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Inequality? Evidence from Christian
Kampala, 1895-2011**

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A Colonial Legacy of African Gender Inequality? Evidence from Christian Kampala, 1895-2011

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Abstract: The colonial legacy of African underdevelopment is widely debated but hard to document. We use occupational statistics from Protestant marriage registers of historical Kampala to investigate the hypothesis that African gender inequality and female disempowerment are rooted in colonial times. We find that the arrival of Europeans in Uganda ignited a century-long transformation of Kampala involving a gender Kuznets curve. Men rapidly acquired literacy and quickly found their way into white-collar (high-status) employment in the wage economy built by the Europeans. Women took somewhat longer to obtain literacy and considerably longer to enter into white-collar and waged work. This led to increased gender inequality during the first half of the colonial period. But gender inequality gradually declined during the latter half of the colonial era, and after Uganda's independence in 1962 its level was not significantly different from that of pre-colonial times. Our data support Boserup's view that gender inequality was rooted in native social norms: daughters of African men who worked in the traditional, informal economy were less well educated, less frequently employed in formal work, and more often subjected to marital gender inequality than daughters of men employed in the modernized, formal economy created by the Europeans.

Keywords: Africa, Church Books, Colonialism, Development, Female Disempowerment, Gender Discrimination, Gender Inequality, Missionaries, Uganda

JEL Codes: N37, J12, J16, N97, O55.

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I

Introduction

It is well known that Sub-Saharan Africa has lagged behind the rest of the world for many decades, at least since the 1960s, when most of today's African states gained independence from their European colonial powers. It is not so well known, however, for how much longer Africa had lagged behind, and to what extent colonial Africa was developed, or stunted, by the colonial powers. Historical data that might inform us scarcely exist, and the little data that is available is often unreliable (Jerven 2013). Empirical investigations into Africa's colonial past are often limited to the study of national-level variables, recorded long ago by colonial agents who gave primacy to statistics regarding the colonizer's own activities (notably exports and taxes). Native Africans and the informal economy have received little or no attention. Missionary activities seem to have positively impacted on the educational attainments of contemporary Africans (Nunn 2014), but to what extent colonial activities more broadly have translated into human capital formation, labour market opportunities, and social mobility among African men and women, today and in the past, remains an open question.

Recent scholarship has pointed to women's lack of access to education and formal employment as a barrier to African economic growth (Duflo 2012; World Bank 2011). Earlier scholarship has suggested that this marginalization of women is rooted in colonial times. During her numerous visits to Africa in the 1960s, Ester Boserup observed that the modernized (formal) sectors were primarily reserved for men, while women were mainly engaged in informal work (Boserup 1970). Boserup hypothesised that a key reason why women were discouraged from entering into formal employment was that African men 'loathed the idea of their wives and daughters working under the authority of a foreign man'

(*ibid.*, p. 178). Akyeampong et al (2012, 2013) have advanced Boserup's hypothesis further, reasoning that since post-colonial, male-dominated politics did little to correct these gender imbalances, today's marginalization of African women is a legacy from colonial times. But the lack of long-term gender-specific occupational information has prevented empirical investigations of this hypothesis.

In this paper we propose a novel empirical basis for testing the hypothesis that gender inequality and female disempowerment is a legacy of colonial times. Our data come from the church books of one of the earliest and largest Protestant parishes in Sub-Saharan Africa, St. Paul's Cathedral in Kampala, containing more than 16,000 historical marriages. The recorded statistics provide uncharted access to the educational and occupational performances of Christianized African men and women dating back to pre-colonial times. Our sampled birth cohorts spread across four distinct eras of Ugandan history: the pre-missionary period (pre-1877); the (intermediate) pre-colonial period (1877-1894); the colonial period (1894-1962); and the post-colonial period (post-1962). The data facilitate an investigation of individual performances and gender inequalities within five distinct areas of accomplishment: (i) numeracy skills; (ii) literacy skills; (iii) working skills; (iv) white-collar (i.e. high-status) employment, and (v) formal-sector (i.e. waged) employment. Our statistics also provide insight into female labour force participation rates across the four eras of Ugandan history mentioned above.

Our data clearly demonstrate that the arrival of missionaries and colonial agents dramatically changed the educational and occupational structures among the sampled population, initiating a century-long transformation of Kampala from an entirely rural

economy to one of urban modernity. We find that this transformation initially amplified gender inequality within those capacities that we are able to measure, both between cohorts of birth and within marriage. Our sampled men and women both underwent a literacy revolution following the arrival of the missionaries, with literacy rates rising from 0% to nearly 100% within three generations. But the literacy revolution among women came with a delay of about three decades causing the gender gap in literacy to grow substantially. We observe similar patterns with regard to female labour market opportunities: women took on average considerably longer than men to acquire working skills and to enter into waged and white-collar (high-status) work. But towards the end of the colonial era, notably after 1950, women started to catch up with men within most of these areas. Today the gender inequality within the capacities that we are able to observe is either completely gone or is miniscule compared to colonial times.

We also find that social background, captured by the occupational status of the fathers of our sampled men and women, played a key role both for the educational and occupational performances of the offspring and for their gender inequality within marriage. Our data show that daughters of fathers engaged in the traditional, informal economy were less well educated, less frequently employed in formal work, and more often subjected to marital gender inequality compared to the daughters of fathers employed in the modernized, formal economy created by the Europeans. These findings lend support to the Boserupian notion that female labour market segregation was linked to African social norms. Our data reject the hypothesis, however, that colonial gender inequality in educational and occupational opportunities continued into the post-colonial era: marital gender inequality among the sampled population was not significantly different from its pre-colonial level at any point in

time following Uganda's independence in 1962. Even Idi Amin's political regime of the 1970s, renowned for its campaign against women working outside the household, had no significant impact on the gender inequality among our sampled couples.

Our paper proceeds as follows in order to demonstrate these findings in detail. After providing a brief historical background (Section II), we describe our data (Section III) and illustrating them (Section VI). Then, we present the results of our regression analyses (Section V) and conclude (Section IV).

II

Brief Background

Before Uganda became a British Protectorate in 1894, the Kingdom of Buganda, situated along the northern shore of Lake Victoria, was a centralized state of feudal structures with a *kabaka* (king), territorial lordships (chiefs), and a peasant class. The greater Mengo area, in which today's Kampala is situated, was the most densely populated region in Buganda, home to some 70,000 *bakopi* (peasants). The Kingdom had engaged intensively in the trade of ivory and slaves for cotton clothe, beads, firearms, and gunpowder with Swahili and Arab merchants since the 1850s, with Kampala as the main commercial hub of the region (Reid 2002).

A well-controlled peasant population, the fertile soil of the surrounding area, and the tradition of trade made Kampala the principal 'node' of the British Protectorate and thus the location from which both Christian missionaries and British (indirect) rule spread. Unlike its neighbouring country Kenya, Uganda was not a settler economy and its land remained in

possession of the Ugandans. Instead, the British colonial authority introduced a cash crop economy (mainly cotton and coffee) based on indigenous responses to commercial opportunities and accompanied by colonial tax obligations.

The first urban planning of Kampala (and its then close to 3,000 citizens) came in 1912. Kampala remained a moderate-sized town with around 25,000 residents in the 1940s growing to reach some 50,000 residents around the time of Uganda's independence in 1962. After independence Kampala grew considerably, first to 352,000 residents in 1969, then to 774,241 in 1991. Today Kampala has a population of over 1.5 million (McMaster et al 1975; Omolo-Okalebo et al 2010).

Christianity is by far the most popular religion in Kampala, with nine out of ten adults being declared as Christians in 2002 (UBOS 2006). Hastings (1994, p. 464) has said of the Kingdom of Buganda that 'there was both large-scale conversion to Christianity in the pre-colonial era and a mass conversion movement within the early colonial age.' The spread of the gospel in Buganda was faster than in other regions of Uganda (Oliver, 1952; Taylor 1958; Ward 1999; Meier zu Selhausen 2014). Mission statistics from the colonial Blue Books of the Protectorate of Uganda confirm this 'explosive' indigenous reception of Christianity. The share of Christian affiliates among the population of Buganda grew from 23% in 1910 to 74% in 1959, and Buganda had the highest total number of mission school enrolments in the whole of British Africa in 1938 (Frankema 2012).

III

Data

Our data comes from the earliest and largest Christian missionary station in Uganda: the Anglican Church Diocese of Namirembe, established in 1890 and situated in Kampala. The Diocese's original barn church, housing 3,000 people, was destroyed during a thunderstorm in 1894 (Moon 1994). The church's fast-growing popularity inspired the construction of a new church in 1895 with a seating capacity of 4,000. This event marks the starting point of our marriage register series, which ends in 2011. The series is complete apart from the books covering the years 1900-1907, which were lost after lightning set fire to the thatched roof of the church in 1910. Following the fire, the current St. Paul's Cathedral was constructed between 1915 and 1919. This was the largest house of God in sub-Saharan Africa at the time, where thousands of Christian affiliates gathered every Sunday (Hastings 1994; Taylor 1958).

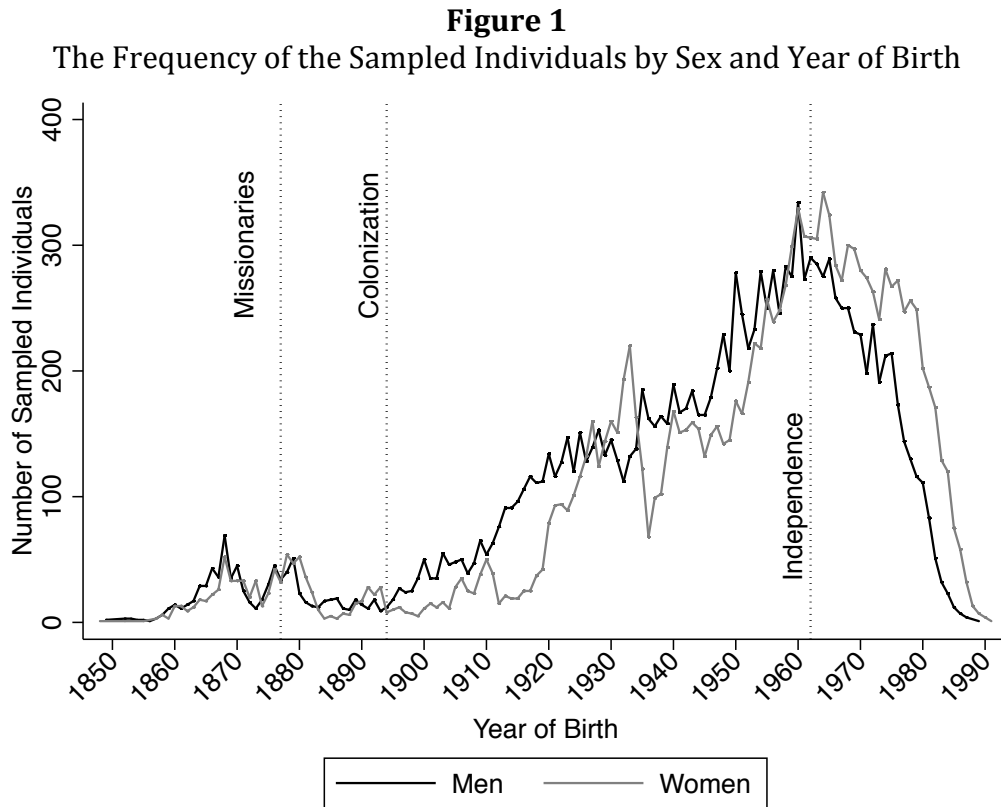
Our marriage registers contain some key vital statistics regarding our sampled population at the time of their marriage. These include the names of each of the spouses, their age at marriage, their civil status, their occupational title, the occupational title of their fathers, and their place of residence. Information about literacy can be inferred from their signatures on the marriage certificate: if a spouse was unable to write down his or her name, the vicar would do so, and the illiterate spouse would then make a mark to verify his or her consent. While signature literacy is, of course, an imperfect measure of someone's actual literacy achievement, previous work has shown that signature literacy is a reasonably good proxy for someone's general ability to read and write (Schofield 1973; Clark 2007).

The detailed and systematic record-keeping of the Anglican missionaries (as well as their native successors) not only make our data a novel empirical basis in the context of African economic history, but also constitute an excellent source of information for studying the impact of missionaries and colonizers on the educational and occupational opportunities of native Africans.² One of its key advantages is that Anglican missionaries followed the same procedure as their British-based colleagues: even our earliest registers, from the 1890s, are written in English on standardised forms, pre-printed in London, and are completely identical to those used by parish ministers in Britain.

Anglican missionaries were not the only Christian missionaries in Uganda. Other missionary societies, such as the White Fathers, the Mill Hill Missionaries, and the Verona Fathers, operated in the region as well. Statistics from the Colonial Blue Books of the Protectorate of Uganda report that roughly two thirds of all Christian marriages in early twentieth-century Uganda were Catholic marriages (Meier zu Selhausen 2014). Catholic missionaries did not, however, follow the tradition of their Protestant counterparts of recording the occupational titles of the spouses. This makes a comparison of the occupational performances between Catholics and Protestants impossible. Although Woodberry and Gallego (2010) and Nunn (2014) have shown that contemporary African Protestant women are better educated than their Catholic counterparts (vice versa for men) geography appears to predict educational achievements far better than religious affiliation in our case. Indeed,

² Thornton (1977) has used vital information from African parish registers to estimate the population of 17th-century Congo by combining the statistics of native baptisms from missionary stations with a reconstruction of the nation's age structure. Similarly, Katzenellenbogen *et al* (1993) have assessed the changes in mortality at the Western Cape of South Africa based on records of the Moravian Church for cohorts between 1837 and 1909. Notkola and Siiskonen (2000) and Notkola *et al.* (2000) have studied fertility, mortality, and migration in north Namibia using parish registers of the Evangelic-Lutheran Church between 1925 and 1990. More recently, Walters (2008) has used Catholic parish registers for the Mwanza region in northern Tanzania to reconstruct historical families since 1890. None of these works, however, have sought to use educational or occupational information from African parish registers for the purpose of studying the economic history of Africa.

our sampled Protestants look much more like their urban colleagues, regardless of religious affiliation, than their religious equals in rural Uganda (see our discussion below).



Our data include 16,783 marriages taking place between 1895 and 2011. Some of the marriage records were incomplete and hence excluded from the sample. Records missing the spousal signature information (0.1%) and records where neither of the spouses had an occupation recorded (2%) were removed from the sample. We kept those marriages, however, where only the groom was recorded to have held an occupation (12%) on the assumption that the bride was a housewife. The implication of this is discussed below. Finally, in some of the recorded marriages, mainly during the 1930s, the spousal ages were replaced by the terms 'Minor' or 'Full' (14%). This signified whether or not a spouse had reached the

age of 21. These records are included only when we study the sampled population's occupational structure, but for obvious reasons the records are excluded when we study cohorts of birth.

One more data limitation is necessary due to the prevalence of polygamy in Uganda (Anderson 2007). Polygamy (multiple marriages) may create a bias in our sample. For example, if workers with high-status jobs take more wives than workers with low-status jobs, then high-status workers will be over-represented in the sample. Worse still, the propensity towards polygamy may change over time, thus changing the bias of the sample across the period of observation. Interestingly, besides those listed as widow(er)s, which we remove to avoid individual over-representation (0.4%), there are no records of individuals re-marrying in our data: all remaining spouses were recorded as either 'bachelor' or 'spinster'. This is consistent with the proscription of the Anglican Church against polygamy and supports the Church's emphasis on the building of nuclear families (Hastings 1973). It does not imply, of course, that polygamy did not take place at all among our sampled individuals. Many Ugandan couples celebrated a customary wedding prior to marrying in the Christian faith (Hansen 1984). The flipside of this is that the Christian Church could not prevent their affiliates from engaging in several customary marriages following the Christian marriage, a practice often observed among local chiefs (Hastings 1973). Since such behaviour does not appear to bias our sample, however, polygamy of this sort will not have any bearing on our results.

Table 1
Summary Statistics

Variable	Obs	Men		Women	
		Mean	St.dev.	Mean	St.dev.
Year of marriage	12939	1970	30	1970	30
Age at marriage	12939	30.3	7.0	23.8	6.4
Year of birth	12939	1945	25	1952	25
Numeracy skills	12939	0.75	0.43	0.84	0.37
Literacy skills	12939	0.97	0.18	0.92	0.27
Working skills	12939	0.66	0.47	0.50	0.50
White-collar work	12939	0.70	0.46	0.56	0.50
Waged work	12939	0.87	0.33	0.55	0.50
Agricultural work	12939	0.08	0.28	0.03	0.16
Housewife	12939	-	-	0.06	0.24
Imputed housewife	12939	-	-	0.12	0.33

Note: Numeracy skills measure the tendency *not* to age heap, i.e. not ending one's age with a 0 or 5. Literacy skills are inferred from a signature (or lack thereof) on the marriage certificate. Working skills mean holding a medium-skilled or highly-skilled profession according to the HISCLASS scheme (van Leeuwen and Maas 2011). The shares of women in skilled/white-collar/waged/agricultural work do not include housewives or imputed housewives (and hence contain 10,327 observations). For more details, see the text.

By limiting the sample to bachelors and spinsters, who had signed the register and had their age recorded, and to couples where at least the groom held an occupation, we end up with a baseline sample of 12,939 men born between 1849 and 1989 and an identical number of women born between 1848 and 1990. Table 1 provides the summary statistics. Figure 1 shows the distribution of the sampled men and women by year of birth, and Figure 2 the average age at marriage. Interestingly, the marriage pattern in the colonial era looks very similar to that of historical Eastern Europe (Hajnal 1965) with women marrying relatively young, and the spouse age gap being comparatively large. In the post-colonial era, the pattern looks more like historical Western Europe (*ibid.*) with late marriages and small spousal age gaps.

Figure 2
Mean Age at Marriage by Sex



Note: The graph shows the average age at marriage apart from those individuals whose age at marriage was replaced by the terms 'Minor' or 'Full' are excluded from the graph (see text).

A good question is to what extent our sampled population represent the actual population of Kampala. While we cannot answer this for the colonial period, a population census conducted in 2002 by the Ugandan Statistical Office (UBOS 2006) enables us to compare the population living in Kampala today with those from our sampled population. To this end, we restrict both datasets to include cohorts of births aged 20 to 60 in 2002 and, for the census data, to those whose civil status was 'married' or 'widow'/'widower'.

Table 2
Shares of Literate and Skilled workers, by Sex

Sample	Literate		Skilled	
	Males	Females	Males	Females
Uganda, all	77%	53%	43%	24%
Uganda, Anglicans	79%	56%	45%	26%
Kampala, all	96%	91%	86%	76%
Kampala, Anglicans	96%	92%	83%	72%
Marriage sample	100%	99%	77%	58%

Note: Skilled individuals in the census data are individuals with more than six years of schooling. Skilled individuals in the marriage sample are workers holding occupations that are coded medium- or higher-skilled in the HISCLASS scheme (van Leeuwen and Maas 2011). *Source:* 2002 Census Data for Kampala and Uganda (UBOS 2006). Marriage sample: see text.

Table 2 reports the literacy rates for the sampled men and women. Among our marriage register population, the literacy rates are 100% for men and 99% for women. Among Anglican Protestants living in Kampala they are 96% for men and 92% for women. The discrepancy could be due to the fact that signature literacy is an imperfect measure of actual literacy. The literature rates among all Ugandans – 77% for men and 53% for women – demonstrate that individuals living in Kampala are far more literate than the average Ugandan. Notably, this is not a matter of religion: Anglican Protestants in Uganda as a whole includes 79% literate men and 56% literate women.

The census data report years of schooling, information that the marriage registers do not include. Conversely, our marriage registers report occupational titles, which are not available in the census data. It is possible, under sensible assumptions, to transform the two different variables into an analogous measure. To this end, we use the so-called HISCLASS scheme to code our occupational titles into ‘skilled’ and ‘unskilled’ workers (see van Leeuwen

and Maas 2011). 'Skilled' workers include highly- or medium-skilled professions in HISCLASS, while 'unskilled' workers include lower- or unskilled professions. To give two examples from the data, a teacher is classified as a skilled worker, and a matmaker is classified as an unskilled worker. Next, we coded those individuals in the census population that had completed their primary education, i.e. had more than six years of schooling, as 'skilled' workers, and those individuals with less than six years of schooling as 'unskilled' workers. Table 2 show the results. In the marriage register, 77% males and 58% females are classified as skilled workers. Among Kampala Anglicans, 83% males and 72% females are classified as skilled. The numbers for the entire Kampala population (i.e. regardless of religious affiliation) are 86% skilled males and 76% skilled females. Among average Ugandans, 45% males and 25% females are skilled.

We think the performance of our sampled population is slightly worse than that of their Kampala counterparts for two reasons other than measurement error. The first is that not all of our individuals live in Kampala. Our regression analysis below shows that grooms residing outside a radius of 10 km from the centre of Kampala (roughly 40% of all males) underperform in terms of educational and occupational achievements compared with Kampala dwellers. Another factor that would downward-bias the skill performance of our individuals is that we catch them on average earlier in life (i.e. at the time of their marriage) compared to those of the census registers (caught when the census was conducted, which could be early or late in life). Nonetheless, the modest discrepancies in the skill performances between the census population and the population of our marriage registers do not deny the fact that our sample is a fairly good representation of Kampala individuals (regardless of religious affiliation).

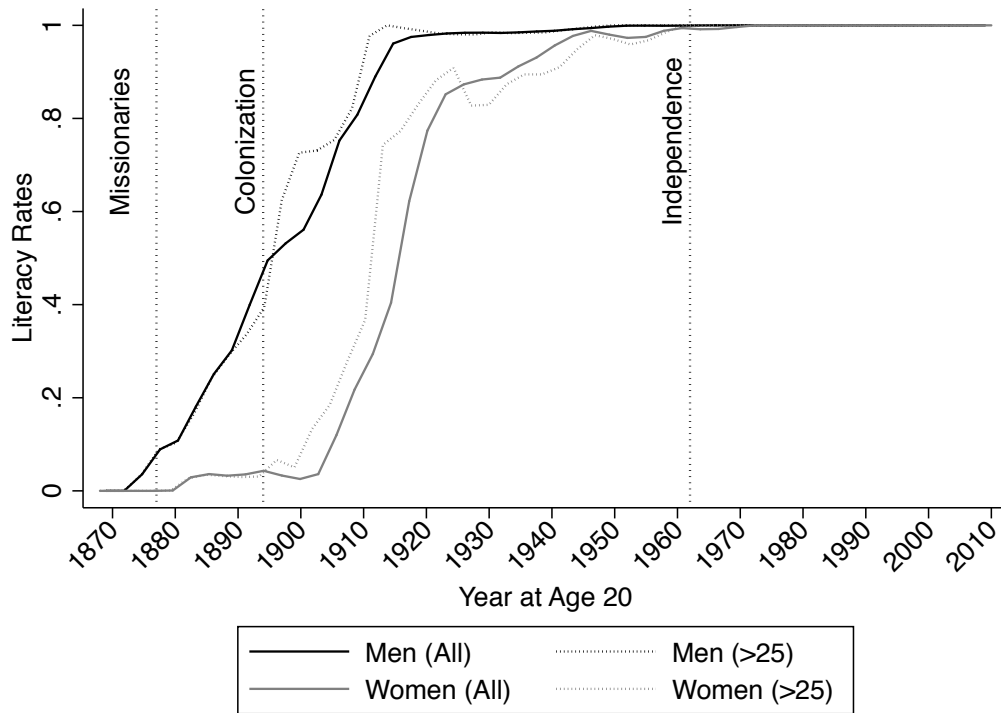
IV

Graphic Analysis

This section is devoted to illustrating the evolution, from the pre-colonial times until today, in the educational and occupational performances of our sampled men and women, as well as the gender inequality between them. We are able to measure individual performances (and gender inequalities) within five distinct areas of achievement: literacy, numeracy, working skill, working status (blue vs. white-collar work), and formality of the work (waged or unwaged).

Figure 3 illustrates the literacy rates by sex for cohorts of birth at the age of 20. Not surprisingly, literacy was virtually non-existent prior to the arrival of the missionaries in 1877, after which it rapidly spread first to men and later women. Virtually all males had attained literacy within less than three generations after the first missionaries arrived and virtually all women within three decades later by the 1940s. Since basic schooling up until the 1950s was almost exclusively provided by missionaries (Etherington 2005; Frankema 2012), the graph shows the immense impact of missionary activities on the literacy skills among our sampled population. The time lapse between men and women's literacy achievements in the period following the arrival of missionaries caused gender inequality in literacy to rise dramatically. But since women gradually caught up with men during the colonial era, gender inequality in literacy had practically disappeared by the mid-20th century.

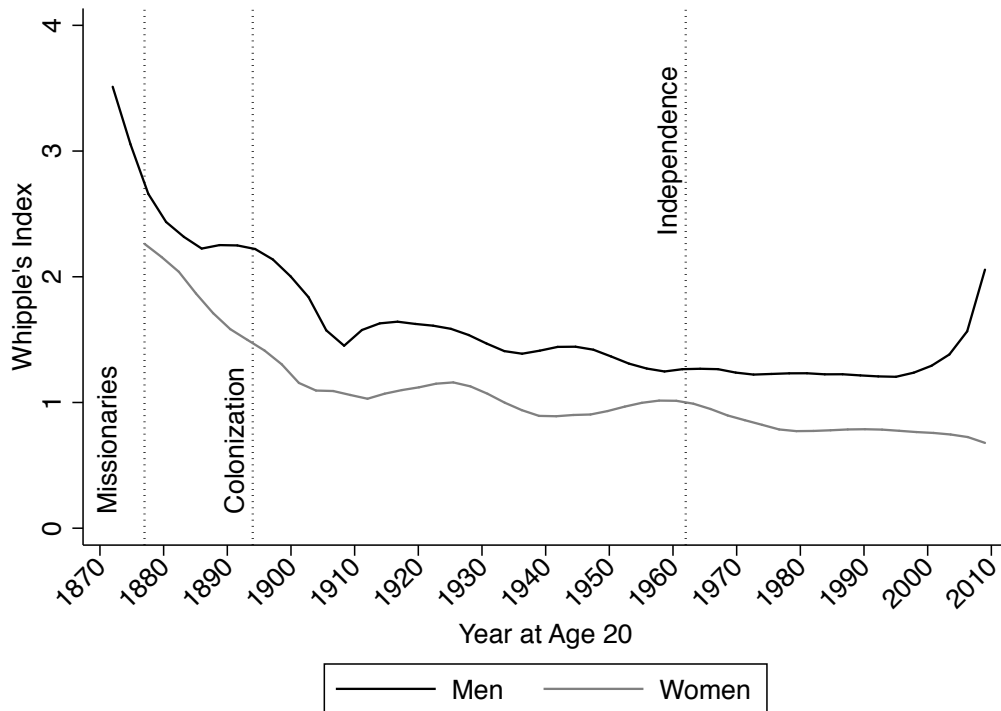
Figure 3
Literacy Rates by Sex



Note: The graph shows the literacy rates by birth cohorts 20 years from birth. Literacy is inferred from the spousal signature (or lack thereof) on the marriage certificate. The dotted lines illustrate the literacy rates among men and women marrying after the age of 25.

One explanation for women's delay in attaining literacy could be to do with age-structure effects. Women married relatively young during the colonial period (Figure 2), on average around the age of 18. Men married later, around the age of 25. If literacy (contrary to what we expect) was attained between the ages of 18 and 25, then this could explain the lapse. But when we control for this by limiting the sample to those who marry beyond the age of 25 (in colonial times this was roughly 10% of our sampled population), then it becomes clear that age-structure effects do not explain the delay (the dotted lines of Figure 3).

Figure 4
Whipple's Index for Numeracy by Sex



Note: The Whipple's Index Score is obtained by summing the number of individuals in the age range 23 and 62 inclusive, who report ages ending in 0 and 5, dividing that sum by the number of individuals between ages 23 and 62 years inclusive, and multiplying the result by 5.

Turning to numeracy skills, we can use the fact that spousal age was self-reported to study the prevalence of age heaping in our sample, captured by the tendency to end one's age with a 0 or 5 (Shryock and Siegel 1976). Age-heaping behaviour is not widespread in our population: the overall imprecision in age reporting, measured by the Whipple index,³ is 0.9%, which is commonly considered to be highly accurate (Robine et al 2007). This means our sampled individuals are comparatively numerate relative to other populations living in developing regions in this period (Crayen and Baten 2010). Figure 4 demonstrates the Whipple Index by sex, revealing that age heaping was more prevalent among men than among

³ The Whipple Index reports the sum of individuals in the age range of 23 and 62 inclusive, who report ages ending in 0 and 5, divided by the number of individuals between the ages of 23 and 62 years inclusive, and multiplied by 5.

women across the entire period of observation. The graph also shows a gradual improvement over time in average numeracy skills, including a large decline in age heaping in the decades following the arrival of missionaries.⁴

The rise in literacy and numeracy skills following the arrival of the missionaries no doubt helped the acquisition of more substantial human capital attainments. This is not to deny that knowledge accumulation took place in the pre-colonial era. Pre-colonial education was built on learning-by-doing and inter-generational transmissions of oral traditions (Ilfie 2007). But those traditional skills were arguably of limited use in the technically-versed wage economy that emerged with the Europeans and emphasised the importance of literacy and numeracy skills.

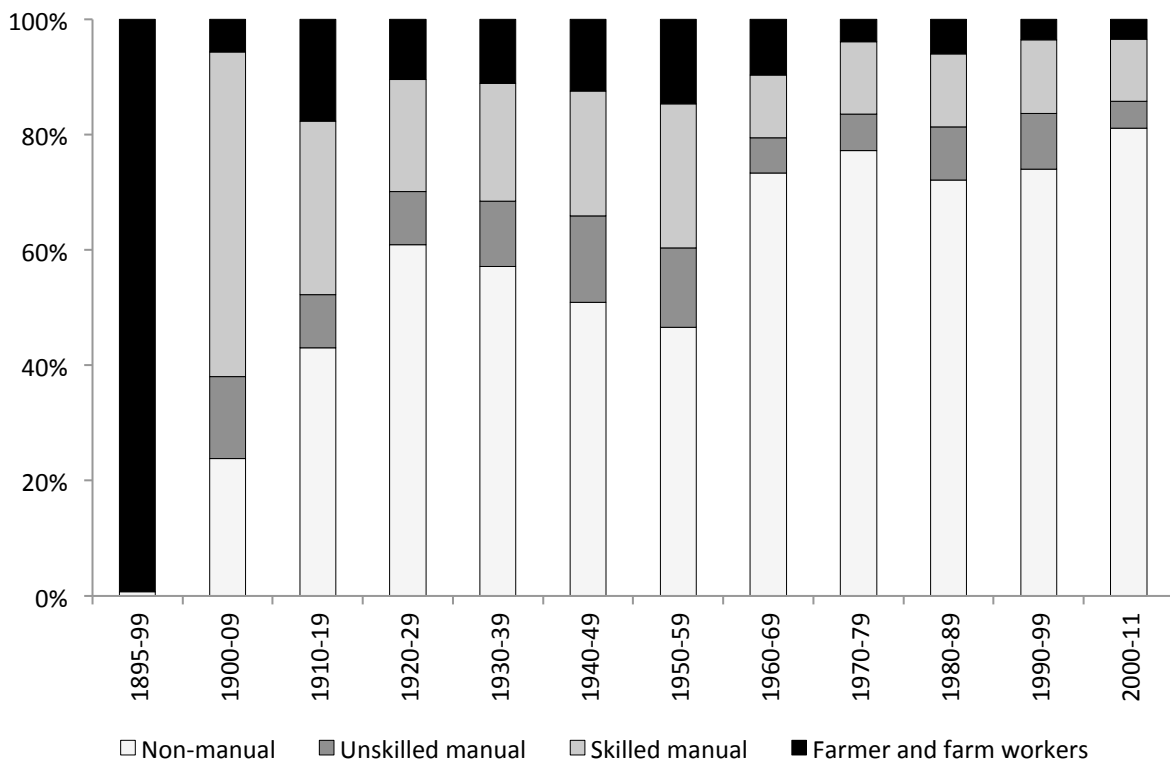
Literacy and numeracy skills are of course rather crude proxies for human capital achievements. More extensive knowledge about human capital formation among our sampled individuals can be derived from their occupational titles. The HISCO/HISCLASS schemes already mentioned provide useful tools for this. The HISCO scheme classifies several thousand historical occupations from across the world by the nature of the work conducted (van Leeuwen et al 2002). The HISCLASS scheme ranks all the occupations listed in the HISCO by the social status of the work (blue- versus white-collar work) and by the skill requirements of the work described by the occupational title (van Leeuwen and Maas 2011).⁵ Tables A1 and A2 in the Appendix list the most common occupational titles in our sample, by decade,

⁴ There is no apparent reason why age heaping increases among men towards the end of our period.

⁵ We are grateful to Prof Marco van Leeuwen, the creator of the HISCO scheme, for annexing our Ugandan data into HISCO/HISCLASS, enabling us to extract information about the working skills of our sampled population. In those rare cases where the HISCO/HISCLASS schemes do not contain our occupational titles (such as 'witch doctor') we have made individuals assessments aided by local labour historians.

showing how these titles were coded in HISCLASS concerning blue- and white-collar work, as well as skilled and unskilled work. It also shows the main sector of activity (agriculture or not).

Figure 5
Distribution of Occupations by Social Class, Men



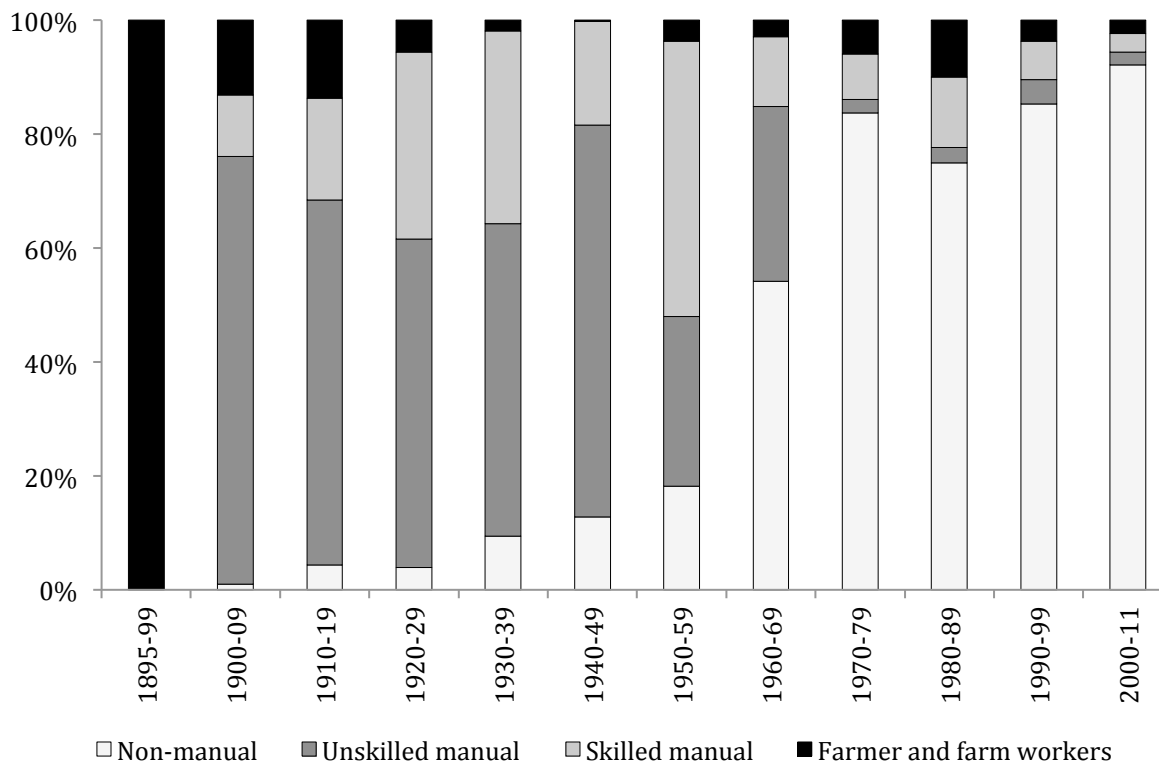
Note: The distribution of occupations into the social groups follows the HISCLASS scheme (van Leeuwen and Maas 2011). *Data:* see text.

Building on the HISCLASS classification, Figures 5 and 6 illustrate the distribution of occupations of men and women by social group. It follows that Kampala was almost entirely dominated by agricultural activities (black) when Uganda became a British Protectorate in 1894: practically all our sampled males were recorded as ‘Peasant’ or ‘Farmer’ (Table A1). In the decade following the arrival of the British colonizers (i.e. 1900-09) Kampala (as represented by our sample) had already undergone a dramatic transformation. Skilled, non-

agricultural, blue-collar work (light grey) had increased substantially among men, with occupations like 'Carpenter' and 'Tailor' starting to appear (Figure 5). White-collar work (white) also grew, from 1% to a staggering 20% in the first decade of the 20th century, with jobs such as 'Clerk', 'Teacher', and 'Trader' now emerging. White-collar work for men became generally more common during the colonial era: by the time of Uganda's independence, in 1962, nearly four in five males were employed in white-collar jobs. The occupational structure for women also changed dramatically following the colonization of Uganda (Figure 6). But while men chiefly ventured into skilled and white-collar work during the colonial era, women's work was initially dominated by manual labour, first unskilled (dark grey) and later skilled (light grey) work. Notably, less than 20% of our sampled women were employed in white-collar (high-status) work toward the end of the colonial era, against 80% of all men.

The drastic changes in the occupational structures among men and women after 1900 deserve a comment. It needs to be kept in mind that the church books covering the years 1900-1907 were lost, meaning that the decade 1900-1909 effectively only concerns the years 1908-09. That in turn means the transition was probably slightly less radical than Figures 5 and 6 indicate. The structural changes could of course also reflect an adjustment in the way that the missionaries recorded occupational titles. Or they could reflect the fact that British colonial taxes had to be paid in cash and by males only, hence forcing the native African men to seek waged employment. This would certainly help explain why job titles such as 'Clerk', 'Carpenter', 'Trader', and 'Teacher' emerge among men during this period.

Figure 6
Distribution of Occupations by Social Class, Women

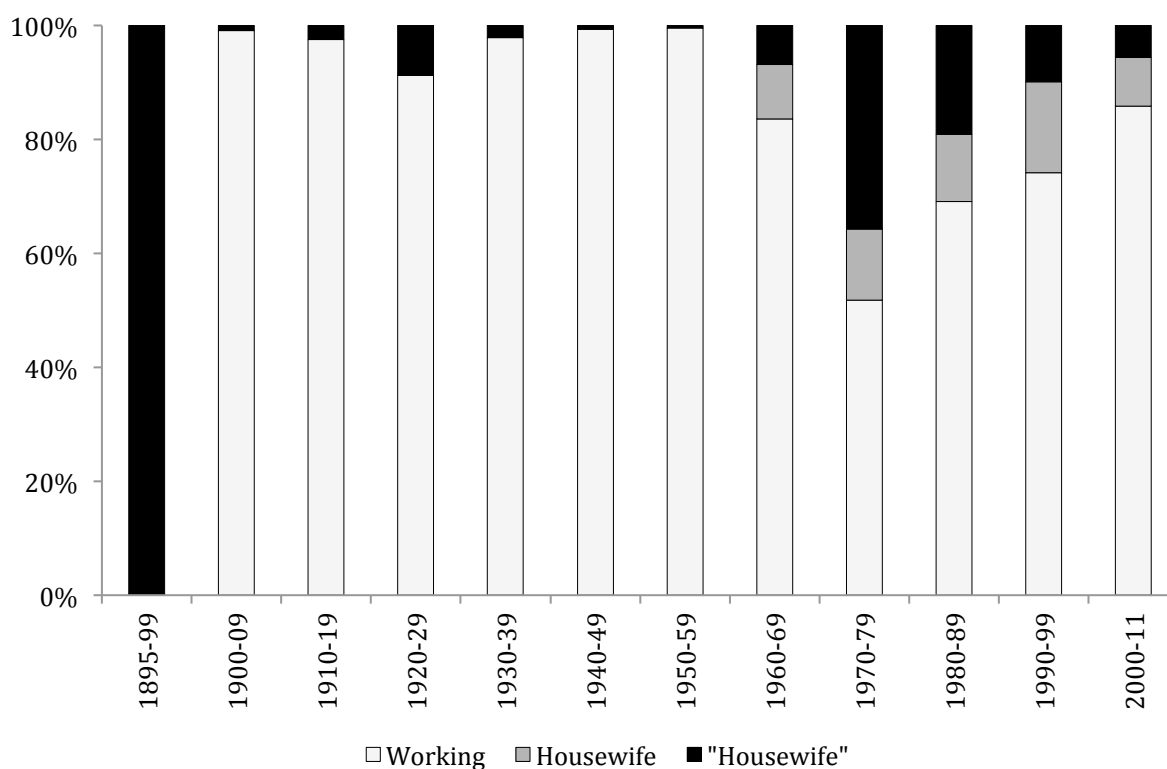


Note: The distribution of occupations into social class follows the HISCLASS scheme (van Leeuwen and Maas 2011). Housewives and imputed housewives were excluded from the sample. The decade 1900-09 effectively only includes the years 1908-09.

Female labour market participation rates can also be studied using our data. Figure 7 shows the evolution in the share of women recorded with an actual occupational title (white). Women recorded as ‘housewife’ (dark grey), or who had no title recorded at all, i.e. our so-called ‘imputed’ housewives (black), were very likely working in agriculture at home or contributing to the household income by ‘working on their own account in bazaar or service occupations’, as Boserup (1970, p. 178) phrases it. So the radical changes in women’s occupational structure after 1900 (Figure 6) could reflect a new practice among women of now reporting their by-occupation. After largely disappearing during the colonial period, housewives (imputed and actual) re-emerge following Uganda’s independence. Their

frequency peaked in the 1970s, with nearly 50% of all women appearing in the registers as housewife or imputed housewife. This, interestingly, coincides with Idi Amin’s notorious campaign against women working outside the household, a telling tale that post-colonial policy may have had temporary gender effects (Kyomuhendo and McIntosh 2006). Our regression analysis below sheds further light on that question.

Figure 7
Women’s Labour Market Participation Rates by Decade

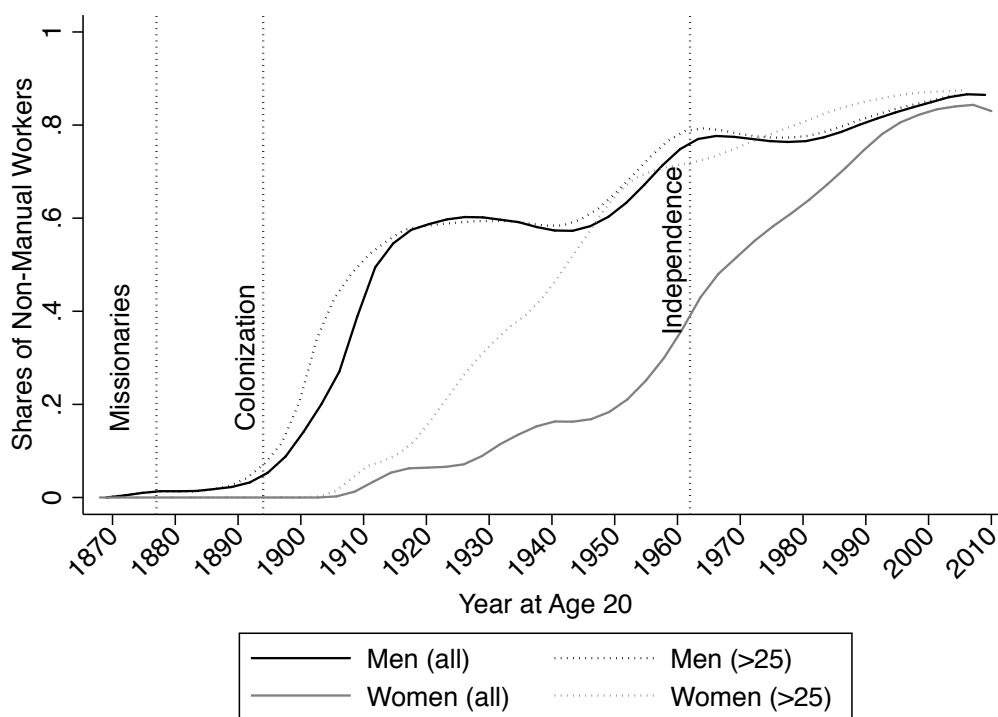


Note: “Housewife” (in citation marks) means the occupation was imputed from the fact that the bride had no occupation recorded while the groom did (see text). The decade 1900-09 effectively only includes the years 1908-09.

The coding of our occupations using HISCLASS affords us a deeper look into the gendered evolution of work status captured by blue- versus white-collar work. Figure 8 shows how differences in the work status among men and women emerged during the

colonial economy and continued to grow up until the 1940s. Three decades after Uganda became British – a point during which 50% of the sampled men were employed in white-collar work – only 10% of the sampled women engaged in this type of work. But from the 1950s on, the gender gap in work status narrowed, and today it is virtually gone. When we correct for age-structure effects (dotted lines) we can see that women marrying after the age of 25 caught up with men even earlier. This supports the Boserupian idea (Boserup 1970) that native social norms encouraged women to marry young, and that women who were able to pursue a work career prior to marriage were perfectly capable of entering into high-status work. Our regression analysis below addresses this question further.

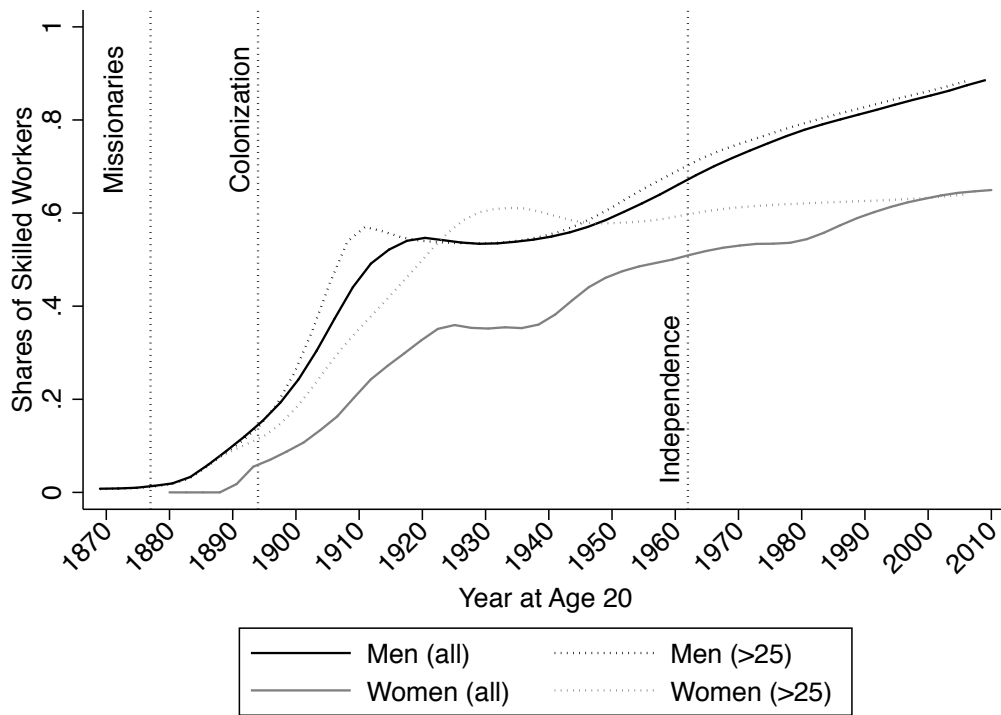
Figure 8
The Share of White-Collar Workers by Sex



Note: A white-collar worker is someone who is deemed so according to the HISCLASS scheme (van Leeuwen and Maas 2011). Housewives and imputed housewives are not included in the graph. *Data:* see text.

Figure 9

The Share of Skilled Workers by Sex



Note: A 'skilled' worker is a worker holding an occupation deemed medium-skilled or highly-skilled according to the HISCLASS scheme (van Leeuwen and Maas 2011). Housewives and imputed housewives are not included. University students (2%) and chiefs and sub-chiefs (1%) are not coded by the HISCLASS scheme, but they appear in the graph coded as skilled workers. *Data:* See text.

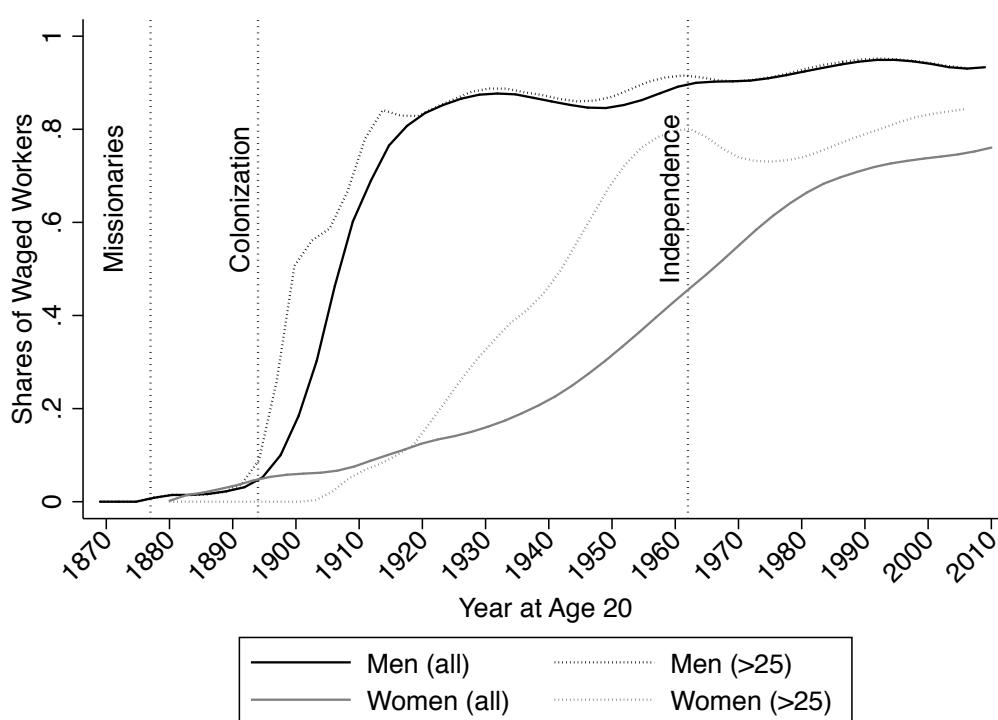
Figure 9 illustrates the share of skilled workers by sex.⁶ It shows skilled workers were highly uncommon during the pre-colonial era, but that they became much more common for both sexes after Uganda became British. As early as 1910, the share of skilled workers had reached 50% for men and 30% for women. Interestingly, although skilled work paid more than twice as much as unskilled work did in the early 1920s and more than three times as much in the early 1940s and late 1950s (Frankema & Van Waijenburg 2012), the shares of skilled male and female workers stagnated during large parts of these periods. After 1950, the share of skilled workers gradually rose to reach 90% for men and 60% for women today.

⁶ University students (2%) and chiefs and sub-chiefs (1%) are not coded by the HISCLASS scheme, so we have coded both these groups as skilled and waged workers.

Remarkably, most of the formation of human capital (measured this way) took place during the early colonial period, emphasising the role of Europeans for human capital accumulation among Christian Africans in and around Kampala. Figure 9 also shows that gender inequality in working skills increased steadily over the course of the colonial and post-colonial periods.

Figure 10

Share of Workers in Waged Employment by Sex



Note: Housewives and imputed housewives are excluded.

The occupational titles can also be split into waged and unwaged work.⁷ This is especially helpful for shedding light on the extent of women's formal labour market segregation. Interestingly, job titles that in a western context would be categorised as waged

⁷ We are particularly grateful to former Ugandan Minister of Education, Prof Edward Rugumayo, for his help with coding our occupations into waged and unwaged work.

work, such as 'Dressmaker' and 'Weaver', indisputably fall into the category of self-employment in Uganda. Self-employment for women often meant informal work carried out in the realm of the domestic sphere, with the goods produced sold in a local market place (hence unwaged work). It exemplifies what Boserup (1970, p. 178) meant by women 'working on their own account in bazaar or service occupations'. In contrast, job titles such as 'Teacher', 'Nurse', and 'Midwife' all fall into the category of waged (i.e. formal) employment.

The same categorisation applies to male jobs, with job titles like 'Accountant', 'Clerk', and 'Teacher' coded as formal (waged) work and 'Peasant', 'Farmer', and 'Tailor' coded as informal (unwaged) work. Figure 10 illustrates the rates of waged employment by sex, showing the remarkable transformation of Kampala from a largely informal society to a largely formal economy. It demonstrates how men rapidly found their way into formal-sector jobs after colonisation: in just 30 years the share of formally-employed men rose from less than 10% to an astonishing 90%.

Figure 10 also shows how gender inequality in waged employment was linked with women's segregation from formal work: as late as the 1940s, some after 50 years after Uganda came under British rule, just 20% of the sampled women were employed in formal work compared with 90% of men. The reason is not that women did not work: only 12% on average were recorded as 'Housewife' or imputed housewife during the colonial era. It was more that most women earned a living *outside* of the formal labour market (Boserup 1970; Rodney 2012). As our data clearly show, it was not until after the 1950s, when the colonial power made considerable effort both to expand the civil service and to Africanize it

(Lawrance et al 2006), that women began to enter colonial bureaucracies as clerks and secretaries.

It is often argued that colonial gender inequality was sustained in the post-colonial period, because male-dominated politics did little to correct the gender imbalances (Akyeampong and Fofack 2013, 2014). Our data thus tell a rather different story: after 1950, and shortly before Uganda's independence, the share of women employed in formal-sector jobs began to increase, growing from 20% in 1950 to reach 80% today. While it is true that a gender gap in waged employment still remains, its contemporary size is tiny compared to that of the colonial era.

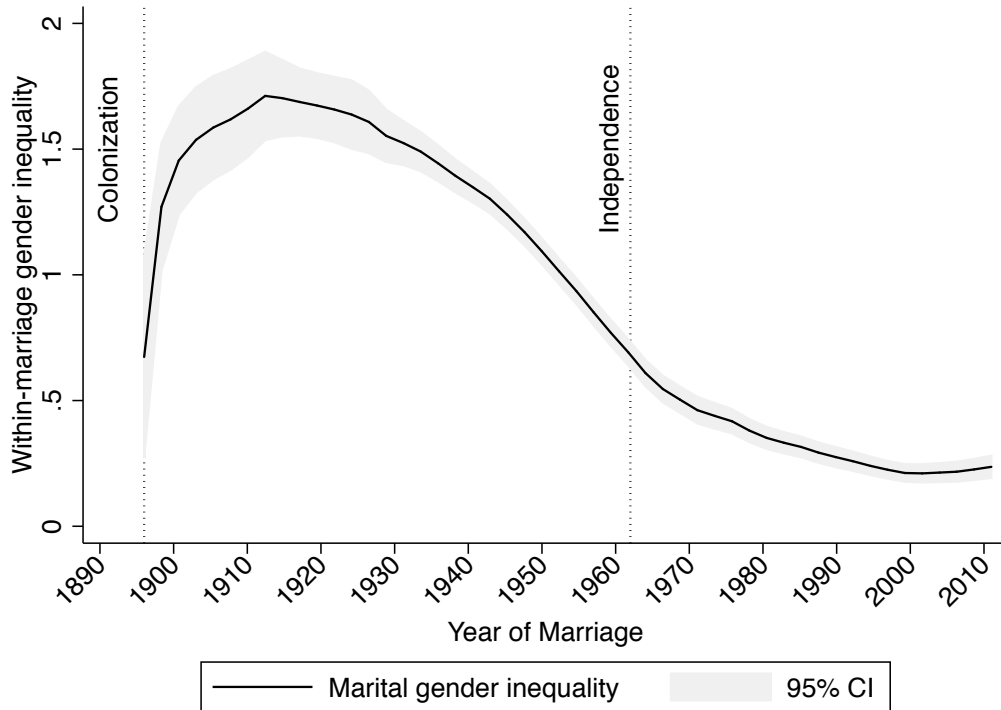
V

Regression Analysis

Up to this point we have used our data to illustrate some developments in the aggregate. Our micro-level statistics enable us, however, to take a deeper look at the role of time and social background for gender inequality and women's economic segregation. To this end, we construct a performance score for each of our sampled individuals. The score is designed so that the individual receives one point for each of the following attainments: literacy, numeracy, working skills, white-collar work, and waged work. Hence, the performance score has a maximum of five and a minimum of zero. We then use the individual performance scores to calculate an index for gender inequality within marriage. This comes about simply by subtracting the bride's performance score from the performance score of the groom.

Figure 11

Gender Inequality Within Marriage



Note: Marital gender inequality is the difference between the groom’s and the bride’s performance scores (see text). *Data:* see text.

Figure 11 shows the index for marital gender inequality, confirming the message of previous graphs that gender inequality first increased and later decreased during the colonial era. Furthermore, in order to explore the role of the socio-economic background of our grooms and brides, we subdivide the spousal fathers into five social groups based on their occupational titles (Table 3). These five groups are: chiefs, peasants, craftsmen, mission waged workers and non-mission waged workers.

Table 3**Categorization of Fathers by Social Group**

Chief	Peasants	Craftsmen	Mission workers	Non-mission workers
Chief	Cottongrower	Barkclothmaker	Archdeacon	Accountant
Sub-chief	Cowherd	Basketmaker	Bishop	Businessman
	Cultivator	Blacksmith	Catechist	Butcher
	Farmer	Brickmaker	Church Minister	Clerk
	Fisher	Builder	Church teacher	Cook
	Fisherman	Carpenter	Church Warden	Driver
	Gardener	Maker	Clergy	Engineer
	Hunter	Mason	Clerk in Holy Order	Headman
	Peasant	Matmaker	Dispenser	Labourer
	Planter	Matmaker	Doctor	Mechanic
	Servant	Potter	Lay reader	Policeman
	Shepherd	Tailor	Medical assistant	Printer
		Weaver	Nurse	Shopowner
			Priest	Soldier
			Teacher	Trader

Table 4 reports the results of regressing the groom's and bride's performance score (columns 1 and 2, respectively) on a number of socio-economic factors, including the father's social group and controlling for time fixed effects.⁸ This informs us about several matters. Starting with our individual background variables, it does not surprise us that grooms who are living in Kampala perform significantly better than grooms living elsewhere (i.e. beyond a radius of 10 km of the centre of Kampala). The same is true of brides married to a groom who lives in Kampala. The location of the groom has, however, no influence on marital gender inequality (Table 4, columns 3 and 4), so gender inequality within marriage is not a specific rural or a specific urban phenomenon. Another matter of interest concerns the size of the spousal age gap. While this plays no significant role for the performance of the groom, the size of the spousal age gap exercises a negative effect on the bride, both in terms of her individual

⁸ For ease of interpretation of the estimates, Table 4 reports the results of a standard OLS regression model. The results are identical, in terms of statistical significance, to using an Ordered Probit model.

performance and for her gender inequality within marriage. This conclusion chimes with the findings of Carmichael (2011) that the size of the spousal age gap is positively correlated with female disempowerment within developing countries.

Social background, captured by the father's social group, is important both for the performance of the offspring (the grooms and the brides) and for their gender inequalities within marriage. Not surprisingly, offspring of the elites (chiefs and sub-chiefs) perform significantly better than offspring of peasants (the social-group reference category in Table 4). Gender inequalities within marriage are also lower among elite offspring, mainly because elites appear to put relatively large emphasis on the performance of their daughters (cf. the size of the estimate). Offspring of fathers employed in waged work (mission and other waged jobs) also perform significantly better than descendants of peasants. But while offspring of fathers employed in mission work have the lowest gender inequality among all social groups, offspring whose fathers are employed in non-mission waged work are subject to higher inequality within marriage than descendants of peasants. The reason for this may be that fathers in non-mission waged work place relatively greater emphasis on the performances of sons than daughters than others (cf. the size of the estimates). Descendants of fathers that are craftsmen, i.e. who engage in informal, unwaged work, perform even worse than descendants of peasants. This has no significant bearings on their marriage inequality, probably because craftsmen place equally little emphasis on the education of their daughters and sons.

Table 4
Individual Performances and Marital Inequality

Model: OLS	Performance Score Groom	Performance Score Bride	Marital Inequality Score Groom	Marital Inequality Score Bride
Groom living in Kampala	0.08*** (-0.66)	0.07*** (-0.61)	0.02 (-0.66)	0.02 (-0.61)
Spousal age gap	-0.01 (-7.28)	-0.02*** (-11.00)	0.01*** (-4.47)	0.01*** (-3.74)
Father's occ: Chief	0.14*** (-2.91)	0.27*** (-5.13)	-0.04 (-0.57)	-0.15** (-2.46)
Father's occ: Craftman	-0.15*** (-2.71)	-0.08 (-1.56)	-0.06 (-0.77)	0.03 (-0.48)
Father's occ: Mission work	0.18*** (-4.80)	0.45*** (-11.06)	-0.06 (-1.18)	-0.34*** (-7.16)
Father's occ: Other waged work	0.11*** (-3.90)	0.09*** (-3.38)	0.05 (-1.43)	-0.02 (-0.55)
Sub-period: 1900-09	1.78*** (-7.06)	0.20 (-0.71)	1.57*** (-4.70)	1.55*** (-4.68)
Sub-period: 1910-19	2.21*** (-9.90)	0.75*** (-2.99)	1.42*** (-4.83)	1.44*** (-4.93)
Sub-period: 1920-29	2.70*** (-12.65)	1.21*** (-5.08)	1.44*** (-5.11)	1.51*** (-5.39)
Sub-period: 1930-39	2.72*** (-12.67)	1.48*** (-6.17)	1.17*** (-4.15)	1.25*** (-4.42)
Sub-period: 1940-49	2.70*** (-13.11)	1.57*** (-6.81)	1.08*** (-3.99)	1.14*** (-4.18)

Table 4 cont'd

Sub-period: 1950-59	2.57*** (-12.48)	1.89*** (-8.16)	0.65** (-2.38)	0.70** (-2.58)
Sub-period: 1960-69	2.96*** (-14.31)	2.56*** (-11.06)	0.34 (-1.26)	0.41 (-1.50)
Sub-period: 1970-79	3.22*** (-15.57)	3.10*** (-13.39)	0.08 (-0.31)	0.13 (-0.49)
Sub-period: 1980-89	3.08*** (-14.97)	2.96*** (-12.86)	0.08 (-0.29)	0.13 (-0.46)
Sub-period: 1990-99	3.20*** (-15.56)	3.21*** (-13.95)	-0.05 (-0.18)	-0.01 (-0.04)
Sub-period: 2000-11	3.36*** (-16.39)	3.35*** (-14.59)	0.00 (-0.01)	0.02 (-0.08)
Constant	1.05*** (-5.15)	0.85*** (-3.72)	0.20 (-0.74)	0.19 (-0.71)
<i>N</i>	10372	10372	10372	10372

Note: Housewives and imputed housewives were excluded from the analysis. Individual performance scores summarise the score (one or zero) in each of these five areas: literate, numerate, skilled work, white-collar work, and waged work (see text). Marital Inequality is the groom's performance score minus that of the bride. The spousal age gap is the groom's age at marriage minus the age at marriage of the bride. The reference category for father's occupation is 'Peasant' and for time is the sub-period 1895-99. The OLS model is used for ease of interpretation; the statistical significances remain if we use an Ordered Probit model instead. Because of problems of multicollinearity between the occupational groups of fathers, the regression of marital inequality was run separately for grooms and brides (Columns 3 and 4). *t*-statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *Data:* see text.

The difference in the performances of females by social background show that discrimination against women was very much an African social class phenomenon, with certain groups placing more emphasis on the performances of daughters than others. The pattern is rather clear: daughters of fathers involved in activities directly linked to Europeans (i.e. chiefs, mission workers, and participants in the formal economy) performed significantly

better than those whose fathers worked in the traditional sectors, either as peasants or in informal craftsman trades (basketmakers, clothmakers etc.). Gender inequality within marriage largely repeats that pattern, being significantly lower among the offspring of elites or mission workers than among those of fathers working in traditional sectors.

One of the key questions we set out to ask was whether or not we can detect a colonial legacy of gender inequality and of female marginalization. The time fixed-effects in Table 4 can help cast light on those matters. We use decadal time dummies throughout, except for the initial period that covers the five-year period from 1895 to 1899 (the time reference category of Table 4). The reasoning behind this is that those couples that married very early into the colonial period were not yet influenced by colonial activities. Figures 5 and 6 above provide ample support for this: major changes to the occupational structures among men and women caused by the colonizers did not occur before 1900. Hence, the gender inequality existing in the pre-colonial period seem to be captured well by those that married prior to 1900.

The time dummies show that Europeans exerted a positive influence on the average performance of males (Table 4, Column 1). In the first decade of the 20th century, the average performance score of men had increased by 1.76 points compared to their late 19th-century equivalents. From then on, the male performance score gradually increased. By the end of the colonial period (i.e. in 1950-99) the score was up by 2.54 points compared to pre-colonial times. The post-colonial period witnessed further progress, and the average score of males today is 3.33 points higher than that of their pre-colonial counterparts. It is interesting to note that most of the improvements in the men's performance score took place during the colonial period.

Turning to women, it was only after 1910 that they statistically outperformed their pre-colonial counterparts. The average improvement – 0.76 points up since 1895-99 – was not as impressive as the male improvement of 2.19 points by that decade. But women gradually gain in on men, having increased their performance score by 1.90 points by the end of the colonial period (in 1950-59) against an increase of 2.54 points among men. They further gained in on men during the post-colonial period, and today the improvement in women’s average performance score matches that of men (3.35 point for women against 3.33 points for men). The only setback episode across the entire period of observation was during Idi Amin’s presidency in the 1970s. The setback concerned men and women alike, and it is barely detectable in terms of marital gender inequality.

Is there a colonial legacy of gender inequality among our sampled population? This question is easy to answer using our time dummies. Marital gender inequality increased significantly immediately after 1900. After the initial peak, when men were on average one and a half points ahead of women, gender inequality gradually declined. By the end of the colonial era, in 1950-59, men were roughly half a point ahead of women. After independence, gender inequality within marriage was not significantly different from its pre-colonial level, which was some 0.2 points in the favour of men (cf. the constants in Table 4, Columns 3 and 4). Today marital gender inequality among our sampled population, despite the fact that it was very large during the colonial era, is virtually non-existent.

VI

Conclusion

The purpose of our study was to investigate the hypothesis that gender inequality and the marginalisation of women could be traced back to colonial times. Previous studies have emphasised that gender inequality and female disempowerment already existed prior to the arrival of missionaries and colonizers in terms of the limited social and physical mobility of women (Hattersley 1908; Roscoe 1911; Reid 2002). But even if gender inequality and female labour market segregation did not arrive with the Europeans, their presence certainly augmented the imbalances between African men and women concerning educational and occupational opportunities. Still, our regression analysis shows that gender inequality after colonial independence was not significantly different from its pre-colonial level. Also, the colonial-period segregation of women, notably in terms of literacy skills, formal employment, and white-collar (high-status) work, is largely gone today. We thus refute the hypothesis of a colonial legacy of gender inequality and female labour market segregation in Christian Kampala.

Our social background analysis offers some hints, however, that rural Africa may look very different in this regard from urban Africa, today as well as in the past. Our data showed that African men working in the realm of the traditional, informal economy (mainly peasants) appeared more prone to preserve gender inequality and female marginalization than men working in the modernized, formal economy. This in turn suggests that African discrimination against a modernized (European-style) economy could be key in understanding contemporary women's lack of access to education and formal employment and hence the persistence of poverty in Africa.

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Appendix

Table A1

The Ten Most Common Occupations and Their Coding, Men

2000-11	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Businessman	0	0	1	0	432	15.0	15.0
2	Teacher	0	0	1	1	276	9.6	24.5
3	Accountant	0	0	1	1	269	9.3	33.8
4	Engineer	0	1	1	1	190	6.6	40.4
5	Farmer	1	1	1	0	110	3.8	44.2
6	Banker	0	0	1	1	100	3.5	47.7
7	Doctor	0	0	1	1	79	2.7	50.4
8	Driver	0	1	0	1	78	2.7	53.1
9	Technician	0	0	1	1	74	2.6	55.7
10	Marketer	0	0	0	1	59	2.0	57.7

1990-99	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Businessman	0	0	1	0	297	15.6	15.6
2	Teacher	0	0	1	1	203	10.7	26.3
3	Driver	0	1	0	1	101	5.3	31.6
4	Accountant	0	0	1	1	100	5.3	36.8
5	Farmer	1	1	1	0	94	4.9	41.8
6	Engineer	0	1	1	1	80	4.2	46.0
7	Technician	0	0	1	1	64	3.4	49.3
8	Banker	0	0	1	1	56	2.9	52.3
9	Doctor	0	0	1	1	47	2.5	54.7
10	Civil Servant	0	0	0	1	43	2.3	57.0

1980-99	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Businessman	0	0	1	0	349	16.9	16.9
2	Farmer	1	1	1	0	188	9.1	26.0
3	Teacher	0	0	1	1	133	6.4	32.4
4	Accountant	0	0	1	1	117	5.7	38.1
5	Driver	0	1	0	1	101	4.9	42.9
6	Technician	0	0	1	1	82	4.0	46.9
7	Mechanic	0	1	1	1	65	3.1	50.1
8	Clerk	0	0	0	1	63	3.1	53.1
9	Trader	0	0	1	1	58	2.8	55.9
10	Banker	0	0	1	1	57	2.8	58.7

1970-99	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Businessman	0	0	0	0	247	14.2	14.2
2	Clerk	0	0	1	1	115	6.6	20.7
3	Accountant	0	0	0	1	106	6.1	26.8
4	Teacher	0	0	1	1	104	6.0	32.8
5	Farmer	1	1	1	1	81	4.6	37.4
6	Trader	0	0	1	0	61	3.5	40.9
7	Salesman	0	0	1	1	59	3.4	44.3
8	Mechanic	0	1	0	1	54	3.1	47.4
9	Driver	0	1	1	1	43	2.5	49.8
10	Gardener	0	1	0	1	43	2.5	52.3

1960-99	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Clerk	0	0	0	1	172	15.7	15.7
2	Teacher	0	0	1	1	152	13.9	29.6
3	Farmer	1	1	1	0	68	6.2	35.8
4	Trader	0	0	1	1	58	5.3	41.1
5	Salesman	0	0	0	1	48	4.4	45.5
6	Mechanic	0	1	1	1	30	2.7	48.2
7	Accountant	0	0	1	1	28	2.6	50.8
8	Driver	0	1	0	1	24	2.2	53.0
9	Shopowner	0	0	1	0	21	1.9	54.9
10	Policeman	0	0	1	1	20	1.8	56.7

1950-59	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Clerk	0	0	0	1	294	16.7	16.7
2	Farmer	1	1	1	0	220	12.5	29.1
3	Teacher	0	0	1	1	157	8.9	38.0
4	Trader	0	0	1	1	141	8.0	46.0
5	Builder	0	1	0	1	126	7.1	53.1
6	Carpenter	0	1	1	1	126	7.1	60.3
7	Mechanic	0	1	1	1	84	4.8	65.0
8	Tailor	0	1	1	0	79	4.5	69.5
9	Driver	0	1	0	1	66	3.7	73.3
10	Medical assistant	0	0	0	1	34	1.9	75.2

1940-49	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Clerk	0	0	0	1	253	19.5	19.5
2	Trader	0	0	1	1	132	10.2	29.7
3	Farmer	1	1	1	0	127	9.8	39.5
4	Teacher	0	0	1	1	121	9.3	48.8
5	Carpenter	0	1	1	1	83	6.4	55.3
6	Driver	0	1	0	1	71	5.5	60.7
7	Builder	0	1	0	1	64	4.9	65.7
8	Mechanic	0	1	1	1	43	3.3	69.0
9	Medical assistant	0	0	0	1	40	3.1	72.1
10	Tailor	0	1	1	0	32	2.5	74.5

1930-39	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Clerk	0	0	0	1	198	19.8	19.8
2	Trader	0	0	1	1	105	10.5	30.3
3	Teacher	0	0	1	1	84	8.4	38.7
4	Farmer	1	1	1	0	79	7.9	46.6
5	Driver	0	1	0	1	58	5.8	52.4
6	Carpenter	0	1	1	1	45	4.5	56.8
7	Policeman	0	0	1	1	42	4.2	61.0
8	Chief	0	0	1	1	40	4.0	65.0
9	Medical assistant	0	0	0	1	31	3.1	68.1
10	Tailor	0	1	1	0	29	2.9	71.0

1920-29	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Clerk	0	0	0	1	139	22.6	22.6
2	Teacher	0	0	1	1	83	13.5	36.2
3	Trader	0	0	1	1	67	10.9	47.1
4	Medical assistant	0	0	0	1	36	5.9	52.9
5	Carpenter	0	1	1	1	33	5.4	58.3
6	Driver	0	1	0	1	33	5.4	63.7
7	Farmer	1	1	1	0	26	4.2	67.9
8	Servant (peasant)	1	1	0	0	26	4.2	72.2
9	Tailor	0	1	1	0	22	3.6	75.7
10	Chief	0	0	1	1	19	3.1	78.8

1910-19	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Clerk	0	0	0	1	89	17.0	17.0
2	Tailor	0	1	1	0	79	15.1	32.1
3	Servant (peasant)	1	1	0	0	65	12.4	44.5
4	Teacher	0	0	1	1	39	7.4	51.9
5	Chief	0	0	1	1	34	6.5	58.4
6	Carpenter	0	1	1	1	32	6.1	64.5
7	Trader	0	0	1	1	30	5.7	70.2
8	Sub-chief	0	0	1	1	19	3.6	73.9
9	Farmer	1	1	1	0	13	2.5	76.3
10	Soldier	0	1	0	1	11	2.1	78.4

1900-09	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Tailor	0	1	1	0	63	29.3	29.3
2	Trader	0	0	1	1	26	12.1	41.4
3	Teacher	0	0	1	1	18	8.4	49.8
4	Carpenter	0	1	1	1	17	7.9	57.7
5	Barkclothmaker	0	1	0	0	16	7.4	65.1
6	Clerk	0	0	0	1	10	4.7	69.8
7	Chief	0	0	1	1	9	4.2	74.0
8	Servant (peasant)	1	1	0	0	9	4.2	78.1
9	Bricklayer	0	1	1	1	6	2.8	80.9
10	Blacksmith	0	1	1	1	5	2.3	83.3

1895-99	Male Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Servant (peasant)	1	1	0	0	389	73.4	73.4
2	Peasant	1	1	0	0	130	24.5	97.9
3	Chief	0	0	1	1	5	0.9	98.9
4	Teacher	0	0	1	1	3	0.6	99.4
5	Farmer	1	1	1	0	2	0.4	99.8
6	Clerk	0	0	0	1	1	0.2	100.0
7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-

Table A2**The Ten Most Common Occupations and Their Coding, Women**

2000-11	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Teacher	0	0	1	1	369	12.8	12.8
2	Businesswoman	0	0	1	0	314	10.9	23.7
3	Housewife	NA	NA	NA	NA	194	6.7	30.4
4	Accountant	0	0	1	1	172	6.0	36.3
5	Nurse	0	0	1	1	141	4.9	41.2
6	"Housewife"	NA	NA	NA	NA	128	4.4	45.6
7	Farmer	1	1	1	0	126	4.4	50.0
8	Secretary	0	0	0	1	112	3.9	53.9
9	Banker	0	0	1	1	109	3.8	57.7
10	Administrator	0	0	1	1	91	3.2	60.8

1990-99	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Teacher	0	0	1	1	291	15.3	15.3
2	Housewife	NA	NA	NA	NA	255	13.4	28.7
3	"Housewife"	NA	NA	NA	NA	157	8.3	36.9
4	Businesswoman	0	0	1	0	151	7.9	44.9
5	Secretary	0	0	0	1	123	6.5	51.3
6	Accountant	0	0	1	1	76	4.0	55.3
7	Tailor	0	1	1	0	62	3.3	58.6
8	Nurse	0	0	1	1	59	3.1	61.7
9	Farmer	1	1	1	0	56	2.9	64.6
10	University student	0	0	1	0	42	2.2	66.8

1980-99	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	"Housewife"	NA	NA	NA	NA	336	16.3	16.3
2	Housewife	NA	NA	NA	NA	208	10.1	26.3
3	Teacher	0	0	1	1	192	9.3	35.6
4	Secretary	0	0	0	1	186	9.0	44.6
5	Businesswoman	0	0	1	0	122	5.9	50.5
6	Farmer	1	1	1	0	121	5.9	56.3
7	Tailor	0	1	1	0	121	5.9	62.2
8	Craftswoman	0	1	1	0	76	3.7	65.9
9	Nurse	0	0	1	1	71	3.4	69.3
10	Clerk	0	0	0	1	62	3.0	72.3

1970-99	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	"Housewife"	NA	NA	NA	NA	582	33.3	33.3
2	Housewife	NA	NA	NA	NA	202	11.6	44.9
3	Secretary	0	0	0	1	186	10.7	55.6
4	Teacher	0	0	1	1	150	8.6	64.2
5	Nurse	0	0	1	1	67	3.8	68.0
6	University student	0	0	1	0	58	3.3	71.3
7	Clerk	0	0	0	1	57	3.3	74.6
8	Typist	0	0	0	1	53	3.0	77.6
9	Tailor	0	1	1	0	48	2.8	80.4
10	Farmer	1	1	1	0	47	2.7	83.1

1960-99	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Teacher	0	0	1	1	210	19.2	19.2
2	Needleworker	0	1	0	0	207	18.9	38.1
3	Housewife	0	0	0	0	101	9.2	47.3
4	Tailor	0	1	1	0	99	9.0	56.4
5	Nurse	0	0	1	1	80	7.3	63.7
6	"Housewife"	NA	NA	NA	NA	73	6.7	70.3
7	Typist	0	0	0	1	44	4.0	74.3
8	Secretary	0	0	0	1	40	3.7	78.0
9	Midwife	0	0	1	1	37	3.4	81.4
10	Weaver	0	1	0	0	27	2.5	83.8

1950-59	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Tailor	0	1	1	0	841	47.7	47.7
2	Weaver	0	1	0	0	389	22.0	69.7
3	Teacher	0	0	1	1	160	9.1	78.8
4	Nurse	0	0	1	1	95	5.4	84.1
5	Matmaker	0	1	0	0	90	5.1	89.2
6	Farmer	1	1	1	0	64	3.6	92.9
7	Midwife	0	0	1	1	33	1.9	94.7
8	Basketmaker	0	1	0	0	32	1.8	96.5
9	Clerk	0	0	0	1	10	0.6	97.1
10	Typist	0	0	0	1	9	0.5	97.6

1940-49	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Weaver	0	1	0	0	645	49.8	49.8
2	Tailor	0	1	1	0	230	17.8	67.5
3	Matmaker	0	1	0	0	177	13.7	81.2
4	Teacher	0	0	1	1	112	8.6	89.8
5	Basketmaker	0	1	0	0	46	3.6	93.4
6	Nurse	0	0	1	1	31	2.4	95.8
7	Midwife	0	0	1	1	18	1.4	97.2
8	Gardener	0	1	1	0	13	1.0	98.2
9	"Housewife"	NA	NA	NA	NA	8	0.6	98.8
10	Dressmaker	0	1	1	0	4	0.3	99.1

1930-39	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Matmaker	0	1	0	0	369	36.9	36.9
2	Tailor	0	1	1	0	324	32.4	69.2
3	Weaver	0	1	0	0	87	8.7	77.9
4	Teacher	0	0	1	1	67	6.7	84.6
5	Basketmaker	0	1	0	0	54	5.4	90.0
6	"Housewife"	NA	NA	NA	NA	21	2.1	92.1
7	Farmer	1	1	1	0	18	1.8	93.9
8	Midwife	0	0	1	1	15	1.5	95.4
9	Seamstress	0	1	0	0	10	1.0	96.4
10	Gardener	1	1	1	0	8	0.8	97.2

1920-29	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Matmaker	0	1	0	0	220	35.8	35.8
2	Tailor	0	1	1	0	182	29.6	65.5
3	Basketmaker	0	1	0	0	100	16.3	81.8
4	"Housewife"	NA	NA	NA	NA	53	8.6	90.4
5	Farmer	1	1	1	0	31	5.1	95.4
6	Teacher	0	0	1	1	16	2.6	98.1
7	Trader	0	0	1	1	3	0.5	98.5
8	Nurse	0	0	1	1	2	0.3	98.9
9	University student	0	0	1	0	2	0.3	99.2
10	Midwife	0	0	1	1	1	0.2	99.4

1910-19	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Matmaker	0	1	0	0	253	48.3	48.3
2	Tailor	0	1	1	0	83	15.8	64.1
3	Farmer	1	1	1	0	70	13.4	77.5
4	Seamstress	0	1	0	0	42	8.0	85.5
5	Basketmaker	0	1	0	0	30	5.7	91.2
6	"Housewife"	NA	NA	NA	NA	13	2.5	93.7
7	Teacher	0	0	1	1	11	2.1	95.8
8	Cook	0	1	1	1	7	1.3	97.1
9	Clerk	0	0	0	1	4	0.8	97.9
10	Nurse	0	0	1	1	3	0.6	98.5

1900-09	Female Occupation	Agri.	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	Matmaker	0	1	0	0	124	57.7	57.7
2	Gardener	1	1	0	0	42	19.5	77.2
3	Farmer	1	1	1	0	17	7.9	85.1
4	Tailor	0	1	1	0	13	6.1	91.2
5	Basketmaker	0	1	0	0	12	5.6	96.7
6	Cook	0	1	1	1	3	1.4	98.1
7	"Housewife"	NA	NA	NA	NA	2	0.9	99.1
8	Teacher	0	0	1	1	2	0.9	100.0
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-

1895-99	Female Occupation	Skilled	Manual	Skilled	Waged	Freq.	Percent	Cum.
1	"Housewife"	NA	NA	NA	NA	509	96.0	96.0
2	Gardener	1	1	0	0	19	3.6	99.6
3	Farmer	1	1	1	0	2	0.4	100.0
4	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-