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Gender Inequality across Time and Space in Myanmar

Ohmar Khine[*]
Faculty of Economics, Chulalongkorn University, Thailand.

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Abstract

This study assesses the evolution of gender equality between 1973 and 2019 under military and non-military regimes in Myanmar. Gender inequality remains a significant barrier in Myanmar: women have participated in major political events since 1974 but have failed to gain equality in politics, health, education, or economic development. Past reports on this issue lacked quantitative analyses due to information inaccessibility. Also, these reports assumed a homogeneous population in Myanmar. In this study, the Gender Inequality Index was calculated empirically from various data sources at different periods and regions. Independent variables such as health, education, regional economic development, ethnicity, and urbanization were disaggregated at the state, division, and township levels. We controlled unobserved factors across time by using a time-fixed effect and across space by using a state-fixed effect in the specification. The results showed that gender inequality was 5 percent higher ($p < 0.01$) during the military regime than during the non-military periods. Also, it was higher in the northwestern borders than in other areas but much lower in the Yangon Division and parts of Mon State. These results provide a detailed view of the factors that influence gender inequality and may assist in planning social and economic programs at the granular level in Myanmar.

Keywords*:* Myanmar, Military Junta, Gender Inequality, Ethnic Minority, Economic Development, Political Participation
JEL Classifications: D63, I14, I24, N35, N45, N95, P16

[*] **Corresponding author**: Email: ohmar01@gmail.com

1. Introduction

Gender equality promises equal rights, responsibilities, and opportunities to all genders. In addition to its central role in human rights, it engenders economic prosperity. At the microeconomic level, it provides a better working environment, high job satisfaction (Semykina & Linz, 2013), and high productivity and growth of a firm (Wu & Cheng, 2016). At the macroeconomic level, gender equality increases freedom of choice (Inglehart et al., 2008), women's income (Maceira, 2017), and economic growth rate (Dollar & Gatti, 1999). Gender equality also prevents adverse psychological effects and increases happiness in society (Audette et al., 2019). Therefore, gender inequality affects everyone, including men, children, and families, as well as lesbians, gays, and transgender persons. Because gender inequality negatively impacts economic growth and development (Kuiper & Barker, 2005), it may presage the nation's economic difficulty in the future.

Democratic societies promote gender equality as a precondition for economic efficiency (Esping-Andersen, 1990) and institute public policies to advance women's roles in the family, economy, and politics (Chang, 2000; Lewis, 1992). In contrast, authoritarian regimes are reluctant to acknowledge the importance of human rights, including women's right to economic and political participation (Thames, 2017). Under the authoritarian military regime for almost five decades, Myanmar was no exception. Gender inequality in the private and public spheres was high under the military government from 1962 to 2010 (Asia Development Bank et al., 2016; Minoletti, 2016). However, the extent of the inequality during this period is unclear due to the military government's suppression of systematic data collection regarding social, political, and economic conditions.

After the leadership transition in the 2010s, the new government encouraged local and international organizations to collect social data and conduct research in Myanmar. These studies focused on gender equality and social change (Htun & Jensenius, 2020), political participation (Maber, 2014; Minoletti, 2016), and federalism (Williams, 2018). However, empirical research on gender issues in Myanmar is still scarce due to the limited data availability.

The main purpose of this study is to examine qualitatively and quantitatively gender inequality across time and space in Myanmar. First, the Gender Inequality Index (GII) is used to compare the levels of gender inequality during the military-led authoritarian government from 1973 to 2014 and during the democratically elected government from 2015 to 2019. Second, ordinary least square (OLS) estimation was used to analyze the impacts of social factors on gender inequality. This analysis examines GII at the township level to better understand regional variations based on ethnicity, religion, and economic development. The study may uncover geographical variations of GII due to 1) social norm, 2) ethnic composition, 3) prevalent religion, 4) urbanization, and 5) regional economic development. These factors may influence gender inequality, but they have been ignored in the empirical literature due to data limitations. The GII analysis at the disaggregated level in this study may highlight these regional differences and suggest what causes gender inequality at the granular level in Myanmar.

The rest of this report is structured as follows: Section 2 provides the literature review, and Section 3 explains the background information for Myanmar. Section 4 describes the data and methods used for the study. Section 5 presents the research results and discussions. Then, the conclusions are covered in Section 6.

2. Literature on Gender Inequality and its Measurements

Gender equality refers to the condition in which both genders have the same rights and opportunities in all aspects of their lives. Gender inequality exists in almost all countries due to cultural legacies, historical developments, geographical locations, and religious norms that shape the concept of equality (Sibani, 2017). It exacerbates poverty, the lack of health and education, overall well-being, and all aspects of social development (McLoyd, 1998). Because of its critical nature in personal and national development, gender equality is listed as the third of the Millennium Development Goals on the UN agenda and the fifth in the Sustainable Development Goals (SDG) by 2030.

2.1. Factors that Influence Gender Equality

Studies on gender equality have investigated correlative factors and found that women's political participation, health, education, and economic participation influence gender equality. Women's participation in a democratic process significantly increases gender equality (Beer, 2009; Weldon, 2002) because it empowers women to demand policy agendas that reflect their needs. This empowerment is especially crucial in budgetary considerations. A more significant number of women involved in the executive or legislative branches of government results in better health for everyone and smaller income inequalities (Reeves et al., 2022), potentially due to the increased budget allocations for social programs associated with health and education (Boizendahl, 2009; Chattopadhyay & Duflo, 2004; Courtemanche & Green, 2017; Funk & Litschig, 2020; Kittilson, 2007; Svaleryd, 2009), while spending less on military and defense (Elveren, 2022). Conversely, the lack of women's participation in decision-making is correlated with the absence of formulating and implementing policies to reduce health inequalities (Crespí-Lloréns et al., 2021). Such participation must surpass a critical mass to contribute to equality (Swiss et al., 2012; UNDP, 1995).

Gender equality influences health. It decreases male and female mortality rates (Kawachi et al., 1999), infant mortality rates (Bhalotra & Clots-Figueras, 2014; Homan, 2017), maternal and neonatal mortality rates (Abdollahpour et al., 2022; Bagade et al., 2022; Banda et al., 2017; Chirowa et al., 2013), intimate partner violence (Sanz-Barbero et al., 2015; Yllö, 1983), female obesity (Wells et al., 2012), and psychological symptoms like depression and anxiety (Elwér et al., 2013; Platt et al., 2016; Van de Velde et al., 2013). Empowering women's decision-making improves infant mortality rates (Bhalotra & Clots-Figueras, 2014) and better health for both men and women (Homan, 2019; Reeves & Stuckler, 2016). Although many theories exist to account for the broad impact of gender equality on health (Lahelma et al., 2002; King et al., 2020; Pampel, 2001; Sen & Östlin, 2008), all of them acknowledge socioeconomic status within a society to be fundamental to this relationship: the disadvantaged group has reduced opportunities for healthcare and increased risks toward harmful situations (Commission on Social Determinants of Health, 2008). Thus, gender inequality creates a health gap and relegates women to the disadvantaged group, resulting in poorer health. Gender equality eliminates the gap and provides health benefits not only to women but also to children and men.

Gender equality and education are interlinked, although the correlation is not simple. Women's participation in household decisions, a form of gender equality, leads to higher education expenditures for girls (Saleemi & Kofol, 2022). From a macroscopic perspective, gender inequality at the institutional level is associated with lower levels of female secondary education (Branisa et al., 2013; Fontanella et al., 2020) and female literacy (Jütting et al., 2008). However, education may (Roy & Husain, 2019) or may not

(Murphy-Graham, 2009; Peppin Vaughan, 2016) directly reduce gender inequality. Despite this complex interplay with gender equality, education is linked to other relevant factors in this field. For example, women's education improves health (Raghupathy, 1996; Tran & Thi My Tran, 2019; Weitzman, 2017), employment (Barro & Lee, 2001; Chaudhry & Rahman, 2009), and political participation (Goetz, 2003; Sahu & Yadav, 2018). Also, low gender inequality in education benefits GDP per capita (Assoumou-Ella, 2019; John & Singh, 2017; Thévenon & Del Pero, 2015) and long-term economic growth (Altuzarra et al., 2021; Klasen 2002; Thévenon & Del Pero, 2015). Education, therefore, is intimately connected to gender equality and other factors discussed here.

Not surprisingly, gender equality is also associated with economic activities. Countries with low gender inequality have high female employment (Bertay et al., 2020), leading to income equality (Gonzales et al., 2015), economic benefits for businesses (Shan et al., 2017; Smith & Bettio, 2008; Wu & Cheng, 2016), and economic development (Paez & Tin, 2021). Women's economic activities improve children's health (King et al., 2020) and education (Gonzales et al., 2015). In contrast, gender inequality limits women from effective economic participation in the labor market due to women's lack of access to skills and opportunities. Gender bias in employment (Klasen, 2000) and the labor market (Klasen & Lamanna, 2009) correlate negatively with economic growth. These and other studies (Diachkova & Kontoboitseva, 2022; Rodríguez 2017; Tzannatos, 1999) support the critical nature of gender equality in the national economy: gender equality and economic development promote each other (Dollar & Gatti, 1999).

Three other factors – democratic institutions, ethnicity, and religion – may influence gender equality. As noted before, women's participation in a political process is a vital factor in gender equality. Therefore, it stands to reason that the democratic process is required for gender equality. In a democracy, everyone can access social resources, healthcare, education, and economic prosperity. As part of this philosophy, a democratic society promotes equality as a precondition of economic efficiency (Esping-Andersen, 1990; Lewis, 1992). Weldon's (2002) empirical analysis of women representatives in policymaking of 36 democratic countries showed that strong women's movements and practical women's policymakers increased women's rights. In contrast, authoritarian regimes concentrate power through political repression against individual freedom. Authoritarian regimes violate human rights and repress women's political participation (Shalaby, 2016; Thames, 2017). Authoritarianism was a critical factor that hindered women's access to political power (Shalaby, 2016), but women's political opportunity was far from straightforward in some countries (Donno & Kreft, 2019).

Ethnic or racial inequality is based on physical features, place of origin, or culture. It influences social status (Kane, 2000) and leads to disadvantage or discrimination in the workplace (Brown et al., 2003; Royster, 2003), income (Seekings & Nattrass, 2008), healthcare (Crimmins et al., 2004), education (Stevens, 2007; Stevens et al., 2011), and political participation (Crowley, 2001; Leighley & Vedlitz, 1999). The marginalization based on ethnicity exacerbates gender inequality in political participation (Chattier, 2015; Hussain et al., 2021; Nazneen, 2018), health (Brown & Hargrove, 2013; Patterson et al., 2022), education (Parker et al., 2020; United Nations, 2009), employment (Islam et al., 2021), and earning (Nawyn & Gjokaj, 2014). For example, indigenous women in northern Thailand experience difficulty at every step of healthcare access due to the "double jeopardy" of the gender expectations imposed on them and the discrimination based on different cultural characteristics (Thummapol et al., 2018). Thus, qualitative and quantitative analyses of gender equality that treat women as one homogeneous group within a country would overgeneralize women's situations, leading to misleading or

wrong conclusions and inappropriate solutions, policies, or activity programs that may not benefit those in need.

The inequalities based on ethnic or racial characteristics may interact with another factor: religion. Religion, coupled with patriarchal norms, worsens gender inequality in political participation (Cassese & Holman, 2016), health (Ariyo et al., 2017), education (Cooray & Potrafke, 2011), and employment (Davis & Gao, 2020; Foroutan, 2008; Lehrer, 2004). Although some studies have found differences in gender inequality or related factors among Christians, Muslims, Hindus, and Buddhists (Cooray & Potrafke, 2011), others found no differences (Panday et al., 2019). The differences in gender inequality among religions may be partly explained by the patriarchal cultures on which these religions are based (Davis & Gao, 2020; Foroutan, 2008). Indeed, variations in women's labor market participation can be seen in Muslims from different countries (Foroutan, 2008; Spierings et al., 2009), strongly supporting the hypothesis that cultural influence shapes their attitudes on women's labor participation rather than religious influences (Cole, 2020).

2.2. Indicators of Gender Equality and Inequality

Economists and organizations established different indices for measuring gender equality or inequality. The first pair of global indices designed to assess gender equality was the Gender-related Development Index (GDI) and Gender Empowerment Measure (GEM) in the United Nations Development Program's Human Development Report (UNDP 1995). GDI was developed from the Human Development Index (HDI), a composite measure of health, education, and income. Whereas HDI failed to capture gender differences in well-being (Gaye et al., 2010), GDI focused on the gender gap between men and women by accounting for disparities in three basic dimensions of human development: health, education, and living standards. In contrast, GEM was developed to capture the inequalities between men's and women's opportunities in the decision-making process in political participation, economic participation, and economic power (income share). GEM primarily measured the gender gap relative to female participation in economic and political power. Thus, this index included the share of women in parliament, technical and professional capacities in administrative positions, and income. A higher GEM value indicated higher equal opportunities for women and men in economic and political decision-making.

The criticisms of GDI and GEM led UNDP to create the Gender Inequality Index (GII). GII is a composite indicator that comprises three dimensions affected by gender inequality: (1) empowerment – the share of parliamentary seats held by each gender and the secondary education attainment levels; (2) labor market – women's participation in the workforce; and (3) health – the maternal mortality ratio and the adolescent fertility rate (UNDP, 2010). GII takes a value between 0 (when women and men fare equally) and 1 (when men or women fare poorly compared to the other gender in all dimensions). The World Health Organization, UNDP, and other UN organizations use GII as an indicator to capture disparities between women and men in the political system and social and economic statuses in society. It also correlates with children's health status (Brinda et al., 2015; Marphatia et al., 2016). Although GII has its detractors (Amin & Sabermahani, 2017; McDonald & Koblitz, 2019; Permanyer, 2013), it may be the least problematic indicator, especially for developing countries like Myanmar.

3. Background Information of Myanmar

Geographically, Myanmar extends from north to south with mountain ranges stretching longitudinally in the region and is sectioned administratively into seven divisions and seven states, as shown in Figure 1. Generally, seven divisions occupy the central regions dominated by flatlands, while seven states contain mountainous regions bordering neighboring countries Bangladesh and India to the west and China, Laos, and Thailand to the east (Figure 1). Some border areas, like Chin and Kayah States, are mountainous and remote. The ethnic majority of Burmese, about 68% of the total population (Summerer et al., 2014), are concentrated in the seven divisions (Figure 1). Other ethnic groups (Kachin, Kayah, Kayin, Chin, Mon, Rakhine, and Shan) predominate in the seven states, with an average of 80% of the local population.

Figure 1: Myanmar Geography

Note: The seven divisions – Sagaing, Magwe (Magway), Mandalay, Bago, Ayeyarwady, Yangon (Rangoon), Tanintharyi – have high Burmese concentrations while the seven states (Rakhine, Mon, Kayin, Shan, Kachin, Kayah, and Chin) have high ethnic minority populations. Both state and divisions are equally controlled by the central government. The bordering nations (India, China, Thailand, and Laos) are shown.

Source: asiapacific.anu.edu.au (http://asiapacific.anu.edu.au/mapsonline/sites/default/files/styles/cartogis_700x700/public/maps/bitmap/standard/2019/07/13-058b_Burma_states.png?itok=_Eaun1vw)

Historically, Myanmar fought against the British Empire in the Anglo-Burmese wars, but eventually, the British Empire colonized the country in 1885. After more than 60 years of colonization, Myanmar declared independence in 1948 and started its path to democracy. However, Myanmar's independence did not extend equally to eight ethnic groups. Although ethnic inequality existed before the independence, inter-ethnic conflicts intensified soon after the independence. In 1962, the military junta, predominantly controlled by ethnic Burmese generals, declared a coup d'état and took over the entire country. In 2010, the military junta agreed to hold a fair election, and the National League for Democracy won the majority of parliamentary seats during a democratic election in 2015, peacefully taking over the government from the military junta. This transition from the authoritarian military regime to the democratic government may have affected the factors influencing gender inequality, namely women's political and labor force participation, educational attainment, healthcare, and regional economic development.

The authoritarian military regime in Myanmar restricted women from participating in legislation. During the military junta period from 1962 to 2010, women represented less than 1% of decision-making positions in the government (Maw, 2013). The number increased to 11% after the first democratic election in 2015 (Latt et al., 2017). Even though women's political participation improved overall, the regional difference was noticeable. As shown in Table 1, Mon State and Yangon Division had the highest women's political representation, with 19% and 15%, respectively. In contrast, Chin, Kayah, and Rakhine States had no women representatives in the parliament (Table 1). Because women's political representation induces other improvements in labor-force participation, overall health, and education, these differences may lead to significant regional differences in gender inequality.

Table 1: Women's Representation in Myanmar (2015)

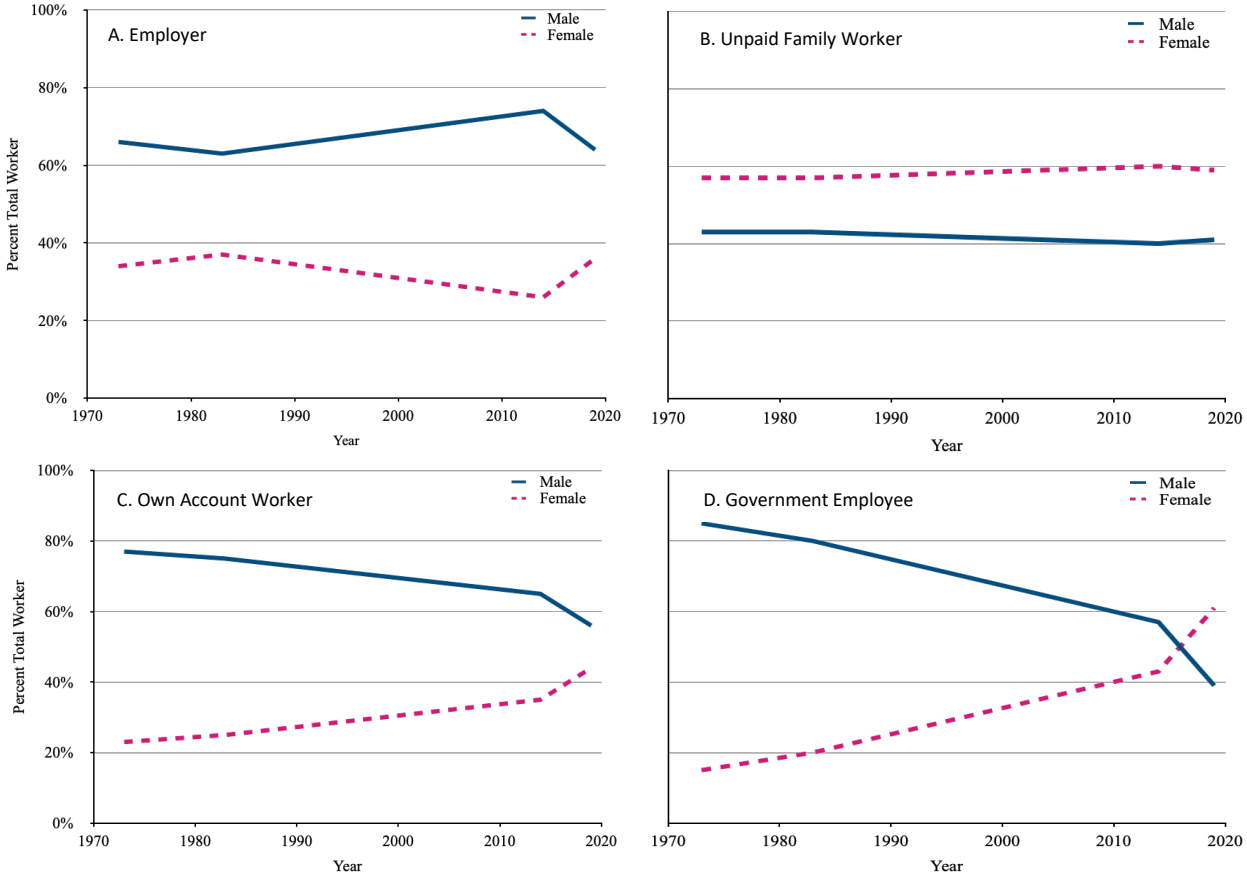
State/Division	Elected MPs	Women Elected MPs	Military MPs	Total MPs	% Women MPs
Mon	23	6	8	31	19.4%
Yangon	92	18	31	123	14.6%
Ayeyarwaddy	54	10	18	72	13.9%
Sagaing	76	14	25	101	13.9%
Magway	51	8	17	68	11.8%
Bago	57	8	19	76	10.5%
Kachin	40	5	13	53	9.4%
Kayin	17	2	6	23	8.7%
Tanintharyi	21	2	7	28	7.1%
Mandalay	57	4	19	76	5.3%
Shan	103	7	39	142	4.9%
Chin	18	0	6	24	0.0%
Kayah	15	0	5	20	0.0%
Rakhine	35	0	12	47	0.0%
Union of Myanmar	659	84	225	884	9.5%

Note: The table shows the number of parliamentary members (MPs) in the November 2015 election and subsequently approved by the Union Election Commission (Minoletti 2016).
Source: The Asia Foundation

Promoting female labor force participation is another driving force in reducing gender inequality. In Myanmar, the transition government in 2010 initiated economic

development, resulting in changes in women's proportion and mode of involvement in the labor force. The Myanmar censuses between 1973 and 2019 were used to determine the proportion and types of female labor participation. Figure 2 shows four different female and male employment statuses. No more than 40% of women were employers, compared to about 65% of men (Figure 2A). In contrast, about 60% of women participate in unpaid family work, which is more than men (Figure 2B). The number of own-account workers almost doubled for women between 1973 and 2019, while male own-account workers decreased from 78% to 58% during the same period (Figure 2C). Female government workers quadrupled from 15% in 1973 to 61% in 2019, but male workers followed the opposite trend during the same period (Figure 2D). Thus, while the female proportions for employers and unpaid family workers have not changed over the years, those for own-account workers and government workers increased, almost reaching equality in the former and surpassing in the latter labor categories.

Figure 2: Male and Female Employment Status



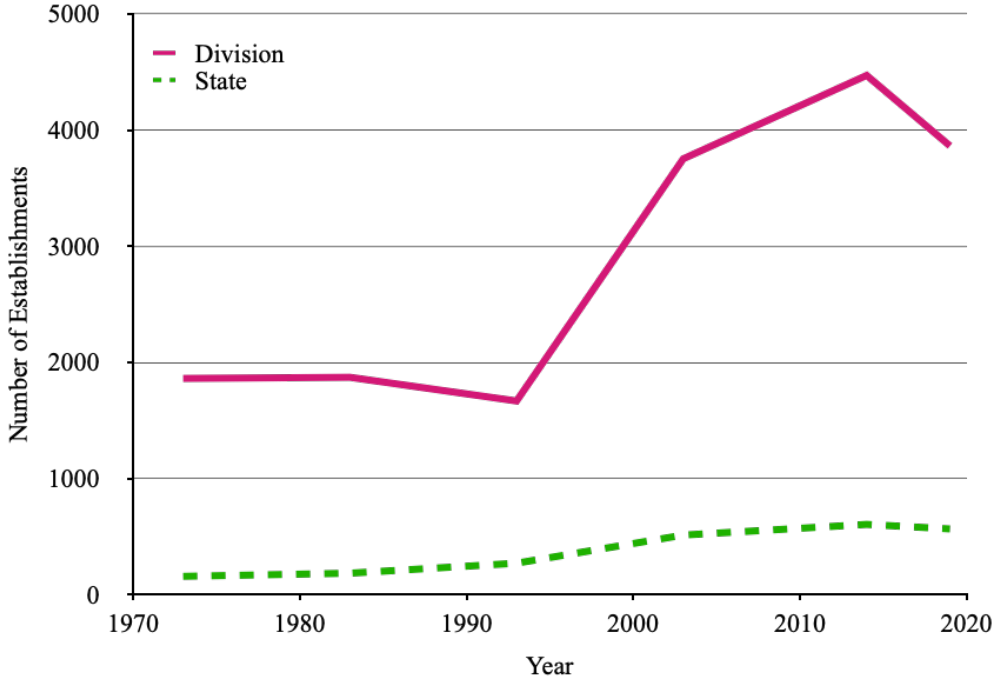
Source: Calculated by author from census data.

These dramatic shifts can be attributed to policy changes after the transition government took over. In 2013, the government released the National Strategic Plan for the Advancement of Women (NSPAW), which aimed at restructuring practices for the advancement of women and gender equality (Chandra, 2017). Additionally, the democratic government in 2016 declared gender equality as a priority in all industrial sectors and launched the Private Sector Development Framework and Action Plan (ILO, 2020). Afterward, the role of women engaging in the economy increased significantly (Figures 2C & 2D). However, the gaps between the role of men and women in entrepreneurs (Figure 2A) and in unpaid employment (Figure 2B) have remained

relatively large. ILO (2020) report suggested that the government could promote women-owned businesses to narrow this gap.

One positive factor in women's labor participation is economic development at the regional and national levels (Perrons, 1995). Regional economic activities can be captured by the number of business establishments (firms), which increases economic growth and employment opportunities in a given area. Figure 3 shows business establishments in divisions and states between 1973 and 2020. A significant gap in economic activities exists depending on the area. The number of establishments was consistently higher in divisions than in states (Figure 3). Furthermore, the number of establishments grew faster in divisions than in states even after the transition and the democratic governments took over (Figure 3). This persistent gap in economic activities may result in differential gender inequality at the regional level.

Figure 3: Number of Establishments in Divisions and States in Myanmar



Source: Calculated from Myanmar Statistical Information Service and Statistical Yearbook 2010. (Created by Ohmar Khine)

Poor public health and service delivery lead to female mortality in early childhood and the reproductive ages. Girls and women have limited access to health information and services, especially in rural areas of Myanmar. Rural and ethnic minority women could barely achieve gender equality due to cultural, economic, and political factors, perpetuating gender-based inequality in these regions' healthcare services. For example, the maternal mortality ratio of the Union is 282 deaths per 100,000 live births (Table 2). The mortality ratio was higher in rural (310) than in urban (193) areas (Table 2). At the state and division level, the maternal mortality ratios range from 157 in Tanintharyi Division to 357 in Chin State (Table 2). Adolescent fertility rates follow the same pattern: the regional adolescent fertility rate ranges from the lowest value of 21 in the Rangoon (Yangon) Division to 50 births per 1,000 women ages 15-19, the highest in Chin State (Table 2). Generally, states and divisions in the border areas tend to have high maternal mortality and adolescent fertility rates. These regional differences may give rise to regional differences in gender inequality in health.

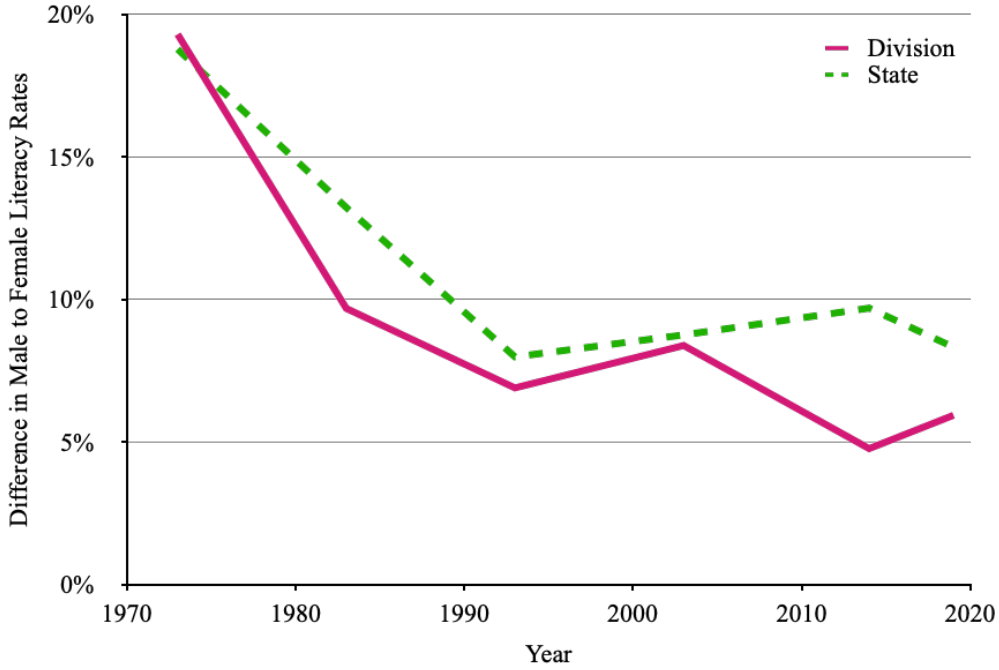
Table 2: Maternal Mortality Ratio and Adolescent Fertility Rate (2014)

State/Division	Maternal Mortality Ratio (deaths per 100,000 live births)	Adolescent Fertility Rate (births per 1,000 women ages 15-19)
Chin State	357	50
Ayeyarwady Division	354	40
Magway Division	344	27
Bago Division	316	28
Rakhine State	314	39
Mandalay Division	280	23
Shan State	278	59
Kayah State	276	38
Kayin State	276	39
Sagaing Division	271	31
Kachin State	270	37
Mon State	217	27
Rangoon Division	213	21
Tanintharyi Division	157	38
Union	282	33
Urban	193	22
Rural	310	38

Source: Thematic Report on Maternal Mortality (https://myanmar.unfpa.org/en/publications/thematic-report-maternal-mortality) and Fertility and Nuptiality (https://myanmar.unfpa.org/en/publications/thematic-report-fertility-and-nuptiality) of the 2014 Myanmar Census.

The above three factors – political and labor participation and access to healthcare – are intricately tied to educational attainment. For example, gender inequality in education leads to lower opportunities for employment. Also, educated girls are less likely to marry young, leading to healthier and more productive lives (Kakkar, 2020). Education reduces gender inequality and strengthens the economy in the country (Walker et al., 2019). In Myanmar, men are more educated than women due to the gender bias resulting from strong stereotypes of female and male roles: sons are considered more valuable than daughters (Minoletti, 2016; Nwe, 2009). Figure 4 shows that the difference in male and female literacy rates dropped significantly over time. However, the gap remained at about 5% from 1970 to 2020. The disparity in literacy rates is observed between genders and Burmese and ethnic minorities (Figure 4). Burmese and ethnic minorities started at about 19% in 1973, but the disparity dropped faster for Burmese than for ethnic minorities (Figure 4). These facts may influence the overall gender inequality in different regions.

Figure 4: The Different in Male and Female Literacy Rates in Myanmar



Source: Calculated from the census data. (Created by Ohmar Khine)

Racial inequality can lead to diminished opportunities, contributing to the cycle of poverty and political marginalization. In this respect, women may face gender inequality based on ethnicity and other variables. As noted before, ethnic Burmese dominate the government and other aspects of life in many places in Myanmar. Ethnic minorities experience reduced opportunities for participation in decision-making processes, economic and social development, and education (Kramer, 2015). These factors would exacerbate gender inequality for ethnic minority women.

Religion influences normative attitudes concerning women's roles in society and acts as a cultural, economic, and political instrument to control people's behavior. The family and the community implement and follow religious teachings and traditions, passing these beliefs on to future generations. People in Myanmar practice Buddhism, Christianity, Islam, Hinduism, and Animism (nat/spirit worship). Although Buddhists predominate, people practice other religions in different states and divisions in Myanmar, as shown in Table 3. Most Burmese and other ethnic minorities (Mon, Rakhine, and Shan) are Buddhists, while many Chin, Kachin, Kayah, and Kayin ethnic minorities are Christians. These regions with higher Christian populations are located in the country's border areas (Figure 1). Religion has played a significant role in political and social structures in Myanmar (Yin & Tun, 2017). Religion should be considered the most critical factor for the economic, social, and democratic progress of women in Myanmar.

Underlying all religions in Myanmar is the inequitable cultural concept against women. Regardless of the religion, people in Myanmar believe that men have a higher "phon" (power, glory, and holiness) than women (Nwe, 2009). This fundamental sociocultural belief permeates through religious practices down to family, community, and society. However, cultural beliefs may be interpreted differently based on religion and ethnicity. Thus, this study uses religion as one of the variables to examine how religion influences gender inequality in Myanmar.

Table 3: Religious Beliefs in Different Regions and States

State/Division	Religion			
	Buddhism	**Christianity**	**Islam**	**Others**
Magway Region	98.80	0.70	0.30	0.20
Mandalay Region	95.70	1.10	3.00	0.20
Bago Region	93.50	2.90	1.20	2.40
Sagaing Region	92.20	6.50	1.10	0.20
Ayeyarwady Region	92.10	6.30	1.40	0.20
Rangoon Regions	91.00	3.20	4.70	1.10
Tanintharyi Region	87.50	7.20	5.10	0.20
Rakhine State	96.20	1.80	1.40	0.60
Mon State	92.60	0.50	5.80	1.10
Kayin State	84.50	9.50	4.60	1.40
Shan State	81.70	9.80	1.00	7.50
Kachin State	64.00	33.80	1.60	0.60
Kayah State	49.90	45.80	1.10	3.20
Chin State	13.00	85.40	0.10	1.50
Union of Myanmar	88.00	6.00	4.00	2.00

Note: Proportions (%) of people practicing the indicated religions were calculated from the 2014 census data. "Others" includes Hinduism, animism, and ancestor worshipping.

Source: Census data from Ministry of Immigration and Population.

4. Methodology

4.1. Datasets and Measurement of Variables

This study uses several datasets from various sources. The core of the dataset is the Myanmar census data from 1973, 1983, and 2014, as well as the 2019 inter-census survey from the Ministry of Labor, Immigration and Population and the Myanmar Statistical Information Service (MMSIS). The data for 1993 and 2003 comes from the Statistical Year Book 2010 to 2015 because the Myanmar government did not collect census data for these years. The data for women's political participation comes from Maw (2013). The total data from all these sources form an unbalanced panel dataset, in which 14 states and divisions represent the cross-sections, and the time series comprises the censuses between 1973 and 2019. For the spatial analysis at the township level, 405 townships are included out of the total 413 townships in Myanmar. Eight townships in Nay Pyi Taw are excluded from the econometric analyses due to the lack of necessary information. The statistical analysis uses a set of dependent and independent variables for gender inequality, considering social parameters such as ethnicity, religion, and economic development at the state/division and township level. Table 4 below shows the summary of the variables, measurements, proxies, and references.

Table 4: Summary of the Variables, Measurements, Proxies, and References

Particulars	Category	Variable (notation)	Proxy	Expected sign	Reference
State Level Analysis across Time					
(1) Dependent variable	(1.1) Gender inequality (I)	GII_t	GII in state *j* at time *t*	NA	a
(2) Explanatory variables	(2.1) Military Junta	Junta ($Junta_t$)	A dummy variable which takes the value 1 if there is military junta period and 0 otherwise	(+/-)	b
	(2.2) Ethnicity	Burmese ($Burmese_{jt}$)	Fraction of Burmese in state *j* at time *t* compared to the total number of populations in state *j* at time *t*	(+/-)	b
	(2.3) Economic development	Establishment per capita ($Esta\_p\_cap_{jt}$)	Number of establishments in state *j* at time *t* divided by the number of populations in state *j* at time *t*	(-)	b
(3) Control variables	(3.1) Education infrastructure	Expenditure on education (% of GDP) ($Gov\_edu\_expen_{jt}$)	Government expenditure on education, total (% of GDP) in state *j* at time *t*	(-)	c
	(3.2) Health	Life expectancy ($Life\_expect_{jt}$)	Average lifespan of people in state *j* at time *t*	(-)	d
	(3.3) Population	Population density ($Pop\_density_{jt}$)	Total population in state *j* at time *t* divided by the area of state *j* at time *t*	(+/-)	e
Township Level Analysis across Space					
(1) Dependent variable	(1.1) Gender inequality (II)	GII	GII in township *i*	NA	a
(2) Explanatory variables	(2.1) Ethnicity	Burmese ($Burmese_i$)	Fraction of Burmese in township *i*	(+/-)	b
	(2.2) Religion	Buddhist ($Buddhist_i$)	Buddhist population in township *i*	(+/-)	a
		Christian ($Christian_i$)	Christian population in township *i*	(+/-)	a
		Islamic ($Islamic_i$)	Islamic population in township *i*	(+/-)	a
	(2.3) Economic development	Establishment per capita ($Esta\_p\_cap_i$)	Number of establishments in state divided by the	(-)	b

Particulars	Category	Variable (notation)	Proxy	Expected sign	Reference
			number of populations in township *i*		
(3) Control variables	(3.1) Education infrastructure	Education infrastructure (Edu_infra_i)	A dummy variable which takes the value 1 if there is a university in the township *i* and 0 otherwise	(-)	b
	(3.2) Health	Life expectancy ($Life\_expect_i$)	Average lifespan of people in state (assume as the same in township)	(-)	d
	(3.3) Population	Population density ($Pop\_density_i$)	Total population in township *i* divided by the area of township *i*	(+/-)	e
	(3.4) Decision-making	Female headed household ($Femalehh_i$)	Percentage of female headed household in township *i*	(-)	f

Note: References are as follows: a) Klingorova and Havlíček (2015); b) Author; c) Emara and Hegazy (2017); d) Kolip and Lange (2018); e) Baten et al. (2021); f) Fisher and Naidoo (2016).

Source: The author's creation. NA = not applicable (row 1 at state level analysis, and row 1 at township level analysis in column 5)

This study uses GII as the dependent variable to measure gender inequality at the state/division and township levels. GII is one of the commonly used indicators to capture the status of women in addressing gender inequality in the social sphere, political participation, and economic independence (Chaudhuri, 2013). GII comprises three dimensions: women's health, empowerment, and women's share in the labor market. GII has a value between 0 and 1, where 0 represents absolute equality and a value closer to 1 indicates a higher inequality. The GIIs at the state/division level (14 states and divisions) are calculated according to the methodology (see appendix) suggested by UNDP (2010) using the data between 1973 and 2019. The GIIs at the township level (413 townships included) are calculated using cross-sectional data from the 2014 census. Table 5 below shows the descriptive summary statistics on state/division and township.

Table 5: Summary of Descriptive Statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max
State and division					
GII	84	.602	.084	.407	.768
Military junta	84	.833	.375	0	1
Burmese	84	.516	.394	.007	.981
Establishments per capita	84	.411	.429	.002	2.219
Government education expenditure	84	1.813	.757	.9	3.27
Life expectancy	84	59.268	6.009	50.1	67.13
Population density	84	.747	.612	.068	2.224
Township					
GII	405	.561	.065	.361	.731
Burmese	405	.557	.411	.012	.979

Variables	Obs.	Mean	Std. Dev.	Min	Max
Buddhist	405	.850	.165	.130	.988
Christian	405	.108	.167	.005	.854
Islamic	405	.021	.016	.001	.058
Establishments per capita	405	.071	.375	0	6.052
Education infrastructure	405	.207	.406	0	1
Life expectancy	405	64.59	1.428	60	66
Population density	405	1.600	6.105	0	47.894
Female headed household	405	.226	.071	.06	.551

Source: Ministry of Labor, Immigration and Population and Myanmar Statistical Information Service (MMSIS).

4.2. Empirical Approach

The study's first goal is to determine whether Myanmar's military junta influenced gender inequality using OLS estimations with time- and state-fixed effects. The second goal is to investigate GII characteristics regarding ethnicity, religion, and economic development in different regions using OLS estimations with state-fixed effects.

This study uses the following econometric specification in which GII is the dependent variable:

$$Y_{jt} = \beta_0 + \beta_1 Junta_t + \beta_2\, Burmese_{jt} + \beta_3 Estab\_p\_cap_{jt} + \beta_4\, Gov\_edu\_expen_{jt} + \beta_5 Life\_expect_{jt} + \beta_6 Pop\_density_{jt} + \delta_j + \rho_t + \varepsilon_{jt} \quad (1)$$

where Y_{jt} = gender inequality index in state *j* at time *t.* On the right-hand side, $Junta_t$ is a binary variable that takes the value 1 if the period is under military junta (1973-2014) and 0 otherwise. Other control variables are used in the specifications shown in Table 4. This study controls for the unobservable variations across time (ρ_t) and space (δ_j) by using fixed effects.

In this section, we utilize cross-sectional township-level data for 2014 and incorporate three critical characteristics into the specifications, namely, (1) ethnicity, (2) religion, and (3) regional economic development or urbanization.

The equation specifies the model that is used in this study:

$$\chi_i = \alpha_0 + \alpha_1 Burmese_i + \alpha_2 Buddhist_i + \alpha_3 Christian_i + \alpha_4 Islamic_i + \alpha_5 Estab\_p\_cap_i + \alpha_6 Edu\_infra_i + \alpha_7 Life\_expect_i + \alpha_8 Pop\_density_i + \alpha_9\, Femalehh_i + \tau_i + \varepsilon_i \quad (2)$$

where χ_i = gender inequality index across townships *i*. The explanatory and control variables on the right-hand side are explained in the Appendix. State-fixed effects (τ_i) are added as a control for unobserved differences in cultural aspects of decision-making in business and government investment across states and divisions. These state-fixed effects (τ_i) should also take care of the omitted variable bias, such as political and economic-related policy implementation, which are not included in the model. Therefore, the results show realistic outcomes of gender inequality across different townships and provide a better understanding of the influence of each variable.

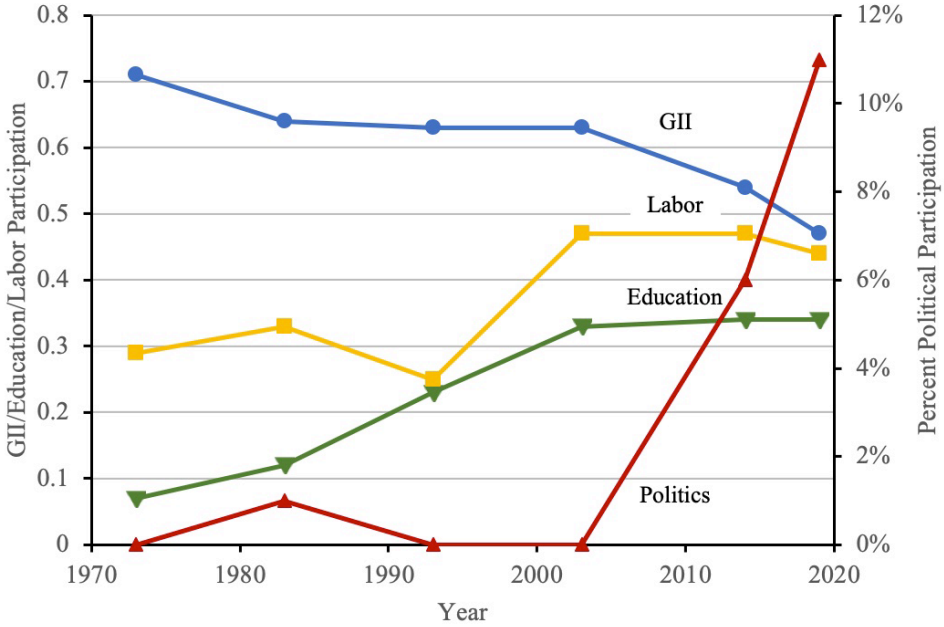
5. Results and Discussions

5.1. GII at the State/Division Levels in Myanmar (1973 - 2019)

The GII was calculated for each state and division, and the results were averaged for each time point from 1973 to 2019. Figure 5 shows GIIs between 1973 and 2019. The GII (blue – o) started at a high level of 0.71 in 1973 and declined to the lowest point of 0.47 in 2019, indicating a gradual increase in gender equality. Although the GII dropped over time, the progress in gender equality stagnated from 1983 to 2003, when the military junta had absolute control as the country's authoritarian government. This potential correlation is examined further below.

During the entire study period, both women's labor market participation (yellow – □) and education attainment at the secondary or higher levels (green – q) increased (Figure 5). In contrast, women's political participation (dark red – p) rose to 1% in 1983 but declined to 0% in 1993 and 2003. This decline in women's political participation was reflected in the GII stagnation during the same period, supporting a strong influence between the two. These results motivated an empirical examination of whether the military junta and other factors, including labor market participation and educational attainment, influenced gender inequality. The study hypothesizes that the military strongly impacted gender inequality after controlling for variables like ethnicity, economic progress (establishment per capita), education, health, and population density.

Figure 5: GII and Women Participation in Labor, Education, and Politics (1973-2019)



Note: GII values (blue o) are between 0 and 1, as explained in the text and shown on the left vertical axis. Labor participation (yellow □) and education attainment (green q) are expressed as fractions between 0 and 1 and shown on the left vertical axis. Political participation (dark red p) is expressed in percentage and shown on the right vertical axis. (Created by Ohmar Khine)

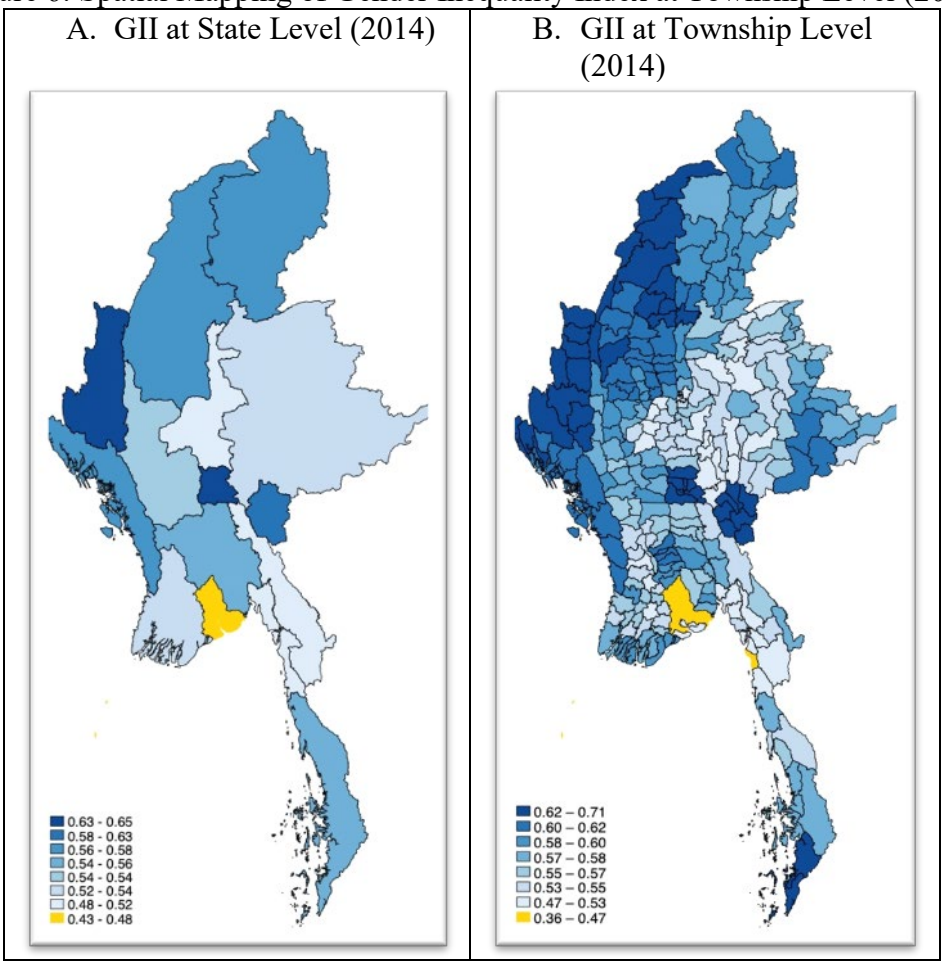
Source: The author's calculation GII from census data and statistic year book.

5.2. GII at the State and Township Levels in Myanmar (2014)

Whether the GII varies across geographical areas within Myanmar was investigated using the 2014 census data to calculate GIIs across 14 states/divisions and

413 townships and plot the results using Spmap in STATA16. This analysis shows the magnitude and spatial distribution of GII results at the state/division and township levels. In other words, the map shows the states and townships with the lowest or highest gender inequality. As shown in Figure 6A, the states and divisions clustered in the northwestern border have high GIIs (high gender inequality). In particular, Chin State has the highest GII (dark blue: GII = 0.65), followed by Sagaing Division (0.58), Rakhine State (0.57), and Kachin State (0.56). The states and divisions with low GIIs are located in the central region with the lowest GII in Yangon Division (yellow: GII = 0.43), followed by Mon State (0.48), Mandalay Division (0.51), and Kayin State (0.52). Therefore, this analysis shows differential GII levels in different states.

Figure 6: Spatial Mapping of Gender Inequality Index at Township Level (2014)



Note: The data set was divided into octiles (12.5 %). Each range excludes the lower bound and include the upper bound.

Source: Created by author.

The analysis at the township level provides a more detailed view of the above observations. As shown in Figure 6B, the townships with high GIIs in Chin State and Sagaing Division all border India, where the mountainous ranges are located. Additional townships with high GIIs in Shan and Kayah States border Laos and Thailand (Figure 6B). At the other end of the spectrum, almost all townships in the Yangon Division have the lowest GIIs (0.36 – 0.49). Also, Mon townships had relatively low GIIs between 0.49 and 0.55 (Figure 6B).

The above data at the state/division and township levels point to several observations and corresponding hypotheses. First, many states where ethnic minorities live have high GIIs, while the regions with high proportions of ethnic Burmese have low GIIs. Thus, ethnic composition may affect gender inequality. Second, the states with high GIIs have higher proportions of Christians (Chin, Kachin, and Kayah States) (Table 3). Hence, a particular religion may impact gender inequality. Third, the townships with low GIIs are located in urban areas. For example, all townships in Rangoon, as well as the townships in Mon State (Thanbyuzayat, Mawlamyine, and Mudon), are well-developed cities. Therefore, regional economic development may influence gender inequality. These results and hypotheses direct the subsequent investigation to focus on the factors that may affect gender inequality, specifically ethnicity, religion, and regional economic development.

5.3 The Effects of the Military Junta on GII

The data at the state/division level were used for quantitative analyses to examine how the military junta influenced gender inequality between 1973 and 2019. The census data were used to determine gender inequality during (1962-2010) and after (2010-2019) the military junta period. The measures of gender inequality, the military junta, and control variables are defined in Table 4. The empirical analysis is based on OLS and fixed effects models incorporating state-fixed and time-fixed effects. Both models are used to ensure robustness in the finding. Table 6 presents the estimation results with the state-level GII as the dependent variable and the following independent variables: Burmese, establishments per capita, government expenditure on education, life expectancy, and population density. All these variables are also defined in Table 4.

As shown in Table 6, a statistically significant ($p < 0.01$) positive coefficient for the variable revealed that gender inequality was 5 percent higher during the military government than after the military junta. The result agrees with the impact of historical institutions and political systems on women's rights and political participation (Beer, 2009; Chattopadhyay & Duflo, 2004). Women's participation in democratic systems increases gender equality (Beer, 2009), while authoritarian regimes disregard human rights and reduce women's participation in political activities (Donno & Kreft, 2019; Shalaby, 2016; Thames, 2017). Between 1962 and 2010 in Myanmar, women held less than 1% of the average parliamentary seats under the military junta government (Maw, 2013). The 2008 constitution drafted by the military effectively banned women from the presidency or vice presidency. The current study showed that women's political participation is closely tied to gender equality (Figure 5). Because women were barred from political participation in the military government, gender equality, as measured by GII, stagnated during this period.

Table 6: Gender Inequality Index at the State Level

Variables	Gender Inequality Index (OLS)	Gender Inequality Index (Fixed Effects)
Military junta	0.047***	0.047***
	(0.017)	(0.014)
Burmese	-0.014**	-0.014**
	(0.007)	(0.006)
Establishment per capita	-0.058***	-0.058***
	(0.018)	(0.023)
Government education expenditure	-0.021**	-0.021**
	(0.009)	(0.011)
Life expectancy	-0.012***	-0.012***
	(0.001)	(0.002)
Population density	-0.016	-0.016
	(0.025)	(0.025)
Constant	1.308***	1.308***
	(0.100)	(0.020)
State/division fixed effects		Yes
Time fixed effects		Yes
Observations	84	84
R-squared	0.901	0.895

*Notes: *** p<0.01, ** p<0.05, * p<0.1; Robust standard errors in parentheses.*
Source: Author's calculations.

The control variables (Burmese, establishment per capita, education expenditure by the government, and life expectancy) were also all negative at statistically significant levels. These results indicate that ethnicity, increased business activities, better access to education, and improved general healthcare could raise gender equality at the state level. Next, the same variables are explored at the township level.

5.4. Factors that Influence GIIs

The 2014 census data were used for the OLS model to determine the factors that impacted GII with the state-fixed effects and the variables defined in Table 4. Table 7 presents the results of the estimations with the township-level GII as the dependent variable and the following independent variables: Burmese, religion, establishments per capita, education infrastructure, life expectancy, population density, and female-headed household. First, the ethnicity variable was examined for its potential contribution to gender inequality. As expected from Figure 6, ethnic Burmese had a statistically significant, negative coefficient at the state level ($p<0.05$) (Table 6) and the township level ($p<0.01$) (Table 7). Thus, the Burmese proportion in a state or division decreased gender inequality. In other words, gender inequality among Burmese appears to be lower than among ethnic minorities. The higher gender inequality among ethnic minorities than among Burmese may be due to structural discrimination against ethnic minority groups and women.

Table 7: Gender Inequality Index at Township Level (OLS Estimates)

Variables	Gender Inequality Index
Burmese	-0.027***
	(0.010)
Buddhist	-0.080***
	(0.030)
Christian	0.077
	(0.131)
Muslim	0.150*
	(0.076)
Establishment per capita	-0.061*
	(0.031)
Education infrastructure	-0.007**
	(0.003)
Life expectancy	-0.031***
	(0.006)
Population density	-0.012***
	(0.002)
Female headed household	-0.123***
	(0.017)
Constant	2.621***
	(0.377)
Observations	405
R-squared	0.898

*Notes: *** p<0.01, ** p<0.05, * p<0.1; Standard errors in parentheses,*
Source: Author's calculations.

One culprit of institutional discrimination is the language barrier. Although ethnic Burmese make up 70% of the population in the country, ethnic Burmese are the minority in the states (South & Lall, 2016). In these states, despite most of the population speaking local languages other than Burmese, the only official language allowed in the state and federal government is Burmese. For example, the government-sanctioned educational system is provided only in the Burmese language. The majority of teachers appointed by the government (70%) who are working in ethnic minority areas cannot speak local languages (Lall & South, 2018). Public schools in the states do not provide extra support for ethnic minorities. As a result, ethnic students perform poorly in school. For ethnic minority women, this educational discrimination is compounded by the gender differences in literacy rates in states compared to divisions where Burmese are mainly located (Figure 4).

For example, the language barrier exacerbates healthcare inaccessibility. It can contribute to poorer healthcare quality and less safety for ethnic minorities than those who can speak the language (De Moissac & Bowen, 2019). Ethnic minorities require more time to communicate with service providers who do not speak their languages, causing frustration and decreased approachability (Hussey, 2012). As a result, ethnic minority women receive reduced maternal healthcare services (Oo, 2018), causing high maternal mortality (Lwin & Punpuing, 2022), as shown in Table 2. Because maternal mortality is part of the GII calculation, reduced maternal healthcare in the states increases gender inequality.

Another repercussion of the language barrier is reduced political participation by ethnic minorities. For the minorities, it is difficult to enter the political process because

they have to overcome institutional discrimination in the form of Burmese as the only official language allowed in the state and federal government. Compounding these problems are Myanmar's patriarchal customs that assume that women have a lower "phon" (power, glory, and holiness) than men (Nwe, 2009) and that women are not as well-educated as their male counterparts, exacerbating reduced political participation (Table 1). Thus, the institutional discrimination enforced by traditional customs, education, healthcare, and political participation excludes ethnic minorities from positions of power, social prominence, and decision-making. These results support the hypothesis that the areas where ethnic Burmese are located have lower GIIs than where other ethnic minorities live. Therefore, ethnic Burmese may have better education (Figure 4), more accessible healthcare (Table 2), better economic opportunities (Figure 3), and higher political participation (Table 1) than other ethnic groups.

Next, religion was examined for its influence on gender inequality. As shown in Table 7, the Buddhists have a statistically significant ($p<0.01$) negative coefficient, supporting the hypothesis that the regions where Buddhists are concentrated have low GIIs (high gender equality). For the regions with high proportions of Christians, not enough evidence is present to conclude its influence on gender inequality (i.e., statistically insignificant), although the coefficient was positive (Table 7). The coefficient for Muslims (Table 7) is positive at a statistically significant level ($p<0.1$), indicating that the regions with a high proportion of Muslims have a higher effect on gender inequality. These findings suggest that different religions, or the regions where they are practiced, have different impacts on gender inequality.

The religious influence on gender inequality found in this study is similar to the results from the previous study (Klingorova & Havlíček, 2015) that Buddhists had lower gender inequality while Muslims had higher gender inequality. However, religion alone may not be a significant factor in gender inequality in the context of Myanmar. As shown in Figure 6, the townships with the highest GII levels are found in the regions with high proportions of Christians (86.7%), mixed proportions (51.5% Buddhists and 47.3% Christians), and predominantly Buddhist populations (92.3%) alike. Also, some regions with high GIIs are on the northwestern border, where their remote locations and mountain ranges hamper healthcare accessibility (Table 2) and economic development (Figure 3). Thus, other aspects of life, such as political (Table 1), social, and economic activities in these regions, may influence these results rather than religious beliefs and practices.

Indeed, economic activities (establishment per capita) have negative impacts on gender inequality, as shown by statistically significant coefficients for the term at the state/division (Table 6) and the township (Table 7) levels. These results support the hypothesis that capital flow into a region lowers gender inequality. In other words, investment and business creation positively impact gender equality. This variable is tied to individuals' incomes because the more businesses there are in a region, the more employees they need. Economic development increases women's labor participation (Perrons, 1995), resulting in gender equality (Su et al., 2019). Therefore, regional economic development plays a crucial role in gender equality in Myanmar.

Myanmar moved toward a market-oriented economy after 2010. Economic activities took off under this open market economy and raised incomes with emerging new industries and inflows of foreign direct investments (Mueller et al., 2020). The regional development in Myanmar accelerated economic expansion in construction, service, and manufacturing in some regions but not others (World Bank Group, 2019). As Figure 4 shows, there was a significant gap in the number of business establishments between states and divisions. For example, Chin State is one of the least-developed states (Khai, 2022) and has become one of the poorest states in Myanmar (Department of Population of Myanmar, 2015). This state also has the highest gender inequality.

Economic growth in Chin State and other states will create more job opportunities for women and men, reducing inequality in these areas.

The coefficients of four other control variables were all negative at statistically significant levels. These are the government expenditure and education infrastructure (Tables 6 and 7), life expectancy (Tables 6 and 7), population density (Table 7), and female-headed households (Table 7). These results support the hypothesis that funding for education and healthcare increases gender equality. This finding agrees with the previous study that showed that more healthcare facilities and improved public health policies could optimize gender equality (Veas et al., 2021). Myanmar's healthcare system improved significantly after the political change in 2010 and increased support for women's reproductive health and family planning (Latt et al., 2016). However, some of the remote regions still lack adequate healthcare services. Chin State, in particular, has the poorest maternal health status compared to other regions in Myanmar (Tun et al., 2019) and shows higher gender inequality (Figure 6). Healthcare improvement in remote areas like Chin State may raise gender equality and equally benefit women, children, and girls.

The current study also showed that high population density reduces gender inequality. Most dense populations are located in urban and city areas where employment opportunities, education accessibility, and high development exist (Hong, 2016). Urban areas provide high-earning possibilities; therefore, urbanization is more likely to generate higher income than rural areas. This factor relates to economic development, which boosts gender equality.

The study also found that higher female-headed households had lower gender inequality. There are 28% of female-headed households in urban areas in Myanmar (Department of Population of Myanmar, 2015). Female-headed households accumulated more wealth and had access to safe drinking water and hygienic toilets than male-headed households in rural areas (Fisher & Naidoo, 2016). These consequences are related to women as decision-makers of the family, an essential dimension of gender equality.

This study has several limitations. First, data availability is restricted in Myanmar. The military junta government's long political and economic isolation from the outside world extends to the academic world. The census data are unavailable for some years (1953, 1963, 1993, 2003). Neither are the data for economic and political activities and healthcare data. Thus, this study had to rely on several data sources with varying qualities and formats to compensate for the lack of available data. Despite these obstacles, this research combined available datasets to empirically analyze gender inequality in Myanmar. Other quantitative micro-level data, such as gender-differentiated education achievements, women's wealth and land ownership, women's income, women's participation in informal and formal businesses, internal or external migration, and women's political participation at the village and township levels, are desperately needed to examine past economic policies in Myanmar. Future studies may also compare the impacts of military juntas among states and regions by using individual data samples.

6. Conclusion

To date, only a few studies have used econometric methods to analyze the consequences of past economic policies in Myanmar. This study contributes to the field by using the available census data to determine the aftermath of the military regime and its economic activities from 1962 to 2010 on gender inequality. During this period, gender inequality remained high, owing to the military junta's exclusion of women from political decision-making and economic planning. The military regime restricted women

from participating in legislation intended to protect the Burman "race" (David & Holliday, 2018). The current study demonstrated that gender equality improved over time, but the legacies of the historic decisions remain to this day. Other factors such as ethnicity, religion, and regional economic development also contributed to women's equality.

Racial inequality has existed since the independence of Myanmar. It has created institutional discrimination that influenced political participation, healthcare, and education for ethnic minorities, resulting in the absence of economic and social development in their states (Kramer, 2015) and ultimately leading to the cycle of poverty and armed conflicts. The current study showed that political participation, healthcare, and education also influence gender equality.

This study also found a high impact between economic development and gender equality. Economic development reduces gender inequality by enabling more females to participate in the labor force and increasing women's bargaining power in their households. Economic empowerment opens their opportunities for political and social recognition. This study may guide nongovernmental and international organizations working on gender issues to target specific regions and tailor specific economic programs to reduce gender inequality in Myanmar.

In a developing country like Myanmar, reducing gender inequality among different ethnicities requires targeted policies that address the unique challenges faced by women from diverse backgrounds. The current and past studies point to four potential policy and intervention targets: political and economic opportunities, healthcare, and education.

First, the government and organizations can promote political participation and representation of women from diverse ethnic backgrounds in leadership positions, decision-making processes, and public life. Such interventions can be achieved through targeted measures such as quotas, diversity initiatives, and mentorship programs (UNDP, 2021).

Second, the government, organizations, and businesses may implement policies that promote equal employment opportunities for women from all ethnic backgrounds. Such interventions include addressing biases in recruitment and hiring processes (Wrench & Modood, 2000) and supporting career advancement and professional development. Businesses and organizations can provide targeted support and resources for ethnic women in entrepreneurship and business ownership. Such a program may include training programs (Idrus et al., 2014), access to capital, mentorship programs, and business development support.

Third, policies addressing health disparities and promoting women's well-being from different ethnic backgrounds would lower gender inequality. The interventions include ensuring access to culturally sensitive healthcare services, addressing barriers to healthcare access, and providing support for specific health concerns that disproportionately affect certain ethnic groups.

Fourth, as noted in Section 2, education is linked to improved health (Raghupathy, 1996; Tran & Thi My Tran, 2019; Weitzman, 2017), employment (Barro & Lee, 2001; Chaudhry & Rahman, 2009), and political participation (Goetz, 2003; Sahu & Yadav, 2018). Thus, policies that ensure equal access to quality education and training opportunities for women from different ethnic backgrounds would strengthen women's equality. Addressing problems related to language barriers, cultural norms, and discriminatory practices that may limit educational opportunities for ethnic minority women needs to be considered.

Two other interventions could ameliorate discrimination of ethnic minority women. At the institutional level, cultural sensitivity and awareness among employers,

service providers, and institutions should be promoted to ensure that the needs and experiences of women from diverse ethnic backgrounds are understood and considered. At the local level, community leaders and community-based organizations can support initiatives that promote the rights and well-being of minority women and involve community engagement and empowerment. Especially international nongovernmental organizations can target funding and resources for capacity-building in these communities. It is crucial to engage with and involve women from diverse ethnic backgrounds in developing and implementing these policies to ensure their effectiveness and relevance.

Myanmar gradually rebuilt its economy after the transition government began instituting new social and financial policies in 2010. These policies raised not only the country's GDP (Tang & Li, 2021) but also people's living standards (International Labor Organization, 2018) and gender equality (Chandra, 2017). However, the Myanmar military declared another coup d'état on 1 February 2021, taking absolute control of all aspects of the government. Despite unanimous international condemnation (Peters, 2021; United Nations, 2021) of the totalitarian dictatorship and its consequences – jailing and killing of opposition forces (Maung, 2022; Paddock, 2022), indiscriminate killing of ethnic minorities (NBC News, 2022; Takada & Hizume, 2022), the violence against women (Quadrini, 2021), and social and economic collapse (Bo, 2022; The World Bank, 2022), the military regime still has a firm grip of power in the country to this day. Under the current situation, gender equality has become a more distant goal in Myanmar.

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Appendix

GII Calculation

Because GII construction is a critical component of our methodology, this process is explained in detail here. This paper adopts the methodology suggested by UNDP (2010), which calculates GII by combining the information on women in three dimensions, namely:

1. reproductive health that captures two women's health measures (the maternal mortality ratio and the adolescent fertility rate),
2. women's empowerment that measures the percentage of women participating in a parliament and the disparity in educational attainment between female and male, and
3. women in the labor market that reflects the percentage of women in the labor force.

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Furthermore, the information on women is combined to calculate the GIIs in the following five steps:

Step 1: Treat zeros and extreme values

Female parliamentary representation of countries reporting 0% is coded as 0.1% because the geometric mean cannot have zero, as these countries do have political influence by women (UNDP, 2010). For women's health, the maternal mortality ratio ranges from 10 to 1,000 deaths per 100,000 births (UNDP, 2010). The reason for the range is that any number below ten may harbor statistical errors. Also, any number above 1,000 would result in a maternal mortality environment indistinguishable from other numbers (UNDP, 2010).

Step 2: Aggregate across dimensions within each gender group by using the geometric mean

Female's aggregation formula is:

$$G_F = \sqrt[3]{(\frac{1}{MMR} \cdot \frac{1}{AFR})^{1/2} . (PR_F . SE_F)^{\frac{1}{2}} . LFPR_F} \quad (1)$$

where MMR = Maternal mortality ratio

AFR = Adolescent birth rate (births per 1,000 women ages 15-19)

PR = Share of seats in parliament (%held by women or men)

SE = Percentage of population with at least some secondary education

LFPR = Labor force participation rate

Male's aggregation formula is:

$$G_M = \sqrt[3]{1 . (PR_M . SE_M)^{\frac{1}{2}} . LFPR_M} \quad (2)$$

The rescaling of the maternal mortality ratios by 0.1 is needed to adjust for the truncation of the maternal mortality ratios at 10 as explained above (UNDP, 2010).

Step 3: Aggregate across the gender groups by using a harmonic mean to create an equally distributed gender index

The harmonic mean of the above geometric means captures the inequality between female and male and adjusts for the relation between the dimensions:

$$HARM(G_F\ ,\ G_M) = [\frac{(G_F)^{-1}+(G_M)^{-1}}{2}]^{-1} \quad (3)$$

Step 4: Calculate the geometric mean of the arithmetic means for each indicator

The reference standard for computing inequality is obtained by aggregating female and male indices using equal weights (thus treating the genders equally) and aggregating the indices across three dimensions:

$$G_{\bar{F}}, G_{\bar{M}} = \sqrt[3]{\overline{Health}\ .\overline{Empowerment}\ .\ \overline{LFPR}} \quad (4)$$

where

$$\overline{Health} = (\sqrt{\frac{1}{MMR}.\frac{1}{AFR}+1}\ ) / 2,$$

$$\overline{Empowerment} = (\sqrt{PR_F.SE_F} + \sqrt{PR_M.SE_M}\ )/2 \text{ and}$$

$$\overline{LFPR} = \frac{LFPR_F + LFPR_M}{2}$$

An average of corresponding women and men indices cannot be used to correspond health but rather as half the distance from the norms established for the reproductive health indicators, fewer maternal deaths, and fewer adolescent pregnancies.

Step 5: Calculate the Gender Inequality Index

Comparing the equality distributed gender index to the reference standard generates the GII:

$$Gender\ Inequality\ Index\ (GII) = 1 - \frac{HARM\ (G_F,\ G_M)}{G_{\bar{F},\bar{M}}} \quad (5)$$