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Bride price and the well-being of women

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Abstract: Bride price, which is payment from the groom and/or the groom's family to the bride's family at the time of marriage, is a common cultural practice in many African societies. It is often argued that the practice may have negative effects for girls and women because it may: incentivize early marriage and lead to higher fertility; promote the view that husbands have 'purchased' their wives, resulting in worse treatment of wives; and trap women in unhappy marriages due to the common requirement that some of the bride price be paid back upon divorce. We provide evidence towards a better understanding of the effects of bride price by examining the empirical relationship between bride price payments and various outcomes of interest. Examining a sample of 317 couples from the Democratic Republic of the Congo, we find no evidence that a larger bride price payment is associated with earlier marriage or with higher fertility. We also find that larger bride price payments are actually associated with better-quality marriages as measured by beliefs about the acceptability of domestic violence, the frequency of engaging in positive activities as a couple, and the self-reported happiness of the wife. We also examine the effect of the requirement for the bride price to be paid back upon divorce and find no evidence that this requirement is associated with women being less happy in their marriages on average. However, we do find that the combination of a very high bride price (over US\$1,000) and a requirement to pay back the bride price upon divorce is associated with lower levels of happiness for wives.

Keywords: bride price, culture, marriage customs

JEL classification: J12, Z1, Z13, O55

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1 Introduction

The practice of paying a bride price at the time of marriage is a custom that is widespread throughout sub-Saharan Africa and many parts of Asia. The practice has a long history, dating at least as far back as 3000 BCE, and was used by the Ancient Egyptians, Mesopotamians, Hebrews, Aztecs, and the Incas (Anderson 2007: 132–53).¹ Historically and today, the magnitude of the bride price is often significant. Anderson (2007) summarizes existing evidence on the magnitude of bride price payments. Although there is significant heterogeneity, it is not uncommon for bride price transfers to be in excess of a year's income and sometimes as large as seven or eight times annual income.² For the African societies represented in the Ethnographic Atlas, 83 per cent report having bride price practices.

In recent years, this practice has come under criticism, particularly in Africa. A number of objections have been raised in both the media and in political discourse. Recent examples of articles from African newspapers criticizing the practice include Kelly (2006), IRIN News (2006), and Eryenyu (2014). The objections stem from the view that the transactional nature of the practice results in the commodification of women and has adverse consequences. For example, husbands may feel they can mistreat their wives because they have paid for them, leaving women in marriages prone to physical violence and conflict. The women's rights group *Mifumi* in Uganda reports cases where men say 'I am beating my cows' when they hit their wives, women are denied ownership of property, and women may be expected to be sexually available to their husbands at any time and without protection (Eryenyu 2014). In response to these potential negative effects of high bride price, Kenya's most recent round of marriage laws stipulates that a token bride price must be counted as sufficient to meet the needs of the custom (Dudley 2014).

Additionally, bride price may trap women within their marriage. In many customs, the woman's parents are required to return the bride price if the woman leaves the marriage, particularly if she has not yet had any children. Thus, it is possible that the practice of bride price results in women being locked in the marriage because parents are unwilling or unable to repay the bride price. Due to this concern, Ugandan courts have outlawed the requirement for bride price to be paid back upon divorce (Government of Uganda 2001; Mwesigwa 2015). The stated rationale for this was that it 'would make it easier for women to leave abusive relationships' (Biryabarema 2015).

Another concern centres around the incentives that the bride price generates for parents. It has been argued that parents may have an incentive to 'sell' their daughters early to obtain the bride price payment, resulting in early marriage and higher rates of lifetime fertility. For example, Hague et al. (2011) report accounts from Uganda of parents taking children out of school so they can be married early in return for a bride price. In the words of one participant in their focus groups, the 'selling [of] a human being because the family wants wealth, [and] selling your daughter at a tender age' are common. This is because 'people prefer to get wealth at the expense of their daughters education' (p. 556).

More systematically, Corno and Voena (2016) and Corno et al. (2016) find evidence that adverse shocks to family income increase a woman's chance of early marriage among societies that practise bride price. They argue that families use early marriage, and with it the receipt of bride price, to

¹ By contrast, the practice of dowry is much more recent, having likely been first practised in Ancient Greece and Rome.

² As we will see, this is also true in our setting of interest, the Democratic Republic of the Congo.

smooth consumption. To combat the potential of early marriage due to bride price, the local government in Laikipia county, Kenya has also instituted a programme to give cows to parents whose daughters graduate from high school. The Zambian government has similarly spoken out to discourage families from requesting exorbitant amounts for their daughters, but this is not written into law, and neither country defines what may be counted as exorbitant (Tembo 2014).

These views are not universal, however. Bishai et al. (2009: 149) point out that ‘almost all of what is known about the potential harms of bride price is based on small qualitative studies or anecdotal recollection’. In addition, while the view of the bride price as a purchase price of a wife is common in the (Western) media, this is very different from the general interpretation of the practice made by anthropologists. For example, Vroklage (1952) explicitly rejects the idea that a bride price is the price paid for the purchase of a woman. Interviewees told him, ‘a bride is not a buffalo’ and ‘a bride is not an animal’. Vroklage (1952: 135) instead describes it as ‘a compensation for the expense, the care and trouble spent on the bride’s upbringing... It is compensation for the complete loss of a worker as a bride withdraws from her own kindred and henceforth belongs to her husband’s.’ Bride price is particularly common among groups that practise patrilineal descent, and is considered as a compensation payment for the bride’s future children, who will no longer belong to her parents’ family. In fact, in many groups, marriage is equated with the payment of bride price. In their work on the Kikuyu in Kenya, Adams and Mburugu (1994: 162) write that bridewealth (another term for bride price) is the primary indicator of marriage, with one respondent saying: ‘There was no ceremony, but traditionally I am married because I paid the bridewealth.’ With regard to the Sebei of Uganda, anthropologist Goldschmidt (1974: 312) notes that without the transfer of bride price there is no marriage and any children do not belong to the father’s lineage.

In this paper, we contribute to a better understanding of the effects of bride price by studying the relationship between the bride price amount and a variety of outcomes across marriages. In particular, motivated by the common concerns associated with high bride price, we examine whether a higher bride price paid at marriage is associated with: earlier marriage and higher fertility; a greater acceptance of violence within the home; decreased ability of the wife to leave her husband; lower-quality marriages; and lower levels of happiness for the wife. Our analysis also examines the closely related question of whether the custom of having to pay back the bride price causes wives to be trapped in unhappy and low-quality marriages.

We contribute to answering these questions with survey data collected in Kananga, a provincial capital in the Democratic Republic of the Congo (DRC). We collect information from over 600 individuals, who are husbands and wives from over 300 marriages. In this setting, the practice of the payment of bride price is widespread, and a bride price was paid in all of our marriages. Thus, our focus is on the value of the bride price payment and how this is related to different characteristics of the marriage. This can be contrasted to other studies that focus on the presence or absence of a bride price tradition.³

According to our estimates, there appears to be no evidence that a larger bride price payment is associated with earlier marriage or with higher fertility. We also find that larger bride price payments are associated with better-quality marriages as measured by beliefs about the acceptability of domestic violence, the frequency of engaging in positive activities as a couple, and

³ For example, Ashraf et al. (2016) examine the effects of school construction on female education and show that in Indonesia and Zambia, the effects of such projects depend critically on whether a society practices bride price or not. Among ethnic groups that practice bride price, school construction led to large increases in female education. Among ethnic groups that do not practice bride price, school construction had no effect on female education.

the self-reported happiness of the wife. We also examine the correlates of the requirement for the bride price to be paid back upon divorce. Contrary to general concerns about this aspect of the custom, we find no evidence that this requirement is associated with women being less happy in their marriages. In fact, we find a positive association, although the coefficient is statistically insignificant. However, we do find that if the value of the bride price paid is very high (over US\$1,000), then the requirement is, in fact, negatively associated with the happiness of the wife. Thus, the combination of a very high bride price and a requirement to pay back the bride price upon divorce is associated with wives being less happy.

Overall, our estimates do not provide overwhelming evidence in support of the concern that bride price has detrimental effects on the wellbeing of married women. In fact, the practice generally appears to be correlated with good outcomes. The one exception is that the combination of a high bride price and the requirement for the bride price to be paid back upon divorce is negatively associated with the wife's happiness.

Although these estimates are conditional correlations and not causal estimates, and so should be treated with the necessary amount of caution, we do feel that they are informative. At the very least, these findings, combined with the dearth of other estimates of the correlates of bride price, suggest that much more research into the effects (or correlates) of bride price is needed, especially given the calls to amend or abolish the practice in many countries within Africa.

The rest of this paper is structured as follows. The next section provides a description of the Congolese setting. Section 3 explains the data collection procedure, the sample, and our bride price measure. Section 4 reports our regression equations and our estimated relationships of interest, and Section 5 discusses the significance of these results and compares them to related evidence from other African samples. Section 6 concludes.

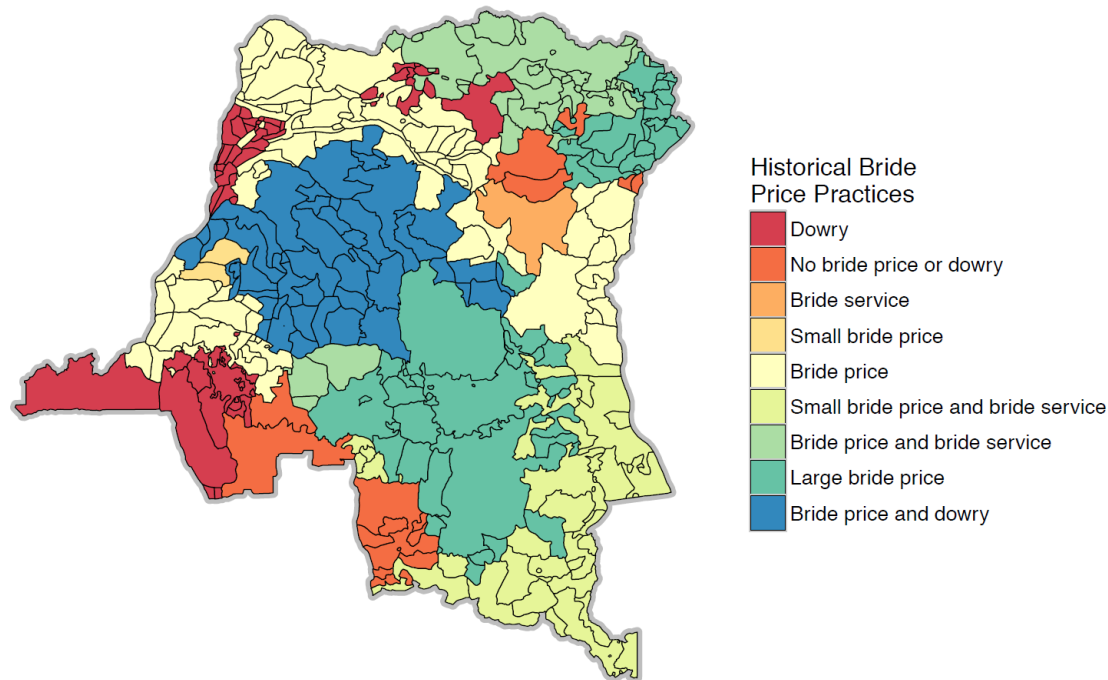
2 The Congolese setting

In the DRC, bride price is referred to as *la dot* (the French word for dowry, though the payment is made from the groom's family to the bride's family) or *biuma* in Tshiluba, the language spoken in the south-central part of the DRC, where we collect our data. Although historically there was variation in marriage payment customs, today bride price is practised among all ethnic groups in this part of the DRC. Bride price also functions as legal proof of marriage, and a couple is not considered married until a bride price is paid in full. Therefore, bride price is also important for inheritance and determining the lineage of any children of the marriage since, if a husband dies, it allows a wife to prove that they were officially married. Chondoka (1988: 158) writes that traditionally 'marriages were all legalized on delivery of the "main" payments'.

The modern practice of bride price has its roots in pre-colonial customs. At this time, as in many other parts of Africa, the practice was widespread and common. The Ethnographic Atlas has data on 64 pre-colonial ethnic groups who are located within the DRC. Of these 64 ethnic groups, approximately 90 per cent practised the payment of bride price and none had dowries. The remaining groups that did not practise payment of bride price tended to have token bride price (small symbolic payments) or bride service (where the husband performs work for the bride's family). Using more detailed data from Vansina (1966) on 300 ethnic groups within the DRC, we have coded historical bride price practices at this more disaggregated ethnicity level. These practices ranged from no payment of bride price, payment of bride price of various economic value, bride service, or payment of dowry. The spatial distribution of these practices is shown in Figure 1. The picture that emerges from the finer data from Vansina (1966) is broadly similar to

that from the Ethnographic Atlas, although with a bit more variation and nuance. Of those groups represented in Vansina (1966), approximately 80 per cent practised some form of payment to the bride's family at the time of marriage. However, there existed great heterogeneity in the size of these transfers, who is involved in the payments, and the terms under which bride price must be repaid.

Figure 1: Spatial variation in historical bride price practices



Source: authors.

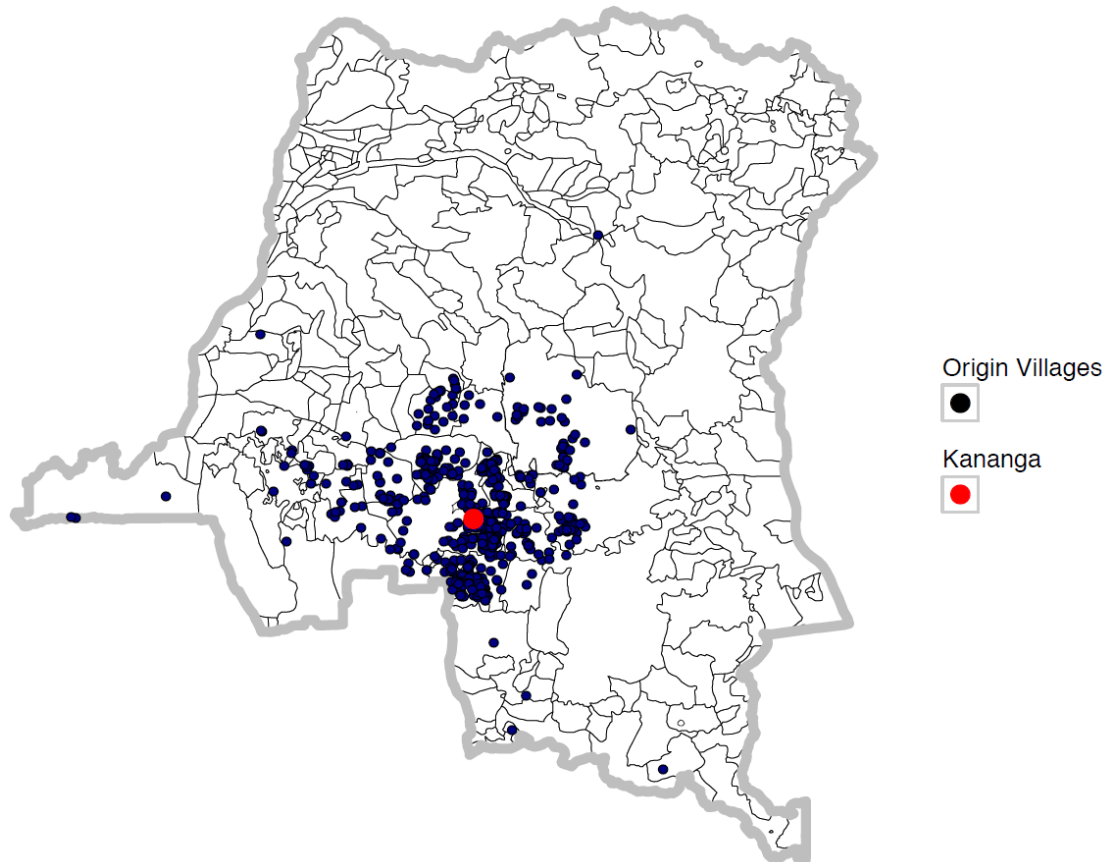
Interviews and focus groups conducted by the authors with men and women in the DRC suggest that bride price is still very important for marriages. For both men and women, bride price payment signals honour and respect for the wife. As one Congolese woman explained, 'Bride price is important for all African women, but for Congolese women in particular... The bride price is an official custom that expresses the love a husband has for his wife. For the parents of the wife, the bride price symbolizes a reward and an honour.' Without payment of the bride price, marriages are not recognized. In fact, some women believe it is better to live with a friend than to live with a man that does not want to pay the bride price. When asked about the role of bride price, a Congolese man noted: 'The bride price is how a man honours his wife.' However, he also says that the bride price serves as 'a guarantee that prevents the [woman's family] from taking her back when there is a dispute'. These interviews suggest that although the bride price is customarily associated with a man's commitment to his wife and is a signal of respect, it may also hinder the woman's options in the case of marital disputes.

3 Description of the data and the sources

3.1 Sampling procedure and data collection

The surveys for the project were administered between June and October 2015 in Kananga, DRC.⁴ Kananga is a city of over one million people, and the capital of Kasai Central province. It is a diverse city, with many different ethnic groups represented. The most populous ethnic group in the city is the Luluwa; however, there are dozens of other smaller ethnic groups represented in the city. Figure 2 is a map of the DRC with the city of Kananga denoted in red, and the villages of origin of the individuals in the sample in black.⁵ Most individuals in the sample are from Kasai Central province or the surrounding provinces.

Figure 2: Villages of origin of the sample and ethnic group boundaries



Source: authors.

A screening survey was administered across the city to identify individuals in monogamous marriages. We selected 442 individuals who reported being in a monogamous marriage in the screening survey to ask them (and their spouses) to participate in the study. Ultimately, 320 of these 442 individuals agreed to participate in the study, yielding a sample of 640 individuals.⁶ Three

⁴ The data were collected for a project on matrilineal kinship systems and intra-household bargaining (Lowes 2017)

⁵ Village of origin is where an individual's family originates from. It is not necessarily the same as village of birth. It is a commonly understood concept in the DRC.

⁶ Individuals declined to participate or were ultimately ineligible to participate for a variety of reasons, including that the spouse was travelling for an extended period of time, illness, death, divorce, or a spouse living outside of Kananga.

men reported either not having paid bride price or said they did not know the value of the bride price they paid. These couples have been excluded from the analysis. The final sample consists of 634 individuals from over 28 different ethnic groups. Table 1 summarizes the distribution of the ethnic groups represented in the sample.

Couples were visited at their homes three different times by a team of one male enumerator and one female enumerator. The male enumerator met with the husband while the female enumerator met with the wife. Thus, the husband and wife both undertook the surveys in private and away from their spouse. In the first visit, participants completed a long survey. This survey had questions on demographics, economic activities, land ownership, family history, and a child roster. During the second and third visits, individuals completed shorter surveys that asked questions about views on gender norms and on characteristics about the marriage. The surveys were conducted in either French or Tshiluba, which are the languages spoken in this area of the DRC.

Table 1: Sample ethnic groups

Ethnic group	Number
Bindi	36
Bunde	5
Chokwe	18
Dekese	29
Kete	32
Kongo	18
Kuba	51
Lele	28
Luba	44
Lualua	10
Luluwa	133
Lunda/Rund	3
Luntu	51
Mbala	35
Mfuya	4
Pende	6
Sala	38
Songe	37
Tetela	40
Yansi	4
Other	12
Total	634

Notes: Other tribes include: Angola, Kanji, Kuchu, Kusu, Luba Katanga, Mongo, Nyambi, Nyoko, Orendo, and Suku.

Source: authors.

Table 2 presents some basic summary statistics for the sample. The women are on average younger than the men and married at younger ages. They also have about three fewer years of education. There are several individuals in the sample who have been married more than once. This could be due to a past divorce or because they are currently engaged in a polygamous marriage.⁷ Approximately 25 per cent of the sample was born in Kananga. The average number of living children each couple has is four. As a point of reference, women in the 2007 and 2014 Demographic and Health Surveys (DHS) who are currently married are on average 18 years old when they first reside with a husband or partner, have 4.9 years of education, and have on average 3.46 living children. Men in the DHS who are currently married are on average 23 years old at first cohabitation and have 8.2 years of education. Thus, individuals in our sample get married slightly later and have more years of education relative to the DHS sample.

Table 2: Summary statistics

	Women			
	Mean	SD	Min.	Max.
Age	36.76	13.89	18.00	91.00
Age married	19.37	4.38	12.00	53.00
Years of education	8.48	3.65	0.00	17.00
Number of marriages	1.06	0.23	1.00	2.00
Born in Kananga	0.27	0.45	0.00	1.00
Number of living children	4.21	2.82	0.00	12.00
Observations	317			

	Men			
	Mean	SD	Min.	Max.
Age	44.50	14.27	22.00	80.00
Age married	27.02	6.51	1.00	63.00
Years of education	11.73	4.07	0.00	18.00
Number of marriages	1.25	0.57	1.00	5.00
Born in Kananga	0.22	0.42	0.00	1.00
Observations	317			

Notes: *Age* is the respondent's current age. *Age at marriage* is how old the respondent was at the time of marriage. *Years of education* is the respondent's number of years of education. *Number of marriages* is the number of times the respondent has been married. *Born in Kananga* is an indicator variable equal to 1 if the respondent was born in Kananga. *Number of living children* is the number of living children the couple has.

Source: authors.

3.2 Bride price and an exploration of its determinants

We first describe our primary variable of interest, the value of bride price payments at the time of marriage. In our surveys, both men and women were asked to report the value of the bride price payments (in US dollars) at the time of marriage. Specifically, they were asked: 'At the time of your own marriage, what was the total value of the bride-price that was paid? Please include the cost of all of the goods and cash payments given as a part of the bride price.' The bride price can be paid in many forms, and usually involves some combination of goats, money, food, and other

⁷ Despite purposefully targeting monogamous couples, several polygamous couples are represented in the sample. This is because women generally report they are in a monogamous marriage, even if their husband has multiple wives. Within the sample, 13 couples are in a polygamous marriage. In the DHS, approximately 20 per cent of marriages in the DRC are polygamous, where the husband has more than one wife.

household items. Thus, our question explicitly asks the respondents to include the estimated value of all non-monetary items as well.

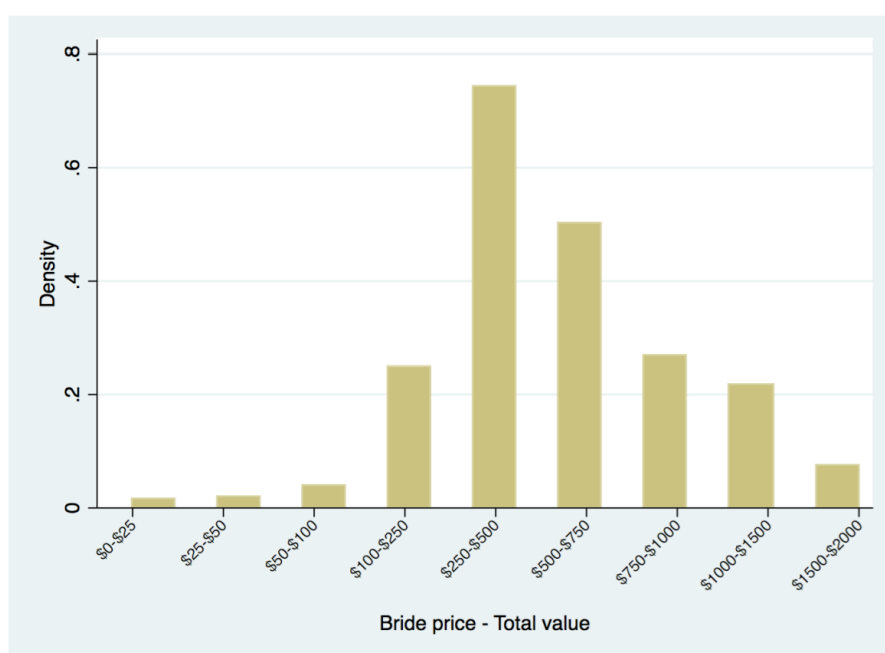
Although both the husband and wife were asked separately, we expect the men to have better information on the amount of the bride price paid because they were the person who made the payment and who was directly involved in the transfer of funds (sometimes with the help of their families). In our data, around 80 per cent of men report having contributed to the bride price payment. Additionally, 40 per cent of men report receiving help from their fathers and 30 per cent report receiving help from their mothers. By contrast, because the payments are received by the wife's parents, she is not directly involved in the transfer of money and therefore is less likely to have detailed knowledge of the amount.⁸

Because bride price is often paid in a variety of goods, it is difficult to assess an exact dollar value of the bride price. Therefore we presented respondents with categories of the monetary equivalent of all money and items paid as part of the bride price, and asked respondents to choose one of the categories. These categories and the proportion of respondents with a bride price payment within each category are reported in Figure 3. The modal bride price payment was between US\$250 and US\$500, which is a significant sum, given that for a number of decades the average real per capita gross domestic product (GDP) of the DRC has been stagnant at around US\$250 per person. The figure also shows that there is a fair amount of variation. Although small bride price payments are less common, larger payments in excess of US\$500 (two years of per capita GDP) are very common. Figure 4 presents the spatial variation in the value of bride price payments using the villages of origin of women in the sample. We take the average amount paid for women whose villages of origin are within each ethnic polygon to produce the figure.⁹

⁸ When wives are able to estimate the amount of bride price paid, the amount of bride price paid reported by husbands and wives is highly correlated. However, women are more likely than men to report that they do not know the value of the bride price paid.

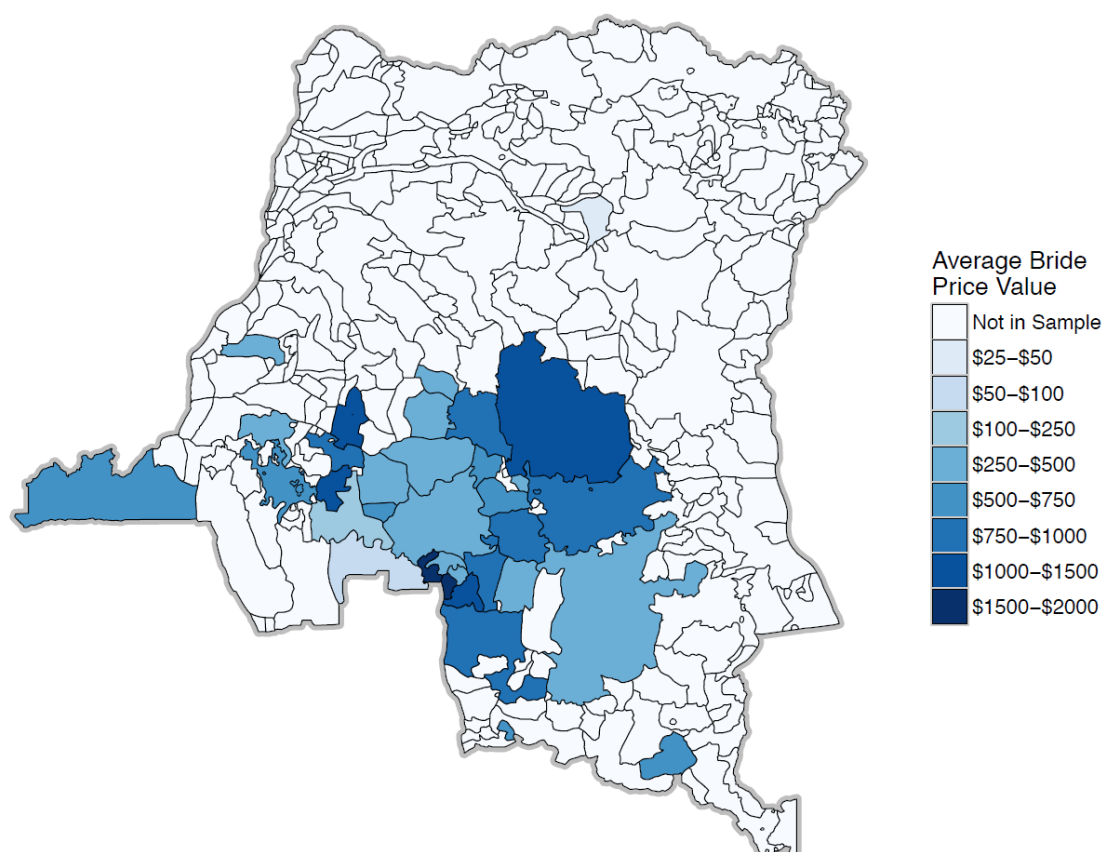
⁹ The ethnic group boundaries are from Vansina (1966), who provided detailed ethnic group boundaries for over 300 ethnic groups in the DRC.

Figure 3: Distribution of bride price payments



Source: authors.

Figure 4: Spatial variation in bride price value



Source: authors.

We begin by examining the correlates of bride price payments. The estimates are reported in Table 3. We examine the wife's education, age, and age squared in column 1. In column 2 we add year of marriage, an indicator variable for whether the couple was married in Kananga (rather than in

the village) and an interaction term. This allows the effect of year of marriage to be systematically different outside of Kananga relative to inside the city. Column 3 includes controls for the husband's characteristics.

Table 3: Wife's characteristics and bride price

	Dep. var.: bride price amount		
	(1)	(2)	(3)
Wife's age	0.011 (0.025)	-0.016 (0.037)	-0.021 (0.042)
Wife's age squared	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Wife's years education	0.091*** (0.026)	0.096*** (0.027)	0.090*** (0.027)
Year married		-0.011 (0.013)	-0.025 (0.016)
Married in Kananga		-4.604 (25.625)	-3.637 (25.792)
Year married*married in Kananga		0.002 (0.013)	0.002 (0.013)
Husband's age			0.014 (0.046)
Husband's age squared			-0.000 (0.000)
Husband's years education			0.008 (0.026)
Observations	317	317	317
Mean dep. var.	5.722	5.722	5.722

Notes: Robust standard errors in parentheses. *Years education* is the number of years of education. *Year married* is the year the couple was married as reported by the husband. *Married in Kananga* is an indicator variable equal to 1 if the couple lived in Kananga at the time of marriage. *Bride price amount* is a variable from 1 to 9 corresponding with various bride price values, where (1) is equal to US\$0–25 and (9) is equal to US\$1,500. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: authors.

Interestingly, we find that the wife's education is the only robust predictor of the bride price payment at the time of marriage. This is consistent with previous studies that have found that a wife's education is a strong predictor of the value of the bride price in Kenya (Borgerhoff Mulder 1995), Zambia, and Indonesia (Ashraf et al. 2016). In our sample, the mean value of the wife's education is 8.48 and the standard deviation is 3.65. Thus, a one-standard-deviation increase in the wife's education is associated with a $3.65 \times 0.09 = 0.33$ point increase in the bride price index. This is fairly sizeable given that the standard deviation of the index is 1.44 (the mean is 5.72). In contrast to Ashraf et al. (2016), who find that the husband's education is also correlated with the amount of the bride price, we find no relationship between the husband's education and the bride price amount once we include controls for the wife's characteristics.¹⁰

¹⁰ In her analysis, Borgerhoff Mulder (1995) does not report estimates that simultaneously account for the husband's and wife's education. She does report that the husband's level of education is positively associated with the total value of the bride price.

Our estimates show that the amount of the bride price, conditional on education, is similar inside and outside of the provincial capital of Kananga. Also, we find no evidence of bride price inflation. The value of bride price payments has not been systematically increasing over time. One concern in interpreting the coefficient on year married is that it may be collinear with the wife's age and the husband's age. However, we obtain similar estimates regardless of whether these covariates are included in the estimating equation (estimates not shown here, but they are available upon request).

4 Estimating equations and empirical results

4.1 Estimating equations

For the analysis that follows, we estimate the following specification:

$$Y_{i,h,w} = \alpha + \beta \text{Bride Price Amount}_{i,h,w} + \mathbf{X}_h\boldsymbol{\Omega} + \mathbf{X}_w\boldsymbol{\Pi} + \mathbf{X}_w\boldsymbol{\Gamma} + \varepsilon_{i,h,w} \quad (1)$$

where i indexes marriages that comprise a husband h and a wife w . $Y_{i,h,w}$ denotes our outcome of interest, which depending on the specific measure will measure a characteristic of the marriage, for the husband or for the wife. $\text{Bride Price Amount}_{i,h,w}$ is the amount of the bride price payment received by woman w 's family from husband h at the time of the marriage. Individuals recall the total value of the bride price and select the appropriate category among the options available (see Figures 3 and 4). We convert the categories into a scale that ranges from 1 to 9, increasing with the value of the bride price payment. \mathbf{X}_h , and \mathbf{X}_w denote vectors of characteristics of the husband and wife, respectively: age, age squared, and educational attainment (measured in years). \mathbf{X}_i denotes a vector of marriage characteristics, including the year that the marriage occurred, an indicator that equals 1 if the marriage was in Kananga (the provincial capital where the surveys were conducted), and the interaction of the two. The year of marriage is included in the specification to account for potential bride price inflation over time and/or shocks in specific years that may have affected bride price payments and our outcome of interest.¹¹ An indicator variable that equals 1 if the marriage occurred in the city of Kananga is also included in the specification, as well as the interaction of this indicator with the year of marriage. These variables account for the possibility of higher bride price amounts and/or greater bride price inflation over time in the city relative to rural areas.

4.2 Bride price, age at marriage, and fertility

We begin by estimating the relationship between the bride price payment and the age at which a woman was married. A potential concern with the tradition of bride price is that it induces parents to arrange for their daughters to be married at a younger age so that they can obtain the bride price payment. This could potentially occur, for example, if the parents are credit constrained, and therefore need funds immediately, even if it comes at the cost of their daughter's future welfare (as in Corno and Voena 2016). Therefore, we test for the presence of a relationship between the value of the bride price payment and the age at marriage by estimating equation (1) with the wife's age at the time of marriage (in years) as the dependent variable. The average age of marriage for women is 19 years. In contrast, the average age of marriage for men is 27 years.

¹¹ For example, Corno and Voena (2016) and Corno et al. (2016) provide theory and evidence that in the presence of bride price, negative income shocks can lead to earlier marriage and greater fertility. Because of the bride price payment, parents have a greater incentive for their daughter to be married early in times of economic hardship.

The results are reported in Table 4. Column 1 reports the estimates of equation (1) with a more parsimonious set of covariates that only includes the wife-level covariates, \mathbf{X}_w . Column 2 adds the marriage-level measures, \mathbf{X}_i , and column 3 additionally includes the husband's characteristics, \mathbf{X}_h . In all specifications, we estimate a negative but statistically insignificant relationship between the bride price payment at marriage and the age at marriage. In addition to the coefficients being insignificant, the magnitudes of the coefficient are small. For example, according to the estimate from column 3, a one-standard-deviation increase in the bride price index (equal to 1.44) is associated with a decline in the age at marriage by $0.10 \times 1.44 = 0.14$ years. In addition, we find that as we add more covariates to our estimating equation, the magnitude of the point estimate declines noticeably. This suggests that even the small estimated effects are potentially spurious. As we control for observable characteristics, the points estimates appear to be converging towards zero.

Table 4: Bride price, wife's age at marriage, and fertility

	Dep. var.: wife's age at marriage			Dep. var.: number of children		
	(1)	(2)	(3)	(4)	(5)	(6)
Bride price amount	-0.289 (0.213)	-0.177 (0.155)	-0.102 (0.141)	0.125* (0.075)	0.095 (0.067)	0.065 (0.061)
Wife's age	0.185*** (0.069)	0.862*** (0.139)	1.031*** (0.145)	0.465*** (0.028)	0.280*** (0.048)	0.178*** (0.050)
Wife's age squared	-0.002* (0.001)	-0.006*** (0.001)	-0.008*** (0.001)	-0.004*** 0.000	-0.003*** (0.001)	-0.002*** 0.000
Wife's years education	0.290*** (0.064)	0.130** (0.060)	0.129** (0.059)	-0.103*** (0.034)	-0.059* (0.032)	-0.064** (0.031)
Year married		0.330*** (0.059)	0.485*** (0.064)		-0.089*** (0.020)	-0.151*** (0.020)
Married in Kananga		-109.714* (66.110)	-92.843 (64.190)		33.216 (35.368)	25.405 (33.628)
Year married*married in Kananga		0.055* (0.033)	0.046 (0.032)		-0.017 (0.018)	-0.013 (0.017)
Husband's age			-0.389*** (0.109)			0.209*** (0.048)
Husband's age squared			0.006*** (0.001)			-0.003*** (0.000)
Husband's years education			0.014 (0.042)			0.010 (0.026)
Observations	317	317	317	317	317	317
Mean dep. var.	19.37	19.37	19.37	4.208	4.208	4.208

Notes: Robust standard errors in parentheses. *Bride price amount* is a variable from 1 to 9 corresponding with various bride price values, where (1) is equal to US\$0–25 and (9) is equal to US\$1,500+. The bride price value used is the value reported by the husband. *Years education* is the number of years of education. *Year married* is the year the couple was married as reported by the husband. *Married in Kananga* is an indicator variable equal to 1 if the couple lived in Kananga at the time of marriage. *Wife's age at marriage* is the age of the wife when the couple was married. *Number of children* is the number of living children a woman has. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: authors.

We next turn to fertility, which is an outcome that may be related to the age at marriage. If bride price leads to earlier marriage, then this may, in turn, cause higher fertility rates. Thus, we also examine the number of living children a woman has.¹² We estimate equation (1), with the number of children as the outcome of interest. Because the total number of children born to a woman is strongly affected by her age, we continue to flexibly control (with a second-order polynomial) for the age of the wife at the time of the survey. Given concerns about spurious trends in fertility and in bride price values over time, or spurious differences within Kananga and outside of Kananga in rural areas, we continue to control for the year in which the couple was married and whether they were married in Kananga or not, as well as the interaction between these two covariates.

The estimates are reported in columns 4–6 of Table 4. The three columns report the same three specifications as in columns 1–3. We estimate a positive relationship between bride price payments and fertility, although only the estimate in column 1 is significant, and this only at the 10 per cent level. In addition, we find that as we add additional covariates the magnitude of the estimated effects converge towards zero. Lastly, the estimated magnitudes also appear to be small. According to the point estimates from column 3, a one-standard-deviation increase in the bride price index is associated with the following increase in the number of children: $0.065 \times 1.44 = 0.09$. This is a small effect.

Overall, we do not find evidence of a strong robust association between the value of the bride price and either the age at marriage or the total number of children.

4.3 Bride price and attitudes about domestic violence

We now turn to an examination of whether bride price payments are associated with different attitudes about domestic violence on the part of husbands. In particular, a common concern is that the payment of a high bride price causes men to feel that because they have ‘paid’ dearly for their wife, they therefore have the right to mistreat her. We test for this possibility by estimating equation (1) where the dependent variables are measures of men’s self-reported views about the acceptability of domestic violence.

We measure the husband’s attitudes about domestic violence using an index constructed from a series of survey questions that are taken from the DHS modules on domestic violence attitudes. Husbands are asked to report whether they believe that domestic violence is justified in five different situations. The situations are: (1) if the wife goes out without the husband’s permission; (2) if she neglects the children; (3) if she argues with her husband; (4) if she refuses to have sex; (5) if she burns the food. For each scenario, the husbands chose an integer on a 1–5 scale, where 1 indicates that he ‘Strongly Disagrees’ (with domestic violence being justified in the situation) and 5 indicates that he ‘Strongly Agrees’ (with domestic violence being justified). We take the average of the answers in the five scenarios to obtain an index that ranges from 1 to 5 and that is increasing in the extent to which the husband believes that domestic violence is justified in these situations.

Estimates of equation (1) with the index of the husband’s perceived acceptability of domestic violence as the outcome are reported in columns 4–6 of Table 5. We estimate a positive effect in all three specifications. However, the estimates are generally not significant and are small in magnitude. According to the estimates of column 6, a one-standard-deviation increase in the value of the bride price amount, results in an increase of $0.094 \times 1.44 = 0.14$ in the domestic violence index. This is equal to 6 per cent of the mean of the domestic violence acceptability index and 0.11

¹² This does not take into account still births or children that have died subsequently. Almost 25 % of the women in the sample have had at least one child die during its first year of life.

standard deviations. Although these effects are not completely trivial, they are fairly modest in addition to being imprecisely estimated.

Table 5: Bride price and views about domestic violence

	Dep. var. : positive views of domestic violence					
	Women			Men		
	(1)	(2)	(3)	(4)	(5)	(6)
Bride price amount	-0.153*** (0.035)	-0.163*** (0.036)	-0.172*** (0.036)	0.064 (0.050)	0.067 (0.050)	0.094* (0.050)
Wife's age	0.006 (0.016)	-0.012 (0.022)	-0.010 (0.027)			0.019 (0.041)
Wife's age squared	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)			-0.000 (0.000)
Wife's years education	-0.011 (0.015)	-0.007 (0.015)	-0.003 (0.018)			-0.067*** (0.021)
Year married		-0.011 (0.009)	-0.028*** (0.010)		-0.003 (0.013)	-0.004 (0.013)
Married in Kananga		-10.615 (16.524)	-12.102 (15.559)		14.792 (19.624)	15.169 (19.427)
Year married*married in Kananga		0.005 (0.008)	0.006 (0.008)		-0.007 (0.010)	-0.007 (0.010)
Husband's age			0.012 (0.029)	-0.056* (0.033)	-0.061* (0.033)	-0.079* (0.043)
Husband's age squared			-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.000)
Husband's years education			-0.012 (0.015)	-0.031* (0.017)	-0.027 (0.017)	-0.005 (0.018)
Observations	317	317	317	317	317	317
Mean dep. var.	2.470	2.470	2.470	2.322	2.322	2.322

Notes: robust standard errors in parentheses. *Bride price amount* is a variable from 1 to 9 corresponding with various bride price values, where (1) is equal to US\$0–25 and (9) is equal to US\$1,500+. The bride price value used is the value reported by the husband. *Years education* is the number of years of education. *Year married* is the year the couple was married as reported by the husband. *Married in Kananga* is an indicator variable equal to 1 if the couple lived in Kananga at the time of marriage. *Domestic violence views index* takes the average response to the following questions: Domestic violence is justified if wife (1) goes out without husband's permission; (2) neglects children; (3) argues with husband; (4) refuses sex; (5) burns food; all questions answered with 1 = strongly disagree to 5 = strongly agree. The index sums the responses to each of the questions and divides by 5 to generate the average response. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: authors.

We next examine the potential effects of bride price amounts on women's attitudes about domestic violence. The concern with high bride price payments is that wives may also believe that husbands can legitimately treat them badly if they have paid a high bride price. Thus, in columns 1–3 of Table 5, we present the estimates with the wife's view on the acceptability of domestic violence in the household as the outcomes variable. We find evidence that a higher bride price paid at the time of marriage is associated with the wife being less accepting of domestic violence. All three coefficients of interest are negative and highly significant. According to the estimates of column 3, a one-standard-deviation increase in the bride price payment index is associated with a decrease in the women's views of the acceptability of domestic violence at $0.172 \times 1.44 = 0.248$. This is a large effect equal to about 10 per cent of the mean of the domestic violence index and 0.43 standard deviations.

While bride price amounts are associated with less acceptance of domestic violence for women, for men there is no statistically significant and robust relationship. In addition, the sign of the coefficient estimates is opposite of that for women. Thus, while it might be the case that a higher bride price causes women to be less accepting of violence in the household, this is not true for men.

4.4 Bride price and marriage quality

Another potential consequence of bride price is that it may affect the quality of the marriage. Therefore, we examine whether a higher bride price is correlated with one measure of marriage quality, the frequency with which couples have positive interactions with each other. Husbands and wives were asked a series of questions about how often they did each of the following six activities with their spouse: laugh, work together on projects, receive gifts, walk together, talk about the day, and discuss their feelings. The respondents chose from the following six response options: (1) never; (2) less than once a month; (3) once or twice a month; (4) once or twice a week; (5) once a day; and (6) more than once a day. We assign the reported numeric values to each response, and create an index equal to the average response value across each of the six activities. The final index ranges from 1 to 6, and is increasing in the frequency in which the couple engages in positive interactions. Most couples report engaging in positive activities fairly regularly, with the mean value being around 5.

Estimates of equation (1) with this outcome as the dependent variable are reported in Table 6.¹³ Columns 1–3 report estimates based on the woman’s perception of the frequency of positive activities and columns 4–6 report estimates based on the husband’s perception. Across all specifications, we find that a higher bride price value is associated with a greater frequency of positive interactions. According to the estimates from column 6, a one-standard-deviation increase in the bride price index is associated with an increase of $0.114 \times 1.44 = 0.164$, which is equal to approximately $0.164 / 0.816 = 0.20$ standard deviations of the dependent variable. In addition, all estimates are highly significant, and the magnitude of the point estimates remain stable with the inclusion of additional covariates.

¹³ The sample size falls from 317 to 315 due to some individuals choosing to not respond to the questions or responding that they did not know the answer to these questions.

Table 6: Bride price and marriage quality

	Dep. var.: frequency of activities index					
	Women			Men		
	(1)	(2)	(3)	(4)	(5)	(6)
Bride price amount	0.076** (0.031)	0.076** (0.031)	0.075** (0.032)	0.119*** (0.027)	0.119*** (0.027)	0.114*** (0.026)
Wife's age	-0.038*** (0.014)	-0.030 (0.022)	-0.003 (0.027)			-0.038 (0.024)
Wife's age squared	0.000*** (0.000)	0.000** (0.000)	0.000 (0.000)			0.000* (0.000)
Wife's years education	0.017 (0.014)	0.015 (0.014)	0.016 (0.015)			0.011 (0.014)
Year married		-0.002 (0.007)	-0.003 (0.009)		-0.005 (0.007)	-0.007 (0.008)
Married in Kananga		-13.715 (14.268)	-11.927 (14.382)		2.896 (11.108)	5.850 (11.469)
Year married*married in Kananga		0.007 (0.007)	0.006 (0.007)		-0.001 (0.006)	-0.003 (0.006)
Husband's age			-0.043 (0.026)	-0.044*** (0.017)	-0.047*** (0.017)	-0.022 (0.022)
Husband's age squared			0.000 (0.000)	0.000** (0.000)	0.000** (0.000)	0.000 (0.000)
Husband's years education			-0.005 (0.012)	-0.015 (0.010)	-0.014 (0.010)	-0.015 (0.010)
Observations	315	315	315	315	315	315
Mean dep. var.	4.999	4.999	4.999	5.285	5.285	5.285

Notes: robust standard errors in parentheses. *Bride price amount* is a variable from 1 to 9 corresponding with various bride price values, where (1) is equal to US\$0–25 and (9) is equal to US\$1,500+. The bride price value used is the value reported by the husband. *Years education* is the number of years of education. *Year married* is the year the couple was married as reported by the husband. *Married in Kananga* is an indicator variable equal to 1 if the couple lived in Kananga at the time of marriage. *Age at marriage* is the age at the time of marriage.

Frequency of activities index takes the average response to the following questions: How frequently do you and your spouse (1) laugh together; (2) work on a project together; (3) receive a gift; (4) walk together; (5) talk about your day; (6) discuss your feelings; all questions answered with 1 = never to 6 = more than once a day. The index sums the responses to each of the questions and divides by 6 to generate the average response. * $p < 0.1$;

** $p < 0.05$; *** $p < 0.01$.

Source: authors.

Overall, the results suggest that higher bride price is not associated with a lower-quality marriage, and in fact seems to be associated with better marriages, at least according to this particular measure of marriage quality.

4.5 Bride price and self-reported happiness

We now examine a related outcome, and one that perhaps most directly measures women's wellbeing: self-reported happiness. We measure happiness using survey responses to a question that asks respondents to report how happy they are. The question asks: 'Taking all things together, would you say you are very unhappy, somewhat unhappy, neither happy nor unhappy, somewhat happy, or very happy? You can also look at these pictures to help you with your response.' The respondents were presented with emoticons of frowning and smiling faces to visualize the scale.

Based on the respondents' answers, we create a variable that takes integer values between 1 and 5 and is increasing with their self-reported happiness.

We then estimate equation (1) with the level of happiness of the wife as our outcome of interest. Estimates are reported in columns 1–3 of Table 7. We find a robust positive relationship between the amount of bride price paid by the husband at marriage and the wife's self-reported happiness. The point estimate is highly significant and stable across our three baseline specifications. The point estimate of 0.192 (from column 3) suggests that a one-standard-deviation increase in the bride price index is associated with an increase of $0.192 \times 1.44 = 0.28$ points on the happiness scale. This is a sizeable effect, given that the mean level of the happiness in the sample is 2.7 and that the standard deviation is 0.88.

The natural next question is what effect a higher bride price has on the husband's happiness. It is possible that a higher bride price is also associated with greater happiness on the part of the husband. However, it is also possible that the wife's happiness comes at the expense of the husband's happiness and so a higher bride price is associated with a less happy husband. We examine this by estimating equation (1) with the husband's self-reported happiness measure as the outcome of interest. Estimates are reported in columns 4–6 of Table 7. The estimated coefficients are precisely estimated and are very close to zero.

Overall, the estimates are consistent with a higher bride price resulting in greater happiness on the part of the wife, but having no effect on the happiness of the husband. These estimates are (perhaps) surprising given the general concern that a high bride price leads men to treat women poorly, leaving women in unhappy marriages where they are worse-off. Our estimates provide no evidence to support the validity of this concern. If anything, our findings appear to suggest that a higher bride price is associated a better marriage, where the wife is more happy.

Table 7: Bride price and self-reported happiness

	Dep. var.: happiness					
	Women			Men		
	(1)	(2)	(3)	(4)	(5)	(6)
Bride price amount	0.188*** (0.037)	0.193*** (0.038)	0.192*** (0.038)	0.025 (0.033)	0.026 (0.033)	-0.005 (0.035)
Wife's age	-0.009 (0.019)	0.015 (0.020)	0.002 (0.025)			0.016 (0.029)
Wife's age squared	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)			-0.000 (0.000)
Wife's years education	0.050*** (0.014)	0.045*** (0.014)	0.030* (0.016)			0.074*** (0.015)
Year married		0.007 (0.008)	0.009 (0.009)		-0.004 (0.008)	-0.009 (0.009)
Married in Kananga		-10.598 (13.584)	-6.546 (13.538)		-17.159 (15.182)	-21.441 (14.949)
Year married*married in Kananga		0.005 (0.007)	0.003 (0.007)		0.009 (0.008)	0.011 (0.007)
Husband's age			0.008 (0.027)	0.026 (0.025)	0.035 (0.026)	0.027 (0.032)
Husband's age squared			-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Husband's years education			0.033** (0.014)	0.056*** (0.014)	0.055*** (0.014)	0.026* (0.014)
Observations	317	317	317	317	317	317
Mean dep. var.	2.681	2.681	2.681	2.700	2.700	2.700

Notes: robust standard errors in parentheses. *Bride price amount* is a variable from 1 to 9 corresponding with various bride price values, where (1) is equal to US\$0–25 dollars and (9) is equal to US\$1,500+. The bride price value used is the value reported by the husband. *Years education* is the number of years of education. *Year married* is the year the couple was married as reported by the husband. *Married in Kananga* is an indicator variable equal to 1 if the couple lived in Kananga at the time of marriage. *Age at marriage* is the age at the time of marriage. Happiness asks respondents to rate how happy they are on a scale of 1 = very unhappy to 5 = very happy. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: authors.

4.6 Repayment practices and happiness

Another concern with the bride price custom is that in many societies that practice bride price, there is also the convention that if the marriage dissolves then the bride price must be paid back, in whole or in part, by the wife's family. The extent to which this norm is present, and is enforced, can also vary depending on which party is perceived to be at fault, and whether or not the woman has had any children. The requirement of paying back bride price is believed to be a significant obstacle to women who would like to leave bad marriages, causing them to be stuck in these marriages.

In an attempt to provide evidence on this consequence of the bride price, we examine whether the presence of a requirement to pay back the bride price upon divorce is associated with less self-reported happiness by wives. If the practice of repayment causes women to be trapped in low-quality and unhappy marriages, then we would expect that when looking at a sample of currently married couples, those women who perceive there to be a requirement of repayment of the bride price upon divorce, on average, will be less happy.

To do this, we use information obtained from respondents using the following question: ‘In the event of a divorce, how much of the bride price must be repaid?’. Respondents choose one of the following responses: all of it; most of it; some of it; a little bit of it; none of it; or don’t know. Using their response, we then code a variable that equals 0 if none of it must be returned, 1 if some amount of it must be returned, and 2 if all of it must be returned. We add to our baseline estimating equation this measure, which is increasing in the extent to which the bride price must be repaid upon divorce.¹⁴

The estimates are reported in columns 1–3 of Table 8. As shown, we find no evidence that the requirement to pay back the bride price upon divorce is associated with wives being less happy in their marriage. The coefficient on the repayment variable is not statistically different from zero. In addition, the coefficients are positive and not negative. Though not significant, these suggest that, if anything, a repayment requirement is positively associated with the wife’s happiness.

It is possible that the requirement to repay the bride price upon divorce is more detrimental when the value of the bride price paid is higher. We test for this possibility by including an interaction between the repayment variable and the value of the bride price measure. Effectively, this allows the effect of the repayment requirement on the wife’s happiness to vary depending on the value of the bride price that was paid at marriage.

These estimates are reported in columns 4–6 of Table 8. Our estimates produce a coefficient for the interaction term that is negative and significant. According to the estimated magnitudes, the effect of the repayment index, which takes on the value of 0, 1, or 2 is given by: $0.926 - 0.146 \times \text{bride price amount}$. Thus, the estimate relationship between the repayment index and the wife’s happiness moves from being positive to negative when the value of the bride price index is greater than $0.926 / 0.146 = 6.34$. Therefore, when the value of the bride price index is 7, 8, or 9, then a requirement to repay the bride price is associated with lower happiness of the wife. However, the relationship is not significant for a bride price value of 7 ($p = 0.30$), but is significant for a value of 8 ($p = 0.05$) and a value of 9 ($p = 0.02$).

¹⁴ An alternative strategy is to create indicator variables for two of the three categories (the third is the omitted category) and include these in the estimating equation. This allows a more flexible relationship between repayment requirements and the outcomes of interests. All of the conclusions we report below remain if we estimate this more flexible specification.

Table 8: Bride price repayment customs and self-reported happiness

	Var.: wife's happiness					
	(1)	(2)	(3)	(4)	(5)	(6)
Bride price amount	0.186*** (0.038)	0.191*** (0.038)	0.190*** (0.038)	0.265*** (0.041)	0.276*** (0.041)	0.272*** (0.041)
Amount pay back	0.069 (0.076)	0.078 (0.077)	0.065 (0.077)	0.926*** (0.251)	0.992*** (0.248)	0.933*** (0.252)
Bride price amount*amount pay back				-0.146*** (0.043)	-0.156*** (0.043)	-0.148*** (0.043)
Wife's age	-0.006 (0.019)	0.019 (0.020)	0.005 (0.025)	-0.002 (0.019)	0.026 (0.019)	0.011 (0.024)
Wife's age squared	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Wife's years education	0.050*** (0.014)	0.044*** (0.014)	0.030* (0.016)	0.045*** (0.014)	0.039** (0.014)	0.026* (0.016)
Year married		0.008 (0.008)	0.009 (0.009)		0.011 (0.007)	0.012 (0.009)
Married in Kananga		-11.017 (13.549)	-7.112 (13.517)		-6.806 (12.884)	-3.940 (12.944)
Year married*married in Kananga		0.006 (0.007)	0.004 (0.007)		0.003 (0.006)	0.002 (0.006)
Husband's age			0.009 (0.027)			0.013 (0.026)
Husband's age squared			-0.000 (0.000)			-0.000 (0.000)
Husband's years education			0.032** (0.014)			0.028** (0.014)
Observations	317	317	317	317	317	317
Mean	2.681	2.681	2.681	2.681	2.681	2.681

Notes: robust standard errors in parentheses. *Bride price amount* is a variable from 1 to 9 corresponding with various bride price values, where (1) is equal to US\$0–25 dollars and (9) is equal to US\$1,500+. The bride price value used is the value reported by the husband. *Amount pay back* is a variable from 0 to 2, where (0) means none of the bride price has to be repaid upon divorce, (1) means some of the bride price must be repaid, and (2) means all of the bride price must be repaid. *Years education* is the number of years of education. *Year married* is the year the couple was married as reported by the husband. *Married in Kananga* is an indicator variable equal to 1 if the couple lived in Kananga at the time of marriage. *Age at marriage* is the age at the time of marriage. Happiness asks respondents to rate how happy they are on a scale of 1 = very unhappy to 5 = very happy.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: authors.

Overall, there is no evidence that the requirement to repay the bride price upon divorce is associated with wives being stuck in less happy marriages, on average. However, this does mask heterogeneity. When the value of the bride price that was paid at marriage is very high, then there is a negative and significant relationship between the repayment requirement and the happiness of wives.

5 Taking stock and comparing our findings to other studies

To date there is limited evidence about the correlates of bride price in the African context. One of the most robust findings, although about the causes of bride price and not its consequences, is that higher education is associated with higher bride price payments at marriage. The reason behind this association is explored in depth by Ashraf et al. (2016), who provide evidence that, within Zambia, the positive effect of the wife's education on her bride price is causal and widely known. In addition, they also show that this effect of education is taken into account when parents make the decision of whether to send their daughters to school. In our setting, we have also found a strong positive relationship between education and the value of the bride price.

As part of an ongoing study also undertaken in the DRC, but in the northern province of Sud-Ubangi, Lowes et al. (in progress) collected information on bride price values and education for a sample of just under 1,000 married couples. The data were collected from a random sample of individuals living in the city of Gemena, the provincial capital, in 2016. Participants were asked to estimate the value of bride price paid at the time of marriage in both cash and in kind. Although this is not a focus of their study, if one examines their data one finds a very strong positive relationship between the educational attainment of the wife and the value of the bride price at marriage. Each year of education is associated with an increase in bride price value of US\$20 (measured in 2016 dollars). The estimates, which have not been previously reported, are provided here in Table A1 in the Appendix. Overall, the existing evidence appears to find robust evidence of a strong positive relationship between a wife's education and the value of the bride price at marriage.

We next turn to studies that examine potential consequences of bride price values. In a recent working paper, Mbaye and Wagner (2013) examine over 2,000 respondents from eight regions in Senegal and find that a higher bride price is associated with lower fertility. They also find that this relationship is statistically significant. In contrast, we found no robust relationship between the value of the bride price and fertility. Although we estimated a positive relationship, the point estimates were generally not statistically different from zero. Along somewhat similar lines, the estimates from Mbaye and Wagner (2013) are only marginally significant and they are very small in magnitude. According to their estimates, if bride price increases by 100 per cent—a very large increase—fertility falls by only 0.04 children. Thus, taken together, our findings and the findings from Mbaye and Wagner (2013) seem to indicate that the value of the bride price appears to have no sizeable or robust relationship with fertility.

Lowes et al. (in progress) also collected information on the age at marriage for their sample from northern DRC. Using these data, one can examine the relationship between the value of the bride price and the age at marriage. Estimates are reported in Table A2. Consistent with our findings here, there is no robust relationship between the value of the bride price and age at marriage. The coefficient is initially estimated to be negative, close to zero, and significant at the 5 per cent level. However, this is not robust to the inclusion of baseline covariates, such as the location of marriage, the decade of marriage, their interaction, or the characteristics of the husband. Once these covariates are added, the coefficient becomes insignificant and very close to zero. Given the close association between early marriage and higher fertility, this finding is also consistent with the finding, in both this study and in Mbaye and Wagner (2013), of no relationship between the value of the bride price and fertility.

Although not the focus of their analysis, the study by Mbaye and Wagner (2013) also provides estimates of the relationship between bride price and a measure of appreciation of the wife by the husband. They estimate a negative relationship between the two (a higher bride price is associated

with less appreciation), although the coefficients are generally not statistically different from zero. This can be contrast to the spirit of our findings, which show a positive association between the value of the bride price and our different measures of the quality of the marriage.

With the exception of Mbaye and Wagner (2013), there is little pre-existing empirical evidence against which to compare our estimates. Two previous studies exist examining the relationship between bride price and divorce. Platteau and Gaspard (2007) examine correlates of bride price payments across Wolof and Toucouleur women in Senegal. They develop a model in which parents strategically set bride price so that it is not so high that it would make divorce too difficult for the daughter. They find that bride prices are significantly higher for educated women in the case of arranged marriages, but that they are not significantly different from non-educated women in the case of love marriages. They conclude that this supports their model of setting bride price strategically, since non-educated women receive higher bride price only in love marriages, where the probability of divorce is lower. In a related paper, Gaspard and Platteau (2010) develop a model where the bride price negatively affects the wife's welfare and increases the probability of divorce. They bring the model to the data and estimate the relationship between a couple's bride price value and divorce. Studying 144 marriages from the Senegal River valley, the authors document a positive relationship between the value of the bride price and the probability of subsequent divorce. In our setting, we only interviewed couples that were married at the time of the survey, and so are unable to estimate the relationship between bride price and divorce within the Congolese context.¹⁵

The previous findings that are most directly comparable to the findings in this paper actually are from qualitative studies. Comparing our findings to these studies, we find significant differences. For example, our findings that higher bride price is correlated with less acceptance of domestic violence, higher marriage quality, and greater happiness for women stand in stark contrast to the conclusions from casual observation or qualitative studies. A number of focus group and survey-based studies have shown that men and women tend to believe that bride price results in less empowerment of women, worse marriages, and lower overall wellbeing. Results of this nature have been found in Uganda (Hague et al. 2011; Kaye et al. 2013) and Ghana (Dery 2015; Horne et al. 2013). For example, in Hague et al. (2011), 84 per cent of 151 respondents reported that they believed that there was a strong connection between the value of the bride price and domestic violence.

An interesting line of future research is the apparent difference between the relationship between bride price and women's wellbeing as found in many studies, including our own, and the perception of the relationship between the two. There are many explanations for the differences in the findings. First, Africa is not a homogeneous unit. Thus, there could be significant heterogeneity across the large continent, which may result in differences in our relationships of interest. Thus, the effects of bride price may be different in the DRC than in Uganda, Kenya, or Ghana. A second possibility is that the actual effects of the bride price custom may be different from the perceived effects. Individuals observe the practice of the bride price, high levels of domestic violence, and low levels of female empowerment and may draw a link between them. Whether there is a general relationship in the data when looking across a large number of individuals is an empirical question.

¹⁵ Bishai et al. (2009) and Bishai and Grossbard (2010) examine the related, but conceptually distinct, question of whether a payment of a bride price (no matter what the value) is associated with differences in sexual practices. Studying nearly 600 married women in 12 districts of Uganda, they find that having paid a bride price is associated with less frequency of sexual intercourse with someone other than the husband. There was no significant relationship between bride price payment and husbands' frequency of extra-marital sexual relations.

A characteristic of qualitative studies is that participants' answers must be interpreted, and this is done through the lens of the researcher. Thus, there is concern that the researcher's priors affect the mapping that is made from statements in the focus groups to conclusions. Further, the presence of a researcher in the focus groups may affect the statements made by participants, and one worries, in particular, about 'demand effects', where participants are more likely to inadvertently (and without conscious realization) say what they feel the researcher wants to hear. This can be contrasted with surveys, which though less rich in some dimensions, have the advantage that researchers are not present when the questions are answered. Instead, local enumerators ask the questions.

6 Conclusion

Bride price, which is payment from the groom and/or groom's family to the bride's family at the time of marriage, is an important cultural practice of many African societies. In recent years, there have been widespread concerns that the practice may have negative effects for girls and women. One concern is that because of the monetary payment received by the bride's family at marriage, it may incentivize early marriage, leading to higher fertility. It is also believed that it may promote the view that husbands have 'purchased' their wives, resulting in worse treatment of wives. In many locations, upon divorce the bride price must be paid back to the groom's family. This may cause an obstacle to divorce and result in women being trapped in unhappy marriages. Thus, in general, there has been widespread concern that the practice is detrimental to the wellbeing of women.

In this paper we have used data related to these issues in an attempt to provide a better understanding of the potential effects of bride price. We did this by examining the empirical relationship between bride price payments and various outcomes of interest, using a sample of 317 married couples from Kananga, a city located in the DRC, a setting where almost everyone pays a bride price and marriages are not recognized as legitimate if a bride price is not paid.

We found no evidence that a larger bride price payment is associated with earlier marriage or with higher fertility. We also found that larger bride price payments are associated with better-quality marriages as measured by beliefs about the acceptability of domestic violence, the frequency of engaging in positive activities as a couple, and the self-reported happiness of the wife. We also examined the correlates of the requirement for the bride price to be paid back upon divorce. Contrary to general concerns about this aspect of the custom, we found no evidence that this requirement is associated with women being less happy in their marriages. In fact, we found a positive association, although the coefficient was statistically insignificant. However, we did find that if the value of the bride price paid was very high (over US\$1,000), then the requirement is, in fact, negatively associated with the happiness of the wife.

Overall, we found that the evidence does not support the notion that the practice of bride price has detrimental effects on the wellbeing of married women. Perhaps surprisingly, in general, a higher bride price tends to be associated with good outcomes. The one exception is that the presence of a high bride price and the requirement for the bride price to be paid back upon divorce does appear to be associated with less happiness on the part of the wife.

We end by reminding the reader about an important caveat. The correlations that we report are just that. Therefore, although informative and valuable, the relationships that we estimate cannot be taken as definitive evidence of the causal effect of high bride price and/or repayment requirements on women's wellbeing. Despite our attempts to control for potentially omitted

factors, like the wife's education or the husband's education, it is very possible that omitted factors play a role and thus influence the estimates and our ability to interpret them as purely causal.

However, we do feel that the estimates we report here, combined with the dearth of other estimates of the correlates of bride price in the literature, lead one to pause and recognize the need for greater research to understand the causal effects of the custom, particularly given the calls to abolish the practice in many countries within Africa.

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Appendices

Table A1: Correlates of bride price amount in Gemena

	Dep. var.: bride price amount (US\$)		
	(1)	(2)	(3)
Wife's age	10.627 (7.083)	15.551 (10.419)	-1.969 (12.597)
Wife's age squared	-0.001 (0.096)	-0.188 (0.150)	0.018 (0.182)
Wife's years education	20.691*** (4.498)	23.711** (4.631)	21.390*** (5.536)
Married in Gemena		15.928 (102.924)	-2.544 (34.061)
Married in 1960s*married in Gemena		-91.436 (321.843)	-251.109 (350.786)
Married in 1970s*married in Gemena		397.272* (223.060)	350.244 (220.741)
Married in 1980s*married in Gemena		-90.286 (170.828)	-100.837 (161.262)
Married in 1990s*married in Gemena		-79.608 (132.622)	-20.253 (89.395)
Married in 2000s*married in Gemena		-48.443 (111.337)	-29.651 (54.064)
Married in 2010s*married in Gemena		-31.877 (109.833)	0.000 (0.000)
Husband's age			17.676** (8.065)
Husband's age squared			-0.165* (0.091)
Husband's years education			4.506 (5.707)
Observations	991	967	910
Mean	271.8	270.5	275

Notes: robust standard errors in parentheses. The regression includes decade of marriage fixed effects. *Years education* is the number of years of education. *Married in Gemena* is an indicator variable equal to 1 if the couple lived in Gemena at the time of marriage. *Bride price amount* is the amount of bride price paid in both cash and in kind in 2016 US dollars. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: authors.

Table A2: Bride price amount and age of marriage in Gemena

	Dep. var.: wife's age at marriage		
	(1)	(2)	(3)
Bride price amount	-0.0005** (0.0002)	0.0002 (0.0001)	0.0002 (0.0002)
Wife's age	0.306** (0.046)	0.645*** (0.096)	0.744** (0.109)
Wife's age squared	-0.003*** (0.001)	-0.003** (0.001)	-0.004*** (0.001)
Wife's years education	0.209*** (0.037)	0.090*** (0.034)	0.071* (0.036)
Married in Gemena		-0.181 (0.779)	0.529 (0.781)
Married in 1960s*married in Gemena		1.955 (1.439)	1.209 (1.306)
Married in 1970s*married in Gemena		0.382 (1.168)	-0.488 (1.238)
Married in 1980s*married in Gemena		0.528 (1.031)	-0.164 (1.063)
Married in 1990s*married in Gemena		0.180 (0.926)	-0.578 (0.924)
Married in 2000s*married in Gemena		-0.475 (0.870)	-1.138 (0.866)
Married in 2010s*married in Gemena		0.708 (1.127)	0.000 (0.000)
Husband's age			-0.177* (0.072)
Husband's age squared			0.002*** (0.001)
Husband's years education			0.002 (0.040)
Observations	991	967	910
Mean	18.74	18.72	18.72

Notes: robust standard errors in parentheses. The regression includes decade of marriage fixed effects. *Bride price amount* is the amount of bride price paid in both cash and in kind in 2016 US dollars. *Years education* is the number of years of education. *Married in Gemena* is an indicator variable equal to 1 if the couple lived in Gemena at the time of marriage. *Wife's age at marriage* is the age of the wife when the couple was married. * $p < 0.1$;

** $p < 0.05$; *** $p < 0.01$

Source: authors.