consortium, and a minority of states allow pain and suffering damages for loss of parental consortium (Bovbjerg et al. 1988:912; Epstein 1999:451–53; Shapo 2010:486–87). Yet all existing empirical and experimental studies on pain and suffering damages have focused on personal injury cases.[1] Therefore, empirical knowledge regarding how judges or juries quantify the pain of losing a beloved family member is lacking. This article fills in the gap by empirically examining a unique data set from Taiwan, constructed by the authors, that contains information on pain and suffering compensation for loss of parental, spousal, and child consortium, pecuniary damages, and plaintiffs' and defendants' annual income, among others.

It is important to ascertain whether pain and suffering damages in wrongful death cases follow a rational pattern. Eric A. Posner and Sunstein (2005:543) state that "[t]here is every reason to believe that the resulting awards [damages for pain and suffering for the distress and loss of companionship suffered by dependents or heirs of the dead tort victims] have *a high degree of arbitrariness*" (emphasis added). Even Judge Posner (2011:319), who generally believes in the efficiency of the common law, lists "the method of computing damages in death cases" as one of the four common-law doctrines that may not have a sound economic rationale. Moreover, noneconomic damages are a substantial fraction of all damages (Bovbjerg et al. 1988; Viscusi 1988:207–08; Avraham 2006). Lack of a rational basis for them would call into question about half or more of tort damages. Pain and suffering damages also are an instance of unbounded damages, which generate positively skewed award distributions (Kahneman et al. 1998; Guthrie et al. 2000), which in turn lead to reform proposals (e.g., Kahneman et al. 1998). Chang et al. (2015), using another unique data set from Taiwan regarding the pain and suffering compensation in personal injury cases, find that career judges in Taiwan reasonably base many of their difficult decisions on objective criteria, most notably the amount of medical costs and the level of injury. Compared to awarding pain and suffering compensation in wrongful death cases, ascertaining the amount for personal injury seems easy. In wrongful death cases, often no pecuniary

[1]For experimental studies on pain and suffering damages in personal injury cases, see Chapman and Bornstein (1996), McCaffery et al. (1995), Avraham (2005), and Diamond et al. (1998). Empirical studies on pain and suffering damages in personal injury cases do not always include death cases (Bovbjerg et al. 1988; Viscusi 1988; Vidmar et al. 1998; Sharkey 2005; Sugarman 2006; Kritzer et al. 2014). The studies (e.g., Leebron 1989) that include death cases analyze compensation for pain and suffering between the time of injury and the time of death, not compensation for survivors.

damages (except funeral expenses) can be claimed,[2] and pecuniary damages are, at most, indirectly related to the emotional distress of the plaintiffs, as the killed person (or his or her estate) is not the suing party. Judicial decisionmakers are left with the personal characteristics of the two parties and the dead victim. It is thus interesting to examine whether in such situations pain and suffering damages for loss of spousal, parental, and children consortium can be consistent or systematically correlated with certain facets of the cases.

From a comparative viewpoint, whether mourning over the deceased by the next-of-kin can be compensated appears to exhibit cultural differences between Europe and Asia. In a survey of tort laws in 10 European countries, Koch and Koziol (2003:429–30) find that except in shocking cases, spouses and other relatives are not entitled to claim pain and suffering compensation.[3] By contrast, in East Asian countries, such as Taiwan,[4] China,[5] Japan,[6] and South Korea,[7] spouses, parents, and children of victims have explicitly recognized rights of demanding pain and suffering damages. In the world spectrum of pain and suffering damages, the United States is in the middle, as spouses are at least entitled to this kind of nonpecuniary compensation. The findings of this empirical inquiry could shed light on how judicial decisionmakers in the United States and East Asian countries may have (or would have) quantified the emotional distress of close relatives.

Using randomly sampled car accident cases from Taiwan, we provide three analyses of pain and suffering damages. First, we assess the effects of personal information about the two parties and the victim on requested and awarded pain and suffering damages. We find that high-income plaintiffs requested more pain and suffering damages, whereas victim's age had a negative impact on the awards each plaintiff received.

Second, most cases have multiple plaintiffs and thus we can examine patterns of judicial behavior on both the "individual level" and the "case level." Individual level in this

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[2]In our first-round data, courts awarded reimbursement of funeral expenses in 35 percent of the observations, and compensation for living expenses in 34 percent of the observations.

[3]Note that Belgium awards pain and suffering damages in wrongful death cases. Courts there use an "indicative" table that contains a schedule of pain and suffering damages to determine the amount due to plaintiffs. Although the tables are not mandatory, courts use them, and therefore most parties settle around the suggested amount. We thank Louis Visscher and Michael Faure for bring this to our attention and providing their first-hand observation. The indicative table in Dutch can be found at <http://www.ordeexpress.be/UserFiles/ArtikelDocumenten/Indicatieve_tabel_2012.pdf>.

[4]Article 194 of Taiwan Civil Code.

[5]Although Article 20 of China's Tort Law of 2009 only lays down a very general principle regarding pain and suffering damages, the Supreme People's Court, in one influential 2001 "judicial interpretation," created rights of action for survivors of the wrongfully killed victim. We were informed that court practices in China vary. In the Shanghai area, for example, courts award flat pain and suffering damages, while in the Beijing area, a pain and suffering damages cap was set but judges have discretion to determine the specific amount of such damages.

[6]Article 711 of Japan Civil Code. In Japan, the pain and suffering damages in wrongful death actions are determined by formulas that are largely based on the role the deceased played in the family. See Ramseyer (forthcoming:Ch. 2) for a detailed account.

[7]Article 752 of South Korea Civil Code.

article refers to the pain and suffering damages requested by and awarded to each individual plaintiff. Analysis on this level is particularly helpful in examining whether familial relations with the victim affect the amount of pain and suffering damages. We find that spouses tended to receive more pain and suffering damages than parents and children; minor children came next; followed by parents; and adult children tended to receive the least. Case level in this article refers to the total pain and suffering damages requested by and awarded to all plaintiffs in one case. Examination on this level is useful in sorting out whether courts would reduce the amount of pain and suffering awards more than they otherwise would when the defendant might encounter financial problems due to the heavy compensation obligation. Indeed, we find that when the amount of pecuniary damages paid by the defendants personally divided by defendants' income is positive, it is negatively statistically significant on both the case level and the individual level. This result, along with the signs and statistical significance of other variables, suggests that judges tend to keep the (total) amount of compensation in check, so as not to put too much financial burden on the defendants.

Third, our data include the amount of pain and suffering damages requested by the plaintiff. This allows us to assess whether, holding constant the exogenous influences on pain and suffering damages, the amount the plaintiff requests is associated with the amount the judge awards. If the requested amount independently influenced the awarded amount, that is evidence that anchoring was at work. Since the defendant almost never countered a pain and suffering damages amount to the court, the expected direction of the anchoring effect is reasonably clear. As the plaintiffs' requests for pain and suffering damages increased, the anchoring theory would forecast that the judge awarded more in such damages. In Chang et al. (2015), we found evidence for such an anchoring effect. In this study, we again find that the plaintiff's request, holding constant other variables, has a statistically significant effect on the pain and suffering awards.

Section II of this article describes Taiwan's law relating to pain and suffering damages. Section III addresses our hypotheses and methodology. Section IV reports and discusses our results. Section V concludes.

II. Taiwan's Pain and Suffering Damages Law

Pursuant to Articles 192[8] and 194[9] of the Taiwan Civil Code, spouse,[10] children, and parents of wrongfully killed victims can claim both pecuniary and nonpecuniary damages. More

[8]Article 192 of Taiwan Civil Code stipulates that "(I) [a] person who has wrongfully caused the death of another shall also be bound to make compensation for the injury to any person incurring the medical expenses, increasing the need in living, or incurring the funeral expenses. (II) If the deceased was statutorily bound to furnish maintenance to a third party, the tortfeasor shall also make compensation to such third party for any injury arising therefrom. (III) The provision of the second paragraph of Article 193 shall apply to the compensation of the preceding paragraph."

[9]Article 194 of Taiwan Civil Code stipulates that "[i]n case of death caused by a wrongful act, the father, mother, sons, daughters and spouse of the deceased may claim for a reasonable compensation in money even if such injury is not a purely pecuniary loss."

[10]A "significant other" who was not legally married to the deceased does not have a right of action.

specifically, the pecuniary damages include (1) the medical expenses incurred before death; (2) the funeral expenses (within a reasonable range); and (3) living expenses for children of the victim who are less than 20 years old and for parents and spouse of the victim who cannot financially sustain themselves. As Taiwan has a mandatory national health-care system, a large portion of the medical expenses are covered by the state; only co-payments and medical treatments not covered by the national health-care system were paid by the victim, and the tortfeasor is responsible for such payments. The calculation of living expenses is formulaic.

As for nonpecuniary damages, the father, mother, spouse, sons, and daughters (in-laws not included) of the victim can claim compensation for their pain and suffering due to losing a beloved one.[11] Legal scholars in Taiwan, like those in Germany, hold the view that the major functions of pain and suffering damages are to compensate victims for their losses and to use money to ease their sorrow. The deterrence effect of pain and suffering damages is also mentioned. In the specific context of wrongful death, following the aforementioned mainstream view, this nonpecuniary compensation received by next-of-kin is to compensate the victim's close relatives for their psychological losses and to reduce their sorrow by giving them money. Courts in Taiwan, however, never explicitly discussed the function of pain and suffering damages in wrongful death cases.

It is important to note that pecuniary damages and nonpecuniary damages here are unlikely to be jointly determined. Pecuniary damages are evidence or formula based, and not all cases involve a claim of pecuniary damages. By contrast, the assessment of nonpecuniary damages is subjective, as elaborated below. In practice, courts determine the amount of pecuniary damages (item by item) first, and then determine the more discretionary nonpecuniary damages. From all existing evidence, judges in Taiwan, when handling these pain and suffering damages cases, did not determine the amount of compensation holistically.

No formula exists for courts to determine the amount of pain and suffering damages. The Civil Code provides no guidance. A few leading cases rendered by the Supreme Court of Taiwan in the 1950s and 1960s declared that the following factors should be considered: socioeconomic status, total assets, annual income, age, educational background, and so forth for both sides, the plaintiff's level of pain and harm, the victim's negligence, the defendant's repentance, and so on. Other than this, to date, there is no conventional wisdom or rules of thumb for quantifying pain and suffering. In practice, the plaintiff generally simply claims an amount and contends that it is just, with little supporting evidence. The court decisions usually start with a template discussion that carbon-copies the list of factors emphasized by the leading cases,[12] then summarize the facts of the case at

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[11]After injury and before death, victims suffer from pain. Their claim for pain and suffering can be inherited only if the defendant has agreed to pay for it, or if the victim had sued the defendant before his death. In both cases, the compensation obligation may affect courts' decision on the pain and suffering damages we study here. Nonetheless, we find that this stipulation has been rarely used in practice, and we have no evidence of its use in the cases we sampled; thus, we ignore this stipulation in the following regression models.

[12]Not all courts use the same template. The factors that a court explicitly claims to take into account slightly differ.

hand, and at the end award an amount. As judges have never elaborated their formulas and rarely provided concrete information regarding the factors,[13] it is doubtful to what extent those factors listed in the template arguments affect the final amount of pain and suffering damages.

Plaintiffs are required to make an ad damnum and do not have an incentive to claim unrealistically high amounts of pain and suffering damages. First, the court fee is proportionate to the amount of claimed total damages (roughly, around 1 percent of the total claimed damages).[14] Second, the losing party has to pay the court fee. In a tort lawsuit, the plaintiff has to pay part of the court fee if the court does not grant all claims. The plaintiff generally has to pay [1 − (court award/plaintiff's claim)] × court fee. So claiming a high amount of pain and suffering damages increases both the court fee and the probability of bearing the cost of a higher percentage of the court fee.

The compulsory automobile liability insurance (CALI) plays an important role in the car accident liability system in Taiwan.[15] All owners of cars or motorcycles have to purchase CALI (before receiving car or motorcycle plates). In an automobile accident, even if no one is at fault, the spouse, children, and parents of the dead can request the CALI fund to indemnify them. The amount of CALI indemnification has increased over the years. As of August 2014, the amount was 2 million Taiwan dollars, or U.S. $67,000, for a wrongful death case. Pursuant to the CALI Act, the tortfeasor can request the court to deduct the CALI indemnification from the court-adjudicated pecuniary and nonpecuniary damages.[16] That is, if the amount of the total court-adjudicated damages is less than 2 million Taiwan dollars, the tortfeasor does not have to pay a penny from his or her own pocket, as the CALI fund has footed the bill. If a court, say, awards 3 million Taiwan dollars, the out-of-pocket payment of the defendant is 3 − 2 = 1 million Taiwan dollars.

Taiwan is considered a civil-law country. Almost all judges are career judges who may or may not have practiced law before serving on the bench (many have not). Most jurists in Taiwan major in law as an undergraduate, while a minority of jurists are trained in a J.D.-like graduate program. Jurists who pass the bar exam and finish six months of practical training are qualified to practice law. Jurists who pursue a career as a judge or prosecutor have to

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[13]Thus, we are not able to put these factors in the regression models, not even putting them to chi-square tests, to examine whether they influence judicial decisions.

[14]Pursuant to Article 77-13 of Civil Procedure Code of Taiwan, the court fee is assessed in the following way: "NTD 1,000 on the first NTD 100,000 of the price or claim's value, and an additional amount shall be taxed for each NTD 10,000 thereafter in accordance with the following rates: NTD 100 on the portion between NTD 100,001 and NTD 1,000,000 inclusive; NTD 90 on the portion between NTD 1,000,001 and NTD 10,000,000 inclusive; NTD 80 on the portion between NTD 10,000,001 and NTD 100,000,000 inclusive; NTD 70 on the portion between NTD 100,000,001 and NTD 1,000,000,000 inclusive; and NTD 60 on the portion over NTD 1,000,000,000. A fraction of NTD 10,000 shall be rounded up to NTD 10,000 for purposes of taxing court costs."

[15]For more information, see the official website of CALI: <http://www.cali.org.tw/>.

[16]Commercial private insurance payments, by contrast, need not be deducted from the damages. In only one case we sampled did the plaintiff voluntarily deduct the private insurance payment from the damages. We thus do not take into account private insurance payments (the amount of which is unknown anyway) in the models.

take the "court officer" examination. Those who pass the examination receive training in the court officer institutes for two years. At the end of their training, based on their grades, preferences, and openings, they become judges or prosecutors. Judges are tenured, and thus presumably less influenced by external political influences. For civil matters, there are three levels of courts: district courts, appellate courts, and the supreme court. The former two can determine both questions of fact and questions of law, while the supreme court only deals with questions of law. Appealing to the appellate court is as of right, whereas large-stake cases represented by attorneys can be appealed to the supreme court, subject to its discretion (Eisenberg & Huang 2012; Chen et al. 2014). All cases in district courts are randomly assigned to judges.

III. Hypothesis and Methodology

In Section III.A, we lay out our three main hypotheses regarding the major determinants of pain and suffering damages. In Section III.B, we describe and summarize the pertinent data. In Section III.C, we spell out the single-equation and structural-equation models at the individual and case levels.

A. *Research Questions*

Our core research question is to identify the major determinants of court-adjudicated pain and suffering damages in wrongful death cases. The hypotheses are as follows.

First, the individual-level pain and suffering award varies by familial relations. Which familial group tends to receive the most pain and suffering damages? We explore this question by examining first the average and distribution of such damages by each familial group. As not all groups are included in all cases, we also compare the groups' relative damages when more than one group sues the defendant together. Before we started the research, we informally surveyed a great many legal professionals and laypersons in Taiwan as to which familial group they think would receive the most, as there is no prior literature on this question. There was no consensus. Some guessed the parents. Indeed, the Chinese saying "the white-haired mourn the passing of the black-haired" was cited by virtually all cases we read that had parent plaintiffs. Some rooted for the spouse. Many believed that the children who lost a broad shoulder and a role model would receive the most.

Second, we hypothesized that judges keep the amount of pain and suffering damages within a certain limit, so as not to push the defendant into financial hardship. One critical difference between pain and suffering damages in personal injury cases and those in wrongful death cases is that in the former there is only one claimant for one tortious action (i.e., the injured party himself or herself), whereas there could be several claimants in the latter (mean and median around four plaintiffs; Table 1). The mean or median pain and suffering damages awarded are not small amounts (mean and median around $33,000; Table 1). If the victim is survived by his or her parents, spouse, and four children, and the judge simply multiplies the median pain and suffering damages by seven—along with pecuniary damages to dependent children, spouse, and/or parents—the heavy liability

Table 1: Summary Statistics

Panel A: Continuous Variables

Variable	N	*Mean*	*Median*	SD	*Min.*	*Max.*
Pain and suffering damages	599	1,009,906	950,000	656,622.5	200,000	5,000,000
To spouse	86	1,113,359	1,000,000	519,868	200,000	3,000,000
To victim's minor child	46	897,826	900,000	461,514	400,000	3,000,000
To victim's adult child	275	756,182	600,000	444,079	200,000	4,000,000
To victim's dependent parent	28	1,638,702	1,500,000	904,120	500,000	5,000,000
To victim's nondependent parent	164	1,305,189	1,000,000	801,055	300,000	5,000,000
Total pain and suffering damages in case (W)*	182	3,315,569	3,000,000	1,772,505	600,000	10,000,000
Pain and suffering requests	596	1,746,200	1,500,000	1,415,016	200,000	19,165,311
Total pain and suffering requests in case*	182	5,740,304	5,000,000	3,537,548	1,000,000	23,665,311
D's payment to P ordered in the judgment (X)*	599	218,029	1,676,067	1,858,679	0	11,500,000
D's payment to P before the verdict (Y)*	599	133,434	0	603,629	0	4,150,000
Victim's age*	433	51.3	56	21.5	2.3	91
Positive damages-income ratio	92	1.07	1.07	0.13	0.65	1.37
Negative damages-income ratio‡	229	−1.08	−1.09	0.14	−1.49	−0.63
P's annual income†	460	253,197	81,889	401,310	0	3,291,106
D's annual income†*	397	276,189	264,000	226,494	0	1,390,223
Number of P*	599	4.4	4	1.9	1	10
Victim's comparative negligence (V) (%)*	599	30	20	30	0	80
% of litigation fee paid by P*	562	70	75	30	0	100
D's actual payment of pecuniary damages = $X + Y - [W^* (1-V)]$‡*	599	1,573,484	1,176,067	1,614,370	−1,532,425	9,200,896

†One plaintiff, one observation. Thus, plaintiff's income refers to the plaintiff's personal annual income. When there is only one defendant, defendant's income refers to the defendant's personal annual income. In joint torts with multiple natural-person defendants, defendant's income refers to the total annual incomes of all natural-person defendants.

‡Pecuniary damages as defined here could be negative because the amount of compensation the plaintiff receives from the compulsory automobile liability insurance fund is subtracted from X. See Section II and footnote 32 for more detailed explanation.

*Case-level statistics. Variables without the asterisk are individual level.

NOTE: P = plaintiff; D = defendant. Amount in Taiwan dollars. 1 U.S. dollar = 30 Taiwan dollars.

SOURCE: Chang et al. PS Damages Data Set 2014.

could bankrupt a middle-class defendant. Pushing a defendant into financial hardship is undesirable because he or she could then choose to run away, paying nothing. Also, financial hardship, not to mention bankruptcy, may destroy another (defendant's) family. Hans (2000:209–14), based on interviews with numerous jurors, reports that jurors generally pay attention to the empty pockets of defendants (business or individual), whereas only a minority of jurors take into account the deep pockets of corporate defendants. Here, we are able to examine whether judges adjust their awards based on the identity of defendants and the financial hardship imposed on them.

Table 1 *continued*

Panel B: Categorical Variables

	%
At least one defendant is corporate	26.7
Plaintiff hires lawyer(s)	61.8
Defendant hires lawyer(s)	41.7
Plaintiff is victim's	100.0
Spouse	14.4
Minor children	7.7
Adult children	45.9
Parents who are financially independent (nondependent parents)	4.7
Parents who are not financially sustainable (dependent parents)	27.4
Financial units of natural-person defendants	100.0
0†	1.2
1	93.0
2	5.5
3	0.3
Year	100.0
2008	18.4
2009	21.5
2010	19.2
2011	20.9
2012	20.0

†In these zero-defendant observations, the tortfeasors died at the accident and only their vicariously liable employers were sued. $N = 599$.

SOURCE: Chang et al. PS Damages Data Set 2014.

More specifically, we conjecture that the financial hardship concern affects judges' decisions on both the case and the individual levels. Specifically, on the case level, the amount of pecuniary damages personally paid by the defendant divided by the defendant's annual income negatively correlates with the amount of pain and suffering damages; the existence of corporate defendants and the number of natural-person defendants positively correlates with the amount of pain and suffering damages. On the individual level, the amount of pain and suffering damages each plaintiff receives decreases with the number of plaintiffs and with the amount of pecuniary damages personally paid by the defendant. In addition, the amount of individual-level pain and suffering damages increases with the existence of corporate defendants, and the number of natural-person defendants.

Finally, judges and juries, in determining a number without guidance, were likely to be subject to the anchoring effect (Guthrie et al. 2000, 2007; Wistrich et al. 2005; Rachlinski et al. 2006, 2007, 2009; Campbell et al. 2014).[17] That is, another number, even an arbitrary or irrelevant one, might influence the amount of pain and suffering damages. In a tort lawsuit that leads to awards of pain and suffering damages, several salient numbers may

[17]For introduction to the anchoring effect, see, e.g., Ariely (2008:25–48), Kahneman (2011:119–28), and Teichman and Zamir (2014).

exist. In experiments, the ad damnum (a plaintiff's claim) has been found to have strong anchoring effects; that is, the higher the ad damnum (a plaintiff's claim), the higher the verdict (Campbell et al. 2014). We thus focus on examining whether the anchoring effects of the ad damnum can also be found in real bench trials. Specifically, we test whether a plaintiff's claim influences how much he or she receives and whether the total request by all the plaintiffs in a case influences the total judicial awards.

B. The Data

All civil cases decided by the district courts in Taiwan since 2000 are available for download on the official website of the judicial administration (Judicial Yuan) of Taiwan.[18] We used key words (see below) to search for car accident cases in which the victim died. We limited our search to the district court cases (partially) won by the plaintiffs and rendered between January 1, 2008, and December 31, 2012.[19] The research period was chosen to be consistent with another pain and suffering article that some of us collaborated on (Chang et al. 2015). We decided to focus on decisions by the court of first instance. As emphasized by Guthrie et al. (2007:4) and Eisenberg and Heise (2013), most cases are handled by these courts; many of these decisions are final in that they are not appealed;[20] and such cases avoid the selection issues that arise in studying appellate cases, such as the parties' decisions to appeal and settlement of cases pending appeal.

Wrongful death can be caused by car accidents, medical malpractice, assault, and the like. We focus on car accident cases here because there are many such cases[21] and the background facts are similar (a person negligently[22] hits and kills a stranger).[23]

Two rounds of case searching were conducted. In the first round, to assure geographic representation of the whole country, we stratified the random sample by judicial district to obtain 10 percent of car accident cases from each district court.[24] After filtering out cases in which the victims were only injured, we had 54 cases coded into 171 observations (one plaintiff, one observation). We decided to conduct a second-round coding

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[18]See <http://jirs.judicial.gov.tw/FJUD/> (website in Chinese).

[19]Small claim and simple proceeding cases are excluded because the judgments in these cases usually do not contain enough information about the cases.

[20]In the case of Taiwan, between 1996 and 2006, 60 percent of the torts cases were not appealed (Huang 2009:196).

[21]By contrast, there were only 17 medical malpractice wrongful death cases during the same period.

[22]Taiwan law does not distinguish negligence and gross negligence when determining the amount of pain and suffering damages. Probably as a result, the cases we code do not tell us whether judges consider the tortfeasors as grossly negligent.

[23]In assault cases, for example, the tortfeasors' motivations vary and may affect judges' decisions.

[24]The search term is, of course, in Chinese and hard to translate. A literal translation would be: *(road traffic OR traffic accident OR car accident NOT state responsibility) AND (Article 195 OR Article 194) AND (defendant pays OR defendants jointly pay).*

because the number of first-round observations was small and the data lacked information on certain critical variables, such as the victim's age and the annual income of the plaintiffs and defendants. The data set compiled in the first round is used in an independent set of regressions as robustness check to make sure that our findings are externally valid.

In the second round, we added more search terms to ensure that income and age were more likely to be observable from the judgments;[25] 204 car accident cases were discovered. After reading the cases and screening out irrelevant observations,[26] we were left with 183 cases (599 observations, as there are multiple plaintiffs in many cases).[27] In the analysis that follows, we use the data set compiled in the second round to gain internal validity.

The individual-level pain and suffering damages awarded by courts in Taiwan exhibit somewhat bell-shaped distributions (after a log transformation) in all five familial relations, as Figure 1 shows.[28] The case-level pain and suffering damages also exhibit bell-shape distributions, centering on $100,000 (see Figure 2). The skewed distribution supporting the log transformation is typical of unbounded award outcomes. Figure 3 and unreported statistics demonstrate that 52 percent (99 percent) of the individual-level pain and suffering damages are in multiples of 500,000 (50,000) Taiwan dollars. The most common amounts were 500,000, 1,000,000, and 1,500,000 Taiwan dollars. This preference for round numbers in noneconomic damages is consistent with Hans and Reyna's (2011:133–37) gist-based model of juries. Table 1 provides selected summary statistics of the data set. Panel A summarizes continuous variables and Panel B summarizes categorical variables. For correlation coefficients of several important continuous variables, see Tables 2 and 3.

C. Regression Models

Our empirical strategy is, first, in Subsection III.C.1, to use single-equation models to identify important objective factors that affect judges' pain and suffering awards on the individual level, putting aside the potential effect from plaintiffs' ad damnum. In Subsection III.C.2, structural-equation models are utilized to account for plaintiffs' requests and examine whether the anchoring effect exists. As there is more than one plaintiff in most cases, and judges are likely to make award decisions by taking into consideration the total amount of pain and suffering damages, in Subsection III.C.3 we describe single-equation and structural-equation models that use judges' case-level pain and suffering damages as the dependent variable and the summation of all plaintiffs' requests as one independent

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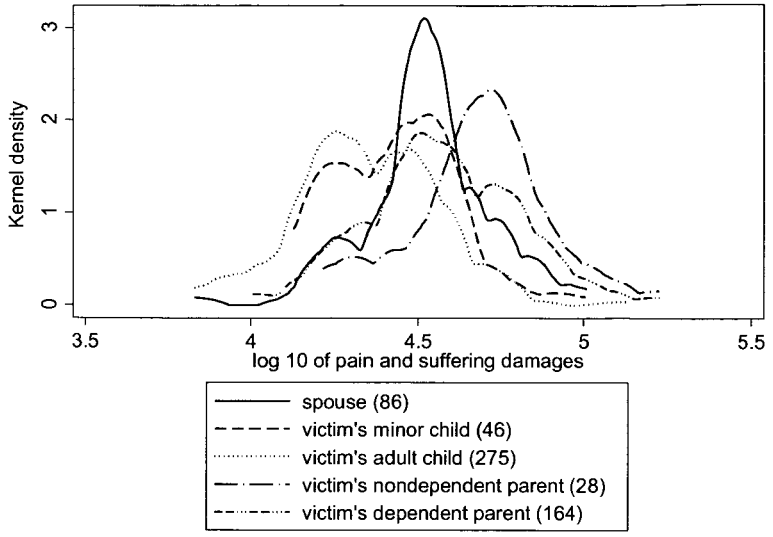
[25]A literal translation of the search term would be: *(road traffic OR traffic accident OR car accident NOT state responsibility) AND (Article 195 OR Article 194) AND (defendant pays OR defendants jointly pay) AND electronic gateway to tax information AND salary AND (income OR gain) AND (years old).*

[26]In a few observations, the plaintiffs were not relatives legally eligible for pain and suffering compensations, so they received zero dollars. A few other observations were not pain and suffering cases but were captured by our search terms. We excluded these observations from our analysis.

[27]Note that several cases showed up in both the first-round data set and the second-round data set.

[28]Throughout this article, the conversion rate is U.S. dollars: Taiwan dollars = 1:30.

Figure 1: Distribution of court-adjudicated pain and suffering damages, by familial relations.



NOTE: *N* for each group in parentheses. The amounts of pain and suffering damages are CPI-adjusted and in U.S. dollars before transformed into log 10. Taiwan court cases decided from 2008 through 2012.

SOURCE: Chang et al. PS Damages Data Set 2014.

variable. As mentioned above, the data used and reported in this section are the second-round data. First-round data are used in the simplified version of the regression models as a robustness check, but the regression results are not fully reproduced. Only inconsistent findings will be noted and discussed in footnotes.

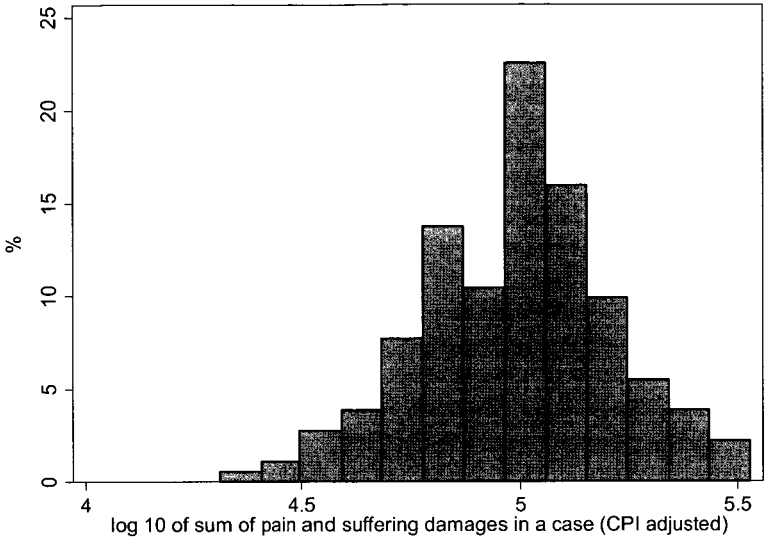
1. One-Equation Models on the Individual Level

We use regression models that account for stratifying the sample by court district and the nonindependence of observations in cases with more than one plaintiff.[29] The dependent variable is the natural log of the judge's pain and suffering damages award. The independent variables control for the defendant's payment of pecuniary damages, characteristics of both parties and victims, and familial relations between the victim and the plaintiff. Year and court fixed effects are also included. The models take the following form:

$$\mathrm{PS}_{\mathrm{idv}} = \beta_0 + \beta_1 \mathrm{PEC}_{\mathrm{case}} + \beta_2 \mathrm{CH}_{\mathrm{idv,case}} + \beta_3 \mathrm{FA}_{\mathrm{idv}} + \beta_4 \mathrm{Dt} + \beta_5 \mathrm{Di} + \varepsilon, \quad (1)$$

[29]To be more exact, in the reported Model 3 in Table 5, we used the svy command in Stata to account for the fact that we stratified the sampling by court and the unit of sampling is a case, not an observation. In the reported Models 1 and 2 in Table 5, we cannot use the svy command because of stratum with a single sampling unit; instead, we cluster by case and report robust standard errors.

Figure 2: Distribution of court-adjudicated case-level pain and suffering damages in wrongful death cases in Taiwan.



NOTE: Amounts are in U.S. dollars and the figure includes 182 cases from 2008 through 2012.
SOURCE: Chang et al. PS Damages Data Set 2014.

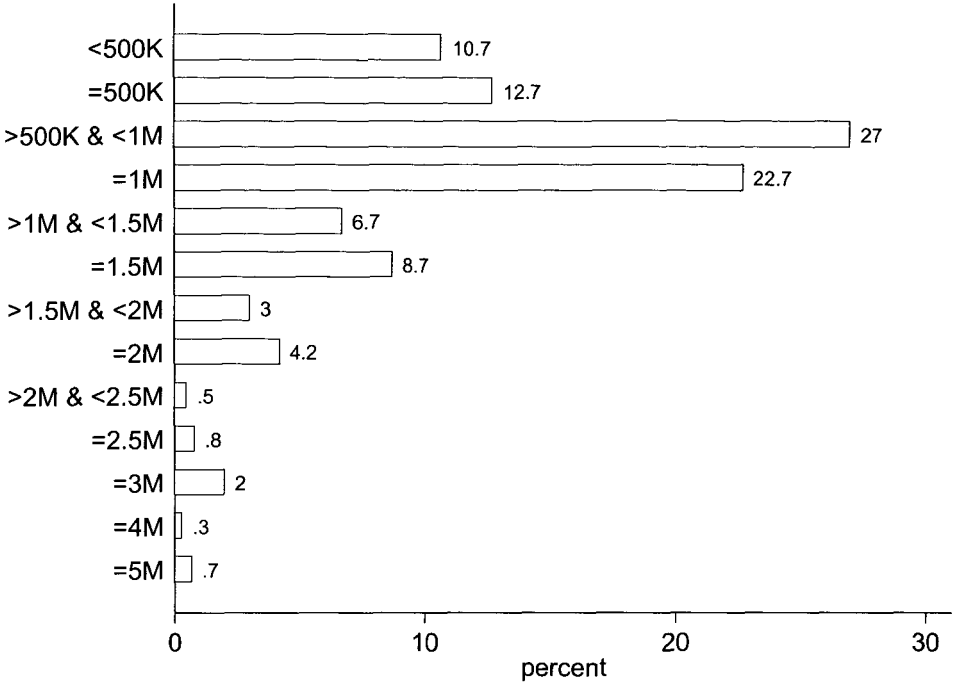
where PS_{idv} is the log of pain and suffering damages (CPI-index adjusted) on the individual level; PEC_{case} are the variables representing defendants' payment of pecuniary damages (CPI-index adjusted) in natural log form, divided by defendants' annual income in natural log form;[30] CH_{case} are several variables capturing the characteristics of the plaintiff, the defendant, and the victim; FA are four dummy variables indicating five types of familial relations; and Dt and Di are dummy variables indicating the years and courts of the case, respectively. The coefficients to be estimated are β_n; ε is an error term.

More specifically, PEC_{case} includes three variables that are intuitive but need some calculation work. The simplest one is a dummy variable that equals 1 if the defendant's personal payment of pecuniary damages is positive; 0 otherwise. The other two variables are defendants' personal payment of pecuniary damages (in log) divided by defendants' annual income (in log) (hereinafter, "damages-income ratio"). These two damages-income ratios measure the relative financial burden[31] caused by pecuniary compensation (hardly

[30]To assess endogeneity concerns related to using pecuniary payments as an independent variable where pain and suffering is the dependent variable, we developed reasonable instruments for the positive and negative pecuniary amount payments. These instrument variable models were then fit and Wu-Haussmann tests could not reject exogeneity (positive award, $p = 0.19$ and negative award, $p = 0.81$).

[31]Assets might be a better measure of financial burden, but most cases do not contain asset information (because the ultimate source of data, the tax authority, does not require taxpayers to reveal their assets). If judges are not aware of total assets, they cannot (explicitly) use them to adjust pain and suffering damages.

Figure 3: Court-adjudicated individual-level pain and suffering damages for loss of consortium.



NOTE: K = 1,000; M = 1 million. Amounts are in Taiwan dollars. 1 U.S. dollar ≒ 30 Taiwan dollars.
SOURCE: Chang et al. PS Damages Data Set 2014.

Table 2: Correlation Matrix for Continuous Variables to be Used in Structural-Equation Models

	PS Damages†	*PS Requests*†	*Age*	*# of P*	*Comparative Negligence*
Pain and suffering requests†	0.711***				
N	596				
Victim's age	−0.578***	−0.507***			
N	433	430			
Number of P	−0.600***	−0.518***	0.725***		
N	599	596	433		
Victim's comparative negligence (%)	0.051	−0.044	0.027	0.058	
N	599	596	433	599	
P's annual income†	0.130**	0.052	−0.044	−0.094	0.004
N	460	459	340	460	460

NOTE: Pearson correlation coefficient reported in the table. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; †$p < 0.1$ (two-tailed).
†Variable in natural log. P represent plaintiffs; PS is pain and suffering; and # is number.
SOURCE: Chang et al. PS Damages Data Set 2014.

Table 3: Partial Correlation Matrix for Damage-Income Ratios and Other Continuous Variables to be Used in Structural-Equation Models

	PS Damages†	*PS Requests*†	*Age*	*# of P*	*Comparative Negligence*	*P Income*†
Positive damages-income ratio†	−0.119*	0.049	−0.18**	0.082	0.065	−0.05
N	329	326	241	329	329	288
Negative damages-income ratio†	−0.209**	−0.243***	0.294***	0.223***	0.161**	0.188**
N	329	326	241	329	329	288

NOTE: Partial correlation coefficient (controlling for the effect of the dummy variable that equals 1 if damages-income ratios are >= 0 and equals 0 if they < 0) reported in the table. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; $^{+}p < 0.1$ (two-tailed). †Variable in natural log. P represent plaintiffs; PS is pain and suffering; and # is number.
SOURCE: Chang et al. PS Damages Data Set 2014.

adjustable by courts) on defendants. Two continuous variables are needed because defendants' *out-of-pocket* payment of pecuniary damages can be positive or negative, and their magnitude might be very different. One variable captures the positive amount, whereas the other variable captures the absolute value of the negative amount.

Defendant's personal (or out-of-pocket) payment of pecuniary damages is calculated in the following way: the amount of damages the defendant(s) still owes all the plaintiffs (as stipulated in the holding) + the amount of damages the defendant(s) has paid the plaintiffs prior to the verdict − the amount of adjudicated pain and suffering damages * (1 − plaintiffs' ratio of comparative negligence).[32] More intuitively, the defendant's personal payment of pecuniary damages is pecuniary damages minus CALI payment. Thus, the defendant's payment of pecuniary damages could be negative (and, indeed, is negative in 424 observations) when CALI indemnification is larger than the pecuniary damages.

The idea behind this variable is that judges are likely to determine the amount of the more objective, relatively standardized pecuniary damages first,[33] and then embark on considering the more discretionary pain and suffering damages. And when doing the latter task, judges would take into account the probability of the defendant's financial hardship such as bankruptcy. The higher the positive damages-income ratio, the more likely the defendant would have financial troubles. Thus, we hypothesize that the damages-income ratio, when positive, will negatively correlate with the pain and suffering damages and when negative will also be negatively correlated with the pain and suffering damages. (Note that the variable used in the models takes the absolute value of the payment, so the variable that captures the negative damages-income ratio is expected to have a positive coefficient.)

[32]Put differently, using the notation in Table 1, X = (pecuniary damages + W) * (1 − V) − Y − CALI. After rearrangement, we obtain another equation: $X + Y - W$* (1 − V) = pecuniary damages * (1 − V) − CALI.

[33]Pecuniary damages include the reimbursement of the funeral expenses and living expenses for many years (until adulthood, for minor children; until expected life, for spouses and dependent parents). See Section II for more details.

The hypothesis behind the negative relationship is as follows: if the defendant's personal payment of pecuniary damages is negative (say, minus 1 million dollars), the first 1 million dollars in the court-adjudicated pain and suffering damages are considered already paid for by the CALI fund. The defendant does not have to actually pay these from his or her own pocket. This should tend to *increase* the amount of pain and suffering damages, as there is less hardship concern. Also, courts might be concerned that if the negligent tortfeasor walks away without paying anything, it will weaken the deterrent effect of tort law. Hence, the smaller the negative personal payment by the defendant (i.e., the larger the absolute value of the payment), the more room courts have in awarding pain and suffering damages to the plaintiffs without requesting defendants to pay for them personally, the larger the pain and suffering damages tend to be—thus the negative relationship between pain and suffering damages and the negative personal payment by the defendant.

By contrast, the hypothesis behind the negative relationship when the personal payment is positive is that a positive amount suggests that every penny of the court-adjudicated pain and suffering damages has to be paid by the defendant personally. This should tend to *decrease* the amount of pain and suffering damages, due to the hardship concern. Because of the potential opposite effect of the defendant's payment of pecuniary damages, we use two continuous variables to capture the effect.

CH_{idv} is the natural log of each plaintiff's income (CPI-index adjusted). CH_{case} includes a variable on victim's age;[34] the natural log of the number of plaintiffs; the natural log of all defendants' income (CPI-index adjusted);[35] dummy variables for whether the plaintiff and the defendant are represented by attorneys; a continuous variable representing the proportion of the victim's comparative negligence (in our data set, from 0–80 percent) ; a dummy variable on whether the defendants include one or more corporations; and a variable that measures the number of "financial units" among noncorporate defendants.

The last two variables warrant more explanation. In our database, the corporate defendants were employers of the defendant(s) and vicariously liable for the tort. We conjecture that courts would increase the amount of pain and suffering damages when there is a corporate defendant because corporations are considered deep-pocketed. The financial unit variable is used to more accurately measure whether courts worry about putting too much financial burden on defendants. All else equal, the more defendants there are to share the burden of paying damages, the less likely that one or all of them will be financially challenged. Nevertheless, the number of defendants as listed in the judgments is not the most exact measure of the defendant's financial wherewithal. For example, in all 23 three-defendant observations in our data set, the defendants were a minor tortfeasor and his or her parents (who are vicariously liable). They can be counted as only one financial unit, as adding a nonearning minor and a house spouse as defendants does

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[34]We tried adding the square of age as another independent variable, but it is insignificant.

[35]In all observations with available information, courts acquire income information from the Ministry of Finance.

not make the sole breadearner less likely to be financially challenged.[36] Hence, we carefully examine the relationships among the defendants (revealed in court decisions) and count the number of financial units (Table 1).

Dt is a series of dummy variables (one for each year) that controls the timing of the judgment. Di are a series of court dummy variables that control for the variance among jurisdictions. We combined 20 courts into 12, as a few courts had only a handful of observations, and used 11 dummies to control for intercourt variation. The combinations are based on geographic proximity and similarity in economic development.

We report three models. Model 1 is the baseline model, with damages-income ratios as the major independent variables of interest. Model 2 is a robustness check, using payment of pecuniary damages (without dividing by defendants' income) as the independent variable of interest and using defendants' income as a separate variable. In Models 1 and 2, only observations with positive plaintiff income and positive defendant income are included. The latter condition is necessary for Model 1, since defendant income is the denominator. We were hesitant to assign infinity or an arbitrary number to the damages-income ratio in observations where defendant income was zero. Observations in which plaintiffs had zero income were excluded because we found, in exploratory analysis, that the models for pain and suffering awards and requests for the plaintiffs with zero and positive incomes are substantively different. Model 3 is a variant on Model 2, but discards age, plaintiff income, and defendant income, all of which had many missing values, in order to use all observations in the regression models. This is also a robustness check on whether variable coefficients and signs change significantly if observations with missing values are added.

2. Structural-Equation Models on the Individual Level

Our data include the amount plaintiffs requested in pain and suffering damages. Such information had not been available in prior pain and suffering studies, except in another article by some of us (Chang et al. 2015) and in Diamond et al. (2011), which observes 19 such cases. We did not include it in the above single-equation regression models due to endogeneity. The requested amount is not independent of other explanatory variables such as plaintiffs' income, but the requested amount is of obvious interest and potential importance. It might be expected to influence the awarded amount in two ways. First, higher requested amounts put higher numbers before the judge. Anchoring theory suggests that higher requested numbers will be associated with higher awarded numbers independently of the merits of an increased award. Second, higher requested amounts may be associated with factors that should have increased awards but were not represented by observable variables. The plaintiff (or his or her attorney), in formulating the requested amount, may have had access to information about the degree or nature of pain and suffering that we cannot observe—for critical reflection of this line of argument, see Section IV.C. To account for the more complex relationship among the variables in models that include the

[36]Even when all three earn money, we still think that they are better treated as one financial unit.

Table 4: Defendants' Responses to Plaintiffs' Pain and Suffering Damages

Defendant's Response	*Freq.*	*Percent*
Plaintiff's claim too high	297	49.6
Do not counter PS claims	95	15.9
Counter with specific claims	36	6.0
Give no counter claims at all	27	4.5
Zero PS damages	19	3.2
Too poor to pay PS damages	107	17.9
Defer to court	16	2.7
PS damages within certain cap	2	0.3
Total	599	100.0

NOTE: PS = pain and suffering.
SOURCE: Chang et al. PS Damages Data Set 2014.

plaintiffs' request, particularly the endogeneity problem, we employ a structural-equation model. Note that we could not meaningfully model the defendant's recommendation concerning pain and suffering damages due to its variety and lack of explicit amounts (see Table 4).

The structural-equation model (based on Model 1 in Table 5) takes the following form:

$$PS_{idv} = \alpha_0 + \alpha_1 CLAIM_{idv} + \alpha_2 PEC_{case} + \alpha_3 CH_{idv,case} + \alpha_4 FA_{idv} + \varepsilon, \quad (2)$$

$$CLAIM_{idv} = \beta_0 + \beta_1 PEC_{case} + \beta_2 CH_{idv,case} + \beta_3 FA_{idv} + \beta_4 PL_{case} + \varepsilon. \quad (3)$$

The model uses almost identical variables as those used in the single-equation model (Equation (1)), except the following. (1) $CLAIM_{idv}$, which represents each plaintiff's request for pain and suffering damages is added to both equations. The plaintiff request equation (Equation (3)) is added to control for the endogeneity problem. Note that the coefficients in the court award equation (Equation (2)) show the direct effects of the independent variables on court awards, excluding the indirect effects of them on court awards through plaintiffs' claims. (2) The plaintiff request equation does not include the defendant's annual income, of which the plaintiff most likely was uninformed when making her request. (3) The plaintiff also could not have known the amount of pecuniary damages to be awarded by judges. Thus, the three variables on damages-income ratio are not included. Nevertheless, the plaintiff knew the amount of CALI payment, as well as the amount of payment from the defendant, before the verdict (in fact, it is generally paid before the lawsuit starts, usually used by the defendant to signal a sincere apology). These two new variables (constituting $\beta_4 PL_{case}$) are thus included in the plaintiff's request equation (Equation (3)). (4) As plaintiffs did not know whether defendants would hire lawyers when making their petitions, the dummy variable on whether defendants hired lawyers is not included in the request equation. (5) Year and court fixed effects are omitted

Table 5: Regression Models of Court-Awarded Pain and Suffering Damages for Individual Plaintiffs

Dependent Variable: CPI-Adjusted Pain and Suffering Damages Awarded to Individual Plaintiffs			
Variables	*(1)*	*(2)*	*(3)*
Damages-Income Ratio			
Positive amount	−0.719***		
	(0.202)		
Negative amount	0.367		
	(0.417)		
Payment of Pecuniary Damages#			
Positive amount		−0.060***	−0.026
		(0.017)	(0.018)
Negative amount		0.016	0.076+
		(0.033)	(0.041)
= 1 if positive amount	0.886+	0.760	1.283*
	(0.521)	(0.497)	(0.592)
Victim's age	−0.012**	−0.011**	
	(0.004)	(0.004)	
P annual income (if > 0)#	0.002	0.000	
	(0.013)	(0.013)	
D annual income (if > 0)#		−0.046	
		(0.070)	
Familial Relations (Baseline: Spouse)			
Victim's minor child	Omitted	Omitted	−0.264***
			(0.073)
Victim's adult child	−0.362***	−0.356***	−0.294***
	(0.082)	(0.083)	(0.045)
Victim's nondependent parent	−0.441*	−0.421*	−0.113
	(0.168)	(0.164)	(0.105)
Victim's dependent parent	−0.411**	−0.420**	−0.160*
	(0.146)	(0.148)	(0.069)
Number of P	−0.100*	−0.099*	−0.151***
	(0.039)	(0.040)	(0.020)
P's comparative negligence (%)	0.229	0.255	0.257*
	(0.197)	(0.200)	(0.126)
P hires lawyer(s)	−0.030	−0.018	0.044
	(0.105)	(0.108)	(0.065)
D hires lawyer(s)	0.122	0.141	0.103
	(0.091)	(0.102)	(0.066)
= 1 if >= 1 corporate D	0.318***	0.330***	0.223**
	(0.089)	(0.092)	(0.073)
Number of D financial units	0.504	0.498	0.027
	(0.332)	(0.328)	(0.127)
Year fixed effects	Yes	Yes	Yes
Court fixed effects	Yes	Yes	Yes
Constant	13.714***	14.413***	13.321***
	(0.530)	(1.245)	(0.641)
Observations(cases)	124	124	599
R^2	0.859	0.861	0.540

NOTE: #Means natural log transformation after CPI-index adjusted. P means plaintiff, and D means defendant. Coefficients in cells. Models 1 and 2: clustered by case and robust standard errors in parentheses. Model 3 uses Stata svy command to account for the fact that the sampling unit is a case and includes standard errors in parentheses. ***$p < 0.001$; **$p < 0.01$; * $p < 0.05$; +$p < 0.1$.

SOURCE: Chang et al. PS Damages Data Set 2014.

in both equations. (6) The dummy variable on whether the plaintiff hires lawyers is not included in the award equation in one of the two models.[37]

We report two structural-equation models. In both models, only observations in which the incomes of the defendants are larger than zero are included, as defendants' incomes are the denominator in the damages-income ratio. In the first model (Columns 1 and 2 in Table 7), observations in which the incomes of the plaintiffs are larger than zero are included, for the same reason specified in the previous subsection. In the second model (Columns 3 and 4 in Table 7), we keep the 189 observations with zero-income plaintiffs, and add an additional dummy variable (which equals 1 if the plaintiff's annual income is zero; 0 otherwise).[38]

3. Regression Models on the Case Level

Most cases in our data set had multiple plaintiffs eligible for pain and suffering awards. The single-equation and structural-equation models described above address individual-level judicial decisions. To ascertain whether the judges were subject to the anchoring effect and whether the judges were concerned about putting too much financial burden on defendants, it is also necessary to examine case-level decisions.

A majority of independent variables in the aforementioned regression models are already case-invariant information, such as whether attorneys are hired. In the two sets of regression models that examine case-level decisions, sum of pain and suffering damages awarded to all plaintiffs in the case and sum of all plaintiffs' requests for pain and suffering damages are the dependent variable and the major independent variable of interest, respectively. Familial relations are individual-level variables. We did not use a series of dummy variables that represent different combinations of familial members in case-level regressions to preserve degree of freedom.

Due to the limited number of case-level observations, we use parsimonious models in both the single-equation and structural-equation models. The single-equation model, taking the following form, keeps the three variables regarding payment of pecuniary damages, three variables regarding the number and income[39] of plaintiffs, two variables on defendants' financial condition, whether lawyers were hired, the percentage of the victim's negligence, and year fixed effects:

$$PS_{case} = \beta_0 + \beta_1 PEC_{case} + \beta_2 CH_{case} + \beta_3 t + \varepsilon. \quad (4)$$

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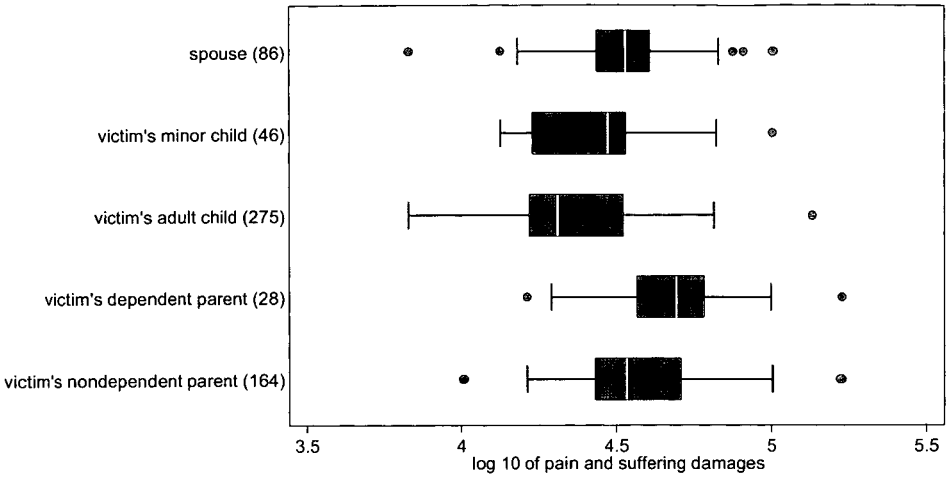
[37]Stata is unable to produce results with this variable in the model ("initial values not feasible"). This variable (whether plaintiffs hire attorneys) is statistically insignificant in the other model and all other models in this article. Thus, we should be confident that lawyer representation is not an important determinant of pain and suffering damages in Taiwan.

[38]Note that if we have no information regarding either party's income, the income variable is coded as missing. Thus, the 189 observations mentioned in the text are indeed those with a plaintiff without income.

[39]If a case contains multiple plaintiffs and the incomes of some of them are missing, we treat those as zero in summing the total annual income on the plaintiff's side.

Figure 4: Distribution of court-adjudicated individual-level pain and suffering damages in wrongful death cases in Taiwan, by familial relations.



NOTE: Numbers of observations in each group in parentheses. The amounts of pain and suffering damages are CPI-adjusted and in U.S. dollars before transformed into $\log_{10}$. Recall $\log_{10}(10{,}000) = 4$, $\log_{10}(31{,}622) = 4.5$, and $\log_{10}(100{,}000) = 5$. Taiwan court cases decided from 2008 through 2012.

SOURCE: Chang et al. PS Damages Data Set 2014.

The structural-equation model takes the following form:

$$PS_{case} = \alpha_0 + \alpha_1 CLAIM_{case} + \alpha_2 PEC_{case} + \alpha_3 CH_{case} + \varepsilon, \tag{5}$$

$$CLAIM_{case} = \beta_0 + \beta_1 PEC_{case} + \beta_2 CH_{case} + \beta_3 PL_{case} + \varepsilon. \tag{6}$$

The court award equation (Equation (5)) in the structural-equation model is basically the same as the single-equation model (Equation (4)), except that the year fixed effects are not used, and the percentage of victim's negligence is removed but still placed in the request equation, as we find in the structural-equation models on the individual level that this percentage is only significant in the request equation. The request equation is also a simplified version of that in the structural-equation model on the individual level. All individual-level variables are removed (e.g., familial relations) or replaced with their case-level aggregates (e.g., plaintiffs' claims and court awards).

IV. FINDINGS AND DISCUSSION

A. *Differences Among Relatives*

As compared to other familial relations, spouses receive the highest pain and suffering damages. Cursory readings of Figure 4, Figure 1, and Panel A of Table 1 leave the impression that parents, especially dependent parents, receive more pain and suffering damages

Table 6: Differences in Pain and Suffering Damages Among Familial Relations in the Same Case

Row Versus Column (>, =, <)	*Minor Child*	*Adult Child*	*Dependent Parent*	*Nondependent Parent*
Spouse	(5, 10, 0)	(44, 21, 0)	(15, 14, 0)	(15, 14, 3)
Minor child		(1, 4, 0)	(3, 0, 0)	(5, 12, 1)
Adult child			(1, 1, 0)	(1, 13, 9)
Dependent parent				(0, 1, 0)

NOTE: 1 represents one case (not one observation). For example, (5, 10, 0) in the upper-left cell in the table means that in five cases, spouse received more than minor child; in 10 cases, the pain and suffering damages were the same; and in zero cases, the spouse received less than the minor child.

SOURCE: Chang et al. PS Damages Data Set 2014.

than spouses, as the mean and median amounts of the pain and suffering damages in these two groups greatly differ. Nevertheless, this does not suggest that when spouses and parents both claim in the same case, judges award more damages to the latter group. Careful observation of the data reveals that parents (with victims often around 20 years old) receive large pain and suffering damages when they are the only familial group that makes the request. Leaving aside cases in which only one familial group is listed as plaintiffs, and comparing the pain and suffering damages received by different familial groups case by case, we find that, in terms of the pain and suffering damages received in a given case, the following inequality generally holds: spouse ≥ minor child ≥ parents ≥ adult child. That is, for example, courts in Taiwan rarely give spouses less pain and suffering damages than other relatives of the victim, and minor children of the victim almost always receive pain and suffering compensation more than or equal to adult children or parents. For more detailed comparisons, see Table 6.

Regression results, as reported in Table 5,[40] bear out the finding that spouses receive the most pain and suffering damages. In all single-equation individual-level models reported in Table 5, all familial relation dummies have negative signs and all but one are statistically significant. As spouse is the baseline category, the regression clearly shows that, as compared to other familial groups, spouses receive more pain and suffering damages. We further test whether the differences between the coefficients of the four dummy variables are statistically significant, but none of them are.

B. Hardship Concern

We find evidence for the claim that courts are concerned about putting too much financial burden on the defendants. We mainly rely on results from structural-equation models on

[40]We run Model 3 on first-round data for a robustness check. Coefficients of all but one major variables have the same sign, though some of them become statistically insignificant, perhaps for lack of degrees of freedom ($N = 168$). The defendant's financial unit has a negative sign and is highly statistically significant ($p < 0.001$). This result is counterintuitive. In first-round data, this variable equals 1 in 167 of the 171 observations, and equals 2 in the other four observations. The lack of variance casts doubt on the reliability of the estimate of this variable.

the individual level and on the case level[41] (reported in Tables 7[42] and 9), but we also reference the results from single-equation models on the individual level and on the case level[43] (reported in Tables 5 and 8) as a robustness check. All models show that when the damages-income ratio is positive, the variables capturing it have negative coefficients, and all but one have a statistically significant (at least at the 0.01 level) impact on the pain and suffering damages awarded to individual plaintiffs as well as the total pain and suffering damages given to all plaintiffs. When the damages-income ratios are negative, this variable in all models has positive coefficients, as expected, and this variable is statistically significant (at least at the 0.01 level) in both the structural-equation models on the individual level.[44] We ran the model using the absolute value of the amount; therefore, a positive coefficient means that the higher the deduction of CALI payment from the pain and suffering damages, the higher the awarded amounts of court-adjudicated pain and suffering damages.[45]

Figure 5, showing the negative relations between damages-income ratio and the amount of pain and suffering damages, corroborates the regression results. The left plot in Figure 5, however, shows that if all defendants are natural persons, the result[46]—lower damages-income ratios leading to lower pain and suffering damages—is the opposite of what we expected. To further test the phenomenon, we added an interaction term (a continuous variable on negative damages-income ratio * a dummy variable on whether defendants include corporations) to unreported single-equation and structural-equation models at both the individual and case levels, with all observations or with observations with negative out-of-pocket payment. The interaction term is never close to statistical significance. Also, the absolute value of the coefficient for the interaction term is small compared

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[41]It was not feasible to run a properly specified, structural-equation model on either level with first-round data.

[42]The sample size used in structural-equation models reported in Table 7 is not very large, so we ran 500 bootstrap versions of these models to assess the impact of the smaller sample size. The results are consistent with the structural-equation models; thus, the small sample size should not be problematic.

[43]We could not run the same single-equation, case-level models on first-round data, as there were so many missing values for plaintiff income and defendant income. Another model, using defendants' payment of pecuniary damages (without being divided by defendants' income) as the major independent variable, and not using any income variable, demonstrates similar results, though the independent variables of interest are not statistically significant at the 0.05 level. $N = 54$.

[44]The single-equation model on the individual level also reveals a positive and statistically significant effect of a negative out-of-pocket payment. But note that the payment there is not divided by defendant's income.

[45]Baker (2001) finds that in the United States, attorneys for the plaintiffs are reluctant to go after "blood money" (meaning defendants' personal assets), unless the tort actions lead to death or serious injury or involve rape. Our context falls into the category where plaintiffs in the United States would still demand blood money. Nonetheless, in light of Baker's theory, our finding can be interpreted as judges in Taiwan being concerned over awarding too much blood money to the plaintiffs.

[46]The partial correlation coefficient between the absolute value of the negative damages-income ratio and the pain and suffering damages awards has a negative sign. This is consistent with the result shown in Figure 5 for the natural-person defendants.

Table 7: Structural-Equation Model Relating to the Requested Pain and Suffering Award on the Individual-Award Level

Variables	*(1) Pain & Suffering Award*	*(2) Pain & Suffering Request*	*(3) Pain & Suffering Award*	*(4) Pain & Suffering Request*
Plaintiff's pain and suffering request*#	1.327***		1.374*	
	(0.374)		(0.605)	
Damages-Income Ratio				
Positive amount*	−0.361**		−0.262+	
	(0.139)		(0.137)	
Negative amount*	1.176**		0.896*	
	(0.359)		(0.366)	
= 1 if positive amount*	1.398***		0.925*	
	(0.397)		(0.384)	
Victim's age*	−0.006	−0.007	0.001	−0.009*
	(0.005)	(0.005)	(0.006)	(0.004)
Familial Relations (Baseline: Spouse)				
Victim's minor child	(constrained)	(constrained)	0.244	−0.290+
			(0.280)	(0.161)
Victim's adult child*	0.074	−0.357***	0.080	−0.230*
	(0.173)	(0.108)	(0.179)	(0.105)
Victim's nondependent parent*	−0.443+	−0.031	−0.261	−0.050
	(0.255)	(0.246)	(0.282)	(0.244)
Victim's dependent parent*	−0.235	−0.222	0.021	−0.247
	(0.227)	(0.210)	(0.252)	(0.176)
Number of P*	0.060	−0.154***	0.052	−0.154***
	(0.068)	(0.044)	(0.100)	(0.046)
% of victim's negligence	−0.079	0.451+	−0.356	0.417+
	(0.269)	(0.257)	(0.307)	(0.242)
P hires lawyer		−0.062	0.031	−0.017
		(0.099)	(0.127)	(0.125)
D hires lawyer	0.030		0.058	
	(0.070)		(0.090)	
= 1 if >= 1 corporate D*	−0.244	0.490***	−0.293	0.449***
	(0.217)	(0.119)	(0.285)	(0.125)
Number of D financial units*	−0.233	0.753+	−0.611	0.721*
	(0.304)	(0.401)	(0.527)	(0.318)
P annual income#*	−0.030	0.048*	−0.025	0.050*
	(0.024)	(0.022)	(0.036)	(0.021)
= 1 if P annual income = 0			−0.425	0.677**
			(0.466)	(0.259)
Amount P receives from compulsory automobile liability insurance#		−0.018		−0.008
		(0.013)		(0.012)
Amount P receives from D before verdict#*		0.019*		0.024+
		(0.008)		(0.012)
Constant	−5.468	13.971***	−5.833	13.881***
	(5.295)	(0.593)	(8.582)	(0.506)
Observations	124	124	211	211
Coefficient of determination	0.802		0.709	

NOTE: #Means natural log transformation after CPI-index adjusted. P means plaintiff, and D means defendant. * in the variable column shows that the total effect of the variable in both models is statistically significant at the 5 percent level. In Columns 1 and 2, only observations in which both plaintiff's and defendant's income >0 are included. In Columns 3 and 4, only observations in which defendant's income >0 are included. The model is a structural-equation model with the pain and suffering award and request modeled simultaneously. The model accounts for the court strata and the nonindependence of multiple plaintiff cases. Robust standard errors in parentheses; clustered by case. ρ (the correlation between the error terms in the two equations) in Columns 1 and 2 is −0.123 and that in Columns 3 and 4 is −0.168. The two ρ are statistically insignificant at the 0.05 level. ***$p < 0.001$; **$p < 0.01$; * $p < 0.05$; +$p < 0.1$.

SOURCE: Chang et al. PS Damages Data Set 2014.

Table 8: Regression Models of Court-Awarded Total Pain and Suffering Damages in Cases

Dependent Variable: Court-Awarded Total Pain and Suffering Damages in Cases	
Variables	*(1)*
Damages-Income Ratio	
Positive amount	−1.046***
	(0.179)
Negative amount	−0.640
	(0.421)
= 1 if positive amount	0.210
	(0.473)
Victim's age	−0.008*
	(0.003)
All P annual income combined#	0.076**
	(0.028)
Number of P	0.152***
	(0.043)
% of victim's negligence	0.114
	(0.194)
P hires lawyer(s)	0.018
	(0.132)
D hires lawyer(s)	0.217+
	(0.111)
>= 1 corporate D	0.245*
	(0.116)
Number of noncorporate D financial units	0.302
	(0.432)
Year fixed effects	Yes
Constant	13.489***
	(0.682)
Observations	62
R^2	0.615

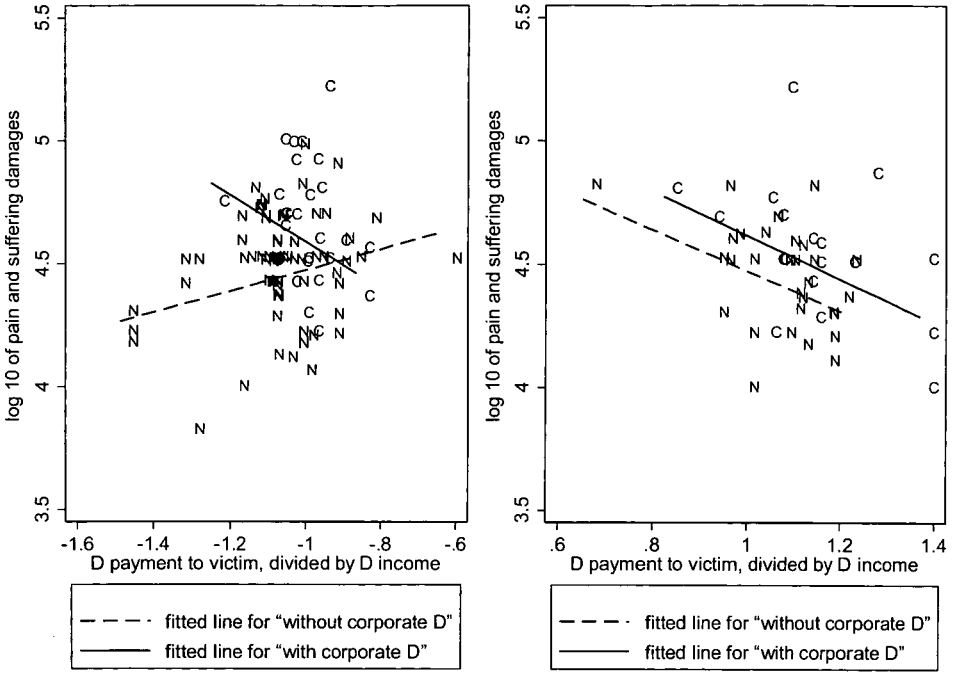
NOTE: #Means natural log transformation after CPI-index adjusted. P means plaintiff, and D means defendant. Coefficients in cells and robust standard errors in parentheses. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$.

SOURCE: Chang et al. PS Damages Data Set 2014.

to that for the continuous variable on negative damages-income ratio. Hence, the opposite effect of negative damages-income ratios on pain and suffering damages in observations with only natural-person defendants disappears after we controlled for other factors included in the regression models. Our general story still holds.

Notably, the structural-equation models on the individual level indirectly support the financial hardship hypothesis. In the plaintiff's request equations (Columns 2 and 4 in Table 7), the dummy variable on corporate defendant is statistically significant at the 0.001 level, and the continuous variable on the number of financial units on the defendant's side is statistically significant at the 0.05 and 0.1 levels. These two variables have positive signs. In

Figure 5: Defendant's relative compensation burden versus individual-level pain and suffering damages.



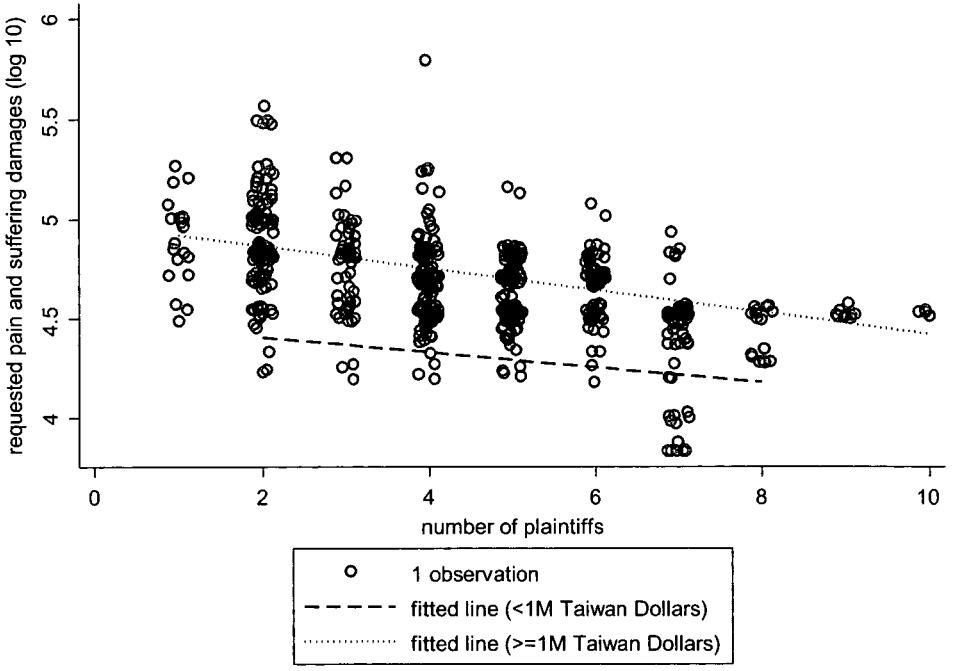
NOTE: C represents an observation with at least one corporate defendant, whereas N represents an observation without any corporate defendants; 229 observations (left plot) are negative, whereas 92 observations are positive (right plot). Eight observations with zero pecuniary payments are omitted from the figure. The amounts of pain and suffering damages are CPI-adjusted and in U.S. dollars before transformed into log 10 (in the right plot, absolute values are taken to be transformed into log 10). The lines in the two plots are fitted lines. Taiwan court cases decided from 2008 through 2012. Jittering is used to facilitate viewing similar data points.

SOURCE: Chang et al. PS Damages Data Set 2014.

other words, plaintiffs demand higher pain and suffering damages when defendants are likely to have deeper pockets. Moreover, the variable on the number of plaintiffs in Columns 2 and 4 of Table 7 has a negative coefficient (see also Figure 6) and is statistically significant at the 0.001 level, again consistent with our theory, as the plaintiffs may expect that courts will not just multiply a fixed amount of pain and suffering damages by the number of plaintiffs,[47] and the plaintiff does not have an incentive to bankrupt the defendant for fear of receiving nothing from the latter. Interestingly, none of the aforementioned variables is statistically significant in the judicial award equations. In addition, the variable on plaintiff's request in the judicial award equations is always positive and statistically significant at least at the 0.05 level, both on the individual level and case level (Models 1 and

[47]The variable on the number of plaintiffs in Columns 2 and 4 in Table 9 has a positive coefficient, but this is not surprising. On the case level, the total amount of demanded pain and suffering damages tends to increase with the number of plaintiffs in the case.

Figure 6: Number of plaintiffs versus plaintiffs' requested (individual-level) pain and suffering damages.



NOTE: $N = 599$. The amounts of pain and suffering damages are CPI-adjusted and in U.S. dollars before being transformed into log 10. Taiwan court cases decided from 2008 through 2012. Jittering is used to facilitate viewing similar data points.
SOURCE: Chang et al. PS Damages Data Set 2014.

3 in Table 7 and Model 1 in Table 9).These findings suggest that the judicial award was based on the plaintiff's evaluation. Put differently, our interpretation is that whether defendants were corporate and the numbers of the two parties influenced court-adjudicated pain and suffering awards through plaintiffs' requests, and judges do not give different weights to these factors.[48]

C. *Anchoring Effect*

At least two reasons suggest that the plaintiff's pain and suffering damages *request* should be relevant to the judge's pain and suffering award. First, judges will not award more than plaintiffs request. The request therefore caps the pain and suffering award and should be nonrandomly associated with it. Second, plaintiffs have an incentive to make reasonable

[48]We conjecture, counterfactually, that had plaintiffs failed to pay attention to the probability of putting too much financial burden on defendants (i.e., whether defendants are corporate and the number of the two parties are not statistically significant in the request equations), the relevant variables in the award equations may turn statistically significant.

Table 9: Structural-Equation Model Relating to the Requested Pain and Suffering Award on the Case Level

Variables	*(1) Total Pain & Suffering Awards to All P*	*(2) Total Pain & Suffering Requests by All P*
Plaintiff's total pain and suffering request#	0.896**	
	(0.309)	
Damages-Income Ratio		
Positive amount	−0.453**	
	(0.159)	
Negative amount	0.596+	
	(0.322)	
= 1 if positive amount	0.885*	
	(0.351)	
Victim's age	−0.002	−0.009**
	(0.003)	(0.003)
# of P receiving pain and suffering damages for dead victim in the case	0.017	0.159**
	(0.061)	(0.050)
% of victim's negligence	−0.138	0.408***
	(0.181)	(0.121)
= 1 if >= 1 corporate D	0.042	0.670
	(0.198)	(0.450)
Number of D financial units	0.002	0.052
	(0.028)	(0.043)
All P annual income combined#		0.356
		(0.245)
The amount P receives from compulsory automobile liability insurance#		−0.024+
		(0.014)
The amount P receives from D before verdict#		0.021+
		(0.012)
Constant	0.592	13.945***
	(4.423)	(0.666)
Observations	62	62
Coefficient of determination	0.501	

NOTE: #Means natural log transformation after CPI-index adjusted. P means plaintiff, and D means defendant. The model is a structural-equation model with the pain and suffering award and request modeled simultaneously. Robust standard errors in parentheses. ρ (the correlation between the error terms in the two equations) is −0.061 and statistically insignificant. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$.

SOURCE: Chang et al. PS Damages Data Set 2014.

pain and suffering requests because the court fee increases as the requested amount increases. The two reasons themselves, however, do not necessarily imply that plaintiffs' requests will be highly positively correlated with judges' awards, all else equal. Experiments have shown that the plaintiffs' ad damnum influences judges' awards (e.g., Chapman & Bornstein 1996; Diamond et al. 1998:318–19; Hastie et al. 1999; Campbell et al. 2014).[49] As

[49]But compare Diamond et al. (2011:172–74), who find that real jurors appeared more inclined to reject ad damnums.

experiments can control for all other factors in the hypothetical case, the influence is attributed to the effect of the request itself; hence the results can be interpreted as evidence for the existence of the anchoring effect.

To examine whether the anchoring effect exists in real-world tort litigation, we adopted a structural-equation approach in which the structural equation includes the plaintiff's requested pain and suffering amount and an additional equation models the plaintiff's requested amount as a function of objectively observable factors. Our model is recursive and therefore is identified.[50] The variables on plaintiffs' requests are statistically significant at least at the 0.05 level and have positive coefficients. That is, holding other factors constant, the more plaintiffs request, the more judges award. This result is consistent with the experimental findings regarding the anchoring effect of plaintiff requests. Nonetheless, like other observational studies, our models are not able to control for everything. The statistical significance of the plaintiff's request is thus subject to interpretations other than the anchoring effect.

Given the anchoring interpretation, judges can be interpreted as following the "anchor and adjust" procedure, although not in its classical sense (Tversky & Kahneman 1974:1128). The statistical significance of the variable capturing a plaintiff's request in the court award equation is evidence for the anchoring part. As for the adjustment part, judges do not adjust the required amount to approach a reasonable amount (as no such thing exists); rather, they adjust to avoid putting too much financial burden on defendants.

D. Plaintiffs' Claim Pattern

Our research sets out to examine the determinants of pain and suffering damages adjudicated by courts. In doing so, we found that what drove the amount of plaintiffs' requests is also an interesting topic. We report the findings here.

First, plaintiffs take into account the financial conditions of the defendants in making their claims, as the number of plaintiffs, existence of corporate defendants, and the number of financial units on the defendant side are statistically significant in the plaintiff request equation (see Table 7). These variables are not statistically significant in the court award equation. In other words, the direct effects of these three variables are weak, whereas their indirect effects on court awards through their influence on plaintiffs' request are stronger. Indeed, their total effects (the sum of the direct effect and the indirect effect) are all statistically significant at least at the 5 percent level.

Second, victim's age has a negative effect on the amount requested by plaintiffs, and is statistically significant in most models. The surviving relatives appear to feel less sorrow when the victim has spent a long time on the earth. Third, the incomes of individual plaintiffs or all plaintiffs have positive effects (see Figure 7). These variables in the plaintiff request equation in the structural-equation models on the individual level are statistically significant at the 0.05 level, suggesting that plaintiffs with positive income demand a higher

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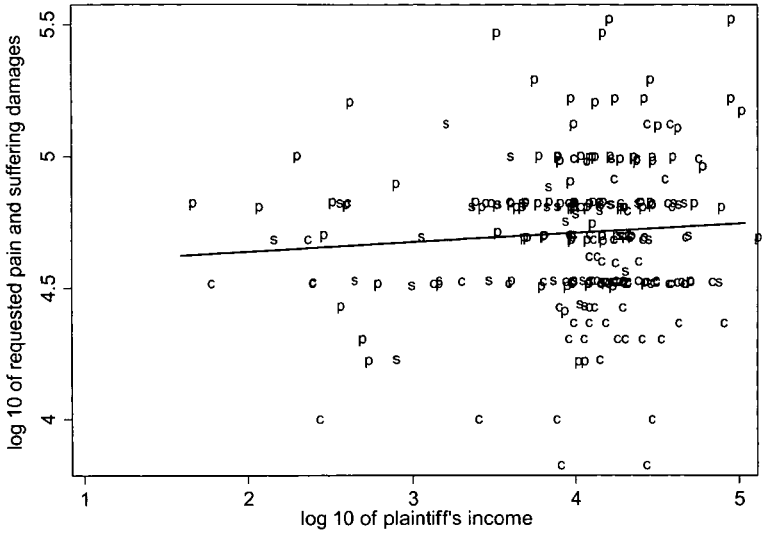
[50]A sufficient condition for a recursive model to be identified is that the covariance between the error terms is specified to be equal to zero (Bollen 1989:95–98). Upon fitting the recursive structural-equation models we could not reject that the covariance between the error terms is equal to zero.

Figure 7: Plaintiff's income versus plaintiff's requested (individual-level) pain and suffering damages.



NOTE: $N = 267$. "c" represent children; "p" represents parents; and "s" represents spouses. Each letter is one observation. The amounts of requested pain and suffering damages and plaintiffs' income are CPI-adjusted and in U.S. dollars before being transformed into log 10. Taiwan court cases decided from 2008 through 2012. Jittering is used to facilitate viewing similar data points. In 189 observations, the plaintiff's income equals 0; in four observations, the plaintiff's annual income is less than 1,000 Taiwan dollars (U.S. $33). These observations were omitted.

SOURCE: Chang et al. PS Damages Data Set 2014.

amount of pain and suffering damages when they have more earning capacity. Fourth, whether plaintiffs hired attorneys has no effect on the requested (and awarded) amount.[51]

Finally, the effect of a defendant's apology on plaintiff claims is worth exploring. Our intuition was that if the defendant offered his or her apology to the surviving relatives before the litigation, it would reduce the chance of plaintiffs resorting to the court, and when the plaintiffs did, it would reduce the requested amount of compensation. We have no information on whether the defendants were apologetic, and we do not know how many accidents settled out of court. We do know the amount of defendants' prelitigation payment to the plaintiff. This voluntary payment could be considered a form of apology. Nevertheless, regression results reported in Table 7 show that the amount of such payment has a positive and (marginally) statistically significant effect on the amount of pain and suffering damage requested by the plaintiff. Robbennolt (2008:379–80) finds that plaintiffs' attorneys tend to increase the claimed amount of compensation when defendants offer their apology, whereas other experiments have found that apologies tend to decrease

[51]In unreported models, we also test whether attorneys would create statistically significant effects if only one party hires them. The result is still statistically insignificant. We have also done a t test to examine whether plaintiffs' income may have affected their decisions to hire attorneys: $p = 0.68$ in the two-sided test.

layperson plaintiffs' estimate of fair settlement value. The plaintiffs in our data behaved like the former, upping the ante when receiving a form of apology before litigation. To tease out whether prepayment as an apology affects plaintiffs with attorneys and those without differently, we add an interaction term (dummy on plaintiffs hiring attorneys × the amount of prepayment) to the two structural-equation models reported in Table 7. Unreported tables show that the prepayment variable and the interaction term both are statistically insignificant (both have positive signs). The lack of statistical significance may be due to lack of degrees of freedom and collinearity. This issue is worth exploring further in future studies.

V. Conclusion

We show that in determining pain and suffering damages in car accident cases, an important concern for both plaintiffs and courts was not putting overwhelming financial burdens on defendants. Plaintiffs' requests have strong influence on court awards, suggesting that the anchoring effect is at work. On the individual level, when different familial groups appear as plaintiffs in one case, courts tend to award spouses the most pain and suffering damages. Spouses are followed by minor children, parents, and adult children. The as-expected judicial behaviors, consistent results, respectable coefficient of determination (all > 0.5), and other test statistics reveal the predictability of pain and suffering damages in wrongful death cases in Taiwan. Our empirical findings will be of relief to other East Asian countries such as China where assessments of pain and suffering damages in wrongful death cases are generally not formulaic. On the other hand, the predictability of nonpecuniary damages by regression models points toward a new reform approach: making pain and suffering damages predictable by suggesting or mandating judges to use the point estimates with prediction intervals by regression models as the starting point of the judicial award.

There are limits to our data and analysis, and future research is thus warranted. This study focuses on car accidents, a typical negligent tort case; future research on intentional torts such as battery may show a different picture. Certain potentially normatively important factors, such as the incomes and assets of both parties and the victim, their educational level, and so forth are not always available from the written judgments; thus, our study is not able to include them in the regression models. A joint research project with courts in Taiwan in the future may better pin down the determinants of nonpecuniary damages.

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