

# Women's Marital Surname Change by Bride's Age and Jurisdiction of Residence: A Replication\*

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Hyphenating or keeping premarital surname for all U.S. destination brides marrying in Hawai'i in 2010 was highly, positively correlated with a state-level women's income measure ( $r = .78, p < .000$ ) and the analogous statistic for men ( $r = .64, p < .000$ ), by bride's state of residence. The women's measure, only, remained significant when both predictors were used, together, to predict retention/hyphenation (*i.e.*, under regression of both predictors). The interaction of state Gini coefficient and the women's income measure was positively predictive in a regression including the interaction components as predictors (adjusted- $R^2 = .66$ ). None of several other predictors suggested by previous research or related to Gini index or income, testable using available, state-level data, were predictive (under regression) alongside the women's income measure. The older the bride, from any jurisdiction, the more likely she is to hyphenate or keep her surname ( $\chi^2$  for linear trend = 1754.65,  $p < .000$ ). These analyses comprise a nearly direct replication of previous work, adding novel analyses. Taken together, the original and replicated study may show evidence consistent with a general practice of women taking into account local economic factors, in marital surname decision-making. This article was re-issued in January 2023 with two author-requested corrections to Figure 2. For more details, see the Corrigendum that appears in NAMES vol. 71, issue 1.

KEYWORDS United States, surnames, family roles, marriage, socioeconomic status  
anthroponymy

## Introduction

Hawai'i, uniquely among U.S. states, requires that brides record whether they will retain their premarital surnames, change to those of their grooms, or hyphenate the two names (Cherlin 1978). About 10% of brides marrying in Hawai'i in 1978 recorded their intention to either retain or hyphenate their last names (Cherlin 1978). In 2006, it was 16.7% with 11.7% retaining and 5.1% hyphenating their surnames (MacEacheron 2011). Since bride age and jurisdiction of residence (e.g., state) are also recorded in

marriage registration documents, a unique research opportunity is afforded. Together, these data allow for testing hypotheses concerning women's marital surname choice in relationship with their age or state of residence.

### ***Interpersonal Importance of Women's Marital Surname Practices***

The marital surname choice of women can be significant at the interpersonal level to the extent this decision can represent both a perceived loss and gain for women. Some college women, for instance, have been reported to anticipate a detriment to earnings with marital surname change (Goldin and Shim 2004). Other women have been reported to perceive surname change, in part, as effecting some loss of personal identity (Boxer and Gritsenko 2005; Robnett and Leaper 2013). Women have also, however, been reported to perceive such change as an opportunity to create unity with their husbands and (future) children (Boxer and Gritsenko 2005; Robnett and Leaper 2013). In addition, unmarried men may expect women to change surname at marriage (Lockwood, Burton, and Boersma 2011). However, the marital surname choice of women is not only of importance at the interpersonal level. On the broader sociological level, when women take their husbands' surnames, they increase the prevalence of their partner's family name and decrease that of their former names. For example, in North America, when wives take their husbands' surnames at marriage, the children of the marriage are more often surnamed solely for these husbands (Johnson and Scheuble 2002).<sup>1</sup> This naming practice may affect whether a given surname survives, and its potential prominence within a society. Prestigious achievements, for example, are often associated with or named after the person who achieved them (e.g., *Darwinian science* named after Charles Darwin). Similarly, place names and businesses may receive the surname of founders. Take for example the U.S. capital city, Washington, D.C. which features the surname of the country's first president, George Washington, and the modified surname *Columbia*, the feminine form of Christopher Columbus' surname. When prominent married women take on their spouses' surnames, there is a good chance their individual achievements and those of their children will not be associated with their own 'line' but with that of their husbands (e.g., Marie Curie's achievements are typically associated with her married surname *Curie*, rather than her natal surname *Sklodowska*).

### ***U.S. Regional and Other Variation in Women's Marital Surname Practices***

In a purportedly representative survey of 929 U.S. married individuals and 180 of their married adult offspring, the prevalence of women changing their marital surname varied by region (Johnson and Scheuble 1995). In that study, the women most likely to retain premarital surname were those in the South, followed by those in the West, then Northeast, and finally North Central regions (note: the usually-Southern custom of retention of birth surname as a middle name was counted as surname retention). It has also been found that the likelihood of bridal marital surname change/retention/hyphenation varied by U.S. *state* (MacEacheron 2011). It is therefore

plausible that women's marital surname choice indeed varies by U.S. state: It is important, however, to replicate such finding before it may be accepted.

Income and professional considerations may systematically predict marital surname choice (e.g., Goldin & Shim, 2004). There is variability in the economic inequality between women and men, between states.<sup>2</sup> This, in turn, could also be related to marital surname choice. Regardless of particular level of affluence of each destination bride in Hawai'i, typical income in one's home state may still affect one's surname choice, to the extent this is influenced by local culture. Destination brides to Hawai'i, however, all have sufficient access to loans, gifts, or income, to allow purchase of a lengthy, return plane journey. Considering marrying closer to home would not require these flights, I hypothesize that destination brides to Hawai'i may be more likely to be employed full-time or salaried, as opposed to employed part-time or unemployed.

### **Age Effects**

MacEacheron (2011) found strong support for older brides being more likely to retain their premarital surname ( $\chi^2(1)$  for linear trend = 399.60,  $p < .0001$ ,  $N = 28,680$ ). Other studies of marital surname retention have also found this pattern (Noack and Wiik 2008; Johnson and Scheuble 1995; Goldin and Shim 2004; Hoffnung 2006; Scheuble and Johnson 1993, 2005). Assuming older women are more traditional than younger ones, such a finding might be puzzling. I speculate that because older brides are nearer to or beyond the end of their reproductive careers, they need worry less about ensuring recruitment of as many resources from husbands, with which to help support minor children – a potential, economic factor in marital surname decision-making.<sup>3</sup>

Although fathers of children are legally obliged to help support them financially, most U.S., custodial, single parents – the large majority of whom are mothers (U.S. Census Bureau 2016) – do not receive all the child support owed them (U.S. Census Bureau 2018). Some fathers, logically, may choose to limit financial support of children to the minimum required, while other fathers may be extremely generous. In industrialized societies, divorce has been shown to tend to diminish paternal investment in children (see discussion in Geary 2000), further attesting to the uncertainty of some fathers' financial support of children.

Giving a child his/her unmarried father's first or middle name, in one population, was associated with increased paternal financial support (Furstenburg and Talvitie 1980). Assuming husbands may, to some extent, *choose* to contribute resources to their children, pleasing husbands in order to better elicit resources from them for her future children, may become less important to a bride the older she is. Assuming, further, that marital surname change to match a husband's would tend to please him, undergoing such change may accordingly become less important to brides generally, with greater age.

### **Gini Coefficient**

A common or even the standard assay (e.g., Kruger 2010) of income inequality within a population is its "Gini coefficient" (Gini 1909). This value at the level of each U.S.

state, comparing households within each state, is used as a predictor herein. The Gini coefficient may be graphically represented. Cumulative share of income earned (Y-axis) is plotted against cumulative share of people (or households) from lowest to highest incomes (X-axis). The 'Line of Equality', representing every individual having equal income, is entered on the graph. This straight line is drawn at a 45-degree angle to the X-axis, from the position representing the least-wealthy person or household to that representing the most wealthy person or household. The Lorenz Curve is then plotted. For each X-axis value of share of people or households at a given point of income relative to the others in the population, it represents their combined share of the population's total income. If income is equal for all in the population, the Lorenz Curve will exactly trace the Line of Equality. The area between these two lines is the Gini coefficient.

## Materials and Methods

Proportion of females (all of whom married males) choosing either to retain their premarital surname or hyphenate it with that of their husband, comprised the dependent variable. For this variable, I obtained data aggregated by state for all U.S. brides marrying in Hawai'i in 2010. From these data, associations could only be computed for variables at the state level. Numbers were obtained for brides choosing each of the four surname options: 1.) change surname to that of groom; 2.) keep premarital surname; 3.) select a 'combination' (*i.e.*, usually, hyphenation of bride's premarital surname with that of groom; or 4.) other (see Table 3). Note that state-level data were only provided for states from which at least 20 brides hailed: accordingly, data were provided for 47 out of 50 U.S. states. Separate data were additionally provided as to proportion of brides making each marital surname choice, by binned age group, for all women in the world who married in Hawai'i in 2010. No other data were included in these datasets. All data were provided by Brian Horiuchi, Hawai'i Department of Health (personal communication, January 2013).

I first looked at the association between brides retaining/hyphenating their surnames and the median income of full-time/salaried women and men by state. I hypothesized that *the proportion of women choosing surname retention/hyphenation at marriage would be positively predicted by the state-level income of the sub-set of women most likely to get married as destination brides: those employed full-time or in salaried positions*. Since only destination brides are considered, those hailing from Hawai'i were excluded from state-level analyses. As in the previous work this study nearly directly replicates (MacEacheron 2011), I also hypothesized that *the predictiveness of this women's income estimate would exceed that of the analogous state-level estimate of men's income*.

Data from all women marrying in Hawai'i in 2010 (whether or not they resided in a U.S. state from which at least 20 brides hailed) were analyzed by age category. These data permitted testing of the hypothesis that *older brides would be more likely to retain/hyphenate their surnames upon marriage*.

Although data were separately provided as to hyphenation and retention rates, these two state rates were summed to create the value predicted— proportion retaining *or*

hyphenating. This procedure was adopted for two reasons. First, it made the current research more comparable to existing research on this topic, given the large majority of the literature on women's marital surname change compares women changing names, with those *either* retaining or hyphenating. Second, this step ensured each 'group' compared would have at least the minimum number of participants required for the statistical tests to be run. Since retention and hyphenation are each low frequency practices, it was assumed that neither sub-grouping would have met the pre-requisite statistical minimum on its own.

Median men's and women's 2010 full-time/salaried workers' earnings by state were obtained from the U.S. Department of Labor (2012). State-level average and median 2010 annual incomes of females and males over 17 years of age were computed using the State Personal Income 2010, IPUMS 1% sample of the U.S. Census (Ruggles et al. 2010).

### **Statistical Analysis**

Consistent with the general practice of research reviewed in MacEacheron (2011, 2016), the number of brides who either kept their premarital surnames or hyphenated were taken together, and contrasted with the number who changed their last names to husbands' surnames. A Chi-square test for linear trend was employed to determine whether the proportion of brides retaining/hyphenating surname increased significantly as the brides' age category increased (using StatsDirect software, [http://www.statsdirect.com/help/chi\\_square\\_tests/2k.htm:%20](http://www.statsdirect.com/help/chi_square_tests/2k.htm:%20); all other statistics were performed using SPSS 18.0 or higher).

The proportion retaining or hyphenating name from the 47 residential states with at least 20 brides marrying in 2010 in Hawai'i, was correlated with state median full-time or salaried incomes of women and men. Ordinary Least Squares ("OLS") regressions were also performed to assess the relative predictiveness of included predictors.

### **Results**

19.23% of *all* brides marrying in Hawai'i in 2010 either retained (12.60%) or hyphenated (6.62%) their premarital surnames. This figure is estimated to be less than 10% among U.S. brides in general (see, e.g., Goldin and Shim 2004): the difference is significant ( $t(45) = 6.14, p < .001$ ). In the Hawai'i 2010 dataset, the older the bride was, the more likely she was to retain or hyphenate her premarital surname (Table 1 and Figure 1:  $\chi^2(1)$  for linear trend = 1754.65,  $p < .0001$ ;  $\chi^2(6)$  total = 3032.30,  $p < .0001$ ).

Table 1. Percentage of brides changing, hyphenating (or otherwise combining), or keeping last name at marriage in Hawaii in 2010, according to the Bride's Age (23,927 records)

Age	Changed	Hyphenated	Kept (Combined)	Other	Total
Under 20	525 (84.95)	31 (5.02)	62 (10.03)	0	618
20–24	3038 (85.48)	158 (4.44)	356 (10.02)	2	3554
25–29	5396 (84.44)	373 (5.84)	605 (9.47)	16	6390
30–34	3898 (78.80)	372 (7.52)	670 (13.54)	7	4947
35–39	2296 (77.62)	229 (7.74)	427 (14.44)	6	2958
40–44	1442 (77.61)	157 (8.45)	248 (13.35)	11	1858
45+	2675 (74.26)	266 (7.38)	648 (17.99)	13	3602
TOTAL	19270 (80.54)	1586 (6.63)	3016 (12.60)	55	23927

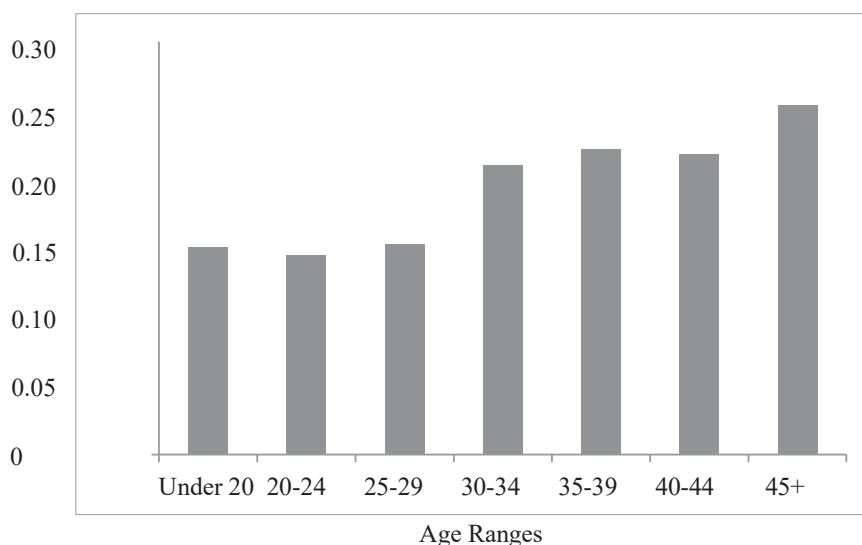


FIGURE 1. Proportion of brides hyphenating or keeping surname at marriage in Hawai'i, 2010 (N = 19,270).

Substantial variation existed in surname choices (see above [Table 1](#)). The observed state variation was not in accord with regional differences as reported by Johnson and Scheubel (1995). This discrepancy remained even when discounting the South due to the potentially confounding regional tradition of women there retaining their premarital

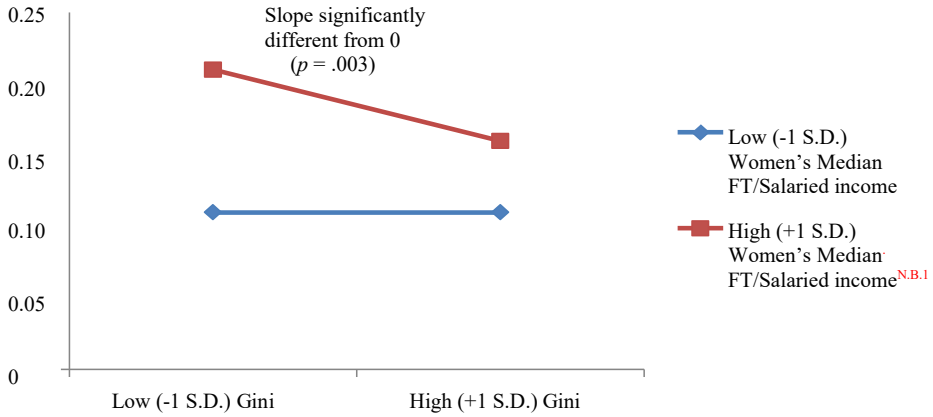


FIGURE 2. Higher women’s median full-time/salaried income predicted state proportion of premarital surname retention or hyphenation only where state Gini low<sup>N.B.2</sup>

**N.B.1&2:** In the original author-approved version of this article which appeared in December 2020 (NAMES 68, no. 4), this line was incorrectly labeled “Men’s Median”. In addition, the caption for Figure 2 included the phrase “only where state Gini high” when it should have been “only where state Gini low”. As per the author’s request on 1 and 27 January 2023, these two errors have been corrected here.

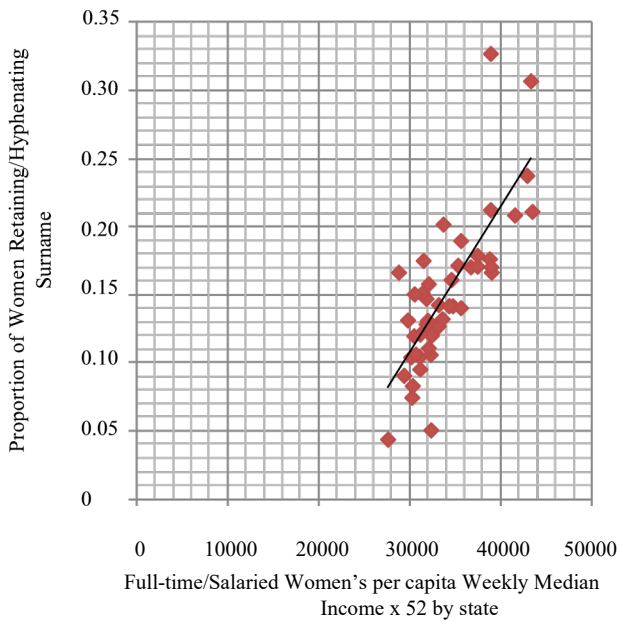


FIGURE 3. Percentage of U.S. brides not resident in Hawai’i marrying in Hawai’i in 2010 who either hyphenated or kept their surnames is significantly correlated with median full-time/ salaried personal income of women in 2010 in bride’s state of residence ( $r = .78, p < .0001, N = 46$  (states), number of brides = 12,949). Median full-time/salaried income of women ♦

premarital surname as middle name. However, women's ( $r = .78, N = 45, p < .0001$ ) see Figure 3 and men's ( $r = .62, N = 45, p < .05$ ) see Figure 4 state median full-time/salaried income were significantly related.

An OLS regression of both men's and women's state (other than Hawai'i itself) median full-time/salaried income on proportion women by state retaining or hyphenating premarital surname, yielded only the latter as significant

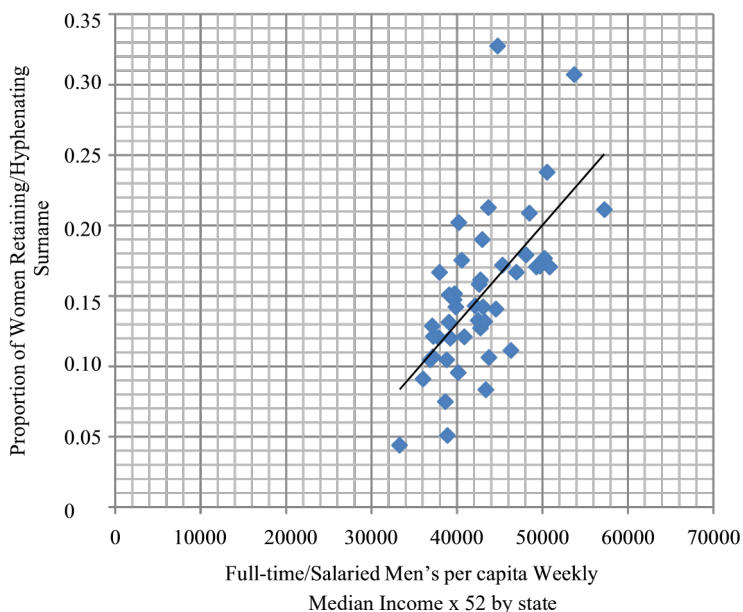


FIGURE 4. Percentage of U.S. brides not resident in Hawai'i marrying in Hawai'i in 2010 who either hyphenated or kept their surnames is significantly correlated with median full-time/salaried personal income of men in 2010 in bride's state of residence ( $r = .64, p < .0001, N = 46$  (states), number of brides = 12,949). Median full-time/salaried income of men ♦

(regression  $F(2, 43) = 33.72, p < .000$ ; betas of  $-.171, ns$ , and  $.927, p < .001$ , for men and women respectively). The adjusted- $R^2 = .593$  revealed a medium to strong effect size (Ferguson 2009). Neither the difference between men's and women's median full-time/salaried incomes by state nor the former value divided by the latter was significantly associated with women's surname choice. Thus, income inequality as between the sexes at state level, does not seem to be associated with women's surname choice.

### **Potential Skewing of Results**

Importantly, analyses were performed to determine whether the above results may have been skewed by states with comparatively low numbers of brides. To test this possibility, the number of women by state keeping/hyphenating surname at marriage was added as a predictor. This predictor was found not to be significant. The resultant regression was also found not to have a higher adjusted- $R^2$  value. These findings provide



some evidence against the possibility that states with few brides may have skewed the results.

### **Discriminant Analysis**

In all analyses that follow,  $N = 46$ . This total represents the number of states from which data were used. Data was available for 47 states, including Hawai'i itself. Given that the hypotheses only pertain to destination brides, the results of the analyses run on the remaining 46 states are exclusively presented here, except where explicitly stated.

### **Women's State-Level Average and Median Income**

Women's and men's state-level average income (as used in MacEacheron 2011) for 2010 was strongly correlated with state rate of brides either retaining or hyphenating their birth surnames ( $r = .76$ ,  $p < .000$  and  $r = .67$ ,  $p < .000$ , respectively). When, however, either was used as sole co-predictor with women's full-time/salaried state median income in OLS regression, the average income predictor was not statistically-significant ( $p > .05$ ), while the other predictor was highly significant (for the regression using the women's income indicator  $\beta_{\text{Women's Median Full-Time/Salaried Income}} = .541$ ,  $p = .041$ ;  $\beta_{\text{Women's Average Income}} = .254$ , *ns*; adjusted- $R^2 = .595$ ; for the regression using the men's income indicator  $\beta_{\text{Women's Median Full-Time/Salaried Income}} = .845$ ,  $p < .000$ ;  $\beta_{\text{Men's Average Income}} = .077$ , *ns*; adjusted- $R^2 = .587$ ). These findings mean women's *full-time/salaried median* income was more predictive than either women's average income or men's full-time/salaried median income.

Women's and men's overall median income was also correlated with state rate of brides either retaining or hyphenating their birth surnames ( $r = .62$ ,  $p < .000$ , and  $r = .473$ ,  $p = .001$ , respectively). Again, when similarly used in OLS regression as predictors alongside just median women's *full-time/salaried* income by state, however, neither was statistically significant: for the regression using the women's income indicator  $\beta_{\text{Women's Median Full-Time/Salaried Income}} = .911$ ,  $p < .000$ ;  $\beta_{\text{Women's Median Income}} = .157$ , *ns*; adjusted- $R^2 = .593$ ; and for the regression using the men's income indicator  $\beta_{\text{Women's Median Full-Time/Salaried Income}} = .943$ ,  $p < .000$ ;  $\beta_{\text{Men's Median Income}} = .224$ , *ns*; adjusted- $R^2 = .609$ . These results mean women's *full-time/salaried* median income was more predictive than either women's or men's *overall* median income.

### **Gini Coefficient**

The Gini coefficient was included as a control variable, based on an observation of data from MacEacheron (2011). In those data, the states in which inequality was higher were the ones in which the average income was lower. I made no a priori prediction as to the Gini coefficient's predictiveness. In the Gini-related analyses, female by-state median full-time/salaried income (a weekly value: average was \$653) was linearly transformed into income in hundreds of dollars (i.e., divided by 100). This conversion was done in order to make this value, the Gini coefficient (which ranges from 0 to 1: average was

.45), and the outcome variable (a proportion), more comparable in magnitude. The goal here was to make the standardized beta values, which show *how* predictive each predictor may be, more interpretable. Prior to analyses, the income variable and the Gini coefficient, and their interaction, were centered.

Marital surname retention/hyphenation rate by state significantly correlated with the Gini coefficient for each state, for 2009 (U.S. Census Bureau:  $r = .335, p = .023$ ). When it and state women's median full-time/salaried income were entered as predictors in OLS regression of brides' premarital surname retention or hyphenation by state, this co-predictor, unlike any other tried, remained significant ( $\beta_{\text{Women's Median Full-Time/Salaried Income}} = .741, p < .000; \beta_{\text{Gini}} = .203; p = .033; \text{adjusted-}R^2 = .627$ ). In other words, only the Gini coefficient and no other predictor assessed was found to be predictive alongside Median Women's Income. When, however, these two predictors and their interaction were entered into a similar regression, the Gini coefficient dropped out as a predictor, leaving the income predictor as highly significant and the interaction term as significant (see Table 2).

Table 2. OLS Regression, DV = Percentage women keeping/hyphenating surname

Predictor:	Beta:	<i>p</i> :
Gini	.151	.107
Women's Median FT and Salaried Income	.669	.000
Gini X Women's Median FT and Salaried Income	.215	.034

Note: adjusted- $R^2 = .658$  (strong effect size: Ferguson, 2009).

Given that the interaction term beta is .215, note that one increment of such term results in that number of standard deviations (positive) change in the DV.

I also assessed whether higher women's median full-time/salaried income predicted premarital surname retention or hyphenation *only* where state income equality was low (therefore, Gini high). To make this assessment, I calculated predicted values ( $\pm 1\text{S.D.}$ ) and used them in an OLS regression similar to that just above. In both of these regressions, the interaction was significant. That is, the interaction term of *high* ( $+1\text{S.D.}$ ), women's median full-time/salaried income with Gini, yielded the following regression terms:  $\beta_{\text{Gini}} = .343, p = .003; \beta_{\text{Women's Median Full-time/Salaried Income}} = .669, p < .000; \beta_{\text{Interaction}} = .241, p = .034; \text{adjusted-}R^2 = .658$ . The interaction term of *low* ( $-1\text{S.D.}$ ), women's median full-time/salaried income with Gini, on the other hand, produced the following regression terms:  $\beta_{\text{Gini}} = .041, ns; \beta_{\text{Women's Median Full-time/Salaried Income}} = .669, p < .000; \beta_{\text{Interaction}} = .328, p = .034; \text{adjusted-}R^2 = .658$ . This interaction is depicted in Figure 2, above.

In this figure, four 'types' of states are represented by the four points. The four types are made up of states in which (1) the Median Women's Income is high and (household-to-household) income inequality is high; (2) the Median Women's Income is high but income inequality is low; (3) the Median Women's Income is low but income inequality is high; and (4) the Median Women's Income is low and income inequality is low.

Table 3. Proportion of destination brides changing, hyphenating, or keeping surname at marriage in Hawai'i in 20201 by brides' state of residence.

State	Changed	Kept	Hyphenated	Other	Total	Proportion Retain/Hyphenate	Proportion Change
Alabama	77	3	6	0	86	0.10	0.90
Alaska	175	21	15	0	211	0.17	0.83
Arizona	429	34	37	0	500	0.14	0.86
California	2586	448	251	3	3288	0.21	0.79
Colorado	307	44	23	0	374	0.18	0.82
Connecticut	56	10	5	0	71	0.21	0.79
Florida	244	42	20	1	307	0.20	0.79
Georgia	151	18	4	0	173	0.13	0.87
Idaho	109	9	6	1	125	0.12	0.87
Illinois	381	58	21	0	460	0.17	0.83
Indiana	161	9	8	0	178	0.10	0.90
Iowa	79	6	5	1	91	0.12	0.87
Kansas	110	10	9	0	129	0.15	0.85
Kentucky	99	5	3	0	107	0.07	0.92
Louisiana	88	5	3	0	96	0.08	0.92
Maine	18	2	1	0	21	0.14	0.86
Maryland	91	17	7	0	115	0.21	0.79
Massachusetts	104	40	7	2	153	0.31	0.68
Michigan	213	23	12	1	249	0.14	0.86
Minnesota	195	26	13	0	234	0.17	0.83
Mississippi	30	1	2	0	33	0.09	0.91
Missouri	165	21	10	0	196	0.16	0.84
Montana	55	7	4	0	66	0.17	0.83
Nebraska	56	2	1	0	59	0.05	0.95
Nevada	258	17	22	0	297	0.13	0.87
New Hampshire	28	5	1	0	34	0.18	0.82
New Jersey	109	26	8	0	143	0.24	0.76
New Mexico	80	13	4	0	97	0.18	0.82
New York	223	69	40	1	333	0.33	0.67
North Carolina	139	12	7	0	158	0.12	0.88
North Dakota	28	5	0	0	33	0.15	0.85
Ohio	288	28	16	0	332	0.13	0.87
Oklahoma	137	6	10	0	153	0.10	0.90
Oregon	464	54	23	1	542	0.14	0.86
Pennsylvania	234	34	11	0	279	0.16	0.84
South Carolina	62	7	4	0	73	0.15	0.85
South Dakota	29	1	3	0	33	0.12	0.88
Tennessee	151	8	10	0	169	0.11	0.89
Texas	820	80	41	0	941	0.13	0.87
Utah	185	12	10	0	207	0.11	0.89
Virginia	155	20	12	0	187	0.12	0.83
Washington	1050	141	76	5	1272	0.17	0.82
West Virginia	33	4	1	0	38	0.13	0.87
Wisconsin	144	20	14	1	179	0.19	0.80
Wyoming	32	3	1	0	36	0.11	0.89
<b>TOTAL</b>	<b>10715</b>	<b>1426</b>	<b>791</b>	<b>17</b>	<b>12949</b>	<b>0.17</b>	<b>0.83</b>

Of these four state types, women's retention/hyphenation of surname differed from the other three in only the second type (i.e. states in which the Median Women's Income was high but the income inequality was low).

## Discussion

### *Limitations*

As is the case with all other essentially correlational research, this work suffers from the third variable problem, and no causation can be or is implied. This study, however, was still judged worthy of performing. This was the case for two reasons. First, it comprises evidence (along with MacEacheron 2011) of a previously-unknown general practice of brides that has practical effects as discussed and has been reported to be the outcome of an often-difficult decision. Second, it would be unethical and impossible to experimentally manipulate which brides take their grooms' names and which do not (and then assess outcomes). In any case, and importantly, it is the fact the decision is made freely (at least in legal terms) that makes it of interest in this work, in which this choice is related to various predictors. Another limitation of the data, was the lack of age-binned information for brides over the age of 45. To the best of my knowledge, however, there is no large-scale source of data concerning brides' name choice, broken down within the over-45 age group. Finally, note that state-level predictors in general may obscure any effects specific to community (or county, *et cetera*). To the author's best knowledge, however, there exist no available data as to women's marital surname choice at community or other such level.

It should be noted that destination brides may systematically differ from other brides with respect to marital surname change, such that the proportion of them hyphenating or keeping surname at marriage may not be generalizable to either the U.S. adult female population or even to U.S. women working full-time or in salaried positions (despite the focal regression used satisfying statistical requirements for generalizability: Field 2005).<sup>4</sup> Given that grooms may expect their future wives to surrender their surnames at marriage (Lockwood, Burton, and Boersma 2011), brides who do so may gain favor with their new husbands. It may be the case that wealthier brides with more economic freedom may feel less compelled to seek this favor and decide instead to retain their surnames (see generally MacEacheron 2016).

### *Summary of Results*

Hyphenating or keeping their premarital surnames for U.S. destination brides marrying in Hawai'i in 2010 was highly and significantly correlated with both median full-time/salaried women's income by bride's state of residence ('median women's income'), and the analogous statistic for men by bride's state of residence. Median women's income, only, remained significant under OLS regression of both predictors. The interaction of the state Gini coefficient and median women's income, in an OLS regression with the interaction plus its components alone as predictors, was also found to be positively predictive. None of the many other potential predictors suggested by previous research or related to Gini or to women's median income, and available to my

knowledge as state-level data, were significantly predictive alongside women's median income. Using data from all brides, worldwide, marrying in 2010 in Hawai'i, the older the bride, the more likely she was to hyphenate or keep her premarital surname.

### **Analysis**

Hyphenation/retention was greater with greater full-time/salaried women's median income in bride's state of residence. In states in which women earn well, my speculation is that there may be less of an incentive for a well-earning woman to give up any earning power associated with her own surname. By the same token, such women may have less incentive to make a surname sacrifice in order to gain favor with a future husband in the hopes of soliciting his greater/ more assured investment, in part to support future children. This association was highly significant, and accounted for 60% of the variance when brides resident in Hawai'i were excluded (59% *with* brides resident in Hawai'i included). Why was women's state-level *average* income for the relevant year not used, as in MacEacheron (2011)? It was strongly correlated with state proportion of non-Hawai'i brides marrying in Hawai'i who either retained or hyphenated their premarital surnames. When it was used as sole co-predictor alongside women's full-time/salaried *state median* income in OLS regression however, the average income predictor was no longer statistically significant. It is speculated that this may be due to destination brides' incomes being better represented by state medians for women employed full-time or salaried, than by women's state averages.'

Also a strong finding was, as hypothesized, the older the bride, the more likely she was to retain or hyphenate her premarital surname (note this was also the case with the analogous 2006 result: MacEacheron 2011). There was, indeed, a significant such linear trend with increasing age. This is congruent with other findings (see generally Goldin and Shim 2004; Hoffnung 2006; Johnson and Scheuble 1995; see also Scheuble and Johnson 1993, 2005; Stafford and Kline 1996). Age alone may not be the precipitating factor, however. Income and financial security may also play a key role in this naming pattern. The nearer to menopause a bride is, the fewer, future children, all else being equal, she may be expected to have, and the less she need attain adequate resources for children— including from husband. Note U.S. women tend to lose income when they have children, while U.S. men may tend to gain it (Cain Miller 2014). This makes fathers a primary and logical, as well as legally-obligated, financial resource. Since 60% of U.S. children are born within wedlock (as of 2016: Wildsmith, Manlove, and Cook 2018), a majority of mothers may seek such support from their husbands. To the extent that taking on a groom's surname may help to gain his favor and thereby elicit future financial support from him, brides of lesser, reproductive age, may have an extra incentive for sacrificing their previous surnames. Another or alternate reason why older brides may tend to change surname less frequently, is that they may be more established in a career in which they are known by name. Such women may thus expect more of a detriment to their earnings, compared to younger women, upon any surname change. Finally, an older bride-to-be may have children from previous relationships whose surname matches her current surname. The desire to maintain this onomastic tie might

be an additional or alternate reason why a marital surname change would be less desirable, on average, for older women.

Retention/hyphenation rate clearly increased with age, yet just over 60% of the variance was explained by state women's median full-time/salaried income alone. What is the role of age here? For example, do states with a higher median income for women tend to have that status because brides therefrom are older when they marry (and therefore better able to earn)? Future studies could investigate this question.

In general, some cross-validation of all results herein is afforded by their similarity to those of the analogous, 2006 Hawai'i data analyses (MacEacheron 2011). It is perhaps important to bear in mind that locally marrying women (residents of Hawai'i) retained or hyphenated premarital surname significantly more frequently ( $t(45) = 4.89$ ,  $p < .0001$ ), despite their state median women's income being no different compared with that value for the other states ( $t(45) = 0.42$ ,  $p = ns$ ). It would have, of course, been preferable to obtain women's marital surname change rates from not just Hawai'i destination brides. Such information, however, is not collected in any other state, and no better, feasible source of data was available to the author's best knowledge.

Intriguingly, the interaction, only, of state Gini coefficient and Women's Income (i.e., not Gini alone, though it was included in the regression) was positively predictive alongside Women's Income. Nothing else was. The graph of simple slopes (Figure 2) shows the general result that only those states with high general equality as well as high women's median full-time/salaried income, relative to other states, had a significantly different (higher) level of surname retention/hyphenation.

## Conclusion

Sixty percent of variance being accounted for via the focal correlation requires explanation. Also requiring explanation, is the *unique* predictiveness of the bride's home state's women's income measure when competitively regressed alongside a number of potential, alternate predictors, except Gini (and, separately, Gini's interaction with such income). It seems implausible that thousands of brides looked up their state women's full-time/salaried median income, and household-to-household income inequality, and made a surnaming decision influenced by these. It is difficult to imagine how the observed pattern of (uncoordinated) action on the part of thousands could occur, without at least some enabling psychological mechanism of detection or noticing of inequality.<sup>5</sup> Based on the results of this study, I tentatively speculate the women studied tended to at least somewhat accurately perceive local (1) income earning potential for their sex; and (2) levels of resource-level inequality, and that these influenced, via unknown mechanism, many of their marital surnaming decisions.

This research does not rule out alternate explanations, however, including economic ones. These might include women consciously or on some other level weighing their own anticipated earnings drop that might result from name change, versus potential benefits flowing from same, and tending to make change/retention decisions accordingly. Such a process would not explain, however, the relationship found with Gini. As stated, no correlational research, such as that herein, is capable of ruling out either of the above explanations. Given that income and local Gini are not feasibly

manipulatable variables, however, only correlational research into the effect of these on retention/ hyphenation rate would seem feasible. Whatever mechanism is actually causal, the within findings concerning state-level data, now nearly directly replicated, are consistent with a complex, at least partly economic, general decision process that tracks women's median full-time/salaried median income and the interaction of that and Gini, both at state level. The within findings concerning world-wide data, now nearly directly replicated, are consistent with a general decision-making process in which brides with greater lifetime horizon more often take husbands' surnames.

## Notes

1. See generally Duchesne 2006 and see Cherlin 1978 for possible preference among married men having their children surnamed after them.
2. State Personal Income 2006, IPUMS 1% sample, US Bureau of Economic Analysis 2008, University of Minnesota, IPUMS.org.
3. Variables related to income and/or income inequality, measurable at state level, have been proposed by some reviewers as more predictive than the income measure used or the Gini coefficient. In the extant literature on the subject, additionally, factors such as political orientation have been argued to be related to women's marital surname choice rates (e.g., Suter 2004). Although women's rate of retaining/hyphenating premarital surnames by state was significantly correlated with (1) 2007 state proportion attaining a BA or greater (U.S. Department of Labor); and (2) (a) 2010 (January–June) state support for Republican party (Gallup (Newport 2010), 2011), as well as (b) 'Democrat advantage' (percentage supporting Democrat party or 'leaning Democrat' minus percentage supporting Republican party or 'leaning Republican'), when each was (separately) used as OLS regression predictor alongside only women's median full-time/salaried income, only the last was significantly predictive. Additionally, women's rate of retaining/hyphenating premarital surnames by state was not correlated with state (1) parasite stress (Fincher and Thornhill 2012), or (2) collectivism/individualism (Vandello and Cohen 1999). These are variable each of these pairs of authors respectively suggest may influence inequality, women's roles, and/or political ideology. Finally, none of the following state-level predictors was correlated with women's marital surname retention/hyphenation rate: (I) average 2010 single family home price (an indicator of state cost of living based on data from U.S. Census Bureau); (II) this amount divided by women's median fulltime/salaried income; (III) 2007 proportion of population attaining high school or greater (U.S. Department of Labor); or (IV) men's or women's 2010 unemployment rates (U.S. Department of Labor). Please contact author for analysis details.
4. All statistical requirements for generalizability of the regression were met when the data from the six greatest outlier states in terms of women's surname retention/hyphenation rate (plus that of Hawai'i) were removed from the regression. Once that was done, the correlation between state female median full-time/ salaried income and percentage brides hyphenating or keeping surname remained large and positive (becoming  $r = .88, p < .001$ ). Similarly, removing the six greatest outliers' data on the same variable from the correlation of male median full-time or salaried income with that variable resulted in that correlation changing to  $r = .53, p < .001$ .
5. For an independent example of Gini predicting women's intersexual, mating relevant, signaling behavior, see Blake et al. 2018.

## Acknowledgements

I wish to thank Brian Y. Horiuchi, Hawai'i State Department of Health, for the data on residence and age of brides, and proportion from each state/age group making each marital surname choice.

## Disclosure statement

The corresponding author states that there is no conflict of interest.

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