DRIVERS FOR EARLY LABOUR MARKET TRANSITIONS OF YOUNG WOMEN IN UGANDA: EVIDENCE FROM THE 2015 SCHOOL TO WORK TRANSITION SURVEY

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ABSTRACT

Fertility decisions and associated impacts on young women's entry into the labour markets are major policy concerns in sub Saharan Africa. This paper jointly estimates the drivers of key life cycle decisions of educational attainment, marriage age, age of first birth and age at first entry into the labour market for young women in Uganda aged 15-24 years. We estimate probit and hazard models for education attainment, first marriage, child bearing and early market entry. We find that education attainment impacts on early labour entry, age at first marriage and fertility decisions. The duration out of school—especially in the first three years, has a significant direct effect on early labour market entry and age at first marriage. As such enforcing the Uganda laws that prohibit early marriage could go a long way in curbing transmission of education poverty across generations. We also find that socio-cultural practices matter especially peer influences matter— higher the share of married women by cohort, the higher the hazard of getting married. There is a regional dimension on the timing of marriage with a higher risk of early marriages observed in the northern and eastern regions.

Key Words: Young Women, Early Marriage, Age at Birth, Labour Entry, Uganda

1. INTRODUCTION

Gender gaps in youth labour force participation persist in sub-Saharan Africa. According to the International Labour Organization (ILO), between 1997 and 2017, the gender gap in youth labour force participation reduced from 6.7 to 5.3 percentage points (ILO, 2017). The persistence of gender gaps in youth employment is partly linked to fertility decisions made by young women and men—during and after school. Young women are more likely to enter marriages early and give birth at an early age which both can delay labour market entry. As a result, policy makers and researchers are increasingly concerned with delayed labour market entry of women in the era of increased education attainment. They have realized that family planning programmes or avoiding risky sexual behaviours alone may not ultimately translate into early female labour market entry. At the individual level, education attainment of both young woman and her parents delays both marriage and age at first birth (Marchetta and Sahn, 2016). On the other hand, at the macroeconomic level, reduction in fertility is associated with increased female participation in paid labour (Canning and Schultz (2012). Nevertheless, the recognition of the problem of delayed female entry into the labour market has not translated into the development of more effective actions to minimize the effects of fertility decisions on labour market entry.

Such gender inequalities in the labour market may arise from deep-rooted social norms that impede women from enhancing their economic lives by limiting their choices and access to economic opportunities (Kabeer 2012). Improving access to education and adult literacy programs have been identified as some of the key strategies to increase women's economic empowerment in Africa (Wekwete 2014; UNDP 2015). Knowledge of the key associations and causes of the female disadvantage in the labour market can help in the design of appropriate policies to change the *status quo*. One of the testable assumptions is that first labour market and fertility experiences of young females[1] are critical in shaping their subsequent labour market experiences and economic empowerment (Herrera and Sahn 2015). The shape of many women's lives

is significantly determined at an early age as many young women in Africa drop out of school too early and enter the labour market unprepared. This can have a strong negative impact on future labour market experience and earning potential, ultimately increasing their vulnerability to poverty in the long run (Gracia and Fares 2008).[2]

Issues of female labour force participation have been central to Uganda's human development agenda. Despite the increased participation in the labour market, females in Uganda continue to face significant challenges in pursuing decent paying and productive jobs in comparison to their male counterparts. The 2016/17 Uganda National Household Survey (UNHS) revealed that female labour force participation for 15-24 year olds was 70 percent compared to 74 percent for males (Uganda Bureau of Statistics, 2017). The same survey showed that gender gap persist s beyond subsistence activities. Young women are much less likely to be working in paid employment and have a higher unemployment rate (of 11.5 percent) compared to 7.3 percent for young men.

This paper seeks to provide insights into the challenges young women face in gaining labour market entry in Uganda. In particular, the paper examines the following key research questions: first, what influences the age at the first recognizably full time economic activity young females undertake? How does this compare with their male counterparts?; second, what affects the age at which young females leave full time education and how do these factors differ from those of their male counterparts?; third, what influences the age at first marriage?; and lastly, what are the determinant of the age at which young women give birth to their first born?

The remainder of the paper is structured as follows. Section 2 presents a discussion of related literature. The data and descriptive evidence, with particular emphasis on the four choices is presented in section 3. Section 4, discusses the model specifications and estimation strategy prior to the discussion of the empirical results in section 5. Section 6 concludes.

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1 Terminology young women and young females is used interchangeably.

2 Supply-side labour market policies often rely on the fact that individuals' early labour market experiences shape their subsequent outcomes in important ways.

2. REVIEW OF RELATED STUDIES

Previous authors have examined the fertility and labour market decisions of young women in Africa. Examples of empirical studies in the recent past include Marchetta and Sahn (2016) and Mbaye and Wagner (2017) for Senegal, Glick et al (2015) for Madagascar, Ardington et al (2015a, 2015b) for South Africa, Baird et al (2015) and Baird et al (2013) for Malawi as well as Westeneng and D'Exelle (2011) for Tanzania. A major a finding from the above African studies is that early marriage and child bearing negatively impact on employment prospects of young women. For example, Marchetta and Sahn (2016) show that for young Senegalese women, higher education attainment delays both the age at marriage and age at first birth. Other studies such as Ardington et al (2015b) show that each additional child reduces the likelihood for labour force entry or employment. Similarly, Bloom et al (2006) shows that each birth reduces a woman's potential labour supply by about 2 years during child bearing.

In the literature, studies have examined the nature of public programmes that can delay female fertility decisions and ultimately impact employment prospects. Cash transfers are frequently highlighted as interventions that can alter fertility decisions. For example, Baird et al (2013) shows that direct cash transfers to school girls empowered young women and reduced the likelihood of teenage pregnancies and early marriages. In India, Sinha and Young (2009) show that cash grants for daughters in form of long term savings bonds increased female education attainment. Other interventions have included increased access to health facilities. Branson and Byker (2015) show that in South Africa, access to clinics reduced the likelihood of teenage pregnancy and impacted on employment.

Socio-economic background and life cycle experiences are also important drivers of both fertility and employment decisions. The high school dropout rate among young people predisposes them to early entry into the labour market. For instance, Grant and Hallman (2008) show that girls who experience any school dropout are more likely to become pregnant if they re-enrol back to school. The same study shows that the presence of adult female in the household

is positively associated with school re-entry after a pregnancy related dropout. Similarly Marchetta and Sahn (2016) show that the education attainment of a mother delays the age at marriage of the daughter. On the hand, the death of a mother can precipitate the early entry into child bearing of a daughter.

Young people transit into the labour market through different paths; some join the workforce directly without benefiting from the formal education system while others enter the labour market after going through the formal education system- either upon graduation or early exit without completion. There are studies on developing countries that have studied the four choices separately. Such studies include child bearing (Gurmu and Etana (2014) on Ethiopia; Nahar and Zahangir (2013) on Bangladesh); labour market entry (); education (Okumu *et al.* 2008 on Uganda) and marriage (Ikamari, 2005 on Kenya). On the other hand, there are studies that attempted to study these choices jointly Glick *et al*. (2015) on Madagascar; Marchetta and Sahn (2016) on Senegal; and Herrera and Sahn (2015) on Madagascar without focus on labour issues and Mobarak (2014) study the effects of the explosive growth in the Bangladeshi garments industry on the lives on Bangladeshi women. They compare the marriage, childbearing, school enrolment and employment decisions of women with greater access to garment sector jobs to women living further away from factories. These are also compared to the situation some years before the factories arrive close to some villages, and to the marriage and enrolment decisions of their male siblings. The study was based on a survey specially conducted by the authors in villages close to the garment factories and control villages. They find that girls exposed to the garment sector delay marriage and childbirth. This stems from (a), young girls becoming more likely to be enrolled in school after garment jobs (which reward literacy and numeracy) arrive, and (b), older girls becoming more likely to be employed outside the home in garment-proximate villages. The authors conclude that the increased demand for education generated through manufacturing growth appears to have a much larger effect on female educational attainment than a large-scale government conditional cash transfer program to encourage female schooling.

Econometric results from a study by Okumu *et al.* (2008) on socio economic determinants of primary school dropout in Uganda suggest that the probability of a child dropping out of primary school reduces as one moves from rural to urban areas; additionally, they found that the odds of a pupil dropping out of primary school increase with increase in the distance to school with pupils traveling long distances to school more likely to drop out of school. Household characteristics seem to influence the school dropout rates; high academic attainments of parents (both mother and father) significantly reduce chances of primary school dropout for both girls and boys in rural and urban areas. They attributed this finding to the fact that educated parents are more aware of the possible returns to their children's education compare to their uneducated counterparts. Furthermore, household size and age of household head were other significant variables explaining the dropout rates: in comparison to children living in small households, children in larger households were less likely to drop out of school and this finding was attributed to substitution for child labour.

The role of education in shaping transitions is yet another area of interest: most studies find that higher levels of education are associated with successful transitions or better chances of securing stable employment. This finding further confirms the positive effects of accumulated human capital in transiting to a decent job. For example Parent's study (2008) on Burkina Faso finds that education beyond primary is a necessary condition for work beyond the household. He finds that among those with little or no schooling, the vast majority of men simply make the transition from household worker to head of household and the vast majority of women stay in domestic work (Parent 2008). Additionally, Elder and Kone (2014), find that compared to those with higher levels of schooling, young people who have not attended school or have only completed primary-level education are more likely to fall in the more insecure categories of self or temporary employment. These results are in congruence with 2013 SWTS descriptive results from Uganda that showed a strong correlation between the levels of education and a young person's labour market transition: the higher the educational attainment, the more likely a young person was to complete his or her labour market transition to stable and/or satisfactory

employment (Byamugisha *et al.* 2014).

With an annual population growth rate of 3 percent (UBoS 2016), Uganda is undoubtedly one of the countries with the highest population growth rates. Although total fertility rate for the country has been on the decline—from an average of 6.7 in 2006 to 5.7 births per woman in 2016 (UBoS and ICF, 2017), Uganda's fertility still remains high in comparison to the East African Community (EAC) neighbours. This high fertility rate may have a bearing on a woman's ability to work: the presence, age and number of young children in a household are some of the variables that can explain women's limited engagement in work (especially formal work) in some developing countries. This is attributed to the fact that women are more often looked at as primary suppliers of household care needs which obviously increases with the presence of children.

The study by Longwe *et al.* (2013) does confirm that African women work less than they would wish to due to caring responsibilities: the study finds that having more children below six years of age, and more so, having the last two children closely spaced is negatively associated with women's non-farm employment. Similarly, modelling the determinants of labour market outcomes in Uganda, Bridges and Lawson (2008), find that for females, both the number and age of children have an effect on the likelihood of being in wage employment: the number of children in the household has an increasingly negative effect on their likelihood of being in wage employment (relative to self-employment) with the probability of being in wage employment falling from 10 percent for a woman in a household with 1 child to 3 percent for a woman in a household with 5 or more children. In addition, both the number of 0–5-year-olds in the household and the dependency ratio further lower their probability of being in wage employment (relative to self-employment) (Ibid). Conversely, Solomon and Kimmel (2009) find female labour supply and fertility not to be inversely related in Ethiopia. They attribute their findings to the persistence of traditional extended family structures where a mother may not be forced to leave the workforce due to the presence of other family members and elder children who may help to take care of an additional child.

3. DATA AND DESCRIPTIVE EVIDENCE

The paper draws heavily on the School to Work (SWT) data conducted by the Uganda Bureau of Statistics (UBoS) in 2015. It was a national wide cross section survey. A two stage stratified sampling design was used. At stage one, enumeration areas (EAs) were grouped by rural/urban location, then drawn using the probability proportional to size. In total 160 EAs were selected from rural areas and 40 EAs from urban areas based on the 2012 Uganda Population and Housing Census mapping frame. At the second stage, 15 households per EA were selected using systematic random sampling. The surveys were implemented by UBoS as part of a global effort by the International Labour Organisation (ILO) to investigate school transitions in 28 developing countries. The survey provides data on demographics (age, gender, and marital status), parents' education and occupation, and several labour market indicators (e.g. first job characteristics, current labour force status, earnings, hours worked, the type of work undertaken and employer characteristics, unemployment). For the purposes of this paper, the analysis focuses on completed interviews for usual members.[3] While the survey targeted youth population in the age groups of 15-30 years of age, this paper focuses on those in the age bracket of 15-24 as at the time of the interview. Accordingly, this leaves 2,046 individuals (968 boys and 1,078 girls) from 1,298 households.

The community variables were sourced from the 2014 Uganda Housing and Population Census conducted by UBoS. With technical support from UBoS, it was possible to link the EAs covered in the SWT data to their respective Census data as in 2014 – this is retrospective information as at that time the study target group was one year younger. However, about 8 percent of the households could not be matched with the Census data. The relevant community information for this study include: access to school and health facilities; most common economic activities; most common land tenure system; access to microfinance services and mobile network coverage – all within the local council 1 (LC1).

Table 1 presents the descriptive statistics of the key variables of interest. More than half (53.8 percent) of the girls have either no formal education or not completed primary education cycle. Only 30.3 percent had at least some secondary education. At the time of the survey only, 36.3 percent of the young women aged 15-24 years were still in school, the shares increases to 45.5 percent when restricted to the cohort of 15-21 years. The early drop out of school presents a high risk of early marriage and in turn narrow their life opportunities and choices.

Forty one percent of the girls are married, with mean age at first marriage at 17.9 years and nearly four in every ten young women have at least one child. However, child marriage - below the age of 18 years as per the Uganda Constitution - stood at 35.4 percent, with the highest incidence in eastern region and with a higher likelihood for those young females living in poor households. Nearly 48.8 percent of the female target group have the first job either in wage employment or self–employment where the average age stands at 20.5 years; and 51.2 percent are engaged as unpaid family workers or engaged in domestic chores where the mean age stands at 19.2 years. However, this paper examines labour market decisions with and without household based activities.

The paper also considers parental educational characteristics by gender. The share of fathers with no formal education (12.8 percent) was two-fold that of their mothers (26.1 percent); and fathers were more educated than mothers – for instance only 21.2 percent of mother had attended at least some secondary education compared to 33.4 percent of the fathers.

Thirty five percent of the girl lived in communities with access to primary schools (30 percent), secondary school (17.3 percent), and health facilities (21.5 percent). Nearly seven in ten, lived in communities that had a microfinance institution. Furthermore, these girls lived in areas with a low sex ratio of nine boys to 10 girls as well as with an average of 37.7 percent share of married women in the total women population for a given a cohort.

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3 Usual member refers to a person that has stayed in a given household for six or more months. It also includes new born babies.

4. MODELLING AND ESTIMATION PROCEDURES

This paper investigates four critical decisions/choices that young women make in their life cycle as mentioned in section 1. The choices include: educational attainment, age at first marriage, age at first birth, age at first entry into labour market. These choices may not be made sequentially as presented here. The paper follows with some limitations the model specifications in Marchetta and Sahn (2016). Specifically, the authors studied the interactions between the education, work and fertility decisions. They estimate four separate models for: educational attainment using an Ordered Probit model; and a hazard model for age at first marriage, age at first birth and age of entry into the formal labour market. These are modelled as a function of different individual, parental, household and community effects, but each equation includes an exclusion restriction (a factor included in that equation but not in any other), which is needed to identify the equation. In addition to this, there are unobservable factors (e.g. women's preferences) which are likely to affect the outcomes and which will be correlated across equations. To address this, Marchetta and Sahn (2016) assume sisters within the same household share identical heterogeneity components in each equation. Both the exclusion restrictions and allowing for these unobservable factors are needed to identify the equations.

Education

In this paper, educational attainment is measured by the highest level of education attained by the young women as at the time of the survey. It also considers young women who were still in school at the time of the survey. This presents a problem of right censoring to the model. As pointed out by Glick *et al.* (2015) inclusion of these young women in the model might lead to biased estimated since their educational attainment at that time might not reflect their final educational attainment; and the treatment of siblings from the same household. Thus given the nature of the educational outcome indicator, the paper adopts an ordered Probit model as presented in Eq. (1) where $Educ_i^*$ is unobservable. Three levels of education outcomes are considered: no

formal school/some primary; completed primary and at least some secondary education.

(1) $Educ_i^* = f(individual, family, location, community, exclusion) + \varepsilon_i$

The individual characteristics include year of birth and age in completed years. These variables enter the model as continuous variable. The family characteristics are captured by the parental educational attainment. There is almost consensus in literature that the impact of father and mother's education are likely to be different on the educational achievement of a child. The paper considers four parental education dummies: parent with no formal education; parent with incomplete primary education; parent being a primary education graduate; and parent with at least secondary education. These dummies enter the model separately for fathers and mothers with parent with no formal education as a reference category.

Financial status/economic status matters for education investment decisions. The economic/wealth status of the household is another family variable constructed based on the young woman's description of the financial status of her household. The wealth status for a given household takes on 1 (or poor status) for a description as "fairly poor" or "poor", otherwise takes on 0 as "well off", "fairly well off" or average".

The locational characteristics captured by place of residence dummy variable for previously living in urban or rural area, and region of residence. Uganda has four major administrative regions (Central, Eastern, Northern and Western) with significant socio-economic development disparities and variations in cultural beliefs (see Ssewanyana and Kasirye, 2014), which might impact on the young woman's choices. The central region is considered as the reference category. Turning to place of residence, most Ugandans reside in rural areas and majorly involved in agricultural activities and with less access to school facilities. The rural area is considered as the reference category.

The community characteristics such as access to road (by quality – all weather, seasonal roads and no road), availability of micro-finance institution within the Local Council 1 (LC 1). The exclusion restrictions are binary dummies indicating availability of school

facilities within LC 1 – the facilities include primary and secondary schools. The paper assumes that the presence of school facilities, especially secondary schools, will indirectly help in keeping the young women in school and in turn delay marriage and early labour market entry. It should be noted that these exclusion restrictions are not included on the other models as presented in Eqs. (2)-(4). It should further be noted that all the above model variables that enter the education model are dummies with the exception of the year of birth variable.

Marriage

The age at first marriage is modelled with a proportional hazard model as presented in Eq. (2).

(2) $lnH_i^m(t) = f(individual, family, location, community, exclusion) + \varepsilon_i$

where $lnH_i^m(t)$ is the log of the ratio between the probability of getting married at time t over cumulative probability of not having married up to time t. The hazard function provides estimates of the relative risks with the reference groups. The risk of first marriage begins at age 14 based on the study targeted population with some degree of regional variation. For those young females who were not married at the date of interview, the variable represents their ages at the date of interview. The individual characteristics are similar to those in Eq (1), with the exceptional of the age in completed years dummies, educational attainment (predicted from Eq. (1)) and duration out of school in years. This last variable is constructed based on the age when the young woman left school. It captures the extent to which duration, say, in time out of school influences the labour market decisions. It provides useful information on when interventions should be pushed to mitigate the negative effects. Duration of the school is included in the model as a spline, allowing the slopes on the years of school relation to be different for 0-3 years, 3-6 years and beyond 6 years. Additional community characteristics include security of land tenure within the LC 1.

To a great extent social norms and beliefs affect marriage behaviour in some communities in Uganda (UNDP 2015, MoGLSD 2015). These norms are captured as exclusion restriction variables (in their

continuous form) in the model. Following Glick *et al.* (2015), the variables include: *sex-ratio* which is measured as the ratio of the number of men to women within a given age cohort computed at the sub-county level within each district. The sex ratio captures relative availability of potential spouse. The *market share* measured as share of married women greater than five years and less than 20 years of the age of the ith women in total women population born in the same year. These two variables were constructed based on the household roster and the computations exclude the ith woman.

Age at first birth

The SWT data used in this paper does not include age at first birth as such – which has been used in the literature to capture fertility decision. Instead, the paper uses a proxy in terms of number of children ever born[4] by the ith young woman and models this decision using the ordered Probit model as expressed in Eq. (3) with $Child_i^*$ unobservable. There are three discrete categories: no children, one-child, and two or more children.

(3) $Child_i^* = f(individual, family, location, community, exclusion) + \varepsilon_i$

The individual characteristics which are not common with the other model include: the duration in marriage in completed years that enters the model as a spline, allowing the slopes on the years in marriage relation to be different for 0-3 years, 3-6 years and beyond 6 years. The exclusion restriction variable is availability of health facilities within LC 1 that enters the model in a dummy form.

Labour market

The age at first entry in the labour market is modelled with a proportional hazard model as presented in Eq. (4). The beginning of exposure to labour market including subsistence activities starts at age 5.

(4) $lnH_i^b(t) = f(individual, family, location, community, exclusion) + \varepsilon_i$

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4 No information is available in the data on the number of children that died. The paper makes a very restrictive assumption that all children ever born by these young women were still living.

where $lnH_i^b(t)$ is the log of the ratio between the probability of entering the labour market at time t over cumulative probability of not having entered the labour market up to time t. The independent variables are similar to those in the above equations but with some exceptions. For the individual characteristics, the duration out of school as at the date of interview is included; and the exclusion restrictions as a dummy on the availability of local produce market. The additional community variables include a dummy on agriculture as the major economic activity for individuals aged 18-30[5] years of age. In this paper two versions of the hazard of early entry in the labour market are estimated. One version takes the labour market to include the household based activities where the ith young woman does not receive any pay; and other version excludes these household based activities. On the side, the paper also compared the results with their male counterparts.

Estimation strategy

Bringing it together, the above models present critical decisions in a young woman's life cycle that seem to be made jointly. This creates complexity in terms of the endogeneity problem (see Glick *et al.* 2015; Marchetta and Sahn 2016). As noted, the models include community characteristics intended to control the impact of unobservable characteristics/factors that might include more than one of the four choices. In addition, the endogeneity of some variables such as education of the young women, and duration in marriage, among others, in the other models is taken care of. The paper takes into account the missing information of the model variables to minimise loss of information. Several model variants are estimated to check on the robustness of the estimates.

5. DISCUSSION OF THE RESULTS

5.1 Education

The results are presented in Table 2. Education of mothers and fathers have impact on schooling. The marginal effects are positive but with noticeable higher impact for father's education relative to a mother's education. The impact increases with higher education levels. The significant negative impact of economic burden on schooling outcomes disappears upon inclusion of the parental education as well as local community characteristics.

The regional dummies as expected impact on educational attainment and to a greater extent the impact follows the level of socio-economic development. Young women residing in urban areas were more likely to have higher education attainment, this finding is robust. Most of the included community variables have the expected signs and some are not statistically significant. The presence of roads have significant impact on the educational outcomes though has a quality dimension. As expected the impact is greater with all-weather roads compared to seasonal roads.

5.2 Age at first marriage

The hazard model results are presented in Table 3. Relative to the younger cohort of 14-17 years of age, the risk of marriage increases with age. Furthermore, the results indicate that hazard of early marriage seem to be reducing through generations – year of birth is an important determinant of timing of first marriage. This finding is robust.

Here the interest is on how schooling affects early marriage. As expected, the hazard to early marriage reduces with higher educational attainment compared to no formal education/some primary education. In other words, there is likely to be delayed marriage among those young women with higher educational attainment. This finding is consistent with the existing literature on schooling and marriage. These findings seem to suggest that enforcing the Uganda laws that prohibit early marriage could go a long way in curbing

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5 The census captured information for age group 18-30 years not 15-24 years.

transmission of education poverty across generations. The duration out of school matters especially for those young women with three years and below of out of school. The risk is positive and significant – implying leaving school earlier increases the risk of early marriage other factors remaining constant. As much as one of the reason for girls' dropping out of school is pregnancy, these result imply that the first three years of out of school are critical in determining the next cause of action for these young women. This calls for strategic interventions during this period to mitigate the early marriage practises.

The existing literature suggests that parental education reduces the risk of early marriage (see e.g. Marchetta and Sahn 2016). However, for the case of Uganda parental educational attainment seem not to have a significant direct effect on the hazard of early marriage after controlling for the educational attainment of their girls. This has to be interpreted with caution since as discussed earlier parental education has a significant indirect effect through its impacts on the young woman's own educational attainment.

Poverty is one of the most cited risk factor for early marriage in sub-Saharan African countries. The hazard of early marriage is greater for the young women living in poor households relative to their counterparts living in non-poor households. However, this significant direct effect is lost after controlling for place of residence. Probably this is explained by the fact that poverty in Uganda is a rural phenomenon.

The results confirm that geography matters. With regard to the region of residence, the risk of early marriage is significantly greater for young women in the eastern region relative to their counterparts in the central region. This finding is robust across the model variants. As expected, the results confirm a lesser risk to early marriage among young women living in urban areas than those in rural areas. The pace of early marriages is slower among young women that previously resided in urban areas relative to their counterpart in the rural areas. Probably explained by the diversity of life styles which influence the timing of marriage. This is a confirmation that early marriages are significantly associated with rural areas. However, the significant direct effect disappears upon inclusion

of the young women's educational attainment. This would be explained by the strong relationship between educational attainment and urbanisation – young women in an urban setting are more likely to have higher educational attainment compared to their counterparts in rural areas.

The socio-cultural practices matter. The higher the share of married women by cohort, the higher the hazard of getting married. This could partly be explained by peer influence of some sort as well as the existing strong social norms and beliefs. The sex-ratio was not significant and dropped from the model estimation.

The availability of a primary school in a community reduces the risk of early marriage significantly, assuming other factors remain constant. In other words access to primary school benefits young women. Access to primary schools is among the supply side interventions that the Government of Uganda started addressing especially during the Poverty Eradication Action Plan. However, as demonstrated by the results above having access to primary school alone might not address the early marriage concerns and in turn early labour entry.

5.3 Age at first birth

Next, the paper considers the determinants of age at first birth. However, due to data limitation on age at first birth, the paper uses a proxy in terms of number of children ever born. The results are presented in Table 4. The number of children even been born increases with the age of the young woman. Similarly, the older generation as measured by the year of birth is more likely to have more children than the younger one.

Young women resident in urban areas are likely to have fewer children compared to their rural counterparts. This will indirectly have a greater impact on the rural young women's ability to participate in the labour market due to greater responsibilities that come with many children. Having at least some secondary education relative to no education/incomplete primary education has a significant negative effect on the number of children. The parental education attainment has no significant effect upon controlling the young women's own education. The effect of time since marriage on

the number of children has a positive and significant effect of being married for 0-3 years but a negative and insignificant effect is noted for being married for 3-6 years and beyond six years. This implies that policies towards delaying marriage will also lead to lower number of children and in turn impact on the young women's ability to participate in the labour market. Contrary to expectations, presence of health facilities within LC1 has a positive and significant effect on number of children.

5.4 Age at first entry into labour market

In this section, where necessary, the results (see Table 5, Panel A) are compared with those of the young men (see Table 5, Panel B) in the same age cohort to bring the gender perspective.

The risk of entering the labour market at such an early age increases with the young women's age and is significant. Relative to those with no formal/incomplete primary education, the risk of early entry in the labour market reduces for young women with at least some secondary education. This effect is robust across the model variants. The effect of time since leaving school has a positive effect but only significant for those being out of school for 0-3 years. The impact is greater once the household based activities are omitted.

Parental education reduces the risk of early labour entry, though significant for only paternal education. The father's educational attainment matters for their daughter's joining of the labour market. The results reduces as education attainment increases. In other words, young women whose fathers have attained some education are much less likely to engage in early labour entry, however, this significant effect is lost upon exclusion of household based activities. The impact on young men is only significant when the father has attained at least secondary education. Similar results are noted for mother's education attainment, though the results are not statistically significant. This is true for both young men and women.

As expected, young women living in poor households have a higher risk of joining the labour market earlier relative to their counterparts in non-poor households— though this finding is not robust across the model

variants. However, the results are robust for boys.

Geographical location matters to a great extent regardless of gender. The risk of entering labour market reduces for young women that are resident in the western and eastern regions relative to their counterparts in the central region. However, the reduction is only significant and robust across all the three model variants for young women in the eastern region. The plausible explanation could be derived from the early marriage model estimates (in section 5.2) where young women in this region are at a higher risk of early marriage. Because of the caring responsibilities they engage in their earlier lives, they are not able to join the labour market. However, the hazard of early labour market entry reduces faster upon exclusion of household based activities for the young women resident in the eastern and northern regions.

The results for young men are similar to those of the young women in the eastern region. Although, the hazard of young men joining the labour market reduces significantly in the western region, which is not the case for the young women. Broadly speaking, the effect of region of residence seem to be higher for young men than young women – manifestation of gender inequalities.

Presence of local market increasing the hazard of joining the labour market among the young women. The risk is not significant with inclusion of the household based activities. However, the effect is positive and significant upon exclusion of household based activities. The effect is significant for young men regardless of inclusion or exclusion of household based activities. Market presence presents better opportunities for working outside household based activities. As expected the effect of presence of produce market is greater for young men than their women counterparts.

6. CONCLUSIONS

Using the SWTs data for Uganda, the paper sought to provide insights into the key choices is a young woman's life including education, marriage, fertility and entry into the labour market with particular attention to labour market decisions.

There is a regional dimension on the timing of marriage with a higher risk of early marriages observed in the northern and eastern regions. The social awareness programs by the civil society organisation as well as the existing policies seem to have had limited impact. The placement of such programs should be regional specific as blanket interventions have proved to be inappropriate. Second, there is need to enforce the laws prohibiting early marriages and effective implementation of the related policies and strategies.

Education impacts on early labour entry, age at first marriage and fertility decisions. The results have demonstrated that duration out of school especially in the first three years has a significant direct effect on early labour market entry and age at first marriage. In first three years after leaving school is a critical period for a young woman's next cause of action. This calls for strategic interventions during this critical period to mitigate early marriage and labour market entry. Breaking the transmission of education poverty from one generation to another would go a long way in addressing early marriages.

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Table 1: **Variable definitions and descriptive statistics**

Variables	Description	Mean	*sd*
Individual characteristics:			
Age	Age in completed years	19.17	2.797
Year of birth		1,995	2.829
Age at started first employment		14.85	4.293
Age when finished formal education		15.4	3.472
Age at first marriage		17.9	2.240
Age at first marriage missing		0.039	0.194
Educational attainment [rf: no schooling/some primary]:			
No schooling/some primary	Dummy=1 if some primary	0.538	0.499
Completed primary	Dummy=1 if completed primary education	0.159	0.365
At least some secondary	Dummy=1 with at least some secondary education	0.303	0.46
Number of children		0.675	1.026
Marriage dummy	Dummy=1 if marriage at that of interview	0.414	0.493
Working status	Dummy=1 for first job experience	0.659	0.474
Working in household based activities	Dummy=1 if first job experience was household based with no pay	0.521	0.500
Family characteristics			
Father's education [rf: no schooling]:			
No schooling		0.128	0.334
Some primary		0.321	0.467
Completed primary		0.217	0.412
At least secondary		0.334	0.472
Missing father education		0.143	0.350
Mother's education [rf: no schooling]			
No Schooling		0.261	0.439
Incomplete Primary		0.376	0.485
Completed Primary		0.152	0.359
At least Secondary		0.212	0.409
Missing mother education		0.122	0.328
Economic status: [rf: non-poor]			
Poor status		0.547	0.498
Locational characteristics			
Urban dummy		0.275	0.447
Region of residence [rf: Central region]			
Central		0.277	0.448
Eastern		0.26	0.439
Northern		0.293	0.455
Western		0.170	0.376
Community characteristics within LC 1			
All weather road		0.352	0.478
Seasonal road		0.469	0.499
No road		0.179	0.384
Availability of microfinance institutions	Dummy=1 if institution available	0.712	0.453
Secure land tenure	Dummy=1 secure land tenure	0.416	0.493
Availability of primary schools	Dummy=1 if primary schools available	0.300	0.458
Availability of secondary school	Dummy=1 if secondary schools available	0.173	0.378
No community characteristics	Dummy=1 missing community information	0.091	0.288
Exclusion restrictions			
Marriage model:			
Sex-ratio male to female-cohort		0.903	0.763
Share of married female to women-cohort		0.377	0.330
Age at first birth			
Availability of health facilities	Dummy=1 if health facilities are available	0.216	0.412
Age at first entry in labour market			
Availability of local produce market			

Source: Author computations based on Uganda SWT 2015.

Table 2: **Ordered Probit results for education**

Variable	Model 1	Model 2	Model 3	Model 4
Date of birth	-0.0341**	-0.0267	-0.0294*	-0.0302*
	-0.0159	-0.0165	-0.0159	-0.0162
Poor status	-0.439***	-0.196**	-0.077	-0.0827
	-0.08	-0.0862	-0.0929	-0.0919
Urban	0.761***	0.618***	0.525***	0.448***
	-0.0923	-0.0935	-0.093	-0.0979
Eastern		-0.380***	-0.254**	-0.128
		-0.118	-0.124	-0.135
Northern		-0.974***	-0.840***	-0.740***
		-0.138	-0.124	-0.143
Western		-0.492***	-0.349***	-0.226
		-0.113	-0.116	-0.136
Father Education: Incomplete Primary			0.359*	0.361*
			-0.191	-0.187
Father Education: Completed Primary			0.710***	0.698***
			-0.168	-0.164
Father Education: At least Secondary			1.008***	0.986***
			-0.174	-0.177
Mother Education: Incomplete Primary			0.105	0.0952
			-0.122	-0.118
Mother Education: Completed Primary			0.481***	0.463***
			-0.119	-0.125
Mother Education: At least Secondary			0.487***	0.479***
			-0.166	-0.169
Microfinance institutions in LC1				0.165
				-0.113
All weather road				0.327**
				-0.16
Seasonal road				0.289**
				-0.139
Presence of sec. school				0.102
				-0.117
No community characteristics	0.124	0.129	0.196	0.165
	-0.18	-0.154	-0.143	-0.139
Missing father education	-0.0525	-0.199	-0.599***	-0.573***
	-0.123	-0.12	-0.162	-0.166
Missing mother education	-0.0832	-0.148	-0.403**	-0.418**
	-0.133	-0.126	-0.198	-0.2
Observations	1078	1078	1078	1078

Table 3: **Results of the hazard of first marriage**

Variables	(4)	(5)	(6)	(7)	(8)
Age 18-20	1.361***	1.393***	0.946***	0.577*	0.886***
	(0.312)	(0.312)	(0.334)	(0.333)	(0.329)
Age 21-24	1.697***	1.749***	0.794*	0.383	1.087**
	(0.407)	(0.402)	(0.439)	(0.453)	(0.440)
Year of birth	0.153***	0.159***	0.250***	0.277***	0.186***
	(0.0506)	(0.0502)	(0.0648)	(0.0682)	(0.0579)
Poor status	0.1000	0.115	0.154	0.0584	0.0150
	(0.137)	(0.143)	(0.142)	(0.145)	(0.147)
Urban (rf:rural area)	-0.213	-0.211	0.0524	-0.0938	-0.315
	(0.207)	(0.202)	(0.190)	(0.193)	(0.202)
Eastern	0.534**	0.534***	0.0736	0.0537	0.437*
	(0.205)	(0.201)	(0.228)	(0.230)	(0.226)
Northern	-0.0324	-0.0241	-0.290	-0.198	0.0234
	(0.217)	(0.214)	(0.226)	(0.231)	(0.240)
Western	-0.0714	-0.0807	-0.283	-0.393	-0.191
	(0.227)	(0.228)	(0.253)	(0.248)	(0.238)
Completed Primary	-0.314*	-0.369**	-0.390**	-0.370**	-0.330*
	(0.158)	(0.160)	(0.168)	(0.166)	(0.167)
At Least Some Secondary	-1.626***	-1.703***	-1.676***	-1.265***	-1.257***
	(0.175)	(0.181)	(0.174)	(0.185)	(0.197)
Father Education: Incomplete Primary		0.0698	0.0145	-0.117	-0.0652
		(0.170)	(0.174)	(0.177)	(0.172)
Father Education: Completed Primary		0.143	0.0564	-0.0838	-0.0352
		(0.198)	(0.190)	(0.195)	(0.199)
Father Education: At least Secondary		0.147	0.220	0.122	0.0408
		(0.258)	(0.245)	(0.252)	(0.259)
Mother Education: Incomplete Primary		0.0159	-0.0487	-0.221	-0.173
		(0.150)	(0.146)	(0.145)	(0.148)
Mother Education: Completed Primary		0.167	0.0768	-0.0937	0.00833
		(0.169)	(0.159)	(0.162)	(0.169)
Mother Education: At least Secondary		0.0329	-0.00778	-0.164	-0.114
		(0.271)	(0.261)	(0.249)	(0.268)
Duration out of school 0-3 years				0.435***	0.450***
				(0.0661)	(0.0635)
Duration out of school 3-6 years				-0.0110	0.00783
				(0.0678)	(0.0649)
Duration out of school 6+ years				-0.0433	-0.0508
				(0.0401)	(0.0399)
Availability of microfinance institutions in LC1			-0.167	-0.157	-0.134
			(0.142)	(0.143)	(0.149)
Secure land tenure			0.0499	-0.00816	-0.0233
			(0.167)	(0.157)	(0.165)
All weather road			-0.0817	-0.184	-0.196
			(0.229)	(0.213)	(0.216)
Seasonal road			0.0272	-0.0720	-0.0917
			(0.180)	(0.167)	(0.168)
Availability of primary schools within LC1			0.316**	0.222	0.185
			(0.140)	(0.143)	(0.151)
Prop. married female to women-cohort			2.052***	1.807***	
			(0.377)	(0.396)	
No community characteristics	-0.235	-0.215	-0.204	-0.187	-0.115
	(0.172)	(0.175)	(0.184)	(0.182)	(0.190)
Missing father education	0.116	0.0658	-0.0898	-0.144	-0.0225
	(0.169)	(0.232)	(0.212)	(0.207)	(0.214)
Missing mother education	0.00438	-0.00333	0.0420	0.0983	0.101
	(0.224)	(0.292)	(0.275)	(0.252)	(0.274)
Sexratio. male to female-cohort					0.00617
					(0.0814)
Observations	1078	1078	1078	1078	1078

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: **Ordered Probit results for child bearing (in terms of number)**

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Age 18-20	0.605***	0.669***	0.686***	0.698***	0.510***
	-0.135	-0.151	-0.152	-0.151	-0.171
Age 21-24	0.936***	1.020***	1.039***	1.066***	0.640**
	-0.249	-0.255	-0.256	-0.257	-0.295
Date of birth	-0.237***	-0.251***	-0.250***	-0.247***	-0.132***
	-0.0413	-0.0382	-0.0387	-0.0385	-0.0435
Poor status	0.0377	0.0105	0.0189	0.0159	-0.0715
	-0.113	-0.117	-0.118	-0.119	-0.113
Urban	-0.373***	-0.144	-0.154	-0.207*	-0.186*
	-0.105	-0.102	-0.101	-0.107	-0.108
Eastern	0.320***	0.234*	0.243*	0.271**	0.0585
	-0.118	-0.133	-0.126	-0.127	-0.141
Northern	-0.0649	-0.359**	-0.365***	-0.280*	-0.374**
	-0.144	-0.142	-0.136	-0.143	-0.156
Western	0.0597	-0.121	-0.119	-0.0685	-0.12
	-0.149	-0.146	-0.143	-0.153	-0.155
Completed Primary		-0.0151	-0.0465	-0.0797	0.203
		-0.104	-0.103	-0.11	-0.128
At Least Some Secondary		-1.200***	-1.259***	-1.271***	-0.636***
		-0.138	-0.139	-0.138	-0.141
Father Education: Incomplete Primary			-0.0618	-0.07	-0.121
			-0.145	-0.145	-0.178
Father Education: Completed Primary			-0.0897	-0.0987	-0.191
			-0.167	-0.166	-0.188
Father Education: At least Secondary			0.178	0.168	0.11
			-0.179	-0.178	-0.195
Mother Education: Incomplete Primary			0.0446	0.0518	-0.00181
			-0.121	-0.121	-0.139
Mother Education: Completed Primary			0.0961	0.116	0.0264
			-0.139	-0.144	-0.171
Mother Education: At least Secondary			-0.0356	0.0089	-0.131
			-0.185	-0.189	-0.216
Duration in marriage 0-3 years					0.616***
					-0.059
Duration in marriage 3-6 years					0.12
					-0.0922
Duration in marriage 6+ years					0.23
					-0.26
Availability of microfinance institutions in LC1				0.149	0.119
				-0.119	-0.11
All weather road				-0.136	-0.119
				-0.152	-0.133
Seasonal road				-0.0786	-0.087
				-0.135	-0.122
Availability of health facilities within LC1				0.216*	0.163
				-0.119	-0.141
No community characteristics	-0.144	-0.166	-0.157	-0.193*	-0.167
	-0.121	-0.115	-0.117	-0.113	-0.13
Missing father education	0.0804	-0.0484	-0.226	-0.208	-0.267
	-0.158	-0.161	-0.198	-0.197	-0.203
Missing mother education	0.199	0.125	0.189	0.121	0.131
	-0.151	-0.16	-0.2	-0.205	-0.205
Observations	1078	1078	1078	1078	1078

Table 5: **Hazard model for early labour entry for young women and men**

Variable	Estimates for young women						Estimates for young men					
	Includes Household based activities			Excludes household based activities			Includes Household based activities			Excludes household based activities		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Age 18-20	0.286*	0.248	0.0242	0.245	0.248	-0.122	-0.0307	-0.0365	-0.132	0.182	0.18	0.015
	-0.153	-0.152	-0.169	-0.232	-0.237	-0.229	-0.156	-0.159	-0.16	-0.219	-0.225	-0.226
Age 21-24	0.418*	0.361	0.0155	0.278	0.297	-0.239	-0.0614	-0.103	-0.289	0.0466	0.0698	-0.228
	-0.245	-0.249	-0.263	-0.311	-0.319	-0.323	-0.264	-0.289	-0.286	-0.347	-0.378	-0.373
Date of birth	0.144***	0.141***	0.162***	0.133**	0.136**	0.167***	0.0815**	0.0755*	0.111**	0.116**	0.117**	0.197***
	-0.0355	-0.0354	-0.0339	-0.0569	-0.0576	-0.0553	-0.0395	-0.0414	-0.0438	-0.0535	-0.0568	-0.0581
Poor status	0.0043	-0.0218	-0.0412	0.13	0.148	0.0792	0.0987	0.101	0.0605	0.104	0.101	0.0147
	-0.0967	-0.0965	-0.0924	-0.133	-0.132	-0.127	-0.0989	-0.101	-0.0992	-0.127	-0.125	-0.133
Urban	-0.0628	-0.0556	-0.0989	0.151	0.148	0.036	-0.0897	-0.0701	-0.126	0.272*	0.276*	0.0807
	-0.118	-0.118	-0.153	-0.157	-0.155	-0.179	-0.128	-0.124	-0.148	-0.157	-0.156	-0.182
Eastern	-0.385**	-0.388**	-0.392**	-0.708***	-0.721***	-0.740***	-0.556***	-0.576***	-0.589***	-0.687***	-0.687***	-0.655***
	-0.169	-0.171	-0.175	-0.235	-0.252	-0.256	-0.162	-0.165	-0.165	-0.232	-0.227	-0.229
Northern	0.189	0.151	0.174	-0.646**	-0.692***	-0.600*	-0.131	-0.123	-0.109	-0.791***	-0.779***	-0.704***
	-0.204	-0.199	-0.186	-0.258	-0.254	-0.304	-0.138	-0.136	-0.132	-0.22	-0.228	-0.191
Western	-0.196	-0.242*	-0.266*	-0.149	-0.191	-0.181	-0.345*	-0.370**	-0.411**	-0.303*	-0.285*	-0.260*
	-0.134	-0.145	-0.156	-0.192	-0.203	-0.195	-0.178	-0.176	-0.163	-0.167	-0.17	-0.141
Completed Primary	-0.167	-0.105	-0.102	-0.0823	-0.0914	-0.121	0.132	0.172	0.146	0.329*	0.291*	0.293**
	-0.109	-0.11	-0.109	-0.126	-0.129	-0.134	-0.119	-0.118	-0.112	-0.166	-0.167	-0.141
At Least Some Secondary	-0.774***	-0.698***	-0.422***	-0.515***	-0.531***	-0.105	-0.696***	-0.612***	-0.315***	-0.772***	-0.794***	-0.246
	-0.116	-0.12	-0.121	-0.145	-0.15	-0.17	-0.111	-0.111	-0.118	-0.162	-0.163	-0.153
Father Incomplete Primary		-0.276**	-0.340***		-0.0694	-0.128		0.0539	0.0161		0.124	-0.00275
		-0.108	-0.115		-0.17	-0.184		-0.154	-0.145		-0.228	-0.216

| Variable | Estimates for young women | | | | | | Estimates for young men | | | | | |
| | Includes Household based activities | | | Excludes household based activities | | | Includes Household based activities | | | Excludes household based activities | | |
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Father Completed Primary		-0.337**	-0.365***		-0.153	-0.17		-0.131	-0.129		0.101	0.0739
		-0.128	-0.129		-0.194	-0.21		-0.198	-0.182		-0.276	-0.261
Father At least Secondary		-0.334**	-0.384***		0.0232	0.0217		-0.213	-0.251		0.0208	-0.072
		-0.14	-0.137		-0.202	-0.197		-0.198	-0.194		-0.238	-0.242
Mother Incomplete Primary		-0.118	-0.154		-0.191	-0.289*		-0.108	-0.109		0.167	0.254
		-0.115	-0.115		-0.164	-0.162		-0.124	-0.122		-0.156	-0.161
Mother Completed Primary		-0.174	-0.21		0.0103	-0.0825		-0.00675	0.00141		0.343	0.426**
		-0.154	-0.146		-0.195	-0.188		-0.155	-0.14		-0.207	-0.189
Mother At least Secondary		-0.108	-0.0967		-0.151	-0.206		-0.105	-0.00553		0.113	0.288
		-0.161	-0.143		-0.235	-0.194		-0.158	-0.141		-0.198	-0.199
All weather road			-0.0288			-0.178			-0.199			-0.0679
			-0.219			-0.206			-0.183			-0.225
Seasonal road			0.0821			-0.121			-0.0718			-0.151
			-0.188			-0.168			-0.165			-0.206
Local Market			0.12			0.319*			0.354***			0.518***
			-0.146			-0.188			-0.134			-0.181
Major economic activity			-0.0259			-0.181			0.0765			0.0343
			-0.137			-0.134			-0.128			-0.149
Duration out of school 0-3 yrs			0.213***			0.327***			0.194***			0.350***
			-0.056			-0.0728			-0.0544			-0.0655

| | Estimates for young women | | | | | | Estimates for young men | | | | | |
| | Includes Household based activities | | | Excludes household based activities | | | Includes Household based activities | | | Excludes household based activities | | |
Variable	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Duration out of school 3–6 yrs			0.0203			0.0501			0.0394			0.0934
			-0.0554			-0.0643			-0.0588			-0.0835
Duration out of school 6+ yrs			0.0225			0.0163			-0.00716			-0.0432
			-0.0331			-0.0469			-0.0415			-0.0545
No community characteristics	-0.064	-0.0814	-0.0448	-0.0569	-0.0784	-0.0207	0.0619	0.0683	0.128	0.0228	0.0454	0.0784
	-0.175	-0.173	-0.173	-0.191	-0.186	-0.185	-0.19	-0.183	-0.174	-0.206	-0.214	-0.211
Missing father education	-0.0691	0.00603	-0.0501	-0.145	-0.214	-0.304	0.0446	0.17	0.177	0.0436	0.0764	0.0752
	-0.133	-0.144	-0.145	-0.181	-0.203	-0.188	-0.126	-0.13	-0.133	-0.159	-0.177	-0.189
Missing mother education	-0.139	-0.11	-0.192	-0.134	-0.0895	-0.209	-0.00228	0.0675	-0.0115	0.0538	0.0618	0.0211
	-0.136	-0.173	-0.172	-0.171	-0.221	-0.196	-0.158	-0.199	-0.195	-0.161	-0.245	-0.246
Observations	1078	1078	1078	1078	1078	1078	968	968	968	968	968	968