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**CORRELATES OF KIN MARRIAGE  
IN EGYPT, JORDAN, AND TUNISIA**

**Rania Salem and Sarah Shah**

**Working Paper No. 1067**

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## Abstract

Although kin marriage is widely practiced in the MENA, the rationales that are thought to motivate kin marriage have not been widely tested. We test three rationales for kin unions among ever-married women using the Egypt, Jordan, and Tunisia Labor Market Surveys. The first rationale for kin unions is to consolidate family property and avoid its fragmentation through the marriage of relatives. We find that the first rationale is supported only by the Tunisian data, where women whose parents worked in a family firm were more likely to marry relatives in some models. A second rationale is to reduce the financial outlays made on marriage. We find that kin unions involved lower matrimonial expenditures and more expenditures by the groom's side in Egypt alone, thus partially confirming the second rationale. A third rationale motivating kin marriage is the belief that brides who marry relatives will enjoy advantages vis-a-vis their husbands and in-laws. Here, we find that Egyptian and Tunisian women in kin unions had less decision-making influence, contrary to our expectations, whereas Jordanian women in kin unions had more decision-making influence.

**JEL Classification:** J12, D10

**Keywords :** Kin marriages; Egypt; Tunisia; Jordan;

## ملخص

على الرغم من أن زواج الأقارب يمارس على نطاق واسع في منطقة الشرق الأوسط، والمبررات التي يعتقد أنها تحفز زواج الأقارب لم يتم اختبارها على نطاق واسع بعد. نقوم باختبار ثلاثة مبررات لزواج الأقارب بين النساء المتزوجات باستخدام مسوح العمل لكل من مصر، والأردن، وتونس. الأساس المنطقي الأول لزواج الأقارب هو توطيد ممتلكات الأسرة وتجنب تجزئتها. نجد أن الأساس المنطقي الأول يدعم فقط من البيانات التونسية، حيث كانت النساء اللاتي تعملن في الشركة المملوكة للأسرة أكثر عرضة لزواج الأقارب. الأساس المنطقي الثاني هو للحد من النفقات المالية التي على الزواج. نجد أن زواج الأقارب يشارك في النفقات الزوجية والمزيد من النفقات إلى جنب العريس في مصر وحدها، مؤكدة بذلك جزئياً المنطق الثاني. الأساس المنطقي الثالث لتحفيز زواج الأقارب هو الاعتقاد بأن العرائس الذين يتزوجون من الأقارب سوف يتمتع بمزايا حيال أزواجهن والأصهار. هنا، نجد أن المرأة المصرية والتونسية كن أقل تأثيراً في صنع القرار، على عكس توقعاتنا، في حين كانت المرأة الأردنية لديها المزيد من النفوذ في صنع القرار.

## 1. Introduction

The Middle East and North Africa (MENA) is exceptional among world regions in its high rates of marriage between close relatives (Reilly 2013). Conjugal unions between cousins and other relatives have historically been the preferred form of marriage across the MENA (Casterline and El-Zeini 2003; Sholkamy 2008). The current prevalence of kin marriages is high but varies across the region. Considering figures from the 1990s to the 2000s, it appears that the prevalence of consanguineous unions ranges from approximately 15% of all marriages in Morocco to about 65% of all marriages in Sudan (Reilly 2013).

Scholars of family formation in the MENA report that those who practice kin marriage articulate several rationales for this type of conjugal union. Two of these rationales are based on economic considerations, and the third relates primarily to social considerations. The *first* economic consideration includes the desire to consolidate family assets and property through the marriage of kin group members. A *second* economic consideration that promotes kin marriage has to do with the reduced marriage expenditures involved in such unions. A *third* consideration that encourages kin marriage is the belief that brides who marry relatives will wield more decision-making power in the families they marry into.

The three rationales for kin marriage have been widely reported by scholars based on their observations of societies where kin endogamy is commonplace. Most of the evidence underlying these rationales is qualitative, however, and with a few exceptions, these rationales have not been tested with nationally representative survey data. Using unique survey data from Egypt, Jordan, and Tunisia, the current paper investigates the determinants of kin marriage by asking 1) *whether women whose parents own land or household enterprises are more likely than other women to marry husbands from their kin group*. It then investigates the consequences of kin marriage by asking 2) *whether women married to members of their kin group differ from other women in terms of their reported marriage expenditures*; and 3) *whether women married to members of their kin group differ from other women in terms of their reported decision-making influence within their households*.

## 2. Background

### 2.1 Defining kin marriage

Many accounts related to the topic of kin marriage investigate consanguinity specifically. While a consanguineous union technically refers to a marriage between biological relatives, it has typically been operationalized to include unions between first cousins or second cousins (Abbasi-Shavazi et al. 2008). Among consanguineous unions in the MENA, marriage to one's patrilineal parallel<sup>1</sup> first cousin holds a special place. These are marriages between the son and daughter of two brothers, or father's brother's daughter/ son marriages (FBD/S marriages). In this study we are interested in kin endogamy (hereafter, endogamy) more generally; that is, marriage between first and second cousins, but also more distant kin that may be related to one another biologically or through marriage.

### 2.2 Correlates of kin marriage in the MENA

The existing literature offers insights into the socio-demographic correlates of kin marriage in the MENA region. Generally, most studies find a negative association between women's education and kin marriage, although some have documented notable exceptions where more educated women have elevated odds of marrying a relative (Abbasi-Shavazi et al. 2008; Bittles 1994; Harkness and Khaled 2014; Weinreb 2008). Kin marriage is inversely associated with wealth and is more common in rural areas (Abbasi-Shavazi et al. 2008; Bittles 1994; Harkness

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<sup>1</sup> Patrilineal marriage involves a union with a relative related to one's father, and matrilineal marriage involves a union with a relative through one's mother. Parallel cousin marriages involve unions between two brothers' or two sisters' children. Cross cousin marriage involves a union between the children of a brother and sister.

and Khaled 2014). In the MENA, kin marriage is practiced among Arab and non-Arab groups alike, as well as among Muslims, Christians, Jews, and Druze (Bittles 1994; Weinreb 2008).

Although the literature on correlates of kin marriage helps answer the question of who practices kin marriage in the region, it does not account for why it is practiced. Indeed, some scholars have tried to explain why kin marriage persists over time in spite of modernization theory's prediction that it would diminish with 'development.' Modernization theory assumes that as modernization progresses, selection of marriage partners according to individual preferences would replace family selection of mates. Specifically, Goode (1963; cited in Abbasi-Shavazi et al. 2008) posited that women's increasing education and labor force participation would cause them to demand more input in the mate selection process. This perspective, of course, assumes that if left to make their own choice of marriage partner themselves, women will prefer to marry non-kin. In fact, observed kin marriage rates have failed to follow the pattern of rapid decline predicted by modernization theorists. A reduction in rates of certain types of consanguineous marriage have been observed in some countries or communities, while in others, researchers have found that consanguineous marriages continue to occur at the same or higher rates, even in settings where women's education and Western cultural norms are widespread (Abbasi-Shavazi et al. 2008; Harkness and Khaled 2014; Weinreb 2008). In this study, we do not make any functionalist assumptions about the need for a specific social practice to offer net societal benefits in order for it to be maintained. However, the question of the underlying motivations for the practice of kin marriage has not been adequately addressed by the empirical literature.

### ***2.3 Rationales for kin marriage in the MENA***

Although these have not been widely tested in observational studies, a number of rationales for kin marriage can be found in the existing literature. The *first* rationale is motivated by an economic consideration related to family-owned assets and property. If the offspring of property-owning siblings are married, inheritance will be concentrated in the hands of the consanguineous couple. This strategy not only prevents the fragmentation of landholdings, but also ensures that wealth stays in the same family. When the child of property-owning parents marry more distantly related kin, the property-owning parents have a better chance of controlling the disposal of the property than might otherwise be the case (Bittles 2013; Casterline and El-Zeini 2003; Tabutin et al. 2015; Weinreb 2008). Many researchers emphasize that this motivation for endogamy is salient in the MENA specifically because of Islam's assurance of a share of inheritance for women who survive their male kin. Although most accounts describe this rationale as applying to land, wealth, assets, and property, it may well apply equally to family-owned enterprises.

A *second* economic consideration related to kin marriage is the reduced marriage expenditures involved in such unions (Casterline and El-Zeini 2003; Weinreb 2008). In the MENA region, custom dictates that fewer or less costly marriage assets will be exchanged when relatives wed. Marriage costs include expenditures on jewelry, furniture, appliances, housing, celebrations, and, among Muslims, prompt dower (or *mahr*). These financial outlays are made by the bride and groom and their families, and can be quite burdensome (Singerman 2007). When the bride and groom are related, however, existing trust between the families allows them to reduce the financial demands typically expected of each party to the marriage (Reddy 1988; Reilly 2013). Weinreb (2008) adds that prompt dower (*mahr*) as well as deferred dower (*muakhar*) are usually lower in consanguineous marriages for two reasons. First, the *mahr* of exogamous brides is often higher in order to compensate for her low status as an exogamous bride. The endogamous bride has a lower *mahr* that reflects her status as an already highly-valued member of the kin group (Weinreb 2008). Second, the *muakhar* is lower for endogamous brides. This is because either the marriage is considered more stable (Hussain 1999; also see Saadat 2015

for evidence from Egypt that consanguineous marriages are less likely to end in divorce) or because it would be easier to extract the muakhar from a relative (Weinreb 2008).

A *third* rationale for kin marriage has to do with the wife's welfare or social status. This has been articulated in a number of ways in the existing literature, but the general claim is that brides who marry relatives enjoy greater autonomy, well-being, power, or influence within their conjugal households (Weinreb 2008). The underlying mechanism may have to do with the higher esteem in which endogamous wives are held, or perhaps the favorable treatment they receive from husbands and in-laws because of their status as kinswomen (Bittles 2012; Hussain 1999). The claim that endogamous wives will likely have relatives who are residentially proximate to them, and therefore will have a social support network to protect and bolster their interests is also plausible (Weinreb 2008).

The points raised above are especially relevant to some of the key theoretical questions raised by feminist social scientists. The feminist literature often assumes that the family is an unequal institution that subjugates women (Ferree 2010). Similarly, much of the anthropological literature has characterized cousin marriage as an exchange of children between male siblings looking to advance their own interests. However, these assumptions mask the fact that women themselves often favor kin marriage (Sholkamy 2008), seeing it as a means to draw on family social support and family economic resources to achieve their personal goals (Hoodfar 1997). So for example, the first economic rationale for kin marriage enables women who are customarily denied their share of parental inheritance another route to lay claim on familial resources, through marriage to a relative. In spite of Islam's guarantee of inheritance for Muslim daughters, women in a male dominated society may nevertheless find laying claims to their inheritance of familial wealth and land difficult when competing with male relatives, who also have claims on the inheritance, and who are the women's social and economic safety net in cases of marital difficulty, divorce, or widowhood. For this reason, women often forfeit their claims to inheritance in lieu of jeopardizing their relations with male kin (Hoodfar 1997). By marrying a relative, women can access familial resources through their husband's inheritance. The second economic rationale highlights the ways in which brides potentially minimize their own financial outlays on marriage through marriage within the kin group. Not only are absolute marital costs minimized, but it may also be the case that proportionate shares of marital expenditures are lower for brides and their families. The third rationale suggests that brides may use kin marriage to secure advantages within the conjugal relationship, since marriage to a relative has informational benefits and reduces the likelihood of abuse or abandonment. Thus the present project complicates some of the assumptions of the feminist literature, and has the potential to demonstrate that kin marriage is a strategy that women may use to ameliorate their inferior social position and to reduce the risks inherent to the patriarchal institution of marriage.

## **2.4 Hypotheses**

Although anthropologists have long studied kin marriage in the MENA region, the insights they offer are limited by their small sample sizes. At the same time, there is a dearth of generalizable survey research on consanguinity and kin marriage in the region (an exception to this is a large literature on the health effects of cousin marriage – see for instance Assaf and Khawaja 2009; Barbour and Salameh 2009; Ben Halim et al. 2012; Ben Halim et al. 2016; El-Kheshen and Saadat 2013; Hamamy et al. 2005; Jaouad et al. 2009; Jurdi and Saxena 2003; Othman and Saadat 2009; Shawky et al. 2011; Sirdah 2014; Sueyoshi and Ohtsuka 2003). Many important issues having to do with kin marriage in the MENA region remain unexplored. This paper aims to fill this gap by assessing evidence for the three rationales for kin marriage mentioned above using nationally-representative survey data from Egypt, Jordan and Tunisia.

Based on the literature discussed above, we structure the analysis that follows according to the following hypotheses:

H1: Women in kin unions will be more likely than women in other unions to report that their parents owned land, assets, or household enterprises.

H2: Women in kin unions will report lower absolute marriage expenditures compared to women in other unions.

H3: Women in kin unions will report higher proportional marriage expenditures by the groom and his family compared to women in other unions.

H4: Women in kin unions will enjoy greater reported decision-making influence in their households compared to women in other unions.

### **3. Data and Methods**

#### **3.1 Data**

In order to assess the rationales for kin marriage summarized in the forgoing discussion, survey data that include variables on the kinship status of spouses before marriage, on the presence of a family enterprise in the parental generation, on the past marriage expenditures of brides and grooms, and on the decision-making influence of wives are required. These requirements are met by the Egypt Labor Market Panel Survey (ELMPS) of 2012, and the Jordan Labor Market Panel Survey (JLMPS) of 2010. The Tunisia Labor Market Panel Survey (TLMPS) of 2014 also contains a subset of the required variables. All three datasets are based on nationally-representative household surveys involving face-to-face interviews of individual survey respondents by trained field personnel, who recorded responses using pencil-and-paper questionnaires.

We also take advantage of the panel feature of the Egypt survey to make use of another set of variables related to family enterprises and asset ownership in Egypt. The ELMPS 2006 contained a number of additional questions about land ownership and household enterprises. By restricting our analyses to women who were surveyed in both in 2006 and 2012, but were unmarried in the first round and married in the second round, we have the opportunity to use appropriately-sequenced reports of land ownership and parental enterprises as predictors of kin marriage. Similar panels are not yet available for Jordan or Tunisia.

#### **3.2 Sample**

Questions related to marriage and family life in the ELMPS, JLMPS, and TLMPS were restricted to ever-married women within a specific age range. The ELMPS sample used in our cross-sectional analysis consists of all 7,196 ever-married women who were 18-39 years old in 2012. The JLMPS sample consists of all 4,511 ever-married women who were between the ages of 15-60 years in 2010. The TLMPS posed most questions required for this analysis to women aged 15-59, a total of 2,190 ever-married women in 2014. To ensure comparability between countries, we restricted the analysis in Jordan and Tunisia to ever-married women aged 18-39, matching the age range of the ELMPS dataset. In Jordan, this resulted in an analysis sample of 2,666 women. In Tunisia, this narrower aged range resulted in the relatively limited analysis sample size of 957 women, and therefore the full age range was also tested in our regression analyses to avoid small cell sizes. Both sets of analyses are presented below.

The second part of our analysis utilizes the panel feature of the ELMPS. Specifically, we restrict our analysis to women who were interviewed in 2006 and in 2012. In order to ensure the proper temporal ordering of predictor and outcome variables, we included only those women who were never-married in 2006 but who were ever-married in 2012. A total of 1,574 women aged 18-39 in 2012 were in this analysis sample.



### 3.3 Analyses

Bivariate analysis was undertaken to examine the socio-demographic correlates of kin marriage, as well as to assess the hypothesized relationship between kin marriage and various other factors.

Next, we ran a number of multivariate regression analyses to test the research questions laid out above. *First*, logistic regressions were used to test the probability of kin marriage according to parental involvement in a family firm when the respondent was aged 15, net of controls, using cross-sections of the Egyptian, Jordanian, and Tunisian survey data. *Second*, using the panel feature of the Egyptian survey data, logistic regressions were used to test the probability of kin marriage according to land and enterprise ownerships of the respondent's natal household. *Third*, OLS regression was used to test the association between kin marriage and total absolute marriage expenditures, net of controls, using cross-sections of the Egyptian and Jordanian survey data. *Fourth*, binomial regression was used to test the association between kin marriage and the bride's side's and groom's side's proportional marriage expenditures, net of controls, using cross-sections of the Egyptian and Jordanian survey data. *Finally*, to test the association between kin marriage and the wife's current decision-making influence within the household, we employed OLS regression techniques on the Egyptian, Jordanian, and Tunisian survey data. We ran these regression analyses on each of the three cross-sectional country datasets and on the Egypt 2006-2012 panel dataset separately. These analyses are summarized in Table 1.

### 3.4 Variables

The descriptive statistics for all variables used in this study are featured in Table 2 (for each of the three cross-sectional country samples) and 3 (for the Egypt 2006-2012 panel sample). We include the mean and standard deviations for continuous variables, as well as the sample size (N) and percentages for categorical variables. We describe the construction of each of our variables, and summarize their frequencies in the following section.

#### 3.4.1 Outcome variables in the determinants of kin marriage model

Kin marriage is the focal variable of this study, utilized as both a hypothesized outcome and determinant of economic factors and social structure. Ever-married women interviewed in the ELMPS and JLMPS were asked whether they were related to their husband before marriage, with the possibility of reporting that they were different types of first cousins, blood relatives, relatives through marriage, or unrelated. Using Wald  $\chi^2$  tests of linear hypotheses following multinomial logistic regressions, we found that there were no statistically significant differences between kinds of relations when regressed on salient variables. We therefore opted to collapse all first cousin categories to provide more parsimonious analyses. When used as an outcome, kin marriage is measured as a three-way categorical variable (1 = husband was a first cousin, 2 = husband was a relative, and 3 = husband was not a relative before marriage, omitted). When used as a predictor variable, a categorical variable compared cousin and kin marriage to marriage with non-relations (the omitted category). The prevalence of kin unions differed from one country to another. Less than a third (29.82%) of ELMPS respondents, over a third (35.92%) of JLMPS respondents, and less than a quarter (23.25%) of TLMPS respondents married endogamously (see Table 2 below). These differences are largely accounted for by the prevalence of cousin marriage: while marriages to other relatives hovered around 10-12% in all three countries, cousin marriage ranged from 10.55% of all marriages in Tunisia, to 17.45% in Egypt, and 25.63% in Jordan.

#### 3.4.2 Predictor variables in the determinants of kin marriage model (three country cross sectional data)

The focal predictors of kin marriage explored in this study include paternal and maternal employment status, and for those parents who were working, their main economic activity

when respondents were 15 years old (and therefore before most women's first marriage). For respondents whose parents died before that point, respondents reported the last economic activity their parents performed. Paternal and maternal employment are measured as categorical variables (family firm, wage worker, and a combination of no work and other as the omitted category). While the original variables in the LMPS capture differing kinds of parental employment (e.g., employer, unpaid family worker, and self-employed), we opted to collapse these three occupational categories into 'family firm,' since all three categories indicate involvement in a familial firm or enterprise. Using Wald chi2 tests of linear hypotheses following multinomial logistic regressions, we found no significant differences between the three family firm-related occupational statuses when regressed on salient variables, for both paternal and maternal employment.

The distribution for paternal economic activity is similar across samples, as about a third of Egyptian (33.13%), Jordanian (30.27%), and Tunisian (32.01%) respondents had fathers who worked in family firms, while approximately two-thirds of Egyptian (65.58%), Jordanian (65.58%), and Tunisian (64.94%) respondents had fathers who were wage workers (see Table 2). The distribution of maternal economic activity varies somewhat across countries; while a majority of Egyptian (86.65%), Jordanian (93.09%), and Tunisian (91.52%) respondents reported non-working mothers, slightly more Egyptian respondents reported having mothers who worked in family businesses (5.70%) or for wages (7.65%) compared to both Jordanian women (1.86% and 5.05%, respectively) and Tunisian women (4.20% and 4.28%, respectively) (Table 2).

#### *3.4.3 Predictor variables in the determinants of kin marriage model (egypt 2006-2012 panel data)*

The focal predictors of kin marriage explored in this study include reports from the 2006 wave of the Egypt panel survey on agricultural land ownership and parental enterprise involvement—the latter were followed up by questions on the value of livestock, agricultural equipment, and non-agricultural enterprise capital for up to four enterprises. The ELMPS 2006 household questionnaire included a question about the household's ownership of agricultural land, and since this is the household in which unmarried respondents lived in 2006, we consider it to be her natal household. The area of agricultural land owned was originally measured in feddan and kirat (a regional system of measuring land area). One feddan is equivalent to 24 kirat or 1.038 acres of land. The land area was converted to acres and is included in our models as a continuous variable. Respondents reported an average of 2.36 acres of household land ownership (see Table 3). Though the sample range of acreage was from 0 to 41.52 (not shown), a majority of respondents (67.51%) reported no land ownership.

The 2006 ELMPS also posed a number of questions regarding whether the household owned various types of enterprises, which we used to construct a variable indicating whether it owned no enterprises, an agricultural enterprise only, a non-agricultural enterprise only, or both types of enterprises. An agricultural enterprise was considered to be present if a member of the natal household reported ownership (alone or jointly with someone else) of any one of 19 different types of agricultural equipment or any one of 14 different types of farm animals. Respondents were also asked about the capital values of the agricultural equipment owned by the household. Capital values were calculated according to the number of each type of equipment (including shares of those jointly owned with other households) and the average value assigned to the equipment by the respondents. Total agricultural equipment capital had a mean value of \$831.91 (in 2006 USD; Table 3). Respondents were also asked whether the household in which they resided owned livestock. The monetary value of the livestock owned by the natal household was calculated according to the number of the animals and the value assigned to the animals by the respondents. Total livestock capital had a mean value of \$814.09 (in 2006 USD;

Table 3). Less than half (46.87%) of respondents reported household ownership of an agricultural enterprise (equipment or livestock) in 2006 (not shown).

In the 2006 ELMPS, respondents were also asked whether the household in which they resided owned a non-agricultural enterprise. Non-agricultural enterprises were measured in a separate questionnaire item asking whether any member of the household “own[s] and work[s] in a non-agricultural project or private activity that aims to produce a service or good for sale,” and if yes, which member owned and worked in the reported enterprise. This section of the questionnaire allowed us to determine whether the focal respondent was the child of an individual working in the enterprise. Over one-fifth (21.53%) of respondents reported parental involvement in a non-agricultural enterprise in 2006 (see Table 3). The focal respondent’s parental involvement in non-agricultural enterprise was gauged through conditional coding such that if the member who was reported to own and work in a non-agricultural enterprise was a parent of the focal respondent, then the value of the enterprise was used in our analysis. Non-agricultural enterprise capital was recorded as a categorical variable in the original dataset, precluding refinement of the variable. The majority (78.47%) of respondents reported no economic enterprises in which a parent was involved, and therefore no enterprise capital existed (Table 3).

#### *3.4.4 Outcome variables in the consequences of kin marriage models (three country cross sectional data)*

The first set of outcomes this study focuses on as consequences of kin marriage include the absolute expenditures on marriage, followed by different parties’ proportionate shares of marital costs. Total marriage expenditures are calculated based on country and year but are standardized to 2012 USD. Values were calculated for Egypt and Jordan, but because of issues of data collection, the Tunisian data were deemed unusable. For Egyptian respondents, the total marriage expenditures are calculated as a sum of reported outlays on bridal jewelry (*shabka*), trousseau (*gihaz*), furniture and appliances, housing, and wedding celebrations. The mean cost of marriage is USD\$10,099.45 (Table 2). Grooms and their families were assumed by the ELMPS survey to be sole contributors to the bridal jewelry. For all other items, respondents were asked to report the percentage contribution of brides, brides’ families, grooms, and grooms’ families to each component of marriage costs. For our analyses, we lump together the contributions of brides and their families on the one hand, and grooms and their families on the other hand to determine how kin marriage is associated with each side’s contributions to marriage costs. As illustrated in the descriptive statistics in Table 2, contributions to marriage expenditures are gendered: on average, brides and their families together contribute significantly less (27%) than grooms and their families (73%).

The Jordanian social context varies from Egypt. For Jordanian respondents, the total marriage cost is calculated as a sum of the outlays made on prompt dower, bridal jewelry, furniture and appliances, housing, and wedding celebrations. The mean cost of marriage is USD\$17,401.08 (Table 2). The JLMPS questionnaire did not include questions on various parties’ contributions to any marriage cost items except for housing. For the items measuring dower, bridal jewelry, furniture and appliances, and wedding celebrations, we therefore assumed that grooms bore 100% of these expenditures, as implied by the survey’s design. For the item measuring housing, the JLMPS solicited reports from wives on the percentage contribution of grooms, grooms’ families, brides’ families, and others (note that, unlike the ELMPS, there was no specific question on brides’ own contributions). The mean proportion of marriage cost expenditures borne by different parties is as follows: grooms and their families contribute the lions’ share of overall marriage costs (99.8%), with a nominal contribution from the brides’ families (0.2%).

The final set of outcomes tested as possible consequences of kin marriage consist of measures of the decision-making influence of wives, which we combined into a composite indicator of decision-making using factor analysis. Currently-married women in Egypt, Jordan, and Tunisia responded to a battery of questions to determine who in their household ‘usually has the final say’ on a number of important decisions. In all three surveys, these decisions included making large household purchases, making purchases for daily needs, the respondents’ own visits to friends or relatives, what food should be cooked each day, getting medical treatment or advice for the respondent, and buying clothes for the respondent. Additional decision-making questions beyond these six were also posed, but in both surveys these items contained a large proportion of missing cases (over 12%), likely due to the fact that the questions pertained to child-related decisions that were not applicable to women who either did not have children or who no longer co-resided with their children. The child-related decision-making items were therefore excluded from our factor analysis. For each of the six decision-making items, responses were collapsed so that women who reported that they alone had the final say received a score of 2, women who reported that they had the final say jointly with other household members received a score of 1, and women who reported that someone else had the final say received a score of 0. Because these responses are categorical we estimated the polychoric correlations between the decision-making items, with the iterated principal-factor method used to analyze the correlation matrix and derive factor scores. The minimum Eigenvalue was set at 1. For all three country datasets, the six decision-making items loaded onto a single factor. The Cronbach’s alpha coefficient<sup>2</sup> for the six items was .776, .678, and .715 in Egypt, Jordan, and Tunisia, respectively, suggesting that the items have relatively high internal consistency. Women generally reported higher decision-making influence in Tunisia and Jordan (factor scores of 1.5 and 1.4 respectively), compared to Egypt (1.2; Table 2).

#### *3.4.5 Control variables (three country cross sectional data)*

The control variables used in our analyses include brides’ age (continuous, actual years of age), brides’ year of first marriage (continuous, actual year), brides’ age at first marriage (continuous, actual years of age), brides’ years of education (continuous, actual years of schooling completed), brides’ employment status during the past three months see (family firm, wage worker, and other as the omitted category), region of residence (a series of categorical variables, with the region having the highest levels of education and urban living omitted for each country; see Table 2), current household wealth (ordinal, three quantiles), family living arrangements at the start of marriage (1 = nuclear, 0 = extended), and brides’ fathers’ and mothers’ education (categorical, ranging from illiterate to university/post-graduate).

#### *3.4.6 Control variables (Egypt 2006-2012 panel data)*

The control variables from the first wave of data collection (2006) used in our analyses include the wealth of the brides’ natal family (ordinal, three quantiles) and region of residence (categorical, with Alexandria and the Suez Canal omitted). The control variables from the second wave of data collection (2012) used in our analyses include brides’ year of first marriage (continuous, actual year), brides’ age at first marriage (continuous, actual years of age), brides’ years of education (continuous, actual years of schooling completed), and brides’ fathers’ and mothers’ education (categorical, ranging from illiterate to university/post-graduate) (Table 3).

## **4. Results**

### *4.1 Bivariate analyses (three country cross sectional data)*

Before undertaking regression analysis of the relationship between ever-married women’s background characteristics and their marriage to a relative (research question 1), we examined bivariate associations between parental employment and control variables on the one hand, and

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<sup>2</sup> The threshold above which Cronbach’s alpha is usually deemed acceptable is 0.7.

kin marriage on the other. Table 4 indicates that in Egypt, a significantly larger percentage of women whose fathers did not work when they were 15 were married to cousins, compared to women whose fathers worked for a family firm, and especially compared to women whose fathers were wage workers, contrary to our expectations. In Jordan, the percentage of women married to relatives did not vary according to their father's past work status. In Tunisia, a larger percentage of women married cousins or relatives if their fathers worked for family firms, but this relationship was not statistically significant (Table 4).

With regards to maternal employment, in all three countries a larger percentage of women whose mothers were involved in a family firm married relatives, followed by those whose mothers were non-workers, and finally, those whose mothers were wage workers had the lowest rates of kin endogamy. However, many aspects of women's background are likely to be correlated with parental employment status, and Tables 5 and 6 indicate that many of these background characteristics (such as fewer years of parental education and poor household wealth) are also significantly associated with kin endogamy. It was therefore necessary to test the net statistical effect of parental employment on kin marriage once such background characteristics were held constant using regression models.

Next, we tested bivariate associations between kin marriage and outcomes related to matrimonial outlays (research question 2). Table 7 demonstrates that, consistent with our hypotheses, marriages between relatives are associated with slightly reduced absolute expenditures on those unions. This relationship was statistically significant in Egypt, but not in Jordan. Furthermore, in Egypt, it appears that endogamous brides' families contributed proportionally less and grooms' families contributed proportionally more to marriage expenditures, as our hypotheses predicted. In Jordan, this difference in proportional contributions was apparent only in the case of bride's families reduced proportional contributions to marriages with cousins and other relatives, but this relationship was not statistically significant.

A final bivariate association explored the association between marriage to a husband from a woman's kin group, and the extent of her decision-making influence within her household (research question 3). Table 7 shows that in Egypt and Tunisia, contrary to expectations, women who were married to a cousin or other relative reported significantly lower decision-making influence compared to women who were married to non-relatives. In Jordan, the opposite relationship held: women in endogamous marriages enjoyed slightly (but significantly) more decision-making influence. Again, because kin marriage in both settings is associated with characteristics that could be assumed to disadvantage women in terms of the influence they exert in household decisions, the robustness of this bivariate relationship had to be tested in a multivariate model.

#### **4.2 Multivariate analyses (three country cross sectional data)**

Our first regression model tests respondents' probabilities of having entered into kin unions based on predictors related to the presence of a family firm, as indicated by the father's and mother's employment status when the respondent was aged 15. Because the dependent variable is a three-way categorical variable, we use multinomial regression, where the base comparison group is comprised of women who married non-relatives. Tables 8 and 9 displays the results of this analysis, net of various controls. We see in Table 8 that paternal involvement in a family firm bears no relationship to whether daughters wed relatives in Egypt or in Jordan, contrary to our first hypothesis. In Tunisia, having a father who worked in a family firm is significantly associated with higher odds of having married a first cousin. However, this is only true of the full sample of women (those aged 15-60) and not the limited sample of those aged 18-39 (which has a rather small sample size of 958 women). In the case of maternal employment, it appears that for Egyptian and Jordanian women, maternal involvement in a family firm does not

significantly raise the odds of having married a cousin or relative, thus refuting H1 (Table 9). In Tunisia, maternal employment in a family firm is associated with higher odds of marrying a cousin or other relative, but only for the restricted sample of those aged 18-39.

Other variables' associations with kin marriage warrant description, as they confirm many of the patterns noted in previous research on kin endogamy in the MENA. Tables 8 and 9 suggest that women with more years of education (statistically significant in Egypt, in Jordan only for other relatives, and in Tunisia only for the full sample of women), with older ages at first marriage (significant in both Egypt and Jordan, but in Tunisia only for the full sample of women) were *less* likely to marry a husband to whom they were related. Also noteworthy is the fact that the coefficient for year of first marriage is statistically significant and negative in Jordan and in the full sample of women in Tunisia (in the case of marriage to first cousins). In other words, there is evidence in these data that more recent cohorts of Jordanian and Tunisian women are less likely to wed first cousins or other relatives than earlier cohorts, when all else is held constant.

We next tested the consequences of kin marriage for matrimonial expenditures by first comparing the observed marriage costs of those who married endogamously versus their predicted marriage costs. We expected to observe significantly lower marriage expenditures among women in kin unions compared to predicted marriage expenditures of women in other unions. To test this, we regressed the natural log of absolute marriage cost on all the predictors, except for kin marriage, yielding our expected marriage expenditures. We then restricted the analysis to those who married kin and computed the observed mean for their marriage costs. Finally, we tested the significance between the predicted mean and the observed mean. For reporting purposes, we also subtracted the observed marriage cost from the predicted marriage cost (see Table 10 below). We found the difference between observed and predicted marriage costs to be statistically significant for Egypt, but not for Jordan, thus confirming H2 only in the Egyptian case.

We carried out another test of this relationship by regressing the natural log of absolute marriage costs on kin marriage. Our second hypothesis predicted that women in kin unions would report lower absolute marriage expenditures compared to women in other unions, but Table 11 shows that there is some evidence to support this hypothesis in Egypt and no evidence in Jordan. In Egypt, marriage to a cousin is associated with a marginally non-significant reduction in total marriage outlays, whereas marriage to another type of relative is associated with a significant reduction in marriage outlays. Other associations yielded interesting results. As we might expect, women with more years of education, and women who formed nuclear households at the start of their marriages reported greater outlays on their marriages overall in both Egypt and Jordan. In Egypt, younger brides did not command higher marriage expenditures, even when controlling for other characteristics. However, in Jordan, each additional year of the bride's age at marriage was associated with a reduction in the outlays made on her marriage. Although marriage expenditures appear to have declined slightly but significantly across successive marriage cohorts in Egypt and Jordan according to Table 11, this should be interpreted with caution given that older women appear to inflate reports of past marriage expenditures, according to a separate analysis (Assaad, Krafft and Yassine 2016).

In our next examination of the consequences of kin marriage for matrimonial expenditures, we regressed the percentage of marriage costs borne by the groom and his family on kin marriage. Because the measure of groom's side's proportional marriage costs was expressed as a decimal ranging between the values 0 and 1, we used a binomial regression model. Binomial regression models are appropriate for proportion data, and regression coefficients represent the percentage increase in *y* for every one unit increase in *x*. Our third hypothesis posited that Egyptian and Jordanian women in kin unions would report higher proportional marriage expenditures by

grooms and grooms' families compared to women in other unions, and the results in Table 12 partially support this hypothesis. In Egypt, the positive relationship between kin marriage and higher proportional marriage cost contributions by the groom's side is somewhat small, but statistically significant, and it is larger for cousin marriages, and slightly smaller for marriages between other relatives. In Jordan, the positive relationship is larger, but non-significant. Table 12 also indicates that in both countries, women who were older when they wed, women with more years of education, and women who married into nuclear family living arrangements saw proportionally less spent by the groom's side compared to other women.

Our final regression model investigated the final hypothesized consequence of kin marriage, namely wives' decision-making influence. Table 13 displays the results of an OLS regression of factor scores derived from six questionnaire items on women's involvement in common household decisions on kin marriage. Surprisingly, although our fourth hypothesis stated that Egyptian, Jordanian, and Tunisian women in kin unions would enjoy greater reported decision-making influence in their households compared to women in other unions, our results differed considerably across countries. In Egypt, being married to a first cousin was associated with a significant *reduction* in women's decision-making influence compared to marrying a non-relative, net of controls. In Jordan, women in both types of kin unions reported significantly *higher* decision-making influence compared to women in non-kin unions when all else was held constant. In Tunisia, results were not significant in the age-restricted sample of women, but in the full sample of women, women married to other relatives followed by women married to cousins had significantly reduced decision-making influence. Consistent with the findings of other studies, we found that older women had greater decision-making influence, as did wage-working and more highly-educated wives.

#### **4.3 Bivariate analyses (Egypt 2006-2012 panel data)**

Before undertaking regression analyses in the ELMPS panel data, we examined bivariate associations between natal family characteristics and kin marriage. As we hypothesized, Table 14 indicates that the highest percentage of women in kin unions was found among those whose natal families owned agricultural land in 2006, compared to those whose families did not own land ( $p < 0.001$ ). Contrary to our expectations, the highest percentage of women in kin unions was found among those whose families owned agricultural enterprises only in 2006 ( $p < 0.001$ ), compared to other family backgrounds. With regards to non-agricultural enterprise, the highest percentage of women in kin unions was found among those whose familial non-agricultural enterprise was valued at \$1-87 USD or \$8,722 USD or more, compared to all others ( $p < 0.05$ ). According to Table 15, women in kin unions, compared to those in non-kin unions, came from natal families who had higher mean values of land acreage ( $p < 0.01$ ) as well as higher mean capital values of livestock ( $p < 0.10$ ) and farm equipment (not significant).

Although many of these bivariate findings seem to support our hypotheses, many aspects of women's background are likely to be correlated with parental enterprise and land ownership, and Tables 15 and 16 indicate that many of these background characteristics (such as fewer years of parental education, natal household wealth, and region of residence) are also significantly associated with kin endogamy. It was therefore necessary to test the net statistical effect of natal family characteristics on kin marriage once such background characteristics were held constant using regression models.

#### **4.4 Multivariate analyses (Egypt 2006-2012 panel data)**

In a previous section, we tested research question 1 with multivariate regressions investigating whether parental involvement in a family firm when the respondent was aged 15 predicts kin marriage. Here we continue to examine this question using the ELMPS panel data containing only those women who were never-married in 2006 but who married in the subsequent six years. We first test whether natal household agricultural land ownership in 2006 is associated

with kin endogamy, as suggested by our bivariate analyses. Table 18 indicates that women whose natal families owned land were no more likely to marry cousins or other relatives, compared to respondents whose families did not own land, net of all else, thus refuting H1. We next tested a continuous predictor measuring acres of land owned by the respondent's natal family in 2006, but found that this too bore no association with the odds of later marrying a cousin or other relative (Table 19).

Our first hypothesis also predicted that those whose families had enterprises would be more likely to enter into endogamous unions. We next tested whether the fact that in 2006, the natal household owned an agricultural enterprise only, a non-agricultural enterprise only, both, or neither predicted kin marriage. Table 20 indicates that contrary to our expectations, this predictor is not associated with marriage to a cousin or other relative.

What if the mere presence of a family enterprise does not raise the odds of kin marriage among daughters, but rather the presence of valuable assets or capital associated with that enterprise? To test this, we regressed kin marriage on continuous measures of the value of livestock owned by the natal family in 2006 (Table 21), as well as on the value of agricultural equipment owned by the natal family in 2006 (Table 22). However, neither predictor bore a significant relationship with kin marriage. Finally, we regressed kin marriage on a categorical measure of the value of the capital associated with any non-agricultural enterprises that existed in the respondent's household in 2006. No clear pattern emerged to suggest that a significant relationship exists with marriage to a cousin or other relative as the value of capital increased (Table 23).

It is plausible that H1 was refuted by the data because asset and enterprise ownership is only relevant to a daughter's marriage if the household exceeds a certain level of wealth. If we found this to be the case in our analysis it might indicate that considerations of family inheritance that motivate marriage to kin members is a concern only for the relatively wealthy. However, interacting the predictors discussed in this section with natal family wealth in 2006 did not yield any statistically significant associations with kin endogamy (results available on request).

## **5. Discussion and Conclusions**

The results of our analyses confirm many findings of the existing literature on kin marriage, but complicate other assertions commonly made in previous studies. We find that ever-married women in kin unions are indeed characterized by younger ages at first marriage (in Egypt and Jordan, and to some extent in Tunisia), and fewer years of (presumably pre-marital) education (in Egypt, and to some extent in Jordan and Tunisia), than their counterparts who are married to non-relatives. Beyond these sociodemographic correlates of kin marriage, our analyses investigated hypotheses related to three rationales for kin marriage. We discuss our results for each of these hypotheses, considering the implications of our findings for the literature, and concluding with a discussion of the limitations of our analyses and some thoughts on what they mean for policy-making.

Our *first hypothesis* predicted that women in kin unions would be more likely than other women to report that their parents owned land, assets, or household enterprises. The existing literature argues that a key rationale for kin marriage lies in the concern natal families have in preserving family property by ensuring that any inheritance passed on to daughters stays in the family through daughters' marriage to kin group members. While the existing literature makes this theoretical assertion, there are few empirical tests of this claim. Our analysis offers a rare investigation of this claim, and indicates that there is little evidence to support our first hypothesis or the theoretical literature.



Specifically, in regression models testing this association among Egyptian, Jordanian, and Tunisian women aged 18-39, women who reported that their fathers worked in family enterprises were no more likely to wed a relative net of controls. Only in the full sample of Tunisian women did paternal involvement in a family firm bear a positive association with marriage to a first cousin. Maternal involvement in a family firm was associated with higher odds that daughters would marry a cousin or another relative only in the restricted Tunisian sample, but not in others. The sensitivity of the Tunisian results to the specification of the sample is difficult to interpret, but suggests that the results are not very robust. Multivariate regressions testing of the first hypothesis using the Egyptian panel data similarly yielded null results, in spite of the fact that several indicators of the presence and value of assets or enterprises in the natal household in 2006 bore significant bivariate associations with kin marriage. Among Egyptian women who were never-married in 2006 but ever-married and aged 18-39 in 2012, there was no association between their marriage to a relative and whether the household in 2006 (presumed to be the respondent's natal household) owned land, or whether it owned an agricultural enterprise, a non-agricultural enterprise, or both, net of controls. Likewise, neither increased acres of land owned by the 2006 household, nor increased values of the household's livestock, agricultural equipment, nor capital for non-agricultural enterprises raised the odds of women's marriage to a relative once other factors were held constant. These results together call into question the commonly-held belief that kin endogamy is an economic strategy for consolidating family wealth or assets.

These null results can be accounted for in two ways. First, some scholars have argued that although Islam calls for daughters' inheritance rights, in practice, Muslim women in many societies seldom inherit property upon their parents' death. Instead, property is passed on to their male siblings (Casterline and El-Zeini 2003; Hoodfar 1997). As mentioned above, some researchers argue that women surrender their inheritance rights in order not to antagonize their brothers, who they depend on for social and material support should they remain unmarried, experience conflict with their husbands, or become widowed or divorced (Hoodfar 1997). If this is the case, this may explain the absence of a relationship between land, assets, and enterprises in the parental generation on the one hand, and kin endogamy in the daughter's generation on the other hand. Second, others have pointed out that only families whose property ownership exceeds a certain threshold are concerned with keeping assets in the family through daughters' marriage to a relative (Casterline and El-Zeini 2003; Khuri 1970). If this is limited to very few families, this may similarly account for the fact that we find no association between kin marriage and the presence and value of land, assets, and enterprises in the natal family.

Our *second hypothesis* posited that women in kin unions would report lower absolute marriage expenditures compared to women in other unions. We find that women who married relatives retrospectively reported having had lower outlays made on their marriages, compared to those who married non-relatives in Egypt only, thus partially supporting H2. In Egypt, the statistically significant negative bivariate relationship between kin marriage and marriage expenditures was therefore not due to the fact that kin marriages tend to occur among socioeconomically disadvantaged individuals, who also spend less on marriage outlays. This finding sheds light on a commonly-reported rationale for kin unions, namely that they lower the matrimonial expenditures needed to seal a match. Although many ethnographic accounts hold that kin marriages offer the advantage to brides and grooms of reduced material expectations and greater affordability in a context of what are often prohibitively high marriage costs, there has been little evidence to confirm or refute this claim. Our results show that this rationale for kin marriage is context-dependent, and differs even between countries that share a similar overall prevalence of kin endogamy, as well as a similar cultural context. More

research is needed to tease out what factors produce the divergent results we found for Egypt and Jordan.

Another theorized consequence of kin marriage finds mixed results in our analysis. Our *third hypothesis* held that women in kin unions would report higher proportional marriage expenditures by the groom and his family compared to women in other unions, but this finding held in Egypt alone and not in Jordan. The former finding suggests that kin unions are more attractive to Egyptian brides than they are to Egyptian grooms, who may end up spending the same amount on marriage to a relative compared to a non-relative, given the findings of hypotheses two and three together. To a large extent, the latter finding is likely due the very small variation in proportional contributions by the groom's side in Jordan. The JLMPS questionnaire's design appears to assume that the bride, the bride's family, and others contribute minimally (if at all) to matrimonial costs. Indeed, the percentage contributions reported in the question on which parties paid for the couple's housing seems to confirm this. However, qualitative data from the West Bank and Jordan contains contradictory reports about outlays on marriage (Moors 1994). Without asking directly about whether others besides the groom shared in covering marriage costs, we cannot know how accurately the JLMPS's measure of proportional marriage contributions reflects actual spending behavior.

Finally, this study tested a *fourth hypothesis* that women in kin unions enjoy advantages within their marriages compared to women in other unions. Using a factor score measuring women's decision-making influence in their current households, we found that compared to others, Egyptian and Tunisian women in kin unions had less decision-making influence, whereas Jordanian women in kin unions had more decision-making influence. Although these results are surprising, they emphasize the fact that that countries with similar socio-cultural ideals related to marriage and kinship can nonetheless produce very different patterns of reported behavior. In Jordan, we can interpret this result in line with the existing literature and conclude that wives who are kin group members are trusted and given the autonomy to make consequential household decisions. In Egypt and Tunisia, our findings may be complicated if the structural disadvantage of women in kin unions extends to their household structures. Specifically, one important determinant of decision-making may be whether the respondent is the most senior woman in her household. If women who marry relatives are more likely to move into an extended family living arrangement, our results may be subject to an important source of omitted variable bias. Further research on women's decision-making would enhance our understanding of what determinants matter for this outcome, and for whether this is the most salient indicator of the advantages kin marriages are thought to confer on wives.

There are a number of other limitations of the foregoing analyses. The relationships we investigate are necessarily associational and not causal. Although in most cases we have sequenced variables so that they follow the proper temporal ordering, the possibility of spurious relationships driving any associations found between predictors and outcomes cannot be ruled out.

The MENA region's policymakers have at times expressed concern over kin marriage because of the potential health implications for the children of married relatives. Although awareness-raising efforts have been undertaken by various actors seeking to reduce the practice, endogamy has not been subjected to government regulation. Nonetheless, if individual actors benefit from kin marriage compared to marriage to non-kin, then efforts to frame this practice as a social ill should be tempered. Based on the results presented here, kin marriages may be beneficial to Egyptian women if higher outlays by the groom at the time of marriage empowers them, as popular belief holds (Hoodfar 1997). In addition, discouraging kin unions may be appropriate for Egypt and Tunisia, where kin marriages do not seem to confer any decision-making advantages on women. However, further analyses using statistical models that can make direct

causal inferences, and involving a broader range of measures of husbands' and wives' status and well-being are required to determine whether policies and programs should discourage kin endogamy in the MENA region.

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**Table 1: Summary of Research Questions, with Outcomes, Predictors, and Data Used to Test Each**

<b>Determinants of Kin Marriage</b>			
<b>Research Question</b>	<b>Outcome</b>	<b>Key Predictor</b>	<b>Data</b>
1	Kin Marriage (3-way categorical variable)	Paternal economic activity at age 15 (3-way categorical variable)	Egypt '12, Jordan '10, Tunisia '14 cross-sections
1	Kin Marriage (3-way categorical variable)	Maternal economic activity at age 15 (3-way categorical variable)	Egypt '12, Jordan '10, Tunisia '14 cross-sections
1	Kin Marriage (3-way categorical variable)	Whether natal household owned land in 2006 (dichotomous)	Egypt '06-'12 panel
1	Kin Marriage (3-way categorical variable)	Acres of land owned by natal household in 2006 (continuous)	Egypt '06-'12 panel
1	Kin Marriage (3-way categorical variable)	Whether natal household owned agricultural enterprise only, non-agricultural enterprise only, both, or neither (4-way categorical variable)	Egypt '06-'12 panel
1	Kin Marriage (3-way categorical variable)	Value of livestock owned by natal household in 2006 (continuous variable)	Egypt '06-'12 panel
1	Kin Marriage (3-way categorical variable)	Value of agricultural equipment owned by natal household in 2006 (continuous variable)	Egypt '06-'12 panel
1	Kin Marriage (3-way categorical variable)	Value of capital for non-agricultural enterprise owned by natal household in 2006 (8-way categorical variable)	Egypt '06-'12 panel
<b>Consequences of Kin Marriage</b>			
<b>Research Question</b>	<b>Outcome</b>	<b>Key Predictor</b>	<b>Data</b>
2	Absolute marriage expenditures (continuous variable)	Kin Marriage (3-way categorical variable)	Egypt '12, Jordan '10 cross-sections
2	Bride's percentage share of marriage expenditures (continuous variable)	Kin Marriage (3-way categorical variable)	Egypt '12, Jordan '10 cross-sections
2	Bride's family's percentage share of marriage expenditures (continuous variable)	Kin Marriage (3-way categorical variable)	Egypt '12, Jordan '10 cross-sections
2	Groom's percentage share of marriage expenditures (continuous variable)	Kin Marriage (3-way categorical variable)	Egypt '12, Jordan '10 cross-sections
2	Groom's family's percentage share of marriage expenditures (continuous variable)	Kin Marriage (3-way categorical variable)	Egypt '12, Jordan '10 cross-sections
2	Others' percentage share of marriage expenditures (continuous variable)	Kin Marriage (3-way categorical variable)	Egypt '12, Jordan '10 cross-sections
2	Decision-making influence (continuous variable)	Kin Marriage (3-way categorical variable)	Egypt '12, Jordan '10, Tunisia '14 cross-sections
3	Decision-making influence (continuous variable)	Kin Marriage (3-way categorical variable)	Egypt '12, Jordan '10, Tunisia '14 cross-sections

**Table 2: Sample Characteristics**

	Egypt (N=7,196)				Jordan (N=2,692)				Tunisia (N=1,223)			
	Ever-Married Women Aged 18-39 Years				Ever-Married Women Aged 18-39 Years				Ever-Married Women Aged 18-39 Years			
	Mean	SD	Percent	N	Mean	SD	Percent	N	Mean	SD	Percent	N
<b>Focal Variables</b>												
Kin Marriage Status												
Husband a Non-Relative			70.18	5,050			64.08	1,725			70.97	868
Husband a First Cousin			17.45	1,256			25.63	690			10.55	129
Husband a Relative			12.37	890			10.29	277			10.96	134
Father's Employment Status when Respondent was 15												
No Work and Other			1	93			5	124			3	33
Family Firm			33	2,384			30	815			32	346
Wage Work			66	4,719			65.12	1,753			65	702
Mother's Employment Status when Respondent was 15												
No Work and Other			87	6,231			93	2,506			92	1,047
Family Firm			6	410			1.86	50			4	48
Wage Work			8	550			4	186			4	49
Absolute Marriage Expenditures (USD)	10,099	7,108			17,401	18,938			-	-		
Proportional Marriage Expenditures												
Bride's Side's Share (%)	27	16			0.2	2			-	-		
Groom's Side's Share (%)	73	16			99.8	2			-	-		
Others' Share (%)	-	-			0.0	0			-	-		
Decision-Making Factor Score	1.2	0.6			1.4	0.5			1.5	0.5		
<b>Control Variables</b>												
Age (years)	28	5			30	6			32	5		
Year of 1st Marriage	2004	6			2000	6			2005	6		
Age at 1st Marriage (years)	21	4			20	4			24	4		
Years of Education	9	5			11	4			7	5		
Respondent's Current Employment Status												
No Work and Other			71	5,065			85.49	2,263			73.51	816
Family Firm			18	1,298			1.02	27			14.68	163
Wage Work			11	755			13.49	357			11.8	131
Region (Egypt Only)												
Alexandria and Suez Canal			7.37	530			-	-			-	-
Greater Cairo			8.64	622			-	-			-	-
Lower Urban			11.01	792			-	-			-	-
Upper Urban			13.33	959			-	-			-	-
Lower Rural			30.54	2,198			-	-			-	-
Upper Rural			29.11	2,095			-	-			-	-
Region (Jordan Only)												
Urban Middle			-	-			42.09	1,133			-	-
Rural Middle			-	-			9.18	247			-	-
Urban North			-	-			22.81	614			-	-
Rural North			-	-			11.18	301			-	-
Urban South			-	-			8.06	217			-	-

	Egypt (N=7,196)				Jordan (N=2,692)				Tunisia (N=1,223)			
	Ever-Married Women Aged 18-39 Years				Ever-Married Women Aged 18-39 Years				Ever-Married Women Aged 18-39 Years			
	Mean	SD	Percent	N	Mean	SD	Percent	N	Mean	SD	Percent	N
Rural South			-	-			6.69	180			-	-
Region (Tunisia Only)												
Northeast			-	-			-	-			27.8	340
Northwest			-	-			-	-			14.64	179
Centereast			-	-			-	-			24.37	298
Centerwest			-	-			-	-			18.56	227
Southeast			-	-			-	-			9.73	119
Southwest			-	-			-	-			4.91	60
Wealth												
Wealthiest			33	2,367			29.38	791			22.08	270
Middle Wealth			35	2,532			36.22	975			30.42	372
Poorest			32	2,297			34.4	926			47.51	581
Living Arrangements at Start of Marriage												
Extended			29	2,053			30.31	816			77.61	201
Nuclear			71	5,143			69.69	1,876			22.39	58
Father's Education												
Illiterate			54	3,886			24.89	670			53.56	655
Reads and writes			18	1,264			51.23	1,379			1.47	18
Basic			11	796			1.23	33			28.21	345
Secondary			10	733			12.11	326			7.52	92
Post-Secondary			2	117			4.2	113			0.41	5
University and higher			5	400			6.35	171			1.39	17
Mother's Education												
Illiterate			78	5,586			53.12	1,430			75.47	923
Reads and writes			7	528			34.84	938			0.41	5
Basic			6	440			1.19	32			13.98	171
Secondary			6	440			6.76	182			3.52	43
Post-Secondary			1	55			2.45	66			0	0
University and higher			2	147			1.56	42			0.33	4



**Table 3: Sample Characteristics of ELMPS Female Respondents Married Between 2006 and 2012, Aged 18-39 in 2012**

	Mean	SD	Percent	N
<b>Focal Variables</b>				
Kin Marriage Status				
Husband a Non-Relative			75	1183
Husband a First Cousin			14	225
Husband a Relative			11	171
Natal Household Land Ownership (2006)				
No			68	1066
Yes			32	513
Land Owned (acres, 2006)	2	5		
Natal Household Enterprise Ownership				
Neither			40	634
Agricultural Enterprise Only			38	605
Non-Agricultural Enterprise Only			13	205
Both			9	135
Value of Livestock (USD, 2006)	814	2299		
Value of Agricultural Equipment (USD, 2006)	18	271		
Value of Non-Agricultural Enterprise (2006)				
No Parental Enterprise			76	1181
Parental Enterprise, No Capital			3	44
1-87 USD			5	82
88-174 USD			3	51
175-871 USD			4	63
872-1744 USD			3	47
1745-8721 USD			4	70
8722 USD or more			1	23
<b>Control Variables</b>				
Year of 1st Marriage	2008	2		
Age at 1st Marriage (years)	22	4		
Years of Education	10	4		
Father's Education				
Illiterate			46	733
Reads and writes			17	266
Basic			14	214
Secondary			14	226
Post-Secondary			2	30
University and higher			7	110
Mother's Education				
Illiterate			70	1105
Reads and writes			8	120
Basic			8	133
Secondary			10	155
Post-Secondary			1	20
University and higher			3	46
Wealth (2006)				
Wealthiest			26	417
Poorest			32	513
Middle Wealth			41	649
Region (2006)				
Alexandria and Suez Canal			7	117
Greater Cairo			7	108
Lower Urban			12	184
Upper Urban			15	242
Lower Rural			33	521
Upper Rural			26	407

**Table 4: Bivariate Associations for Predictors of Kin Marriage**

Egypt								
	Paternal Work Status				Maternal Work Status			
	Family Firm	Wage Work	No Work	Total	Family Firm	Wage Work	No Work	Total
Cousin	19.34	16.36	24.73	17.45	21.46	9.45	17.91	17.47
Other Relative	12.88	12.12	11.83	12.37	16.34	7.09	12.58	12.38
Non Relative	67.79	71.52	63.44	70.18	62.2	83.45	69.51	70.16
Total	100	100	100	100	100	100	100	100
Chi Square	**	***			***	***	**	

  

Jordan								
	Paternal Work Status				Maternal Work Status			
	Family Firm	Wage Work	No Work	Total	Family Firm	Wage Work	No Work	Total
Cousin	26.13	25.44	25.00	25.63	32.00	16.18	26.02	25.63
Other Relative	9.57	10.78	8.06	10.29	16.00	4.41	10.49	10.29
Non Relative	64.29	63.78	66.94	64.08	52.00	79.41	63.49	64.08
Total	100	100	100	100	100	100	100	100
Chi Square						***	†	

  

Tunisia								
	Paternal Work Status				Maternal Work Status			
	Family Firm	Wage Work	No Work	Total	Family Firm	Wage Work	No Work	Total
Cousin	13.95	10.75	6.67	11.66	20.83	8.33	11.11	11.41
Other Relative	11.87	12.08	13.33	12.05	20.83	6.25	11.71	11.87
Non Relative	74.18	77.17	80	76.29	58.33	85.42	77.18	76.72
Total	100	100	100	100	100	100	100	100
Chi Square					**			

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 5: ANOVA Analysis of Continuous Control Variables on Kin Marriage**

	Egypt				Jordan				Tunisia			
	Cousin	Other Relative	Non Relative	F	Cousin	Other Relative	Non Relative	F	Cousin	Other Relative	Non Relative	F
Age	27.70	28.13	28.31	6.39 **	30.68	30.70	30.13	3.21 *	32.09	32.81	31.81	2.31 †
Year of 1st Marriage	2003.41	2003.31	2004.35	23.51 ***	1998.75	1998.71	2000.73	34.91 ***	2004.48	2003.87	2005.39	4.78 **
Age at 1st Marriage	19.78	20.11	21.31	111.68 ***	19.40	19.42	20.81	42.98 ***	23.33	23.19	24.04	3.13 *
Years of Education	7.64	7.82	9.47	89.48 ***	10.96	10.54	11.68	18.31 ***	5.85	5.81	7.45	9.11 ***

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 6: Bivariate Associations for Categorical Control Variables**

	Egypt				Chi Square	Jordan				Chi Square	Tunisia				
	Cousin	Other Relative	Non Relative	Total		Cousin	Other Relative	Non Relative	Total		Cousin	Other Relative	Non Relative	Total	Chi Square
Respondent's Current Employment Status															
No Work and Other	72	73	71	71		87	88	84	85		77	68	74	74	
Family Firm	22	22	17	18	***	1	1	1	1		18	24	13	15	**
Wage Work	6	5	13	11	***	12	11	14	13		5	8	13	11	*
Total (Percent)	100	100	100	100		100	100	100	100		100	100	100	100	
Father's Education															
Illiterate	64	59	51	54	***	29	23	24	25	*	65	66	56	58	*
Reads and writes	15	18	18	18	†	52	57	50	51	†	1	1	1	1	
Basic	8	10	12	11	***	2	1	1	1		28	27	32	31	
Secondary	8	8	11	10		9	10	14	12		5	5	9	8	
Post-Secondary	2	2	2	2		4	4	4	4		0	1	0	0	
University and higher	2	3	7	6		5	4	7	6	*	2	1	2	2	
Total (Percent)	100	100	100	100		100	100	100	100		100	100	100	100	
Mother's Education															
Illiterate	86	83	75	78	***	60	60	49	53	***	91	89	78	81	***
Reads and writes	6	7	8	7	†	31	32	37	35	*	0	0	1	0	
Basic	4	5	7	6	***	1	1	1	1		8	10	17	15	**
Secondary	3	4	7	6	***	5	6	8	7	*	1	1	4	4	*
Post-Secondary	1	0	1	1		1	1	3	2	**					
University and higher	0	1	3	2	***	1	1	2	2	*	0	0	0	0	
Total (Percent)	100	100	100	100		100	100	100	100		100	100	100	100	
Wealth															
Wealthiest	29	29	35	33	***	24	22	33	29	***	15	13	24	21	**
Middle Wealth	34	35	36	35		40	29	36	36	**	26	29	31	31	
Poorest	38	36	30	32	***	37	50	31	34	***	60	57	45	48	***
Total (Percent)	100	100	100	100		100	100	100	100		100	100	100	100	
Living Arrangements at Start of Marriage															
Extended	39	35	25	29	***	37	36	27	30	***	85	81	75	77	
Nuclear	61	65	75	71	***	63	64	73	70	***	15	19	25	23	
Total (Percent)	100	100	100	100		100	100	100	100		100	100	100	100	
Region (Egypt Only)															
Alexandria and Suez Canal	4	4	9	7	***										
Greater Cairo	5	7	10	9	***										
Lower Urban	6	6	13	11	***										
Upper Urban	14	15	13	13											
Lower Rural	29	24	32	31	***										
Upper Rural	43	44	23	29	***										
Total (Percent)	100	100	100	100											
Region (Jordan Only)															
Urban Middle						39	34	45	42	***					
Rural Middle						12	10	8	9	**					

	Egypt				Chi Square	Jordan				Chi Square	Tunisia			
	Cousin	Other Relative	Non Relative	Total		Cousin	Other Relative	Non Relative	Total		Cousin	Other Relative	Non Relative	Total
Urban North					21	30	22	23	*					
Rural North					12	16	10	11	*					
Urban South					8	5	8	8						
Rural South					8	5	7	7						
Total (Percent)					100	100	100	100						
Region (Tunisia Only)														
Northeast										19	10	32	28	***
Northwest										9	11	17	15	*
Centereast										23	33	21	23	*
Centerwest										26	25	16	19	**
Southeast										14	16	8	10	**
Southwest										9	4	5	5	
Total (Percent)										100	100	100	100	

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 7: ANOVA Analysis of Marriage Expenditure Outcomes Based on Marriage to a Relative**

	Egypt				Jordan				Tunisia			
	Cousin	Other Relative	Non Relative	F	Cousin	Other Relative	Non Relative	F	Cousin	Other Relative	Non Relative	F
Log Absolute Marriage Expenditures	8.91	8.88	9.06	42.05 ***	9.49	9.51	9.51	0.28				
Bride's Side Share (%)	24.33	24.92	27.51	25.80 ***	6.24	11.72	20.68	1.79				
Groom's Side Share (%)	75.27	74.69	72.11	25.69 ***	99.90	99.88	99.77	1.51				
Others' Share (%)	-	-	-	-	2.81	0.00	1.55	0.50				
Decision-Making Factor Score	1.12	1.20	1.29	37.38 ***	1.48	1.47	1.43	3.22 *	1.37	1.34	1.50	8.20 ***

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 8: Multinomial Logistic Regression of Kin Marriage on Paternal Employment Status**

	Egypt (N=7,170)		Jordan (N=2,666)		Tunisia (N=958)		Tunisia (N=2,212)	
	First Cousin	Other Relative	First Cousin	Other Relative	First Cousin	Other Relative	First Cousin	Other Relative
Father's Employment Status								
No Work and Other	-	-	-	-	-	-	-	-
Family Firm	-0.277	-0.004	0.061	0.216	0.778	0.285	1.262 *	0.428
Wage Work	-0.378	-0.017	0.160	0.431	0.543	0.317	0.987 †	0.408
Year of 1st Marriage	0.006	-0.004	-0.024	**	-0.025	*	-0.012	-0.025
Age at 1st Marriage	-0.096	***	-0.064	***	-0.070	***	-0.028	-0.022
Years of Education	-0.031	***	-0.036	***	-0.001	-0.049	*	-0.039
Father's Education								
Illiterate	-	-	-	-	-	-	-	-
Read and Write	-0.222	*	-0.009	-0.020	0.365	*	-0.457	-0.548
Basic	-0.300	*	-0.017	0.392	0.023	-0.005	0.081	0.132
Secondary	-0.027		0.032	-0.316	†	0.181	-0.004	0.043
Post Secondary	0.472	†	0.586	*	0.137	†	-11.946	1.291
University and Above	-0.181		-0.042	0.025	0.302		1.159	0.287
Mother's Education								
Illiterate	-	-	-	-	-	-	-	-
Read and Write	-0.145		0.017	-0.291	**	-0.341	*	-12.509
Basic	-0.276	†	-0.257	-0.290	**	-0.707	*	-0.605
Secondary	-0.573	**	-0.512	*	-0.483	*	-0.370	-1.663
Post Secondary	-0.065		-0.473	-0.849	*	-1.531	*	-
University and Above	-1.632	**	-1.177	*	-1.072	*	-1.029	-12.967
Constant	-11.635		8.594	49.072	**	50.633	*	22.036
								47.963
								18.800
								6.235

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 9: Multinomial Logistic Regression of Kin Marriage on Maternal Employment Status**

	Egypt (N=7,165)		Jordan (N=2,666)		Tunisia (N=1008)		Tunisia (N=2,331)	
	First Cousin	Other Relative	First Cousin	Other Relative	First Cousin	Other Relative	First Cousin	Other Relative
Mother's Employment Status								
Other	-	-	-	-	-	-	-	-
Family Firm	0.114	0.235	0.259	0.561	0.947 *	0.864 *	0.473 †	-0.010
Wage Work	-0.302 †	-0.272	-0.284	-0.623	-0.228	-0.314	-0.217	-0.025
Year of 1st Marriage	0.006	-0.005	-0.025 **	-0.027 *	-0.013	-0.026	-0.014 *	-0.005
Age at 1st Marriage	-0.096 ***	-0.064 ***	-0.085 ***	-0.068 ***	-0.021	-0.018	-0.043 **	-0.044 **
Years of Education	-0.030 ***	-0.035 ***	0.000	-0.047 *	-0.031	-0.040 †	-0.038 *	-0.049 **
Father's Education								
Illiterate	-	-	-	-	-	-	-	-
Read and Write	-0.236 *	-0.012	-0.003	0.403 *	-0.475	-0.528	0.279	-0.246
Basic	-0.324 **	-0.022	0.418	0.088	0.000	0.078	0.159	-0.058
Secondary	-0.062	0.033	-0.280	0.257	0.024	0.131	-0.083	0.110
Post Secondary	0.425	0.581 *	0.168	0.758 *	-12.370	1.375	-13.342	0.601
University and Above	-0.221	-0.043	0.068	0.393	0.979	0.192	0.872	0.004
Mother's Education								
Illiterate	-	-	-	-	-	-	-	-
Read and Write	-0.128	0.027	-0.291 **	-0.342 *	-13.171	-13.110	-14.022	-0.100
Basic	-0.259	-0.241	-0.301	-0.726	-0.636 †	-0.379	-0.369	-0.077
Secondary	-0.426 *	-0.376	-0.460 *	-0.322	-1.640	-1.593	-1.429	-1.551
Post Secondary	0.141	-0.285	-0.676	-1.185	-	-	-14.813	-13.927
University and Above	-1.419 **	-0.979 †	-0.912 †	-0.693	-13.222	-12.542	-13.935	-13.793
Constant	-11.376	9.421	50.115 **	52.955 *	25.022	50.254	28.104 *	9.205

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 10: Paired T Test of Predicted and Observed Marriage Expenditures for Kin Marriages**

	Egypt (N=2,137)		Jordan (N=960)
Predicted Marriage Expenditures	8.936		9.494
Observed Marriage Expenditures	8.897		9.497
Difference	0.039	***	-0.002

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 11: OLS Regression of Log-Linear Absolute Marriage Expenditures on Kin Marriage**

	Egypt (N=7,169)		Jordan (N=2,664)	
Kin Marriage Status				
Non-relative	-		-	
Cousin	-0.036	†	-0.006	
Other Relative	-0.094	***	0.028	
Year of 1st Marriage	-0.015	***	-0.020	***
Age at 1st Marriage	-0.002		-0.014	***
Years of Education	0.041	***	0.052	***
Living Arrangement at Start of Marriage				
Extended	-		-	
Nuclear	0.157	***	0.288	***
Father's Education				
Illiterate	-		-	
Read and Write	0.068	***	-0.004	
Basic	0.037		-0.178	
Secondary	0.089	**	0.074	
Post Secondary	0.163	**	0.074	
University and Above	0.224	***	0.045	
Mother's Education				
Illiterate	-		-	
Read and Write	0.089	**	-0.010	
Basic	0.106	***	-0.077	
Secondary	0.105	**	0.047	
Post Secondary	0.098		-0.015	
University and Above	0.141	*	-0.010	
Constant	39.108	***	49.769	***
Adjusted R Square	0.122		0.146	

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 12: Binomial Regression of Groom Side's Proportional Marriage Expenditures on Kin Marriage**

	Egypt (N=7,029)		Jordan (N=2,661)	
Kin Marriage Status				
Non-relative	-		-	
Cousin	0.101	***	0.892	†
Other Relative	0.081	**	0.647	
Year of 1st Marriage	-0.003		-0.021	
Age at 1st Marriage	-0.012	***	0.073	
Years of Education	-0.016	***	-0.051	
Living Arrangement at Start of Marriage				
Extended	-		-	
Nuclear	-0.081	***	-0.834	
Father's Education				
Illiterate	-		-	
Read and Write	-0.063	*	-0.604	
Basic	-0.063	*	-0.347	
Secondary	0.040		0.043	
Post Secondary	0.103		-0.414	
University and Above	0.057		-0.615	
Mother's Education				
Illiterate	-		-	
Read and Write	-0.027		0.516	
Basic	0.005		-1.074	
Secondary	-0.021		-0.795	
Post Secondary	-0.019		0.067	
University and Above	0.015		12.738	***
Constant	7.489	†	47.609	

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$



**Table 13: OLS Regression of Decision Making Factor Score on Kin Marriage**

	Egypt (N=6,883)		Jordan (N=2,546)		Tunisia (N=982)		Tunisia (N=2,186)	
Kin Marriage Status								
Non-relative	-		-		-		-	
Cousin	-0.081	***	0.068	**	-0.090	†	-0.063	*
Other Relative	-0.010		0.081	**	-0.063		-0.099	**
Age	0.015	***	0.009	***	0.014	***	0.004	***
Years of Education	0.003	†	0.008	*	0.009	*	0.011	***
Current Wealth Status								
Wealthiest			-					
Poorest	-0.017		-0.104	***	-0.085	†	-0.060	†
Middle Wealth	-0.002		-0.049	*	-0.006		-0.012	
Respondent's Current Employment Status								
No Work and Other			-					
Family Firm	-0.001		-0.004		-0.007		-0.035	
Wage Worker	0.080	**	0.065	*	0.188	***	0.165	***
Region: Egypt								
Alexandria and Suez Canal								
Greater Cairo	0.019							
Urban Lower	-0.064	†						
Urban Upper	-0.277	***						
Rural Lower	-0.127	***						
Rural Upper	-0.348	***						
Region: Jordan								
Urban Middle			-					
Rural Middle			-0.080	*				
Urban North			-0.089	***				
Rural North			-0.133	***				
Urban South			-0.144	***				
Rural South			-0.094	*				
Region: Tunisia								
Northeast					-		-	
Northwest					-0.059		-0.059	†
Centereast					-0.299	***	-0.316	***
Centerwest					0.010		0.012	
Southeast					-0.326	***	-0.304	***
Southwest					0.092		0.172	***
Constant	0.984	***	1.145	***	1.105	***	1.400	***
Adjusted R Square	0.085		0.043		0.126		0.119	

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 14: Bivariate Associations for Predictors of Kin Marriage**

	Natal Household Land Ownership			Natal Household Enterprise Ownership					Value of Non-Agricultural Enterprise (2006)							Total	
	No	Yes	Total	Neither	Agricultur e Only	Non-Agric. Only	Both	Total	No Enterprise	Capital 1-87 USD	88-174 USD	175-871 USD	872-1744 USD	1745-8721 USD	8722 USD or more		
Cousin	12.48	17.93	14.25	12.15	17.19	11.71	14.81	14.25	14.56	9.09	24.39	15.69	11.11	12.77	4.29	13.04	14.29
Other Relative	9.66	13.26	10.83	9.46	14.21	7.32	7.41	10.83	11.69	9.09	10.98	7.84	11.11	2.13	7.14	8.70	10.89
Non Relative	77.86	68.81	74.92	78.39	68.60	80.98	77.78	74.92	73.75	81.82	64.63	76.47	77.78	85.11	88.57	78.26	74.82
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Chi Square	***	***		*	***	*					*						*

Notes: †p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001

**Table 15: ANOVA Analysis of Kin Marriage Based on Parental Enterprise Assets**

	Land Owned (acres, 2006)	Value of Livestock (USD)	Value of Equipment (USD)
Cousin	3.06	1138.80	48.05
Other Relative	3.26	869.51	1.45
Non Relative	2.09	744.33	14.43
F	5.96	2.84	1.81
Significance	**	†	

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 16: ANOVA Analysis of Continuous Control Variables on Kin Marriage**

	Year of 1st Marriage	Age at 1st Marriage	Years of Education
Cousin	2008.40	20.22	9.42
Other Relative	2007.96	21.18	9.36
Non Relative	2008.40	22.16	10.73
F	2.78	28.51	14.26
Significance	†	***	***

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 17: Bivariate Associations for Categorical Control Variables**

	Father's Education							Mother's Education							Wealth			Region							
	Illite rate	Reads and writes	Basic	Secondary	Post- Secondar y	University and higher	Total	Illiterate	Reads and writes	Basic	Secondary	Post- Secondar y	University and higher	Total	Wealthiest	Middle Wealth	Poorest	Total	Alex. and Suez Canal	Greater Cairo	Lower Urban	Upper Urban	Lower Rural	Upper Rural	Total
Cousin Other	17.74	12.78	10.75	11.95	13.33	6.36	14.25	16.47	12.50	9.77	7.74	15.00	0.00	14.25	17.41	14.42	9.11	14.25	5.98	7.41	8.70	16.53	12.48	21.87	14.25
Relative Non	12.96	8.65	10.28	9.73	13.33	4.55	10.83	12.04	7.50	8.27	9.03	10.00	4.35	10.83	14.79	8.97	6.95	10.83	6.84	2.78	4.35	11.98	8.45	19.41	10.83
Relative Total	69.30	78.57	78.97	78.32	73.33	89.09	74.92	71.49	80.00	81.95	83.23	75.00	95.65	74.92	67.80	76.61	83.93	74.92	87.18	89.81	86.96	71.49	79.08	58.72	74.92
Chi Square	***					**		***		*		**		***		***		***	**	***		*		***	

Notes: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 18: Logistic Regression of Kin Marriage on Familial Land Ownership (N=1,574)**

	Relative <sup>a</sup>		
	(First Cousin and Other)	First Cousin <sup>b</sup>	Other Relative <sup>b</sup>
Familial Land Ownership			
No	-	-	-
Yes	0.183	0.188	0.168
Year of 1st Marriage	-0.002	0.050	-0.061 †
Age at 1st Marriage (years)	-0.082 ***	-0.136 ***	-0.020
Years of Education	-0.003	-0.001	-0.002
Father's Education			
Illiterate	-	-	-
Reads and writes	-0.195	-0.180	-0.218
Basic	-0.137	-0.259	0.015
Secondary	0.025	-0.009	0.056
Post-Secondary	0.650	0.563	0.724
University and higher	-0.286	-0.083	-0.531
Mother's Education			
Illiterate	-	-	-
Reads and writes	-0.078	-0.055	-0.124
Basic	-0.236	-0.364	-0.063
Secondary	-0.307	-0.645 †	0.119
Post-Secondary	0.312	0.152	0.557
University and higher	-1.250	-14.405	-0.116
Wealth (2006)			
Wealthiest	-	-	-
Poorest	0.249	0.082	0.480
Middle Wealth	0.162	0.147	0.161
Region (2006)			
Alexandria and Suez Canal	-	-	-
Greater Cairo	-0.340	0.033	-0.931
Lower Urban	-0.240	0.005	-0.586
Upper Urban	0.699 *	0.785 †	0.593
Lower Rural	0.054	0.120	-0.001
Upper Rural	0.923 **	0.874 *	1.015 *
Constant	4.963	-99.796	119.601 †

Notes: †p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001. a Logistic regression. b Multinomial Regression

**Table 19: Logistic Regression of Kin Marriage on Familial Land Acreage (N=1,574)**

	Relative <sup>a</sup>		
	(First Cousin and Other)	First Cousin <sup>b</sup>	Other Relative <sup>b</sup>
Acres of Land	0.012	0.010	0.016
Year of 1st Marriage	-0.002	0.051	-0.061 †
Age at 1st Marriage (years)	-0.082 ***	-0.136 ***	-0.020
Years of Education	-0.003	-0.001	-0.002
Father's Education			
Illiterate	-	-	-
Reads and writes	-0.199	-0.180	-0.225
Basic	-0.142	-0.267	0.015
Secondary	0.011	-0.024	0.044
Post-Secondary	0.631	0.538	0.710
University and higher	-0.287	-0.088	-0.530
Mother's Education			
Illiterate	-	-	-
Reads and writes	-0.077	-0.060	-0.117
Basic	-0.235	-0.368	-0.057
Secondary	-0.309	-0.650 †	0.121
Post-Secondary	0.314	0.155	0.561
University and higher	-1.253	-14.033	-0.121
Wealth (2006)			
Wealthiest	-	-	-
Poorest	0.235	0.072	0.462
Middle Wealth	0.162	0.147	0.162
Region (2006)			
Alexandria and Suez Canal	-	-	-
Greater Cairo	-0.341	0.033	-0.933
Lower Urban	-0.222	0.025	-0.569
Upper Urban	0.718 *	0.809 †	0.606
Lower Rural	0.103	0.179	0.034
Upper Rural	0.963 **	0.922 *	1.040 *
Constant	4.729	-100.850	120.320 †

Notes: †p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001. a Logistic regression. b Multinomial Regression

**Table 20: Logistic Regression of Kin Marriage on Parental Enterprise (N=1,574)**

	Relative <sup>a</sup>			
	(First Cousin and Other)	First Cousin <sup>b</sup>	Other Relative <sup>b</sup>	
Natal Household Enterprise Ownership				
Neither	-	-	-	
Agric. Ent. Only	-0.003	-0.055	0.054	
Non-Agric. Ent. Only	-0.134	-0.106	-0.185	
Both	-0.303	-0.171	-0.555	
Year of 1st Marriage	0.000	0.053	-0.059	†
Age at 1st Marriage (years)	-0.085	***	-0.139	***
Years of Education	-0.001	0.000	0.000	
Father's Education				
Illiterate	-	-	-	
Reads and writes	-0.192	-0.175	-0.214	
Basic	-0.162	-0.283	-0.008	
Secondary	-0.003	-0.036	0.025	
Post-Secondary	0.609	0.523	0.674	
University and higher	-0.306	-0.108	-0.544	
Mother's Education				
Illiterate	-	-	-	
Reads and writes	-0.099	-0.080	-0.138	
Basic	-0.236	-0.370	-0.051	
Secondary	-0.325	-0.661	†	0.100
Post-Secondary	0.275	0.130	0.505	
University and higher	-1.270	-14.417	-0.143	
Wealth (2006)				
Wealthiest	-	-	-	
Poorest	0.229	0.074	0.449	
Middle Wealth	0.148	0.135	0.150	
Region (2006)				
Alexandria and Suez Canal	-	-	-	
Greater Cairo	-0.338	0.033	-0.926	
Lower Urban	-0.185	0.051	-0.516	
Upper Urban	0.740	*	†	0.628
Lower Rural	0.133	0.220	0.055	
Upper Rural	0.996	**	*	1.061
Constant	0.294	-105.904	116.220	†

Notes: †p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001. a Logistic regression. b Multinomial Regression

**Table 21: Logistic Regression of Kin Marriage on Value of Livestock (N=1,574)**

	Relative <sup>a</sup>			
	(First Cousin and Other)	First Cousin <sup>b</sup>	Other Relative <sup>b</sup>	
Value of Livestock (USD)	0.000	0.000	0.000	
Year of 1st Marriage	-0.001	0.051	-0.060	†
Age at 1st Marriage (years)	-0.083	-0.136	-0.021	***
Years of Education	-0.002	0.000	-0.003	
Father's Education				
Illiterate	-	-	-	
Reads and writes	-0.193	-0.175	-0.213	
Basic	-0.152	-0.273	0.003	
Secondary	0.014	-0.025	0.052	
Post-Secondary	0.626	0.552	0.682	
University and higher	-0.288	-0.074	-0.544	
Mother's Education				
Illiterate	-	-	-	
Reads and writes	-0.095	-0.076	-0.135	
Basic	-0.247	-0.375	-0.071	
Secondary	-0.321	-0.670	0.110	†
Post-Secondary	0.319	0.158	0.564	
University and higher	-1.247	-14.037	-0.110	
Wealth (2006)				
Wealthiest	-	-	-	
Poorest	0.252	0.087	0.473	
Middle Wealth	0.162	0.146	0.158	
Region (2006)				
Alexandria and Suez Canal	-	-	-	
Greater Cairo	-0.340	0.033	-0.931	
Lower Urban	-0.229	0.014	-0.568	
Upper Urban	0.724	0.804	0.628	†
Lower Rural	0.118	0.167	0.091	
Upper Rural	0.979	0.911	1.102	*
Constant	2.748	-101.382	117.987	†

Notes: †p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001. a Logistic regression. b Multinomial Regression

**Table 22: Logistic Regression of Kin Marriage on Value of Equipment (N=1,574)**

	Relative <sup>a</sup>				
	(First Cousin and Other)	First Cousin <sup>b</sup>	Other Relative <sup>b</sup>		
Value of Agricultural Equipment (USD)	0.000	0.000	-0.004		
Year of 1st Marriage	-0.001	0.052	-0.060		†
Age at 1st Marriage (years)	-0.082	-0.136	-0.023	***	
Years of Education	-0.002	0.000	-0.002		
Father's Education					
Illiterate	-	-	-		
Reads and writes	-0.197	-0.183	-0.203		
Basic	-0.158	-0.295	0.017		
Secondary	0.022	-0.002	0.036		
Post-Secondary	0.635	0.584	0.669		
University and higher	-0.280	-0.051	-0.557		
Mother's Education					
Illiterate	-	-	-		
Reads and writes	-0.091	-0.067	-0.150		
Basic	-0.245	-0.372	-0.085		
Secondary	-0.320	-0.664	0.103	†	
Post-Secondary	0.244	-0.056	0.626		
University and higher	-1.251	-14.172	-0.108		
Wealth (2006)					
Wealthiest	-	-	-		
Poorest	0.261	0.115	0.464		
Middle Wealth	0.173	0.176	0.141		
Region (2006)					
Alexandria and Suez Canal	-	-	-		
Greater Cairo	-0.338	0.037	-0.936		
Lower Urban	-0.225	0.021	-0.571		
Upper Urban	0.724	0.801	0.626	†	
Lower Rural	0.125	0.181	0.087		
Upper Rural	0.991	0.937	1.086	*	*
Constant	2.367	-103.668	117.659		†

Notes: †p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001. a Logistic regression. b Multinomial Regression



**Table 23: Logistic Regression of Kin Marriage on Value of Non-Agricultural Enterprise (N=1,574)**

	Relative <sup>a</sup>		First Cousin <sup>b</sup>		Other Relative <sup>b</sup>	
	(First Cousin and Other)					
Value of Non-Agricultural Enterprise						
No Parental Enterprise	-		-		-	
No Capital	-0.360		-0.510		-0.174	
1-87 USD	0.485	†	0.676	*	0.162	
88-174 USD	-0.297		-0.215		-0.466	
175-871 USD	-0.167		-0.233		-0.103	
872-1744 USD	-0.303		0.126		-1.399	
1745-8721 USD	-0.714	†	-1.213	*	-0.235	
8722 USD or more	0.205		0.207		0.214	
Year of 1st Marriage	0.000		0.054		-0.058	†
Age at 1st Marriage (years)	-0.085	***	-0.140	***	-0.022	
Years of Education	-0.004		-0.003		-0.002	
Father's Education						
Illiterate	-		-		-	
Reads and writes	-0.204		-0.191		-0.221	
Basic	-0.160		-0.284		-0.005	
Secondary	0.007		-0.023		0.036	
Post-Secondary	0.623		0.560		0.687	
University and higher	-0.300		-0.086		-0.554	
Mother's Education						
Illiterate	-		-		-	
Reads and writes	-0.060		-0.037		-0.093	
Basic	-0.227		-0.359		-0.062	
Secondary	-0.328		-0.698	†	0.131	
Post-Secondary	0.310		0.148		0.553	
University and higher	-1.217		-13.472		-0.105	
Wealth (2006)						
Wealthiest	-		-		-	
Poorest	0.158		-0.057		0.438	
Middle Wealth	0.106		0.060		0.144	
Region (2006)						
Alexandria and Suez Canal	-		-		-	
Greater Cairo	-0.331		0.034		-0.933	
Lower Urban	-0.204		0.047		-0.575	
Upper Urban	0.755	0.021	0.865	†	0.610	
Lower Rural	0.163		0.255		0.063	
Upper Rural	1.023	0.001	1.005	*	1.064	*
Constant	-0.324		-106.869		113.670	†

Notes: †p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001. a Logistic regression. b Multinomial Regression