**Missing marriage: changing marriage patterns amid social transition in Myanmar**

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Abstract: Across Asia, men and women increasingly delay or abstain from marriage, a change often linked to improvements in female educational attainment and labour force participation. In Myanmar, less than 90% of women aged 45-49 years during the 2014 census had ever married, compared to nearly all men of a similar age. This paper investigates the difference in marriage patterns between males and females in Myanmar. Using a Cox proportional hazards model, we analyse the associations between entry into marriage across age cohorts, and male and female educational attainment and workforce participation. We find that having a high level of education and currently working negatively affect women’s chances of marrying across all ages. While higher education similarly affects younger men, we find that higher socioeconomic status substantially improves a man’s likelihood of marriage in later life, suggesting lingering gender stereotypes influencing women to remain single in the country.

Keywords: Never Married, Single, Myanmar, Female Education, Female Labour Force Participation, Census, Cross-sectional Survey

**Introduction**

Since establishing its current geographical borders in the early 1940s, the population of Myanmar has nearly tripled. Historical data suggest that population growth in Myanmar first gained momentum following independence and then began to stabilize in recent periods, reaching a population of just over 50 million in 2014. Although the population increased by more than 80% between the 1983 and 2014 censuses, population growth has been slower than projected by the government agencies and researchers (Myint, 1991; Tint, 1991; Spoorenberg, 2013). The reasons behind this deceleration of population growth are a combination of rapidly declining fertility, persistently high mortality rates, and increasing emigration to neighbouring countries. In the course of these demographic changes, there has been a noticeable shift in marriage patterns, with an increasing number of women have remained unmarried throughout their reproductive lives.

Historically, women in Myanmar have held greater power in marital decision-making than those in neighbouring countries. They were less likely to marry in childhood or early adolescence. For example, data from the 1931 Census for Burma confirm that child marriage was effectively non-existent in Burma, but common amongst populations in the Indian sub-continent. The same census records show that among 14-16 year old females, 84% of Hindus in Bengal, 77% of Hindus in Bihar and Orissa states of India, and nearly 90% of Muslim females in Bengal were married compared to less than 1% of Burmese females in the same age group (Bennison, 1933). Later marriage has persisted; population surveys and census data show that the mean age at marriage for women in Myanmar has been above 21 years for at least the past five decades (Maung, 1986). However, while marriage is still an expected life event, the percentage of never married women aged 45-49 years in Myanmar has doubled from approximately 6% in 1973 to 12.8% in 2014.

This is not unique to Myanmar, as other countries in Asia have also experienced similar declines in female marriage rates. Recent censuses and surveys conducted across several Asian countries showed that about 10% or more of the female population have remained single or never married between ages 45 and 49 years. However, most of these countries, including Japan (15.9% in 2015), Hong Kong (15.5% in 2016) and Singapore (12.8% in 2011), have low, or very low, fertility, and relatively high levels of development when compared to Myanmar (United Nations Statistics Division, 2018). For 2018, the World Bank estimated that Japan had a total fertility rate (TFR) of 1.4, while Singapore’s was estimated at only 1.1. Myanmar’s estimated TFR for the same time period was 2.2, higher than the estimates for neighbouring Thailand and Vietnam (World Bank, 2018). The per capita gross domestic product in Myanmar was less than 5% of Japan’s in 2017 (World Bank, 2018), and the country’s life expectancy of only 67 years was among the lowest outside of sub-Saharan Africa, and 15 years lower than that of Japan (Wang et al., 2012).

However, Myanmar has shown social developments that mirror those in high income, low fertility countries in Asia. Over the past 30 years, Myanmar had seen considerable improvements in women’s educational attainment and participation in the labour force, which have been identified as driving factors for changes in marriage patterns across the globe (Choe & Retherford, 2009; Jones, 2004). For example, previous research has shown that school attendance, at least up to graduate level, is often incompatible with marriage for women. This may especially be the case in societies with gendered domestic roles, where improvements in women’s status, either through education or economic advancement, have been linked to lower marriage rates among women, including in high income Asian countries such as Japan (Jones, 2004; Jones, 2019; Torabi & Abbasi-Shavazi, 2016; Jones & Gubhaju, 2009; Ono, 2003).

Similarly, career advancement has been cited as a reason for delayed marriage among females in Asia. For example, in South Korea, where an increasingly better educated workforce has found steep competition for jobs after leaving university, there has been a clear drop in female participation in the labour force among the age group 25-29 years, as women tend to leave the labour market to marry and have children before re-entering the market (Choe & Retherford, 2009). A similar trend in labour force engagement was seen in Japan prior to the early 2000s. The percentage of married women who participated in the workforce in Japan rose from 58% to 71% between 2000 and 2006. However, although more married women actively participate in employment in the country, their wages and representation in leadership positions remain lower than that of men (Shambaugh et al., 2017).

Improvements in women’s education and professional advancement can trigger a marriage squeeze in the population when both education and employment favour women, especially in countries where there is a strong belief that men should be the primary breadwinners for the family (Gender Equality Network, 2018). In contrast, countries that have shifted domestic roles to distribute household labour more equitably among men and women, and those where women’s social and economic position have improved, are more likely to have seen an increase in marriage among those with better education (Ono, 2013). This is true of the United States, and possibly Japan, where marriage among well-educated women has increased as female education and economic independence become more accepted (Goldstein & Kenney, 2001; Shambaugh et al., 2017).

Education and workforce participation changes may have a major impact on entry into marriage in Myanmar because of a potential marriage squeeze caused by excess male migration and mortality. The 2014 Census estimated that around two million Myanmar migrants lived abroad, more than 60% of whom were men (International Organisation for Migration [IOM], 2016). The IOM estimates that, of these two million emigrants, 1.4 million live in Thailand, representing an 88% and 90% increase in the number of men and women, respectively, migrating to Thailand over the past twenty-five years (IOM, 2016).

Male mortality is also much higher than female mortality in Myanmar, especially among people of reproductive ages. Analysis of 2014 Census and vital registration data found that the age-specific mortality rates (ASMRs) for men in five-year age groups between 25 and 49 were between three and five times greater than female mortality rates (Department of Population, Ministry of Labour, Immigration and Population, 2016; Oung et al., 2017). In comparison, male ASMRs are only up to twice as large as female ASMRs in nearby Nepal (Ministry of Health, Nepal et al., 2017). Moreover, male ASMRs in Myanmar appear to have increased over the last several decades, with a mortality rate ranging from 9.5 per 1000 men aged 25 years in 1991 to 16.7 per 1000 in 2014 (Ministry of Immigration and Population, Immigration and Population Department, 1995). In contrast, the ASMR for women aged 25 years declined from 6 per 1000 in 1991 to 5.6 per 1000 in 2014. Life expectancy in Myanmar, estimated to be around 60 years for men and 67 for women, is also low for South-east Asia, even compared with other countries with recent periods of prolonged conflict (Wang et al., 2012).

Myanmar thus presents an interesting case for the analysis of marriage: it has evolved a marriage pattern that exhibits characteristics similar to those of much more developed and prosperous Asian countries, despite its poverty and lower levels of economic development. The present analysis seeks to determine how rapid social development, as characterised by female education and labour force participation, may influence marriage patterns in Myanmar, even in the absence of any strong economic development.

**Methods**

We used recently released data from Myanmar’s first Demographic and Health Survey (DHS), conducted during 2015-2016, along with aggregated data from the 1983 and 2014 censuses, to analyse the underlying associations between entry into marriage among men and women, and educational attainment and labour force participation in Myanmar (Ministry of Health and Sports & ICF, 2017). First, we describe the trends in marriage, education and labour force participation in Myanmar from 1973 to 2016. We then demonstrate how education and labour force participation influence the propensity to marriage for men and women of different age cohorts in Myanmar.

The DHS used a stratified two-stage sample design, identifying 30 households from each of 442 clusters. All women between the ages of 15-49 years who were residing in each of these households were eligible for interview. Men between the ages of 15-49 from every second household were selected for interview, and their participation did not depend on their residency in a household with an eligible woman (Ministry of Health and Sports & ICF, 2017). We used data on all individuals aged 20-49 from both male and female samples. Our analyses accounted for the standard complex survey design, following the procedure in Stata/SE 15.0.

For the individual level analysis, we used DHS data from 11,044 women and 3,969 men aged 20-49 years. Individuals aged 15-19 years in 2016 were excluded from the analysis due to problems related to censoring. Only a few women marry between ages 15 and 19 years in Myanmar. Most individuals aged 15-19 who would eventually pursue higher education would have not yet enrolled in higher education at college or university levels at the time of the survey, and therefore could not have completed the key events relevant to this analysis. While many of those aged 20-24 years would not have completed university, they would still be classified as individuals with university level education in the DHS. Therefore, those aged 20-24 were included in the pooled sample. We acknowledge this may bias the results of the analysis if university educated individuals delay marriage until after graduation, but we expect this bias to be small as only 2.1% of the females and 1.4% of the males aged 20-24 had higher education. For much of the paper, we focus attention on marriage patterns among those aged 25 years and over in order to reduce the impact of this bias.

We show the results of chi-squared tests to compare the distributions of current status binary variables (never-married and ever-married) by social and economic characteristics. These include: residence (urban/rural) status; higher education (university level or above); highest wealth quintile; whether or not the individual was currently working at the time of the survey; if working, whether they were working in a professional or managerial position; and whether they had ever had sexual relations. We conducted chi-square tests separately for men and women aged between 20 and 49 years, in five-year intervals, at the time of the survey. For the purposes of this paper, descriptive results are shown for the cohorts aged 25-29, 35-39 and 45-49 years at the time of the survey to demonstrate the variation across cohorts who reached marriageable age in different decades. Descriptive results for those aged 20-49 years are reported in Appendices 1a and 1b.

The effect of social and economic characteristics on entry into marriage was assessed using Cox proportional hazard regression models, estimating the hazard at different durations of an individual changing from never-married to ever-married status. The Myanmar DHS did not record the age at first marriage. Instead it asked women what age they started living with their first spouse. This is interpreted as indicating age at marriage, as cohabitation outside of marriage is generally uncommon in Myanmar. We examined the 2016 DHS and confirmed that very few women (0.4% of those never married) reported sexual activity outside of marriage. For these reasons, we felt confident that age at first cohabitation can be used as a proxy for age at first marriage in Myanmar. The underlying time variable for the survival analysis is measured the duration between the person attaining the age of 10 years and the recorded date of first cohabitation (the event) or the date of the survey (censored cases). The minimum reported age at cohabitation in the survey was 10 years, and hence we defined the exposure from age 10 onwards.

The Cox regression model allows the underlying hazard to be determined non-parametrically by the data (Bradburn et al., 2003; Cox & Oakes, 1984). Regressions with parametric baseline hazards are often used to examine the characteristics associated with entry into marriage (Reda & Lindstrom, 2014). A model with a non-parametric underlying hazard, however, offers an opportunity to explore the distribution of the hazards without the constraints stemming from a parametric specification. Similar approaches have been used to analyse marriage trends in other countries (Adebowale et al., 2012; McGinnis, 2003; Ikamari, 2005).

We present the results of two pooled models for males and females, with the variables highest level of education attainment and current work status as primary indicators of interest. The estimates are adjusted for urban/rural residence, age cohort and urban/rural wealth quintiles. We also adjusted for geographic region in both male and female models. For the female model, marriage patterns were significantly different only in five regions and states compared to Yangon (the reference region). For males, region had no significant effect on the marriage hazard. We thus simplified the female model to show the effects of residence in these five regions and states only. We have also included region in the final models for males for comparison. This did not influence the parameter estimates for other variables included in the models.

Household wealth status is measured by constructing a standard wealth index and identifying the wealth quintile within which each household falls. When a single wealth index is computed for all households, urban households tend to fall into higher wealth quintiles and rural households into lower wealth quintiles. Therefore, recent DHSs compute wealth quintile variables separately for urban and rural settings, and then scale these to generate a composite index that allows for comparability between urban and rural areas (Rutstein, n.d.). This helps to adjust for differences in how wealth is manifest for urban and rural dwellers. Our models include wealth quintiles calculated using the scaled composite wealth index, which are available through the DHS dataset.

The first models for men and women include only the previously described variables, while the second models also include an interaction term to account for the likely association between an individual’s highest level of education and his or her current work status. The underlying assumption is that those who reported to be working and have a higher level of education are employed in higher status occupations. For example, among women aged 20-49 years, 39% of those with higher education worked in professional or technical positions compared to only 2.7% of their counterparts without any formal education. There are similar trends for men: 35% of those with higher education worked in professional or technical positions compared to 6% without any formal education. In contrast, more than 80% of men and 66% of women who worked in unskilled manual labour had no formal education or only primary education. The inclusion of the interaction term seeks to ascertain if the effects of the variables of interest on entry into marriage change when this likely association is considered in addition to other socioeconomic variables.

Ideally, we should use a model in which current work status and education level are allowed to vary over time, as their values at the time of the survey may not represent the individual’s status at the time of marriage. Unfortunately, historical data on individuals’ professional and educational experiences over time were not available in the Myanmar DHS. We acknowledge that this may imply that the results presented for individual age cohorts may indicate different relationships. Models for specific age cohorts are presented separately in Appendix 2.

**Results**

***Changing marriage patterns***

As of 2014, most women in Myanmar who marry tend to do so by the age of 25 years. After age 25, first marriage rates tend to level off. This represents a shift in marriage patterns over the past 40 years. The changes show lower percentages married for younger age groups in each successive census for both men and women. The data suggest that during the second half of the twentieth century an increasing number of women delayed marriage, but most eventually married in the end. However, by 2014, a greater proportion of women were delaying marriage indefinitely: in both 1973 and 1983, 94% of women then aged between 45 and 49 years had married, this percentage fell to 87% in 2014 (Table 1). Men also appear to have delayed marriage increasingly over time, but fewer men than women have never married by ages 45-49 years. As celibacy has increased over the last 45 years, the singulate mean age at marriage (SMAM) has risen from 23.9 years in 1973 to 25.9 years in 2014.

[Table 1 about here]

The changes found at the national level are also observed in states and regions: the percentage of women who had never married increased in every state and region from 1983 to 2014. Mandalay, Yangon and Sagaing show the biggest increases of 10.3, 7.9 and 9.1 percentage points respectively. Mandalay and Yangon have remarkably high percentages of unmarried women: approximately 15% of the female population aged 45-49 years in Yangon have never married, while more than 17% of women in this age group in Mandalay in 2014 were single. The range of variation also changed from 1983 to 2014. In 1983, the percentage of never married women aged 45-49 years ranged from 1.7% in Rakhine to 7.3% in both Yangon and Mandalay. In 2014, this ranged from 6.4% in Shan to 17.6% in Mandalay. The DHS shows similar patterns, with 19.3% of women aged 45-49 years in Mandalay never having married compared to only 6.0% in Chin. Yangon and Mandalay have the largest populations of any states or regions in the country, so their dramatic changes in marriage patterns have a large influence on overall change at the national level. While areas with more unmarried women are also generally areas with more unmarried men, women aged 45-49 years living in Yangon and Mandalay are still approximately 50% more likely to be unmarried than men.

 These changes may be partially due to changing population dynamics in the country, including an overall drop in the number of men relative to women for nearly all age groups (Table 2). According to Myanmar’s census data, there were more than 115 men for every 100 women between the ages of 15 and 49 years in 1983. By 2014, there were only 89 men for every 100 women in this age range. The changes are apparent across all age and education groups. However, those with no education and those with the highest education appeared to have seen the greatest shifts. In 1983, relatively few men or women had higher education, in absolute terms 180,000 men and 160,000 women. In 2014, there were more than 2 million women living in Myanmar with a university or higher education, compared to fewer than 1.5 million men. For those aged over 50 years, more men had a university or higher education. However, highly educated women of marriageable ages (742,991 women aged 20-29 years) outnumbered men of similar education and marriageability (474,345 men aged 25-34 years).

[Table 2 about here]

***Increasing educational levels and labour force engagement***

Education levels have changed rapidly in Myanmar over the last 50 years (Table 1). The analysis of the 1973 census shows that fewer than 40% of both the male and female populations over the age of five years had received any education. Ten years later, more than half of population had some formal education. These improvements in educational attainment continued until the 2000s. By 2007, nearly 90% of the population aged 15 years and above had some education, and enrolment in higher education which increased from less than 2% in 1983 to more than 10% of females and 8.5% of males over age 15 in 2014. The 2014 census also found that more than 90% of the total population aged over 10 years was literate, with little or no difference between males and females (Ministry of Immigration and Population, Department of Population 2015). Most geographic areas have percentages literate between 80% and 95%. However, a smaller proportion of the population of Shan state was literate (67%) and the state had a marked gender disparity (72% men and 62% women were literate) (Ministry of Immigration and Population, Department of Population, 2015).

Similarly, female participation in the labour force has changed over the past half century. In 1973, only around one third of females aged over 10 years were employed outside of the home, while more than 50% worked as unpaid household workers (Maung, 1986). By 2014, female participation in the formal workforce had increased to more than 40% among those aged over 10 years, and only one third of these reported working in the home (Ministry of Immigration and Population, Department of Population, 2015). The majority of this change appears to have come from increased workforce participation among younger women. In 1983, fewer than 20% of 15-19 year old women were employed, but 40% were reported to be working in 2014. Similarly, only a third of 20-24 year old women were working in 1983, while more than half worked in 2014. Labour participation for men in similar age groups also increased over the same period.

The increase in female labour participation in Myanmar after the 1970s may be due to a transition in the type of work available for women. Most employed men (81.1% in 2015-2016) and women (63.9% in 2015-2016) worked in agricultural or manual labour positions (Ministry of Health and Sports & ICF, 2017). However, women seem to be increasingly taking on office jobs and leadership positions. In 1983, only 2.8% of women aged 19-49 years held managerial or professional positions. By 2014, this had increased to 7.8% of women of reproductive age, slightly higher than the percentage of men reporting the same kind of positions (7.1%). Moreover, more than a quarter of women reported working in sales or clerical positions, compared to only 11.3% of men. These transitions appear consistent with women’s educational advancements.

***Factors associated with marriage***

Among women aged 45-49 years in 2016, 12.8% had never married. Never-married women in their late 40s were more likely than were ever-married women of the same age to live in urban areas, work at a professional level, and fall into a higher wealth quintile (Table 3a). They also had higher levels of educational attainment. These associations were found for women aged 25-29 and 35-39 years in 2016 as well. In addition, significantly more never- married women were engaged in the labour force than married women in the younger two age cohorts.

[Table 3a about here]

In 2016, only 5.2% of men aged 45-49 years had never married. Never-married men were not significantly different as a group from the majority of men of the same age who had married, although a higher proportion of never-married men were in the highest wealth quintile (Table 3b). Perhaps due to the small sample of never-married men in the older age cohorts, only the 25-29 year age cohort showed clear differences between men who had married and those who had not. In this age cohort, unmarried men were more likely to live in an urban area, have university or higher education, and belong to households in the highest wealth quintile. Married men were more likely to be working, but unmarried men were more likely to work in a professional or managerial position.

[Table 3b about here]

 We now present the results of the Cox regression analysis (Table 4). For women, we found that higher educational attainment, urban residency and higher wealth status were associated with lower hazard ratios of entering into marriage. Women living in certain regions had a higher marriage hazard than the majority of the country. These included the remote regions of Kachin, Chin and Shan, along with the national capital of Nay Pyi Taw. Women who were currently working also had an approximately 10% lower hazard of entering into marriage than women who were not currently working, but the difference was not statistically significant. Higher levels of education were associated with lower hazards of entry into marriage for women from all age cohorts, but appeared to affect older women (those aged between 45-49 years in 2015-2016) the most (Appendix 2). While increased wealth decreased the marriage hazard for younger women, increased wealth did not affect entry into marriage for older women, although for older women our measure of wealth may not reflect wealth status at the time of marriage. Current work status did not significantly affect the hazard ratio for entering into marriage for women with no education but, as educational levels increased (see Model 2), the difference between currently working and not currently working women increased and became statistically significant so that, among women with higher education, the relative risk of entering into marriage for working women was only about 60 per cent of that for women who were not working (Figure 1). This suggests that women with higher status jobs were less likely to marry.

[Table 4 about here]

 For men, the patterns were different, although the smaller sample means that results should be interpreted with caution (Figure 1). Currently working men had a higher risk of marrying than men who were not currently working. This was true for all levels of education, but the relative differential varied by age, becoming massive among men with high levels of education. Overall, unemployed men with higher education had the lowest risk of marriage.

Urban residence and higher wealth status were associated with a reduced hazard of marriage for men, but influence entry into marriage for men. Unfortunately, the small sub-samples for male age cohorts makes it difficult to identify the patterns disaggregated by age.

[Figure 1 about here]

**Discussion**

Delays to marriage and increases in the proportion of women never marrying have been observed across Asia for the past several decades (Smith, 1980; Xenos & Gultiano, 1992; Jones & Gubhaju, 2009). While there is evidence demonstrating the relationship between delays in marriage and fertility decline, fewer studies explore why women in particular are increasingly choosing to delay marriage or remain never married across their reproductive life course, and how their behaviour may differ from that of men of similar social status. Our analysis has investigated changes in marriage trends in Myanmar and sought to identify demographic and social characteristics associated with entry into marriage in the country for women compared to men. We found that women in Myanmar are increasingly unlikely to marry, a trend similar to several other countries in Asia but unusual for the country’s level of socioeconomic development. We also determined that, for women, remaining unmarried, (especially in later life) is associated with higher education and workforce engagement. Higher education also decreases the hazard of entering into marriage for men, as did current employment. However, the effect of the interaction term for education and employment differed for men and women: employment reinforced the decrease in women’s marriage hazard associated with higher levels of education, whereas for men with higher educational qualifications, being employed counteracted the impact of education. A working female with higher education had a hazard of marriage only one third that of a non-working female with no education. The same comparison for men revealed that a working male with higher education had a hazard of marriage three quarters that of a non-working male with no education. Very few women or men with lower levels of education worked in professional or managerial positions. As such, the results suggest that belonging to a higher status group has somewhat differing effects on men and women in Myanmar. Belonging to one of these groups is strongly associated with a reduced chance of marriage for women. Working status increases the strength of this association for women. For employed men (most men are employed), current employment had less of an effect on the marriage hazard of increasing education.

These relationships between marriage and sociodemographic characteristics are not unlike those found in other Asian countries experiencing marriage squeezes. However, the patterns in Myanmar appear especially gendered. Existing literature on marriage in Asia suggests that two distinct groups have emerged to represent the populations who delay marriage or never marry in the region. The first includes women who have benefited from increased educational attainment and employment opportunities arising from changing social and cultural norms. The second comprises men who face growing economic insecurity and inability to manage the financial costs of marriage and family life (Raymo et al., 2015, Lee et al., 2020). The results of this analysis support the existence of the first group (of women) in Myanmar, but provide very little evidence for the existence of second group (of men). The oldest age cohort of women, aged 45-49 years in 2015-2016, who have higher levels of education and who work, represents the first group. In our analysis, these women have lower hazards of entering into marriage. In contrast, we see evidence of a positive interaction between education and employment that means that the marriage hazard decreases much less with education for men. The consequence is that, in Myanmar, most men (all but 5.2%) still marry. This is a noticeable contrast to other countries in the region with high rates of being single or never married, where there is much clearer evidence of the existence of the second group of men. For example, the proportion of men with less education and those working in lower paying jobs who marry in South Korea has declined markedly since 1990 (Lee et al., 2020).

The analysis in this paper suggests that changes in women’s status, especially related to education, may have contributed to changing marriage patterns and led to a marriage squeeze on women but not men. The status of and opportunities for men in rapidly developing countries have not changed in the same way as those for women, and while it is culturally acceptable for women to marry men of higher status, it is less so for men to marry women of higher status (Jones 2004). Analysis of the 1973 Census showed that literacy was considerably higher among males than females, with increasing gaps as age increased. In 1973, only half of all women aged 45-49 years were literate, compared to 82.3% of men (Maung, 1986). Although men aged 45-49 years today are still more likely than women of the same age to be literate (90.2% compared to 80.3%), the gap has decreased (Ministry of Health and Sports & ICF, 2017). Furthermore, women in Myanmar are also now more likely to have secondary or higher education than men (14.5% of women compared to 11.9% of men) signifying dramatic changes in women’s status in the country and their options for employment outside of the home (Ministry of Health and Sports & ICF, 2017). These changes, illustrated in Table 2, have changed the gender dynamics of higher education in the country.

The improvements in female literacy and education found in Myanmar are unusual when compared to countries with similar economic profiles in the region. For example, the most recent Myanmar DHS found that 85% of women of reproductive age were literate. This compares to only 66.3% of women surveyed during Bangladesh’s most recent DHS, 76.1% in Cambodia, and 69.1% in Nepal (National Institute of Statistics, Directorate General for Health & ICF Macro, 2011; National Institute of Population Research et al., 2016; Ministry of Health, Nepal et al., 2017). Similarly, while in Myanmar in 2014, 81.2% of women over the age of 25 years had received some education, in the same year fewer than half of the women in the same age group in Bangladesh and only around 72% of women in Indonesia had primary education. In the previous year, only an estimated two thirds of the female population aged over age 25 years in Thailand had received any education (World Bank, 2019). In comparison, female education levels in Myanmar appear more similar to those found in high-income countries in Asia, with higher rates of never married women.

The conflict between increased education and professional opportunities, and the continued expectation that women fulfil traditional roles within marriage has been identified as a primary reason for women to delay marriage across Asia (Raymo et al., 2015). This has been noted in high-income countries in particular, such as Japan and South Korea (Jones, 2019). These countries, though much more economically developed than Myanmar, appear similar to Myanmar in terms of female education and labour force engagement. For example, in 2017, around 50% of females over the age of 15 were engaged in the labour force in both Japan and Myanmar (World Bank, 2019), but Myanmar had a higher proportion (around 25%) of female managers than either Japan (14.9%) or South Korea (12.3%) (International Labour Organization, 2019). Additionally, like Japan and South Korea, Myanmar has near universal literacy for younger populations, more than 95% of boys and girls between the ages of 10 and 14 years (Department of Population, Ministry of Immigration and Population, 2015).

However, as observed in Japan and South Korea, the social pressures placed on women to fulfil dual roles and mothers and employees may have even greater influence on marriage in Myanmar, where women are generally expected to work at home once they are married (Gender Equality Network, 2018). Recent scholarship on gender and women’s status in Myanmar highlights this tension and points to the ideological concept of Hpon (also referred to as Pon), an abstract concept derived from Theravada Buddhism that establishes the religious superiority of men, and often leads to an institutionalized belief in male superiority (Thein, 2015; Miedema et al., 2016). These beliefs are woven into the social fabric of the country, even affecting the education system itself. A recent review of textbooks used for grades 1-7 found that they helped perpetuate conflicting female social norms by showing girls helping with domestic work at home and studying, but not being physically active or serving as leaders (Thein, 2015). While this paper does not attempt a deeper exploration of gender relations and female empowerment in Myanmar, it acknowledges the conflict created by acceptance of concepts such as Hpon and the efforts of the government to encourage and enable women with equal access to education and promote relatively relaxed marriage and employment norms.

Our findings suggest fewer marriage opportunities for women who have higher levels of education, and further show that women who hold positions at professional level are less likely to have married by the end of their reproductive years, perhaps due to a marriage squeeze that disproportionately affects well-educated women. While this paper begins to examine the role of changing access to female education and employment in the absence of changing social norms on marriage and fertility, greater sociological research into gender roles and stereotypes in Myanmar would greatly contribute to our growing understanding of social change and fertility in the country.

Although data limitations did not permit us to explore excess male migration and mortality in detail, the apparent shortage of men of reproductive age caused by these phenomena have likely created a marriage squeeze for well-educated and higher status women in Myanmar. As of 2014, there were over one million more women of reproductive age (15-49 years) than men, and an overall sex ratio of 93 men for every 100 women (Ministry of Immigration and Population, Department of Population, 2015). Considering a slight age difference in partners such that women aged 20-24 years tend to marry men aged 25-29 years, the sex ratio falls to 89 men per 100 women for all education levels and only 75 men per 100 women for those with the highest level of education. Emigration is a major driver of this shortage. However, male emigrants are unlikely to be missing spouses for the unmarried women identified in this analysis. The IOM estimates that the majority of emigrants go on to work in the commercial fishing, agriculture, manufacturing and hospitality sectors, which often offer lower wages and poor working conditions in host countries (IOM, 2016). The high status of the never-married women observed in our analysis suggest that those men who have emigrated would not necessarily have been eligible to marry these women.

Excess male mortality may also contribute to the country’s marriage squeeze. Age specific mortality rates for men aged 25 years were more than three times the rates for women of the same age in 2014, and gap that has grown over the past several decades. The reasons for these changes in mortality remain unknown, as cause-specific mortality data are unavailable or incomplete (Oung et al., 2017). However, excess male mortality may be caused by higher risk behaviour among men. For example, Myanmar is one of the largest sources of opium in the world and is also home to large jade and ruby mines. Countries with similar illicit drug and conflict environments, for example Colombia, have also experienced marriage squeezes on women (Holland Jones & Ferguson, 2010). Men may also be more likely to abuse alcohol and other drugs. A recent survey found that 2% of adults living in opium producing villages in eastern Myanmar used opium (United Nations Office on Drugs and Crime, 2015), and mental or behavioural disorders due to psychoactive substance use were the seventh leading cause of registered deaths in 2013 (Oung et al., 2017). HIV/AIDS also disproportionally affects men in Myanmar: almost four times as many men died from AIDS-related causes in 2017 and more than twice as many men are currently living with HIV in the country than women (Joint United Nations Program on HIV/AIDS, 2018).

Unfortunately, data on cause of death or the socioeconomic and demographic characteristics of those who die are not readily available from Myanmar and we can only speculate about the relationship between high male mortality and low female marriage. Additionally, although we are able to make inferences about marriage trends over the past several decades using published survey reports, we must view the data with caution. We know that certain areas of Myanmar are routinely non-enumerated during national surveys and censuses. For example, around 1.2 million people lived in areas non-enumerated for security reasons during the 1983 and 2014 censuses (Census Division, Immigration and Manpower Department, Ministry of Home and Religious Affairs 1986; Ministry of Immigration and Population, Department of Population, 2015). The 1991 Population Change and Fertility Survey identifies several sampling limitations arising from state officials’ ability to exclude townships and villages from the sampling frame, and the subsequent decision not to adjust the sample design following these omissions (Ministry of Immigration and Population, Immigration and Population Department, 1995). The DHS data, upon which our analysis in this paper is largely based, includes five clusters that are replacements for areas deemed insecure during survey implementation (Ministry of Health and Sports & ICF, 2017). Adjusting the sample to reflect these limitations was not possible because information is not available on which townships or clusters were excluded or replaced. Data limitations also prohibited us from including time-varying information about an individual’s education and employment status at the time of marriage, which would have enhanced our understanding of how these variables affect individual’s entry into marriage at the time of marriage.

In addition to the data limitations caused by ongoing conflict in Myanmar, we must consider the potential impact of conflict exposure on marriage. Changing marriage patterns have been identified as a possible demographic response to conflict (Hill, 2004; Fargues, 2000; Jayaraman & Gebreselassie, 2009). We do not explore this relationship in detail in this analysis, but note that areas where conflict is most intense, for example Shan and Rakhine states, have higher proportions of ever-married women, especially among younger age cohorts. Although we see these basic relationships, understanding whether the differences are related to conflict exposure requires further analysis.

 Despite these data limitations, the consistency of trends across data sources and the quality of the data that are available support the existence of a female marriage squeeze disproportionately affecting well-educated and wealthier women in Myanmar. Supplementary reports and previous research help to demonstrate the similarities between the causes of this marriage squeeze and those found in wealthier Asian countries, and provide additional evidence of the potential contribution of excess male emigration and mortality on the marriage squeeze in Myanmar.

At the start of this paper we posited the conundrum that Myanmar’s marriage pattern for women increasingly resembled the patterns of much richer countries in the East and South-east Asian region, whereas the marriage pattern for men followed countries at a similar level of economic development. The explanation for this does not offer a different kind of association between marriage and social and economic variables in Myanmar. Rather it is peculiar combination of social and economic circumstances in Myanmar relative to other countries. Myanmar’s distinctive characteristics include a more rapid than average improvement in female education, coupled with greater than average excess male mortality in the young adult ages and higher emigration among young men when compared to women, all of which have occurred over a time period when expectations of women’s role within the household after marriage have not changed greatly. The improvement in female education and increased labour force participation have therefore made high status women less willing to marry and embrace the double burden of work outside the home, and simultaneously reduced the pool of ‘acceptable’ partners. Meanwhile, increasing emigration along with excess male mortality have reduced the supply of men available for marriage and consequently increased their marriage rate.

**Declaration of Interests**

The authors declare that there are no conflicts of interest.

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| --- |
| Table 1. Intercensal population changes in marriage, labour force engagement and educational attainment, Myanmar 1973-2014 |
|  | **Women** | **Men** |
|  | **1973** | **1983** | **2014** | **1973** | **1983** | **2014** |
| Percentage never married |  |  |  |  |  |  |
| 15-19 | 78.0 | 83.2 | 86.8 | 95.2 | 93.3 | 92.4 |
| 20-24 | 35.5 | 42.1 | 54.5 | 55.2 | 60.1 | 67.0 |
| 25-29 | 16.6 | 21.5 | 32.0 | 23.7 | 28.1 | 39.0 |
| 30-34 | 9.3 | 12.8 | 20.8 | 10.3 | 12.7 | 22.6 |
| 35-39 | 7.0 | 8.9 | 16.2 | 6.1 | 7.2 | 14.5 |
| 40-44 | 6.2 | 6.7 | 14.1 | 4.4 | 4.8 | 10.6 |
| 45-49 | 5.9 | 5.9 | 12.9 | 3.5 | 3.8 | 8.3 |
| Percentage of the population 10 years and older in labour force | 30.9 | 34.4 | 42.9 | 65.3 | 62.7 | 72.5 |
| Percentage of the population 10 years and older with any education | 31.7 | 61.6 | 85.4 | 39.8 | 65.1 | 89.2 |
| Percentage of the population 10 and older with higher education | --# | 1.3 | 9.1 | -- | 1.4 | 7.4 |

 # Only information on the percentage of the population completing Standard 5 or higher was available for 1973: 8.3% of females and 17.1% of males over age 10.

Data Sources: Maung, 1986; Immigration and Manpower Department, Ministry of Home and Religious Affairs, 1986; Department of Population, Ministry of Immigration and Population, 2015

Table 2. Male-female population ratios by education level and age cohort, 1983 vs 2014, Myanmar

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Age Group | No Education | Grades 1-5 | Grades 6-9 | Grades 10-11 | University or Higher | Total |
| 1983 |  |  |  |  |  |  |
| 5-9 | 103.4 | 98.2 |  |  |  | 102.0 |
| 10-14 | 202.9 | 104.3 | 107.6 | 82.0 |  | 132.7 |
| 15-19 | 186.0 | 87.2 | 143.4 | 99.2 | 86.4 | 128.1 |
| 20-24 | 179.5 | 83.3 | 171.7 | 125.0 | 90.5 | 130.2 |
| 25-29 | 179.4 | 81.5 | 192.0 | 149.5 | 97.3 | 136.8 |
| 30-34 | 81.6 | 82.2 | 199.6 | 195.5 | 133.9 | 97.7 |
| 35-39 | 82.2 | 88.0 | 194.9 | 210.2 | 170.4 | 99.6 |
| 40-44 | 74.7 | 88.0 | 233.8 | 263.1 | 61.3 | 92.1 |
| 45-49 | 80.6 | 97.1 | 275.7 | 365.4 | 335.9 | 96.5 |
| 50-54 | 83.3 | 98.7 | 258.2 | 419.8 | 360.3 | 95.0 |
| Total | 117.8 | 91.9 | 165.1 | 156.8 | 115.1 | 116.0 |
| 2014 |  |  |  |  |  |  |
| 5-9 | 107.3 | 100.9 | 86.7 |  |  | 102.3 |
| 10-14 | 119.7 | 112.4 | 95.3 | 76.2 |  | 103.2 |
| 15-19 | 99.5 | 96.7 | 114.4 | 91.3 | 67.0 | 98.0 |
| 20-24 | 86.3 | 84.5 | 110.0 | 113.4 | 69.6 | 92.9 |
| 25-29 | 78.9 | 81.9 | 114.8 | 125.4 | 73.6 | 92.0 |
| 30-34 | 77.6 | 84.1 | 124.6 | 119.0 | 74.0 | 92.7 |
| 35-39 | 74.5 | 82.4 | 130.9 | 116.6 | 70.4 | 90.9 |
| 40-44 | 69.1 | 77.5 | 128.9 | 124.5 | 68.0 | 88.4 |
| 45-49 | 64.8 | 74.8 | 136.2 | 124.5 | 83.1 | 86.5 |
| 50-54 | 53.5 | 71.6 | 143.3 | 142.2 | 112.0 | 79.0 |
| Total | 73.6 | 86.0 | 115.8 | 113.4 | 75.7 | 91.6 |

Data Source: Immigration and Manpower Department, Ministry of Home and Religious Affairs, 1986; Department of Population, Ministry of Immigration and Population, 2015

Table 3a. Percentage of women with key social and demographic characteristics, and within select age cohorts, who are ever- and never-married, Myanmar 2015-2016, % (n)

|  |  |  |  |
| --- | --- | --- | --- |
| Age in 2016 | Ever-married | Never-married | Total |
| 25-29 years | ***n* = 1,354** | ***n* = 513** | ***n* = 1,867** |
| Urbana |  25.5 (345) | 39.0 (200) | 29.2 (545) |
| Higher education a |  10.8 (147) | 25.8 (133) | 15.0 (280) |
| Highest wealth quintile a |  17.4 (236) | 30.0 (154) | 20.9 (390) |
| Currently working a |  59.7 (808) | 83.5 (429) | 66.3 (1,237) |
| In professional or managerial employment a |  4.7 (63) | 13.9 (71) |  7.2 (134) |
| Ever had sexual intercourse a | 100.0 (1,354) |  1.0 (5) | 72.8 (1,359) |
| 35-39 years | ***n* = 1,623** | ***n* = 331** | ***n* = 1,954** |
| Urban a |  27.5 (446) | 40.0 (133) | 29.6 (579) |
| Higher education a |  9.8 (159) | 20.9 (69) | 11.7 (228) |
| Highest wealth quintile a |  20.8 (337) | 37.1 (123) | 23.5 (460) |
| Currently working a |  68.7 (1,118) | 81.8 (270) | 71.1 (1,388) |
| In professional or managerial employment a |  5.0 (82) | 11.6 (38) |  6.2 (120) |
| Ever had sexual intercourse a | 100.0 (1,623) |  0.0 (0) | 83.1 (1,623) |
| 45-49 years | ***n* = 1,432** | ***n* = 210** | ***n* = 1,642** |
| Urban a |  29.7 (415) | 38.4 (84) | 30.9 (500) |
| Higher education a |  5.6 (79) | 19.7 (43) | 7.5 (122) |
| Highest wealth quintile a |  22.6 (316) | 35.6 (78) | 24.3 (394) |
| Currently working |  68.2 (953) | 74.8 (164) | 69.1 (1,117) |
| In professional or managerial employment a |  4.7 (65) | 13.0 (29) |  5.8 (94) |
| Ever had sexual intercourse a | 100.0 (1,399) |  0.0 (0) | 86.5 (1,399) |

ap-value for chi-square test ≤0.001

Data Source: Myanmar Demographic and Health Survey, 2015-2016 (Ministry of Health and Sports and ICF 2017)

Table 3b. Percentage of men with key social and demographic characteristics, and within select age cohorts, who are ever- and never-married, Myanmar 2015-2016, % (n)

|  |  |  |  |
| --- | --- | --- | --- |
| Age in 2015-2016 | Ever-married | Never-married | Total |
| 25-29 years | ***n* = 464** | ***n* = 213** | ***n* = 677** |
| Urban b |  26.8 (124) | 38.0 (81) | 30.3 (205) |
| Higher education a |  8.5 (40) | 20.1 (43) | 12.2 (83) |
| Highest wealth quintile b |  17.6 (82) | 28.6 (61) | 21.0 (143) |
| Currently working b |  97.3 (452) | 90.6 (193) | 95.2 (645) |
| In professional or managerial employment b |  6.0 (28) | 12.8 (27) |  8.1 (55) |
| Ever had sexual intercourse a | 100.0 (464) | 21.6 (46) | 75.3 (510) |
| 35-39 years | ***n* = 608** | ***n* = 71** | ***n* = 679** |
| Urban | 27.5 (167) | 36.6 (26) | 28.4 (193) |
| Higher education | 8.2 (50) |  9.9 (7) |  8.4 (57) |
| Highest wealth quintile | 18.9 (115) | 19.7 (14) | 18.9 (129) |
| Currently working | 95.7 (582) | 95.8 (68) | 95.7 (650) |
| In professional or managerial employment | 9.2 (56) |  8.5 (6) |  9.1 (62) |
| Ever had sexual intercourse a | 99.8 (607) | 23.9 (17) | 91.8 (624) |
| 45-49 years  | ***n* = 541** | ***n* = 30** | ***n* = 571** |
| Urban |  26.5 (144) | 26.7 (8) | 26.5 (151) |
| Higher education |  4.3 (23) |  6.6 (2) |  4.4 (25) |
| Highest wealth quintile |  16.9 (92) | 26.7 (8) | 17.5 (100) |
| Currently working |  94.8 (513) | 90.0 (27) | 94.6 (540) |
| In professional or managerial employment |  7.0 (39) |  0.0 (0) |  6.7 (39) |
| Ever had sexual intercourse a | 100.0 (541) | 13.3 (4) | 95.4 (545) |

ap-value for chi-sq test ≤0.001

bp-value for chi-sq test ≤0.05

Data Source: Myanmar Demographic and Health Survey, 2015-2016 (Ministry of Health and Sports and ICF 2017)

Table 4. Effect of selected social, economic and demographic characteristics on marriage hazards for men and women between the ages of 20 and 49 in Myanmar

|  |  |  |
| --- | --- | --- |
|  | Model 1 | Model 2 |
|  | Women | Men | Women | Men |
|  | **Hazard ratio** | ***p*-value** | **Hazard ratio** | ***p*-value** | **Hazard ratio** | ***p*-value** | **Hazard ratio** | ***p*-value** |
| Age Cohort |  |  |  |  |  |  |  |  |
| 20-24 | 0.90 | 0.058 | 0.87 | 0.181 | 0.90 | 0.070 | 0.88 | 0.211 |
| 25-29 | 1.04 | 0.380 | 0.97 | 0.699 | 1.05 | 0.307 | 0.97 | 0.713 |
| 30-34 | 1.00 | 0.944 | 0.91 | 0.196 | 1.00 | 0.988 | 0.91 | 0.189 |
| 35-39 | 0.97 | 0.484 | 0.93 | 0.318 | 0.97 | 0.501 | 0.93 | 0.305 |
| 40-44 | 1.02 | 0.605 | 0.94 | 0.341 | 1.03 | 0.574 | 0.93 | 0.319 |
| 45-49 (reference category) | -- | -- | -- | -- | -- | -- | -- | -- |
| Education |  |  |  |  |  |  |  |  |
| None (reference category) | -- | -- | -- | -- | -- | -- | -- | -- |
| Primary | 0.77 | ≤0.001 | 0.95 | 0.507 | 0.85 | 0.027 | 1.46 | 0.110 |
| Secondary | 0.63 | ≤0.001 | 0.76 | ≤0.001 | 0.73 | ≤0.001 | 0.76 | 0.315 |
| Higher | 0.40 | ≤0.001 | 0.47 | ≤0.001 | 0.52 | ≤0.001 | 0.12 | 0.014 |
| Currently working | 0.76 | ≤0.001 | 1.41 | 0.001 | 0.89 | 0.131 | 1.57 | 0.027 |
| Rural residency | 1.18 | ≤0.001 | 1.15 | 0.016 | 1.18 | ≤0.001 | 1.15 | 0.018 |
| Wealth quintile |  |  |  |  |  |  |  |  |
| Poorest (reference category) | -- | -- | -- | -- | -- | -- | -- | -- |
| Poor | 0.80 | ≤0.001 | 0.89 | 0.060 | 0.79 | ≤0.001 | 0.89 | 0.064 |
| Middle | 0.74 | ≤0.001 | 0.79 | ≤0.001 | 0.74 | ≤0.001 | 0.79 | ≤0.001 |
| Rich | 0.64 | ≤0.001 | 0.75 | ≤0.001 | 0.64 | ≤0.001 | 0.75 | ≤0.001 |
| Richest | 0.59 | ≤0.001 | 0.73 | ≤0.001 | 0.59 | ≤0.001 | 0.73 | ≤0.001 |
| Region |  |  |  |  |  |  |  |  |
| All Other States/Regions (reference category) | -- | -- | -- | -- | -- | -- | -- | -- |
| Kachin | 1.25 | ≤0.001 | 0.92 | 0.238 | 1.25 | ≤0.001 | 0.92 | 0.230 |
| Chin | 1.23 | ≤0.001 | 1.04 | 0.689 | 1.23 | ≤0.001 | 1.03 | 0.744 |
| Mandalay | 0.87 | 0.026 | 0.85 | 0.089 | 0.86 | 0.019 | 0.85 | 0.086 |
| Shan | 1.41 | ≤0.001 | 1.12 | 0.200 | 1.39 | ≤0.001 | 1.13 | 0.195 |
| Nay Pyi Taw | 1.20 | 0.002 | 1.08 | 0.387 | 1.21 | 0.001 | 1.08 | 0.416 |
| Education-currently working interaction |  |  |  |  |  |  |  |  |
| Primary x Working | -- | -- | -- | -- | 0.87 | 0.084 | 0.64 | 0.065 |
| Secondary x Working | -- | -- | -- | -- | 0.80 | 0.006 | 1.00 | 0.999 |
| Higher x Working | -- | -- | -- | -- | 0.67 | ≤0.001 | 3.88 | 0.109 |

Data Source: Myanmar Demographic and Health Survey, 2015-2016 (Ministry of Health and Sports and ICF 2017)

Note: Both women’s models include 11,044 women and both men’s models include 3,969 men.

Figure 1. Relative risk of entering into marriage for men and women, by current education level and work status



Data Source: Myanmar Demographic and Health Survey, 2015-2016 (Ministry of Health and Sports and ICF 2017)