MARRIAGE OUTCOMES AND WOMEN
EMPOWERMENT AFTER MARRIAGE:
A THREE COUNTRIES STORY

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Abstract

This paper provides a first step in the analysis of an understudied phenomenon: women's bargaining power after marriage. Using a Multiple Index Multiple Causes (MIMIC) Model, the paper studies the relationship between women's bargaining power within her household after marriage and her pre-marital power. This later is reflected in her marriage characteristics; such as the divorce payment, the jewelry she received from her husband in addition to her husband characteristics. The MIMIC model was estimated using the ELMPS (2012) data for Egypt, the JLMPS (2010) for Jordan and the TLMPS (2013) for Tunisia. Results show that empowerment has a significant positive effect on the five decision indicators for the three countries. Moreover, it was evidence that there is considerable difference between the three countries in terms of determinates of post marriage decision-making power. In general, the determinants affecting women's empowerment in Tunisia are not the same as in Egypt or Jordan. Ultimately, we can conclude that, although pre-marriage bargaining power is playing significant role in women' post marital empowerment in Egypt and Jordan. It is mainly individual characteristics and husbands' characteristics that affect women's post marital empowerment in Tunisia. This could be due to the difference in culture and social context in Tunisia as compared to Jordan and Egypt. This result confirms the importance of norms, traditions and culture factors as causes that affect woman empowerment in general as well as her state after marriage.

JEL Classifications: J12; J16

Keywords: Egypt, Morocco, Jordan, Labor Market Panel Survey, MIMIC, Women's Empowerment, Women's Agency, Marriage.

ملخص

تقدم هذه الورقة خطوة أولى في تحليل ظاهرة غير مدروسة بالشكل الكافي وهي القدرة التفاوضية للمرأة بعد الزواج. وباستخدام نموذج متعدد الأسباب للأسباب المتعددة (ميميك)، تدرس الورقة العلاقة بين القدرة التفاوضية للمرأة داخل أسرتها بعد الزواج وقوتها قبل الزواج. وينعكس هذا لاحقا في خصائص زواجها. مثل دفع الطلاق، والمجوهرات التي تلقتها من زوجها بالإضافة إلى خصائص زوجها. وقد تم تقدير نموذج ميميك باستخدام بيانات المسح التتبعى لسوق العمل فى مصر لعام 2012، و المسح التتبعى لسوق العمل فى الأردن لعام 2010 و المسح التتبعى لسوق العمل في تونس لعام 2013. وتبين النتائج أن التمكين له أثر إيجابي كبير على مؤشرات القرارات الخمسة للبلدان الثلاثة. وعلاوة على ذلك، كان هناك دليل على وجود فرق كبير بين البلدان الثلاثة فيما يتعلق بتحديد قوة اتخاذ القرارات بعد الزواج. وبصفة عامة، فإن المحددات التي تؤثر على تمكين المرأة في تونس ليست هي نفسها في مصر أو الأردن. في نهاية المطاف، يمكن أن نخلص إلى أنه على الرغم من أن القدرة على المساومة قبل الزواج تلعب دورا هاما في تمكين المرأة بعد الزواج في مصر والأردن. وهي أساسا خصائص فردية وخصائص الأزواج التي تؤثر على تمكين المرأة بعد الزواج في تونس. وقد يعود ذلك إلى الاختلاف في الثقافة والسياق الاجتماعي في تونس مقارنة بالأردن ومصر. وتؤكد هذه النتيجة أهمية المعايير والتقاليد وعوامل الثقافة كأسباب تؤثر على تمكين المرأة بشكل عام وكذلك حالها بعد الزواج.

1. Introduction

In the MENA region households are the basic economic and social unit. For all groups of the society household represents the center of their lives. According to this region's culture, parents are responsible for their children until they turn into adults, and children in return are responsible for the care of their aging parents. In this context, for the elderly, sick, or disabled a household provides the main social security system, while for children, youth, the unemployed, and other dependents they offer economic shelter. (Rashad, Osman, & Roudi-Fahimi, 2005).

In these societies, marriage represent the main channel through which households are formed and defined. Although in most cases young people usually choose their own spouses, their families play a major role in formulating marriage contracts. Hence in these societies marriage is an individual as well as a family matter (Rashad et. al 2005). Moreover, according to the MENA region culture adulthood is granted through marriage. As engaging in adult roles including sex, childbearing, and independent living is considered socially appropriate only through getting married (Assaad and Kraft 2014a). Consequently, marriage provides the couple -specially the bride- with respect, recognition, and community approval; hence it shapes their social and economic future. Moreover, it consumes a huge amount of resources that usually exceeds any other inter-generational transfer, including inheritances. Together this makes marriage of great and crucial importance as well as of high risks (Assaad and Kraft 2014a).

In spite of the recognition of the importance of marriage in the region, empirical research on the economics of marriage in the Middle East and North Africa is still very limited (Assaad and Kraft 2014a and 2014b).

The first application of economic theory to the institution of marriage was introduced by Becker's theory of marriage. He extended the basic concepts of neoclassical economics basically rational choice and markets to the institution of marriage through framing a model of marriage market, where choices of individuals maximizing their utility result in market equilibrium, (Becker, 1973; 1974a and Grossbard-Shechlman, 1995). In this framework gains from marriage include complementary spousal labor and quantity and quality of children. Marriage market outcomes are shaped by alternatives in the marriage market, in other markets (such as engaging in wage work instead of household labor) and by complementary or substitutable characteristics of the couple. Marriage output and its division is also linked to matching in the marriage market (Becker, 1973). In addition, Becker's theory acknowledges the uncertainty in selecting a spouse and search costs (Becker, 1974a; Assaad and Kraft 2014a).

An alternative approach to analyze the economics of marriage in the economic theory is the game theory. Game theory has frequently been used to study allocation within households and marriages (Lundberg & Pollak, 1996, 2003; McElroy, 1990; Udry, 1996) as opposed to models that consider the household as a single unit, with a benevolent head (Becker, 1974b). A significant added value of these models is their emphasis on the bargaining power and bargaining behaviors as main factors that can explain both processes and outcomes in the marriage market. Hence outcomes are not necessarily efficient (Assaad and Kraft 2014a).

In the MENA region one can distinguish a number of important unique features of the institution of marriage that form the economics of marriage in the region. First, marriage outcomes are determined through bargaining process between two families not two individuals. Second, uneven rights within marriage, justified by tradition and religion, favor men once the marriage has taken place (Hoodfar, 1997)[1]. Because of this features of marriages the bride's

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[1] Some factors that contribute to this are first, for engagements both sides can break it off; on the other hand, divorce is very difficult to be obtained by females while it's relatively easier for males. In addition, divorce- when it takes place- is socially and economically much more harmful for women, both (El Feki, 2013; Hoodfar, 1997). Second, Muslim men are allowed to take up to four wives except in Tunisia, this reduces women's bargaining power significantly after marriage.

and her family's bargaining power is greatest before marriage hence contracts describing marriage conditions are negotiated before marriage. Usually the families of the bride and groom, and especially that of the bride, occupy an important part in the negotiations (Hoodfar, 1997). In most cases, very detailed marriage outcomes are negotiated in parallel with the marriage contract (Amin & Al-Bassusi, 2004). Negotiations cover not only material living conditions, but also many financial and behavioral outcomes. Thus, the marriage contract is of great significance to the economic and social arrangements of the couple's life.

Given these unique features of marriage in North Africa, Assaad and Kraft (2014a) introduced a unifying framework to understand the economics of marriage in the region, building on both Becker's framework and the game theory approach. They draw on Becker's idea of how individuals' characteristics affect their marriage outcomes, and make use of the game theory understanding of how marriage contracts are negotiated. They proposed a framework that is consistent with the findings of the anthropological literature (Hoodfar, 1997) and incorporates the findings of most of the economics oriented literature (Elbadawy, 2007; Salem, 2011; Sieverding, 2012) that came in support of a bargaining framework as opposed to other perspectives such as the 'modernization' hypotheses (Assaad & Krafft, 2014; Salem, 2011).

Accordingly, this framework considered marriage outcomes as the result of a bargaining process between families. The couple's own characteristics as well as those of their families define different marriage outcomes that will form and affect their lives after marriage. Outcomes of the matching and bargaining process include age at marriage, kin marriage, nuclear residence, total costs of marriage, bride's and her family's share of costs and the age and educational difference between the bride and groom. Eventually, those outcomes are affected by bargaining power before marriage, ability to pay, as well the bride and groom's traits. The framework also empathized extensive interactions and possible tradeoffs among different outcomes; as they are the result of a complicated negotiation process with several tradeoffs (Assaad and Kraft 2014a).

In the women empowerment literature, the determinants of women's bargaining power after marriage include control over material resources (such as land, livestock, and having labor earnings), human assets (such as education and health), socio-demographic characteristics (age, family size, family structure, etc.), psychological characteristics (beliefs about self-efficacy), social norms (both formal and informal) and marriage characteristics (nuclear residence, consanguinity, marriage costs, age gap and education gap) (Ackerly 1995; Allendorf, 2007; Goetz, and Gupta 1996; Grasmuck and Espinal 2000; Hashemi, et al. 1996; Hindin, 2000; Kabeer, 1997; Malhotra and Mather 1997; Mason 1998; Mayoux 2001; Parveen and Leonhäuser 2004 and Pitt et al. 2006).

This paper builds on the women empowerment literature and adds to the framework introduced by Assaad and Kraft 2014 the idea that those marriage outcomes are expected to shape females bargaining power after marriage.

Recognizing the importance of marriage to MENA region youth lives, and given the limited empirical literature that tackled economics of marriage in the region, the aim of the present paper is to contribute to the economic empirical studies addressing economics of marriage in the MENA region by studying the impact the pre marriage bargaining power as reflected in different marriage outcomes, such as age gap, education gap between the two spouses, bride price (*mahr*), jewelry (*shabka*) and divorce payment (*moakhar*), in addition to individuals and households' characteristics on the bargaining power of women after marriage.

The paper is organized as follows; the second section reviews the literature concerned with economics of marriage with special focus on those addressing the MENA region. Section 3

explains the methodology. Section 4 describes the data used in the analysis. The estimated results are presented and discussed in section 5 and finally section 6 concludes.

2. Literature

Despite the recognition of the importance of marriage in the region, empirical research on the economics of marriage in the Middle East and North Africa is still very limited (Assaad and Kraft 2014a and 2014b).

Generally, the anthropological and sociological literature (Amin & Al-Bassusi, 2004; El Feki, 2013; Hoodfar, 1997) on the institution of marriage is more comprehensive than the economics literature. For the MENA region in specific the literature on the economics of marriage is limited, relatively recent and primarily descriptive in nature (Assaad and Krafft, 2014a). Most of these studies focus on trends such as the age at marriage and prevalence of marriage (Eltigani, 2000; Nosseir, 2003; Rashad, Osman, & Roudi-Fahimi, 2005; Salem, 2012). These studies demonstrated that for the region early marriage is on the decline; women are marrying later and some women are not marrying at all. This phenomenon raised mixed positions; on one hand it was appreciated on the basis that early marriage is generally associated with early childbearing and high fertility, both of which pose health risks for women and their children (Rashad, Osman, & Roudi-Fahimi, 2005). On the other hand, delays in marriage also delay adult roles, and create a period of 'wait adulthood' or 'waithood'.

The costs of marriage were the focus of other studies (Salem, 2012; Singerman & Ibrahim, 2003; Singerman, 2007), Singerman & Ibrahim, 2003). They showed that the marriage of children is an important component of family savings and expenditure. Singermna 2007 for Egypt and Salem, 2012 for Jordan finds that contrary to common discourse, the costs of marriage have not increased in recent years. Household structure and place of residence of newly married couples occupied some attention (Amin & Al-Bassusi, 2004; Elbadawy, 2007; Salem, 2012; Singerman, 2007). Increasingly nuclear households are becoming the norm in North Africa. Various drivers have been identified for this trend mainly urbanization, education (Nosseir, 2003) increased costs of marriage and delayed marriage (Amin & Al-Bassusi, 2004; Salem, 2012; Singerman, 2007). Finally, the high consanguinity levels that characterize the region (Elbadawy, 2007; Mokhtar & Abdel-Fattah, 2001) has been analyzed. Various reasons have been introduced; basically, consanguinity is on the whole beneficial for both men and women (Casterline & El-Zeini, 2003). While young men and their families consider consanguineous marriages appealing because of lower costs, this may be considered as a disadvantage for women. However, women would favor this kind of marriage, as it is believed that kin marriages fundamentally reduce the uncertainty around a spouse's characteristics and help protect women against domestic violence (Hoodfar, 1997).

Only few papers examined the determinants of different marriage outcomes in a multivariate framework in MENA region. Many of these studies focus on the transition to and timing of marriage. Assaad and Kraft (2014b) examines the determinants of a number of marriage outcomes, including age at marriage for Egypt, Morocco, and Tunisia. Results showed that, that all else remaining equal, for Egypt the age at marriage witnessed a rise, and more recently a decline in the median age at marriage for both males and females, in contrast, in Morocco and Tunisia the median age at marriage consistently increased for later cohorts, pointing towards steadily later ages at marriage. Sieverding (2012) examines the effect of wage work on young Egyptian women's marriage outcomes including timing of marriage, the results showed that working does not mean that women marry more quickly. Assaad, Binzel, and Gadallah (2010) study the relationship between men's employment and marriage timing for young men in Egypt. They find that getting high-quality job is a key factor of determining marriage timing for men in Egypt. Assaad and Ramadan (2008) examine the role of housing policy reforms in reducing the delays in marriage for young males in Egypt. They indicated

that the 1996 rental law reform through effectively reducing the cost of getting a rental contract had a significant impact on decreasing the median age at marriage for men in Egypt.

Other marriage outcomes such as nuclear residence, consanguinity, and marriage costs, were the focus of some fewer studies. Casterline and El-Zeini (2003) simulates the impact of reducing family size on consanguinity, and find that reduced family size is unlikely to significantly decrease consanguinity. Elbadawy (2007) examines how female education improves marriage characteristics in Egypt, including husband quality variables such as his education, his pre-marital wealth level and other marital characteristics like nuclear residence, consanguinity, and marriage costs. He results indicate that highly educated women have better chances of marrying husbands with higher education. Female education is found to be highly correlated with nuclear residence, and negatively correlated with being in a consanguineous marriage. Female education has an insignificant impact on reducing the share of marriage costs of the bride and her family. One explanation for this result is that more educated brides are achieving better marriage matches.

The previously mentioned study of Sieverding (2012) examines how wage work affects young Egyptian women's and their families' contributions to total marriage costs and the quality of husband as reflected in education gap between the two spouses, and finds that young women who work contribute more to the costs of marriage and have higher total costs. However, this increased bride- side contribution does not result in an increased likelihood of making an educationally hypergamous match. Finally, Assaad and Kraft 2014b examine the determinants of other marriage outcomes, besides age at marriage, mainly marriage costs, consanguinity, and nuclear residence. They demonstrate how individual characteristics, parental background and ability to pay form bargaining power and marriage outcomes, and highlight the tradeoffs between different marriage outcomes. Results showed that more educated women are more likely to have nuclear arrangements at marriage, but only significantly in Egypt. Marriage costs increase with women's own education, and with highly educated parents, more educated spouse, nuclear residence and parental wealth.

Bargaining power within marriage was the focus of very limited number of studies. Salem (2011) examined bargaining power after marriage within the economics of marriage literature for Egypt. The author follows the bargaining model and examines how women's proportional and absolute contributions to marriage costs and wage work affect their bargaining power as measured by a decision-making index within marriage in Egypt using ELMPS 2006. The findings demonstrate that, for women, greater wages before marriage lead to greater contributions to marriage costs, which in turn increases bargaining power within marriage. However, no direct correlation was found between the bride's marriage payments and her decision-making power within marriage. Yount et al (2015) focused on the impact of women's age at first marriage on three dimensions of women agency in Egypt two of which proxies bargaining power after marriage; (1) influence in family decisions, including those reserved for men, (2) freedom of movement in public spaces, and (3) attitudes about gender, specifically violence against wives. Using multiple indicator multiple cause structural equations model, they confirmed that women's older age at first marriage was positively associated with the family decision-making and gender-violence attitudes, but not freedom of movement.

As far as the authors are aware of, Salem (2011) is the only study that directly tackled bargaining power after marriage within the economics of marriage literature for the MENA region. This paper addresses a similar question concerning the determinants of women's bargaining power after marriage, using a more rigorous methodology in regards to controlling for pre-marital bargaining power and thus being able to estimate, for instance, the effect of spousal age gaps on bargaining power. Additionally, this paper will allow for comparative work by using recent data sets for three of the MENA countries: Egypt, Jordan, and Tunisia.

In the literature, the determinants of women's bargaining power after marriage include control over material resources (such as land, livestock, and having labor earnings), human assets (such as education and health), socio-demographic characteristics (age, family size, family structure, etc.), psychological characteristics (beliefs about self-efficacy), social norms (both formal and informal) and marriage characteristics (nuclear residence, consanguinity, marriage costs, age gap and education gap) (Ackerly 1995; Allendorf, 2007; Goetz, and Gupta 1996; Grasmuck and Espinal 2000; Hashemi, et al. 1996; Hindin, 2000; Kabeer, 1997; Malhotra and Mather 1997; Mason 1998; Mayoux 2001; Parveen and Leonhäuser 2004 and Pitt et al. 2006).

Building on this literature together with the unifying framework for the economics of marriage in the North African region proposed by Assaad and Kraft (2014a), the aim of this paper is to study the linkage between pre-marital bargaining power and women's bargaining power after marriage. More precisely we will study how pre-marriage bargaining power and different marriage characteristics, in addition to individual and household characteristics, affect women's bargaining power after marriage.

3. Methodology

This paper provides a first step in the analysis of an understudied phenomena: women's bargaining power after marriage. More precisely, using a Multiple Index Multiple Causes (MIMIC) Model, the paper studies the relationship between women's bargaining power within her household after marriage and her pre-marital power. This later is reflected in her marriage characteristics; such as the divorce payment, the jewelry she received from her husband in addition to her husband characteristics.

The MIMIC Model was introduced by Goldeberger (1972). The advantage of using a MIMIC model is that it allows exploring the linkages between the indicators of a given latent variable such as "*Post- Marriage Empowerment*", donated as PME*, in our case and a number of its possible causes (Figure 1) without a directly observable measure of empowerment (Huber, 2013and Rose and Speigel, 2011).

In more details, the MIMIC model estimates two equations. First, the structural equation that allows to study the latent variable, PME*, as function of causal variables; such as individual (I) and marriage (M) characteristics and regional dummies (R) (Rahman et al, 2004). So, for each respondent i, we have:

$$\text{PME}_i^* = f(I_i, M_i, R_i; \varepsilon_i) \tag{1}$$

where f(.) indicates the form of the relationship and ε_i is the stochastic error in the equation.

Second, the model also specifies a set of equations corresponding to the indicator variables; known as the indicators equations. In our case, these indicators reflect women's decision-making power within her households. They are indicators related to who take the decisions concerning family's large purchase, daily cooking, her medical treatment…etc. The indicators equations for the decision-making power of each respondent i, can written as:

$$DI_{ik} = g_i(PME^*_i, \mu_i) \qquad k=1,2,3,4,5 \tag{2}$$

where $g_i(.)$ indicates the form of the relationship and (μ_i) is a stochastic error. DI$_i$ is a set of five decision making questions that take several answers ranging from taking the decision alone ($DI_i = 4$) to not participating in the decision making at all ($DI_i = 1$). [2]

The sets of equations (1) and (2) are interdependent structural equations. Replacing equation (1) in (2) results in the reduced form of our decision-making power model. And in order to complete the specification of the model, we must specify the form of the interdependent structural equations (1)-(2), and we must specify the form of the probability distribution of the

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[2] If the question is not applicable to her; the answer is coded as 5.

errors ε, μ$_i$. In our case the errors ε, μ$_i$ follow logistic distribution. As empowerment is a binary variable that takes value 1 if woman is empowered, 0 otherwise; the f(.) takes the form of logit function. While the g$_i$ (.) takes the form of ordered logit as the answers of the decision-making questions are ordered from 4 (take the decisions alone) to 1 (do not participate in the decision process).

The causes of empowerment include a set of the individual's characteristics, *I*, such as her age, her age at marriage, her education and her parents' education and employment status. It includes, as well, marriage contract characteristics (M), which is an outcome of her bargaining power before marriage. This includes the value of dowry and brideprice (*mahr*), value of payment upon divorce (*moakhar*) and of (*ayma*) written upon marriage[3] as well as marriage living arrangements (living alone or with someone else such as her in laws or her parents). Not all these variables are included for all countries, as some questions (such as *ayma* question) were not asked for Jordanian and Tunisian women. For Tunisia, the living arrangement question was not asked. However, we included a dummy variable taking into account if she was married two times compared with being married once.

An important aspect of this contract is the spouse characteristics, since the match itself is an outcome of bargaining power. Hence, the spouse characteristics, mainly age gap between the woman and her husband and husband's education and employment as relative to the respondent's status, are included in the model.

Finally, a dummy variable for the region where the woman lives (urban or rural) (R) is included in the model to account for the effect of the region where she lives.

4. Data

The present research will make use of the Labor Market Panel Surveys carried out by the Economic Research Forum (ERF) for three countries, Egypt, Jordan and Tunisia. The LMPSs contain novel information that makes it possible to link the marriage outcomes, resulting from pre-marital bargaining power, in addition to individuals' characteristics, to the bargaining power of women after marriage. This includes information about parental background, the patterns of marriage (consanguinity, living arrangements), the age gap and the education gap between the two spouses.

For both Egypt and Jordan, the analysis will focus on women married in the ten years preceding each survey to achieve the optimal tradeoff between sample size and accurate recall. While for Tunisia due to sample size considerations we will focus on women married in the fifteen years preceding the survey.

For Egypt, our sample includes 4015 women who has been married since 2002 with an average age of around 25 years old and average age at marriage of 21 years old. While for Jordan we have 1470 women married since 2000 with an average age of around 27 years old and average age at marriage of 21.8 years old. Finally, for Tunisia, there are 1130 women married since 1996 with an average age of 34 years old and average age at marriage 25.80 (Table 1)

Figures 2 shows the distribution of the sample according to the answers of the five decision questions in each country. In Egypt, women have a say alone or with her husbdand in the daily decisions such as daily purchases or food. While for major decisions such as large households purchase she mainly takes the decision with her husband, or she is not involved at all.

For Jordan and Tunisia, most of the respondent takes the decision with their husband. However, for the daily cooking and for buying clothes to herself, the majority takes the decision alone.

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[3] It is worth noting that marriage outcome variables used in the model may differ between countries according to their availability and according to the marriage laws of the countries.

For the large households pucrchase, as observed in Egypt, the in laws play an important role in the decision and the respondents rarely participate in the descision.

Concerning marriage contract characteristics, table 2 shows the distribution of our sample according to different marriage contract outcomes. In both Egypt and Jordan; more than 50% of the sample are living in a separate house with their husbands. This question was not available in the Tunisian survey.

For both the Jewelry and divorce payment; the case in Egypt is in general similar to Jordan as the majority of the respondents received jewelry from their husbands and agreed on divorce payment. While in Tunisia, only 6.5% of the respondents receive jewelry while the question of divorce payment was not asked in the survey.

For Egypt, the table reveals that while the vast majority of the sample do have wedding list, jewelry and divorce payment only around quarter of the sample has bride price. This may be due to the fact that many families tend to share the cost of the (*gehaz*) instead of paying bride price (*mahr)*. This may indicate that bride price is not considered to be as important as the other outcomes in marriage negotiations and hence it may not be as important in reflecting the bride side bargaining power before marriage.

Same pattern is observed in Tunisia for the bride price, where only 6.71% of the respondent received it. However, in Jordan, bride price is an important feature of marriage as almost 82% of the sample does have bride price.

5. Estimated Results

The MIMIC model was estimated using the ELMPS (2012) data for Egypt, the JLMPS (2010) for Jordan and the TLMPS (2013) for Tunisia. For the three countries, our latent variable *post marriage Empowerment* had significant ($p < 0.01$) factor loadings on all five decision-making power indicators, which was equal to or exceeding 1.348 in Egypt, 0.667 in Jordan and 0.792 for Tunisia (Appendix 2).

The impacts of the individual and marriage characteristics on our latent variable "Empowerment" for the three countries are available in Appendix 3. It could be noticed that there is considerable difference between the three countries. It is evident that age has a non-linear significant impact on Tunisian female's decision making power after marriage; a linear effect for Jordan; while it has no significant impact in Egypt. Moreover, results revealed that late marriage decreased Egyptian and Jordanian female's decision making power after marriage; women married at younger age are more empowered than those married at older age. This is surprising as according to the literature it is expected that married young women would participate less in the decision-making within her household. In Tunisia age at marriage has no significant impact. One interesting result is that age gap has a positive impact on women empowerment after marriage in Egypt and Tunisia and a negative impact in Jordan however in all three countries it is statistically insignificant.

All women own education categories relative to being illiterate are found to have no significant effect on women empowerment after marriage in Egypt and Tunisia while it has a positive and significant impact in Jordan.

Parents education and employment turned out to have no significant impact on the respondent decision making power after marriage in Jordan and Tunisia. For Egypt, the picture is different. Egyptian father who can read and write without basic education increases his daughter's empowerment within her household as compared to an illiterate father. Same positive impact is found for an Egyptian father with basic education or secondary education. Father's employment status has a week impact; only a self-employed father increased his daughter decision-making power after marriage while a father with no job decreased it as compared to a

wageworker father. The impact of mother's employment differs according to her employment status; a self-employed or unpaid family worker mother increases her daughter decision power after marriage as compared to a wageworker mother while a mother with no job has no significant impact.

Results revealed that husband characteristics has no significant impact on women decision making power after marriage in both Egypt and Jordan while in Tunisia it has a weak effect. For husband education, a Tunisian woman married to a husband with higher education level has a lower decision making power after marriage as compared to a woman married to a husband with same education level. While for husband's employment status, only women married to an unemployed husband have lower significant decision-making power as compared to a woman married to someone working in the public sector, whereas all other husband employment categories have no significant impact.

As expected living in rural areas decreased women decision making power after marriage in Egypt and Tunisia while it has no significant impact in Jordan.

Turning to our main variables of interest "marriage characteristics". In general, it is noticed that marriage characteristics play an important role in shaping women decision-making power after marriage in Egypt and Jordan but have a less pronounced impact in Tunisia.

All three marriage characteristics included in the Tunisian model turned out statistically insignificant.

Whereas, in Egypt and Jordan marriage characteristics play a more important role but in different direction for some characteristics. The results show that a woman living in a separate house has a higher decision making power than a woman living with her husband and others, such as her in laws or her parents, in both countries. Women who receive jewelry has a higher decision making power after marriage in Egypt but a lower decision making power in Jordan. Women whose marriage contract includes divorce payment have higher decision power within their households as compared to those who did not receive any or those who do not know in both countries. For bride price a marriage contract that included a bride price has a negative impact on decision-making power after marriage in Egypt and a positive impact in Jordan. Finally, including wedding list increases women decision-making power after marriage in Egypt[4].

6. Concluding Remarks

This paper examines the association between women's bargaining power before marriage and her post marital empowerment. More precisely, the paper studies the relationship between the marriage characteristics, in addition to her individual characteristics, on women's decision-making power after marriage.

Marriage characteristics such as bride price, jewelry, divorce payment and living arrangement are the output of the bargaining power of the bride and her family before marriage. Such bargaining power, as well as the husband's characteristics, may be an important determinant in her decision-making within her household post marriage.

Five decision indicators measure women's empowerment within her household. The five indicators reflect who has the final say in household's decision such as large households purchase, daily purchases, cooked food, her health treatment and getting clothes to herself. The answer of each decision may vary between: having the final say alone, with her husband, with her husband and in laws or not participating at the decision at all.

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[4] This question was not asked for Jordan and hence not included in the model.

Given that multiple causes are affecting women's post marital empowerment that is reflected in several indicators, we use Multiple Indicator Multiple Index Model. The MIMIC model was estimated using the ELMPS (2012) data for Egypt, the JLMPS (2010) for Jordan and the TLMPS (2013) for Tunisia.

Results show that empowerment has a significant positive effect on the five decision indicators for the three countries. Moreover, it was evidence that there is considerable difference between the three countries in terms determinates of post marriage decision-making power. In general, the determinants affecting women's empowerment in Tunisia are not the same as in Egypt or Jordan.

For the causes of empowerment; results show that marriage characteristics included in the Tunisian model have no significant impact on women's empowerment. While for Egypt marriage characteristics, such as living arrangement, divorce payment and brideprice play a significant role. An Egyptian woman living in a separate house has a higher decision making power than a woman living with her husband and others, such as her in laws or her parents. Women who receive jewelry has a higher decision making power after marriage in Egypt. And women whose marriage contract includes divorce payment have higher decision power within their households as compared to those who did not receive any or those who do not know. Same results were found in Jordan for the living arrangement and divorce payment. For bride price, it decreases women's decision-making power after marriage in Egypt but increases it in Jordan, which was already noticed when examining the raw data. Finally, including wedding list increases women decision-making power after marriage in Egypt.

Ultimately, we can conclude that, although pre-marriage bargaining power is playing significant role in women' post marital empowerment in Egypt and Jordan. It is mainly individual characteristics and husbands' characteristics that affect women's post marital empowerment in Tunisia. This could be due to the difference in culture and social context in Tunisia as compared to Jordan and Egypt. It is known that Tunisia is a unique case as compared to other MENA region for example men are not allowed to marry more than one woman. This result confirms the importance of norms, traditions and culture factors as causes that affect woman empowerment in general as well as her marriage after marriage. This is a point that needs further investigation in future research.

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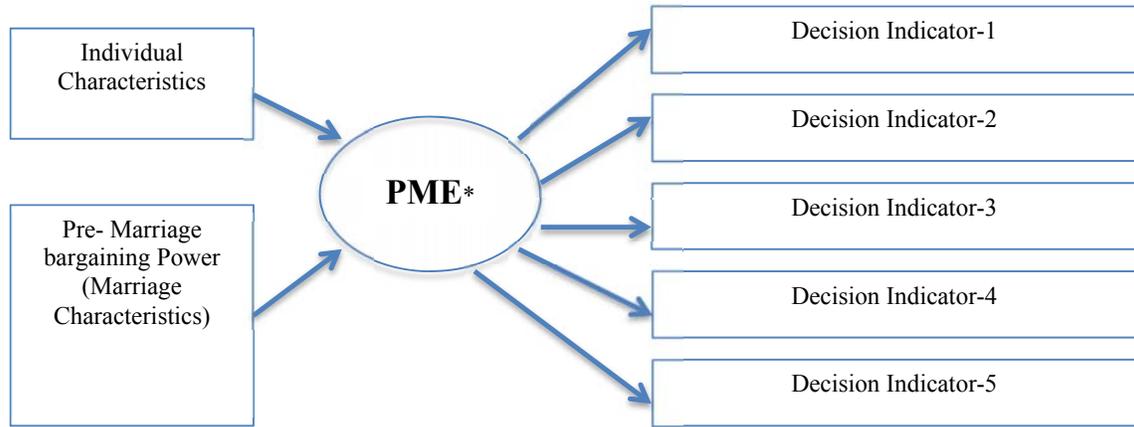
Figure 1: MIMIC Model

Figure 2: 1- Distribution of the Sample according to Answers of the Decision Questions in Egypt

Note: DI1: Who take the decision for making large household purchases? DI2: Who take the decision for making household purchases for daily needs? DI3: Who take the decision concerning what food should be cooked each day? DI4: Who take the decision concerning getting medical treatment or advice for yourself? DI:5 Who take the decision concerning buying clothes for yourself?

Figure 2: 2- Distribution of the Sample according to Answers of the Decision Questions in Jordan

Note: DI1: Who take the decision for making large household purchases? DI2: Who take the decision for making household purchases for daily needs? DI3: Who take the decision concerning what food should be cooked each day? DI4: Who take the decision concerning getting medical treatment or advice for yourself? DI:5 Who take the decision concerning buying clothes for yourself?
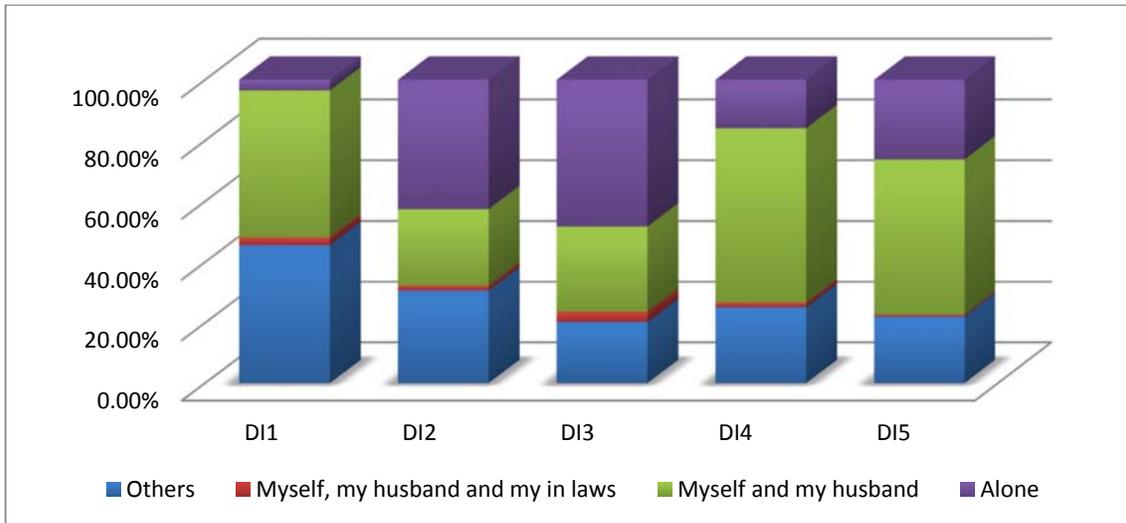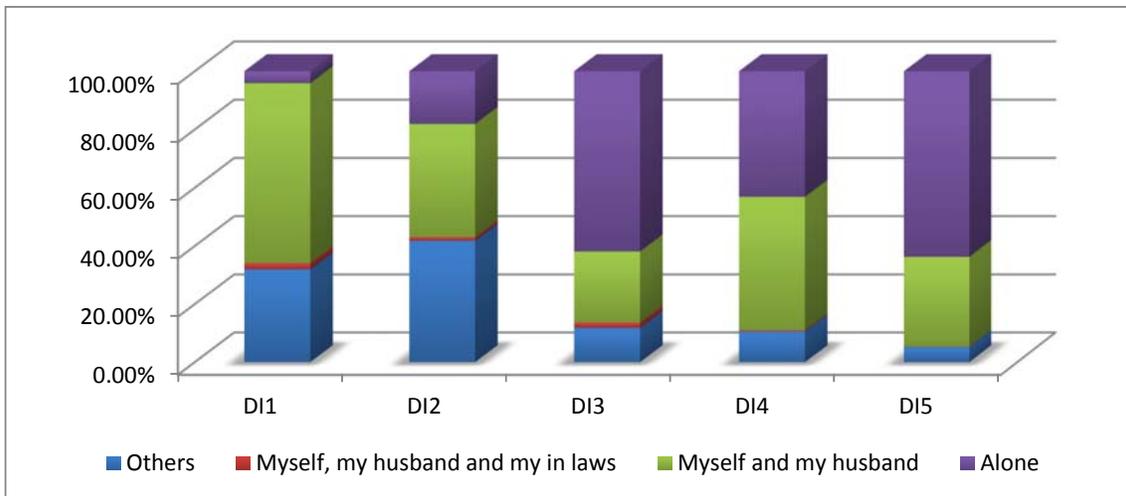
Figure 2: 3- Distribution of the Sample according to answers of the Decision Questions in Tunisia
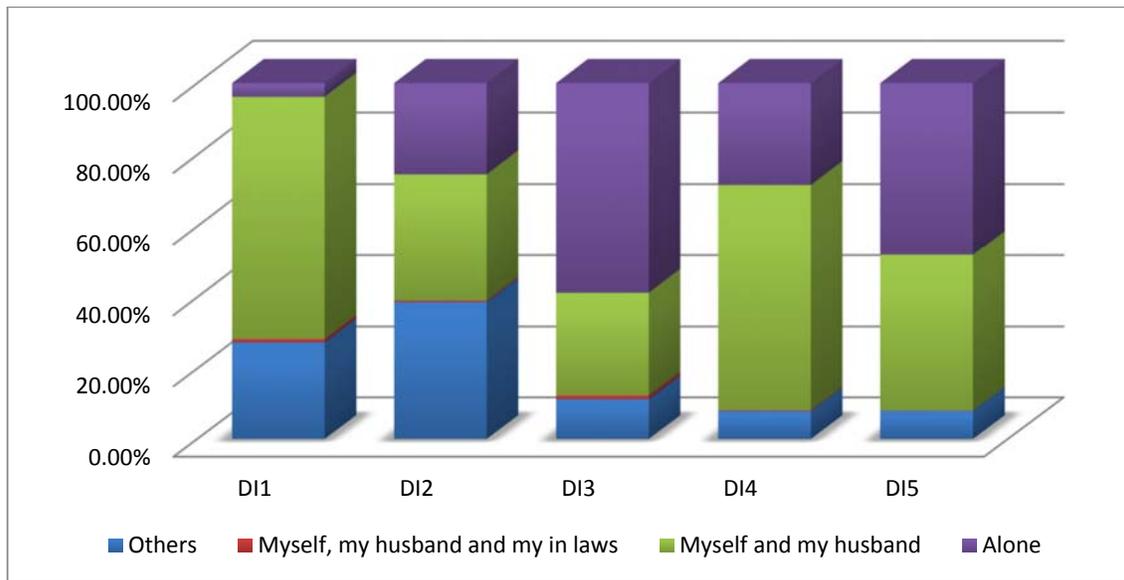

Note: DI1: Who take the decision for making large household purchases? DI2: Who take the decision for making household purchases for daily needs? DI3: Who take the decision concerning what food should be cooked each day? DI4: Who take the decision concerning getting medical treatment or advice for yourself?DI:5 Who take the decision concerning buying clothes for yourself?

Table 1: Sample Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Egypt					
age	4015	25.37	4.02	18	39
Age at marriage	4015	21.19	3.48	11	36
Age Gap	4015	5.07	3.74	-10	20
Jordan					
age	1470	27.29	5.56	15	59
Age at marriage	1470	21.82	4.94	7	51
Age Gap	1470	6.10	5.53	-10	37
Tunisia					
age	1130	34.38	7.09	18	58
Age at marriage	1130	25.80	6.29	12	99
Age Gap	1130	6.83	6.43	-15	44

Table 2: Sample Distribution according to Marriage Contract Outcome (%)

	Egypt	Jordan	Tunisia
Are you living alone with your husband?			
No	31.81	22.11	n.a.
Yes	68.19	77.89	n.a.
Did you write Ayma?			
No	19.43	n.a.	n.a.
Yes	80.57	n.a.	n.a.
Bride Price			
No	74.16	18.16	93.29
Yes	25.84	81.84	6.71
Divorce Payment			
No	17.29	2.79	n.a.
Yes	82.71	97.21	n.a.
Jewelry			
No	3.99	29.25	93.47
Yes	96.01	70.75	6.53

Note: n.a. Not available

Appendix 1: Technical Note for the Construction of the Decision Index

For the decision-making power inside the household, women are asked the following questions:

1. Who take the decision for making large household purchases?

2. Who take the decision for making household purchases for daily needs?

3. Who take the decision concerning what food should be cooked each day?

4. Who take the decision concerning getting medical treatment or advice for yourself?

5. Who take the decision concerning buying clothes for yourself?

Answers of 5 questions, DI_k, takes the following values:

- $DI_k=4$: if the respondent takes the decision alone.
- $DI_k=3$: if the respondent takes the decision with her husband.
- $DI_k=2$: if the respondent takes the decision with her husband and her in laws.
- $DI_k=1$: if the respondent does not participate in the decision at all.
- $DI_k=5$: *Not Applicable*.

Appendix 2: Estimated Impact of Empowerment on the Different Indicators for Decision Making Power for the Three Countries (MIMIC)

Empowerment	DI1	DI2	DI3	DI4	DI5
Egypt	1	3.413***	2.859***	1.348***	1.453***
	(0)	(0.266)	(0.213)	(0.0935)	(0.0998)
Jordan	1	0.667***	0.756***	2.141***	1.933***
	(0)	(0.0871)	(0.113)	(0.330)	(0.285)
Tunisia	1	0.927***	0.792***	1.933***	2.116***
	(0)	(0.124)	(0.127)	(0.304)	(0.356)

Notes: Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Appendix 3: Estimated Parameters of the MIMIC Model for the Three Countries

Variables	Egypt	Jordan	Tunisia
Age	0.0287	0.0662***	0.0738***
	(0.0211)	(0.0212)	(0.0252)
age squared	-0.000172	-0.000448	-0.000888**
	(0.000403)	(0.000349)	(0.000353)
What was your age at your first marriage?	-0.00987**	-0.0331***	0.00118
	(0.00413)	(0.00827)	(0.00478)
Age gap	0.000264	-0.00284	0.00194
	(0.00260)	(0.00347)	(0.00375)
Her education status (Reference: Illiterate)			
Literate but no basic education	-0.0224	0.282*	-0.00584
	(0.0609)	(0.152)	(0.0769)
Basic Education: (elementary or Middle)	0.00354	0.288**	0.0682
	(0.0317)	(0.125)	(0.0731)
Secondary: vocational or general	0.0150	0.345***	0.171
	(0.0289)	(0.133)	(0.107)
Post secondary	0.00187	0.391***	0.161
	(0.0518)	(0.141)	(0.144)
University and post graduate	0.0470	0.405***	0.0937
	(0.0393)	(0.141)	(0.119)
Father's education (Reference: Illiterate)			
Reads and writes	0.0484**	-0.0198	-0.0229
	(0.0238)	(0.0494)	(0.236)
Basic	0.0842***	0.307	-0.0725
	(0.0297)	(0.201)	(0.0573)
Secondary (Secondary/Post Secondary for Tunisia)	0.0555*	-0.00880	-0.0548
	(0.0335)	(0.0664)	(0.0957)
Post-secondary	-0.00128	-0.0548	
	(0.0695)	(0.0960)	
University and above	0.0549	-0.130	
	(0.0475)	(0.0854)	
Father's Employment (Reference: Wage Worker)			
Employer	-0.00356	-0.0704	0.144
	(0.0215)	(0.0620)	(0.0950)
Self-employed	0.0517*	0.0219	-0.00821
	(0.0283)	(0.0477)	(0.0568)
Unpaid Family Worker	-0.132	-0.620	0.166
	(0.163)	(0.459)	(0.402)
No job	-0.171**	-0.0693	0.0427
	(0.0780)	(0.0791)	(0.166)
Mother's education (Reference: Illiterate)			
Read and write	0.0310	0.0231	0.162
	(0.0330)	(0.0428)	(0.357)
Basic	0.0136	0.0127	-0.00493
	(0.0365)	(0.151)	(0.0759)
Secondary (Secondary/Post Secondary for Tunisia)	0.0497	0.0653	0.0813
	(0.0429)	(0.0722)	(0.150)
Post-secondary	-0.00860	0.108	
	(0.0886)	(0.129)	
University and above	-0.00688	0.151	
	(0.0756)	(0.152)	
Mother's Employment (Reference: Wage Worker)			
Employed	0.141*	-0.267	0.0562
	(0.0738)	(0.194)	(0.260)
Unpaid Family Worker	0.0973*	-0.222	-0.232
	(0.0557)	(0.279)	(0.165)
No Job	0.000730	-0.000461	-0.0886
	(0.0380)	(0.0960)	(0.0989)
Are you living alone with your husband?	0.171***	0.0917**	
	(0.0213)	(0.0454)	
Bride List (*Ayma*)	0.0927***		
	(0.0245)		-0.201
Bride Price (*Mahr*)	-0.0837***	0.0822*	(0.138)
	(0.0196)	(0.0489)	
Divorce Payment (*Moakhar*)	0.106***	0.212*	
	(0.0236)	(0.115)	-0.0465
Jewelery (*Shabka*)	0.0876**	-0.110**	(0.134)
	(0.0440)	(0.0429)	
Two marriages (Reference Married once)			-0.246
Husband's education compared to her education (Reference: Same level of educations)			
He has higher level of education	-0.0253	-0.00406	-0.122**
	(0.0231)	(0.0508)	(0.0587)
He has lower level of education	0.0233	-0.00490	-0.0290
	(0.0216)	(0.0458)	(0.0623)

Variables	Egypt	Jordan	Tunisia
Husband's employment status (Reference: wage worker)			
formal employed in private sector	0.0602**	0.0878	-0.0132
	(0.0278)	(0.0550)	(0.0671)
informal employed in private sector	-0.0342	-0.0512	-0.107
	(0.0234)	(0.0438)	(0.0694)
unemployed	-0.0467	-0.0759	-0.187*
	(0.0492)	(0.0916)	(0.103)
outside manpower	0.155	0.00866	-0.111
	(0.157)	(0.101)	(0.0988)
Do you live in rural areas?	-0.0584***	0.0265	-0.177***
	(0.0188)	(0.0431)	(0.0550)
Observations	3,760	1,470	968

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.