

ETHNO-DEMOGRAPHIC DYNAMICS OF  
THE ROHINGYA-BUDDHIST CONFLICT

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## **Abstract**

*Ethno-demographic grievances define the conflict between Buddhist and Rohingya-Muslim populations in the Rakhine State of Myanmar. Nationalistic Buddhist leaders, such as the controversial monk Ashin Wirathu, maintain that the Rohingya population's rapid growth and high fertility rates threaten to overtake local Buddhist populations, reflecting local Rakhine State sentiments. This study seeks to identify quantitative and qualitative differences between the Rohingya and Buddhist populations in Rakhine State and to elucidate the theoretical and practical implications for Buddhist-Rohingya relations. Due to the government's decision to avoid enumeration of self-identifying Rohingya, this study has relied on several recent local surveys to reconstruct a local demographic description of the Rohingya. The "Demographic Security Dilemma" theory, which specifies expectations for minority-majority conflicts and their resolution, will be used to discuss the relevant forces that underlie the Buddhist-Rohingya conflict.<sup>1</sup>*

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<sup>1</sup> A previous version of this paper was first published in the Georgetown Security Studies Review.

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## TABLE OF CONTENTS

Introduction.....	1
Background.....	5
Methods.....	9
Results.....	12
Discussion.....	14
Conclusion.....	16
Bibliography.....	18
Appendix.....	21

## **Introduction**

Recent communal conflict in the Rakhine State of Myanmar has culminated in the displacement of the Rohingya community—a Muslim minority living in the northwestern regions of the Rakhine State. These conflicts, such as the Rakhine State riots in 2012, resulted in the destruction of Rohingya homes and have led to a recent wave of Rohingya “boat people” seeking refuge along the shorelines and coastal waterways of neighboring Southeast Asia nations. Along with communal conflict, the Rohingya regularly succumb to oppressive governmental policies. As a highly heterogenous nation, with over 135 ethnic groups, Myanmar has militated via governmental policies to oppress many ethnic groups; however, the Rohingya singular religious minority status and perceived emigrant origin, has historically fated this group to unusually rampant discrimination.

Studies on the Rohingya and ethnic conflict provide insight into the dynamics of Rakhine State communal conflict. These Rohingya studies reveal that governmental policies cause marginalization, with competition for natural resources fueling communal conflict in the Rakhine State; also, ethnic studies reveal that fears of safety, migratory flows, high population growth rates and the legacy of colonialism could cause ethnic conflict. Although these studies provide particularly cogent insight and even support the discussion of this analysis, they inadequately address a key regional concern of demography. The majority Buddhist population perceives the Muslim-minority population of Myanmar as a security threat based on differential population growth. The perceived fear, particularly acute in the Rakhine State, targets a significant Muslim population, primarily including the Rohingya (around 30% of the population in the Rakhine State), with population growth as one of the most cited concerns in the Rakhine State. Echoing the fears of local Rakhine-Buddhists, politicized Buddhist monks and associations, such as Ashin Wirathu, the MaBaTha, and the 969 Movement, regularly exploit demographic fears by espousing anti-Muslim rhetoric and by seeking governmental support. Ethno-centric Buddhists often claim that the Rohingya, sustained by high fertility and rapid population growth rates, threaten to overwhelm local Buddhist communities in the Rakhine State. The spread of

anti-Muslim sentiment based on demography along with oppressive governmental policies highlights the relationship between ethnicity and demography.

The interplay of demographic and regional ethnic relations reflects significant differences between Rohingya and Buddhists communities in the Rakhine State. In examining the relationship of high Rohingya birthrate and ethnic conflict in Western Myanmar (and the governmental role), this study analyzes demographic differences between the Rohingya-Muslims and the Rakhine-Buddhists to disprove the hypothesis that the Rohingya's total fertility rate and population growth rate are not statistically different from Myanmar citizens. Demographic comparisons of the Rohingya and similar youthful populations reveal that the Rohingya have a younger population than other members of the Rakhine State, and that differential population growth of these identity groups creates a cyclical relationship of fear and response among the regional stakeholders.

Political-demographic models adeptly pertain to the voiced demographic issues in Myanmar, and theoretical research by Christian Leuprecht particularly addresses ethnic conflict as typified by communal conflict in the Rakhine State. Leuprecht's model, known as the "Demographic Security Dilemma" examines a cyclical relationship of demographics and regional ethnic relations by studying the interactions of a politically dominant low-fertility population and a large, more youthful minority. Leuprecht demonstrates that conflict arises when the politically dominant majority perceives that a 'youthful' secondary minority population will overtake and possibly displace the majority. The ostensible threat leads to political suppression of the minority, thus exacerbating communal conflict and sustaining high fertility and growth rates of the minority. Based on Leuprecht's model, this study asks two questions pertaining to the Rohingya:

1. How does the Rohingya's total fertility rate, age structure and rate of growth compare to that of Rakhine citizens, to the Myanmar population at large, and to other distinct ethnic groups of this country?

2. How might Rohingya demography, vis-à-vis the majority Buddhist populations affect the Rohingya's political relationship with the Myanmar state?

Unfortunately, insufficient data limit the development of a comprehensive demographic study of the Rohingya. However, a rough estimate of the Rohingya fertility and age structure can be inferred using published estimates of this minority's birth and death rates. Assessment of data on Myanmar requires critical discernment and care due to limited access to primary sources. Also, previous government policies of restricting information, has limited the scope of a wide variety of in-depth demographic analysis, including exclusion in census enumeration of the Rohingya in the Rakhine State as well as minorities in conflict areas of the Kachin and Karen states. The 2014 Census estimated the potential number of non-enumerated persons in each state; however specific data are not available.<sup>2</sup> Despite these limitations, this inquiry reinforces existing studies on the Rohingya by extrapolating available demographic data.

Regarding minority-majority relations in Myanmar, application of terminology requires adequate sensitivity and specificity with apt definitions that preclude contentious biases. To legitimize the ruling junta, Burma changed its name in 1989 to 'Myanmar', a variation of the name of the nation prior to British colonialism.<sup>3</sup> However, many ethnic and opposition groups currently prefer using 'Burma', the name of this country during British rule. To respect the views of ethnic groups and oppositions, yet resist the sway of political changes that preclude accurate portrayal, references will employ terminology from international bodies such as the United Nations or the World Bank. For the sake of simplicity, 'Myanmar' refers to the Republic of the Union of Myanmar, 'Union' is used in reference to the country for demographic comparisons, 'Burma' refers to the nation prior to the 1989 ascent of the military junta, and 'Myanmar citizens' refers to all residents of Myanmar with citizenship rights. The Buddhist Rakhine ethnic group is the majority in the Rakhine State; however, the ethnic composition

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<sup>2</sup> Note: An analysis of the Kachin age structure provided from the 2014 Census reveals an extraordinary imbalance in the sex ratio. The 2014 Census notes male out-migration to work in mines in other regions may cause this imbalance.

<sup>3</sup> Dittmer, L. (2010). Burma vs. Myanmar—What's in a Name *Burma or Myanmar?: The Struggle for National Identity* (pp. 1-20): World Scientific.

of the Rakhine state remains quite diverse. Therefore, ‘Rakhine citizens’ refers to members of the Rakhine State with citizenship rights. Similarly, the names for individual Myanmar states will adhere to conventions of the 2014 Census. Finally, the term ‘Rohingya’ identifies members of the Muslim ethnic group without citizenship rights in the Rakhine State.

Myanmar officially recognizes 135 ethnic groups<sup>4</sup> dispersed throughout the nation. However, large concentrations of minorities live in the ethnic states of Chin, Kachin, Karen, Kayah, Mon, Rakhine, and Shan. The official major ethnic groups with dominant concentrations are Chin (consisting of 53 different sub-ethnic groups), Shan (33), Kachin (12), Karen (11), Burman (9), Karenni (9), Rakhine (7) and Mon (1).<sup>5</sup> In a number of ethnic minority states, such as the Chin, Kachin, and Karen, the state name refers to all the sub-groups in the state. Other state names, including the Kayah, Mon, Rakhine, and Shan, refer to the majority ethnic group in the territory.<sup>6</sup> However, a comparison study on all ethnic groups is beyond the scope of this paper; also, this study assumes that ethnic composition coincides with regional terminology.

This paper, organized in five sections, includes background, methods, results, discussion, and a conclusion. The background section provides a brief and relevant historical account of the conflict in the northern Rakhine State from the independence of Myanmar to the present. This section also explores the theoretical framework of this study, introducing the field of political-demography and expanding on the ‘Demographic Security Dilemma’ model. The second, third and fourth sections presents methods, data findings, and discussion in which ethno-demographic analysis of the Rohingya population elucidates differences of Rohingya and Myanmar citizen age structures, thus providing insight into the social, political, and economic impacts of Rohingya demography. The last section of the paper concludes with potential additional studies to address shortcomings of this analysis and implications of the findings for future governmental policies.

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<sup>4</sup> Note: Expected release of the 2014 Census ethnic composition of each region is 2016.

<sup>5</sup> Than, T. M. M. (2007). Mapping the contours of human security challenges in Myanmar. *Myanmar: State, Society and Ethnicity*, 197.

<sup>6</sup> Smith, M. J. (1991). *Burma: Insurgency and the politics of ethnicity*: Zed Books. 30.

## **Background**

Conflict in the northern Rakhine State extends to before British colonization of Burma in 1824. However, widespread persecution since independence in 1948 and subsequent restriction of citizenship rights have contributed to Rohingya suffering. Similar to other ethnic groups at the time of independence, the Rohingya sought regional autonomy either in the form of secession or as a separate administrative state, thus sewing the first seeds of rebellion. Initially, Rohingya political activists pursued succession from Burma and unification with the newly formed country of Pakistan; however, agreements between the leaders of Pakistan and Burma prevented the realization of this aspiration.<sup>7</sup> As moderate Rohingyas engaged with the government, extremist Rohingya groups developed the *mujahideen*, an armed group that threatened the engagement of the government and Rohingya moderates. By 1954, the government initiated *Operation Moonsoon*, factionalizing the *mujahideen* with the assassinations of leaders and imprisonment of supporters.<sup>8</sup> By 1961, Rohingya leaders agreed to the Mayu Frontier Administration (MFA) as proposed by Prime Minister U Nu.<sup>9</sup> The MFA was to govern townships in the northern Rakhine State and to create a separate administrative division controlled by Muslims of Rakhine within the Buddhist Rakhine administration. Yet, the coup of 1962 ended Muslim hope of self-administration,<sup>10</sup> thwarting further political-engagement activity and significantly restricting armed activity of the Rohingya.

In 1962, General Ne Win implemented a Burmanization policy that intertwined social and economic mobility with assimilation into the Burmese culture, thus effectively dismantling the successes that minority ethnic leaders, including the Rohingya, achieved with former Prime Minister U

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<sup>7</sup> Yegar, M. (2002). *Between integration and secession: the Muslim communities of the southern Philippines, Southern Thailand, and western Burma/Myanmar*: Lexington Books. 35.

<sup>8</sup> Islam, S. S., & Tan, A. T. (2007). State Terrorism in Arakan. *A Handbook of Terrorism and Insurgency in Southeast Asia*, 325-351.

<sup>9</sup> Yegar, M. (2002). 51.

<sup>10</sup> International Federation of Human Rights Leagues. (2000). International Mission of Inquiry: Burma: Repression, Discrimination and ethnic cleansing in Arakan. 6.

Nu.<sup>11</sup> At this time, Rohingya also lost citizen rights as the new administration issued Foreign Registration Cards (FRC) to the Rohingya.<sup>12</sup> Operation Naga Min (Dragon King) of 1978, a demographic campaign intended to identify citizens, foreigners and illegal foreigners,<sup>13</sup> further restricted Rohingya citizenship by identifying them as illegal foreigners. The government cemented its stance on denying citizenship to the Rohingya with the 1982 Citizenship Law. This legislation anchored discrimination against Rohingyas in the national systems, political, social and economic, by formally establishing the status of the Rohingya as illegal foreigners.<sup>14</sup> Within a decade, in 1991, the government launched Operation *Pyi Thaya* (Operation Clean and Beautiful Nation) in response to political demonstrations in the Rakhine State.<sup>15</sup> Operations *Naga Min* and *Pyi Thaya* triggered widespread persecution resulting in mass Rohingya refugee migration across the Bangladeshi border. Recent communal violence has also factored in the ongoing Rohingya refugee flight from the northern Rakhine State.

Preliminary analysis of the Rohingya conflict correctly attributes the plight of the Rohingya to widespread persecution and denial of citizenship rights; however, an in-depth assessment uncovers a number of veiled trends that factor in the Rohingya struggle. Studies, such as the Irish Centre for Human Rights<sup>16</sup> and Amnesty International<sup>17</sup> reports, assessed governmental policies as a key contributor to human rights abuses against the Rohingya. The focus of these policies include but are not limited to forced labor, movement restrictions, land confiscation, population control, and religious practices curtailment. Simpson<sup>18</sup> identified that exploitation of natural resources exacerbates insecurity in the Rakhine State as disagreements of natural resource distribution negate attempts at peace building between minority groups and the government. This dispute then leads to a perceived lack of resources

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<sup>11</sup> Steinberg, D. I. (2001). *Burma: the state of Myanmar*: Georgetown University Press. 73.

<sup>12</sup> Yegar, M. (2002). 56.

<sup>13</sup> Ibid. 55.

<sup>14</sup> Zawacki, B. (2012). Defining Myanmar's Rohingya Problem. *Hum. Rts. Brief*, 20, 18.

<sup>15</sup> Constantine, G. (2015). Exiled to Nowhere: Burma's Rohingya. from [www.exiledtonowhere.com](http://www.exiledtonowhere.com)

<sup>16</sup> Schabas, W. A., Prudhomme, N., & Powderly, J. (2010). Crimes against humanity in Western Burma: the situation of the Rohingyas.

<sup>17</sup> Amnesty International. (2004). Myanmar The Rohingya Minority: Fundamental Rights Denied. United Kingdom.

<sup>18</sup> Simpson, A. (2014). *Identity, Ethnicity and Natural Resources in Myanmar*. Paper presented at the The Australian Political Studies Association Annual Conference.

among the Rakhine minority and increases competition for resources and conflict among minority groups in the Rakhine State. Walton and Hayward<sup>19</sup> explored the relationship between ‘religious’ conflict and monastic mobilization in Myanmar as well as the role that U Wirathu, the 969 Movement, and the MaBaTha play in the conflict through the promotion of anti-Muslim propaganda. Yet, studies on ethnic conflict paint a different picture. Lake and Rothchild<sup>20</sup> posited that fears of safety instigate inter-ethnic conflict, aggravated by political activists and misinformation. Finally, Fuller et al.<sup>21</sup> developed a method to measure and assess the potential for ethnic conflict and identifies three “global megatrends”—intensification of migratory flows, higher population growth rates of minorities comparative to majority ethnic groups and the legacy of colonialism—that intensify the threat of ethnic conflict.

Although many studies touch on the correlation between demography and ethnic conflict, few focus on that relationship within Myanmar. Even outside of Myanmar, demography remains under-represented in political science and foreign policy despite the influence that demographic factors have on politics, internal conflicts, and economic changes. Political demography, defined as ‘the study of the size, composition, and distribution of population in relation to both government and politics,’<sup>22</sup> identifies patterns of political identity, conflict, and change through a statistical analysis of human populations. A thorough understanding of such patterns stemming from highly influential demographic factors, would aid the decision process of policymakers. To understand such trends, political demographers employ data and statistics relating to birth, death, fertility, and population growth to name a few. Through analysis and interpretation, these data could reveal a nation’s potential economic successes or its threat of economic stagnation. For example, a young population, such as that of most

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<sup>19</sup> Walton, M. J., & Hayward, S. (2014). *Contesting Buddhist narratives: democratization, nationalism, and communal violence in Myanmar*. Honolulu, HI: East-West Center.

<sup>20</sup> Lake, D. A., & Rothchild, D. (1996). Containing fear: the origins and management of ethnic conflict. *International security*, 21(2), 41-75.

<sup>21</sup> Fuller, G. A., Murphy, A. B., Ridgley, M. A., & Ulack, R. (2000). Measuring potential ethnic conflict in Southeast Asia. *Growth and Change*, 31(2), 305-331.

<sup>22</sup> Weiner and Teitelbaum 2001, 11-12. As cited in: Goldstone, J. A., Kaufmann, E. P., & Toft, M. D. (2012). *Political demography: How population changes are reshaping international security and national politics*: Oxford University Press. 3.

of Africa, reveal potential for economic growth as young members of society enter into the labor force;<sup>23</sup> whereas, aging populations such as Japan or Germany, face a threat of economic stagnation as a greater proportion of their population leave the workforce than enter it. Demographic data, such as fertility and birth statistics, could clarify human rights violations as well. For example, a common tool used in political demography, the total fertility rate (TFR), designates the number of children a woman may have over the course of her childbearing years and thus reveal the efficacy of family-planning programs (if they exist), levels of female education attainment, and existence of women's body rights.

Of demographic frameworks, the 'Demographic Security Dilemma,' as posited by Christian Leuprecht, particularly applies to the situation of the Rohingya in Myanmar. As a member of the 'youth bulge' family, this model reveals the probability of tensions occurring between populations at the sub-national level based on differential population growth. Typically, a 'youth bulge' occurs with a nation having high fertility rates and a growing population that stress national political and economic systems, as well as simultaneously having a large cohort of individuals entering the workforce. These 'youthful' nations (median age of  $\leq 25.0$  years) face a proliferation of intra-state conflict and civil war with an excess number of restive young men, prone to violent behavior and political activism.<sup>24</sup> The 'Demographic Security Dilemma' applies this 'youthful nation' concept at the sub-national level by suggesting that conflict arises when the politically dominant majority perceives that a 'youthful' secondary minority population threatens to overtake and possibly displace the majority.<sup>25</sup> The ostensible threat leads to political suppression of the minority, thus exacerbating communal conflict and promoting conditions that sustain high fertility and growth rates of the minority. This cyclical dilemma of political suppression and population growth has three features: (1) the minority population must have a higher fertility rate (as indicated through a 'youthful' age structure) than the majority; (2)

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<sup>23</sup> Urdal, H. (2012). Youth bulges and violence. *Political demography: how population changes are reshaping international security and national politics*. Boulder, CO: Paradigm Publishers, 117-132.

<sup>24</sup> Moller, H. (1968). Youth as a Force in the Modern World. *Comparative Studies In Society and History*, 10(03), 237-260. , Cincotta, R. (2015). Demography as Early Warning: Gauging Future Political Transitions in the Age-structural Time Domain. *Journal of Intelligence Analysis*, 22(2).

<sup>25</sup> Leuprecht, C. (2010). The Demographic Security Dilemma. *Yale Journal of International Affairs*, 5, 62.

the majority-led government must enact policies that disenfranchise or deny the minority; (3) the marginalized minority reacts to enacted policies with passive responses (e.g., sustained high fertility or migration), active defensive responses (e.g., non-violent protest, political mobilization), and/or active offensive responses (e.g., political violence, armed conflict). Any minority response ultimately escalates to further ethnic tensions with increased perceived threats to the majority's political dominance.

## **Methods**

To determine demographic differences, this study establishes a possible Rohingya age structure based on the crude birth rate (CBR) and crude death rate (CDR), total fertility rate (TFR), and median age by utilizing various sources of data and demographic tools and by examining and comparing the Rohingya data with that of the Union of Myanmar and of individual states in Myanmar. The 2014 Myanmar Census provided data on the nation as well as on individual states, whereas various UN publications extrapolated Rohingya demographic data from a single urban locality (Maungdaw Township) in the Rakhine State.<sup>26</sup> Additionally, a table of stable populations reflects a possible Rohingya age structure based on statistics from the UN publications. Model life tables and tables of stable populations (populations with an unvarying age structure growing at a constant annual rate), as presented by Coale and Demeny,<sup>27</sup> provide life tables and growth rate tables based on a cross-boundary data collection that examine trends in birth and mortality rates, where mortality and sex-age structure

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<sup>26</sup> Note: CEDAW identified Maungdaw Township, the primary township in northern Rakhine, as having a population of 511,785 with 90.41% Bengali. In the 2014 Census, the Union of Myanmar identified the Rohingya as 'Bengali'. The CEDAW publication described this 'Bengali' population as Muslims in the northern Rakhine State; thus the Bengali are assumed to be Rohingya.

<sup>27</sup> Coale, A. J., Demeny, P., & Vaughan, B. (2013). *Regional Model Life Tables and Stable Populations: Studies in Population*: Elsevier.

remain constant.<sup>28</sup> These tables aid in understanding population changes for situations in which no reliable direct information is available.<sup>29</sup>

Age structure, the primary demographic tool used for this study and is often represented by a population pyramid, measures the distribution of a population based on age and gender and can also reveal the median age of a population. Age structures are divided into 5-year age birth cohorts (people born in the same year or period), with each cohort, divided by gender, representing a proportion of the living population.<sup>30</sup> Analyses of ‘youthful’ age structures reveals that if a population has a large proportion of young people ( $\leq 25.0$  years) then that population will continue to grow even during periods of fertility decline as the proportion of women in childbearing years remains high. However, the first few cohorts (0-4, 5-9) having proportionally smaller populations signify that women have fewer children despite a large proportion of childbearing women. The former age structure resembles a pyramid with the younger cohorts having the greatest population proportion; whereas the latter age structure, in a phenomenon known as *demographic momentum*, forms an ‘S’ shape as younger populations mirror the parents’ proportions.<sup>31</sup>

The CBR (number of births per 1000 people) signifies the rate at which a population grows based on the number births; and the CDR (number of death per 1000 people) denotes the rate at which a population dies based on the number of deaths. Yet, these two rates alone reveal little about a population, in that they are crude. However, in the case of the Rohingya in which there is a dearth of data, application of CBR and CDR to a table of stable population successfully constructs an estimated population age structure for the Rohingya.

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<sup>28</sup> United Nations. (1968). *The concept of a stable population - application to the study of populations of countries with incomplete demographic statistics*. United Nations Publications.

<sup>29</sup> Thompson, E. J. (1967). Regional Model Life Tables and Stable Population (Review). [Regional Model Life Tables and Stable Populations., Ansley J. Coale, Paul Demeny]. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, 16(3), 276-277. doi: 10.2307/2985926

<sup>30</sup> Haupt, A., Kane, T. T., & Haub, C. PRB's Population Handbook.

<sup>31</sup> Goldstone, J. A. (2012). A Theory of Political Demography, Human and Institutional Reproduction. *Political demography: how population changes are reshaping international security and national politics*. Boulder, CO: Paradigm Publishers, 10-30.

The total fertility rate (TFR), a more robust assessment of population growth and change than CBR and CDR, measures the “total number of children that a woman would be expected to have if she lived out her entire child-bearing years and had the average number of children at each stage of her life as the overall average experience of all women in her society.”<sup>32</sup> Thus the TFR describes population growth and fertility based on the potential for women to have a certain number of children under the strictures of extraneous variables, such as family planning, contraception, women’s education, and etc.

Finally, the median age of a population, “the age at which exactly half the population is older and half is younger,”<sup>33</sup> classifies a population as ‘youthful’ (the Rohingya), ‘intermediate’ (Myanmar), or ‘mature’ (USA). The Rohingya age structure, as a distribution of a population based on age, yields extraction of an estimated median age, for which, in the case of the Rohingya, there is no available median age data.

The combination of age structure, TFR and the median age will generate a defined interpretation of the Rohingya population. However, due to the restricted nature of the Rohingya data, the age structure, TFR and median age derive from limited demographic studies. To verify the robustness of these measures, this study utilizes two methods of verification: Winsorising of a linear regression of the TFR as well as a cluster analysis of age structures for Myanmar states. The linear regression of the TFR from Myanmar states identifies trends and extrapolates a possible range for a Rohingya TFR. Winsorisation of this linear regression detects potential outliers that distort the data. The censoring of data points on reiterative winsorising treatments enhances the robustness of the dataset and the interpolated Rohingya TFR.<sup>34</sup> Additionally, cluster analysis verified similarities and differences within a dataset of age structures of Myanmar states.

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<sup>32</sup> Ibid. 17.

<sup>33</sup> Haupt, A., et al. 4.

<sup>34</sup> Ghosh, D., & Vogt, A. (2012). *Outliers: An evaluation of methodologies*. Paper presented at the Joint Statistical Meetings. 3456.

## Results

UN statistics on the northern Rakhine State determined the Rohingya CBR as 27.2 in 2012 and the CDR as 12.4 in 2008.<sup>35</sup> However, CBR reflects population growth to a greater extent than CDR in that CDR data may not correlate with ‘youthful’ populations due to extraneous variables, such as availability of health services or prevalence of diseases. Thus, further analysis of Rohingya with Myanmar states focuses on CBR correlations to determine Rohingya TFR. However, the extant Rohingya values of CBR and CDR (27.2 and 12.4 respectively) derive the Rohingya age structure for 2012 utilizing the table of stable populations identified as the Model Growth Rate Set of male and female in the South set with the mortality level of 17 and a reproductive rate of 1.5 ( $R=15.00$ )<sup>36</sup> with ‘r’ defined as the rate of increase, “the basic index of variation for a given mortality schedule”<sup>37</sup> as established by Coale and Demeny. Thus the Rohingya CBR and CDR with the selected Model Growth Rate table render the Rohingya age structure for 2012.

The derived Rohingya age structure resembles a pyramid with a wide base and a narrow apex (Figure 1), indicative of a large proportion of younger cohorts and thus designating a ‘youthful’ population. Owing to its reconstruction, this age structure of cohorts forms a smooth and continuous contour; whereas most age structures derived from actual data may form discontinuous progressions in which discrete increases and/or decreases of contiguous cohorts are not necessarily gradual or incremental.

Based on the reconstructed age structure, the median age of the Rohingya is within the cohort of 20-24 years old. A linear regression and winsorization of TFR as a function of CBR for the Myanmar states reveals an estimated Rohingya TFR of 3.8.

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<sup>35</sup> United Nations, G. A., Committee on the Elimination of Discrimination Against Women. (2013). *Concluding observations on the combined second and third periodic reports of Myanmar, adopted by the Committee at its forty-second session (20 October- 7 November 2008)*, CEDAW/C/MMR/CO/3/Add.4. Retrieved from [http://www2.ohchr.org/english/bodies/cedaw/docs/CEDAW.C.MMR.CO.3.Add.4\\_en.pdf](http://www2.ohchr.org/english/bodies/cedaw/docs/CEDAW.C.MMR.CO.3.Add.4_en.pdf), United Nations High Commissioner for Refugees. (2009). *Fact Sheet 2009 Public Health & HIV*. Retrieved from <http://www.unhcr.org/4bff79459.html>.

<sup>36</sup> Coale, A. J., Demeny, P., & Vaughan, B. (2013).

<sup>37</sup> Ibid. 32.

According to the 2014 Census,<sup>38</sup> the Union maintains the demographic structure of an ‘intermediate’ nation with an older age structure, i.e. a proportionally older population having a median age of 27.1 years; whereas the ‘youthful’ Rohingya age structure may have matched the Union in 1993 (Figure 2). The age structure and birth rate of the Rakhine State (median age = 26 years), although reflecting populations that are younger than the Union, still exceeds that of the Rohingya. Similarly, all non-ethnic minority states in Myanmar, such as Yangon (median age = 28.3 years) and Tanintharyi (median age = 24 years), maintain age structures older than that of the Rohingya with an apparent trajectory of a maturing population. Although Tanintharyi, owing to its rural environment, still presents a relatively young age structure, thus posing as a slight outlier from other non-ethnic minority states. The relatively youthful ethnic minority states show greater deviation within their group than the non-ethnic minority states. Most ethnic minority states resemble a ‘youthful’ population; however the Rakhine State and the Mon State resemble an ‘intermediate’ age structure. Furthermore, all ethnic minority states, except the Chin State, have an older age structure than the Rohingya (Figure 3).

Similarly, TFR trends of Myanmar states align with their respective age structures. A TFR of 2.1 purportedly sustains a population at a replacement level in which some deaths occur before adulthood. The Union (TFR = 2.3) and the Rakhine State (TFR = 2.2) both have a TFR near replacement level; therefore the Rohingya TFR, about 1.5 higher than that of the Union and that of the Rakhine State, presents a Rohingya population growth rate that is 1.5 faster than that of the Myanmar or the Rakhine State. Compared to the other states, the Rohingya sustains one of the highest TFRs and CBRs in Myanmar (Figure 4). A cluster analysis of age structures for Myanmar states reveals three distinct groups: cluster one includes the predominate number of states including all non-ethnic minority states and half of the ethnic minority states; cluster two includes Kayah State (TFR = 3.3; median age =

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<sup>38</sup> Republic of the Union of Myanmar. (2014). *The 2014 Population and Housing Census of Myanmar, Summary of the Provisional Results*.

22.9), Kayin State (TFR = 3.4; 23.6), and the Rohingya; cluster three includes the Chin State (Figure 5). This analysis confirms alignment of the Rohingya age structure and TFR with that of the Kayah State and Kayin State as a ‘youthful’ population.

The deviations from the differentials between minority and majority populations in the Chin State, Rakhine State (excluding the Rohingya) and Mon State could be attributed to various factors. Differences in accessibility of services at the township level and the state level possibly account for the Chin State (TFR = 4.37; median age = 20.1 years) being the only region with a CBR and TFR higher than the Rohingya. Among ethnic states, recent developmental projects, such as creation of model villages designed to improve the livelihoods of the Rakhine ethnic group at the expense of Rohingya rights, thus decreasing birthrates, may explain the Rakhine State divergence from the model. Whereas Mon State (TFR = 2.4; median age = 26.7 years) development, due to high level of Mon population interactions with the Burman ethnic group, may account for the Mon State demographic divergence from the ‘Demographic Security Dilemma’ model.

## **Discussion**

The reconstructed Rohingya age structure, TFR and median age, portrays a relatively “youthful” population that will continue to grow, barring out-migration forces, which will surpass that of Myanmar citizens if the Rohingya fertility rate (birth rate) continues at its current level; whereas the age structure of the Union and its states will continue to mirror the trajectory of nations with maturing populations. According to the Demographic Security Dilemma model, a government controlled by the majority in power may fear a rising population growth of a minority, and will respond to the minority by either disenfranchisement or denial of services. Currently, the Rohingya population faces such disenfranchisement with denial of citizenship rights, employment opportunities and services such as quality healthcare and education. Government implemented population control policies evincing the disenfranchisement and denial of services of the Rohingya, include *Operation Naga Min* of 1978, the

Two-child policy of 2013, and the Population Control Healthcare Bill of 2015. These policies elicit a passive reaction from the Rohingya in the form of high-birth rates retention, low education obtainment, and on-going impoverishment, attributes that typically mark marginalized populations.

Population control policies against the Rohingya dates back to 1962 when the Rohingya first lost citizenship rights. In 1978, the government enacted *Operation Naga Min* or Operation Dragon King, a singularly prominent population control policy in which the government systematically identified illegal residents in problematic regions such as the northern Rakhine State.<sup>39</sup> *Naga Min* led to mass persecution and marginalization of the Rohingya that included widespread rape, destruction of villages, and arbitrary arrests.<sup>40</sup> Human rights activists charged that *Naga Min* was in fact an ethnic cleansing campaign, forcing a mass migration of 250,000 Rohingyas across the border into Bangladesh.<sup>41</sup> Ultimately, population control policies, as the initial root cause, triggered subsequent persecution, marginalization and migration of the Rohingya.

Recently, the government has enacted two additional population control policies designed to restrict population growth in densely populated government designated regions. To address the 2012 communal violence in the northern Rakhine State, the Myanmar government convened the Inquiry Commission on Sectarian Violence in the Rakhine State. This inquiry determined that resource competition significantly contributed to the violence and recommended that local authorities should implement Rohingya family planning programs to maintain the growth of this population. However, these programs should “be implemented ... in a non-discriminatory fashion and must be based on the principle of voluntary participation.”<sup>42</sup> Yet, local Rakhine authorities, ignoring the charge of voluntary participation, implemented this two-child policy with force. Consequently, due to fear of civil

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<sup>39</sup> Yegar, M. (2002). 55.

<sup>40</sup> Ahmed, A. (2012). The Rohingya: Myanmar's Outcasts. *Al Jazeera English*. Retrieved from <http://www.aljazeera.com/indepth/opinion/2012/01/201212710543198527.html>

<sup>41</sup> Constantine, G. (2015).

<sup>42</sup> Republic of the Union of Myanmar. (2013). *Final Report of Inquiry Commission on Sectarian Violence in Rakhine State*.

discipline, the two-child policy has led to unsafe abortions and unregistered births.<sup>43</sup> Furthermore, the recent Population Control Healthcare Bill, enacted by President Thein Sein in May 2015, further marginalizes the Rohingya. The government designed the Population Control Healthcare Bill to reduce maternal and infant mortality rates by mandating that women residing in areas with high population growth rates engage in a 36-month birth-spacing period of children.<sup>44</sup> Yet, critics claim that this bill restricts women's rights in Muslim-majority areas and fuels tensions between Rohingyas and Rakhine citizens.<sup>45</sup> Although a slight improvement to the two-child policy of 2012, this requirement of birth spacing of three years for children may potentially increase unsafe abortions and unregistered births, and at the same time fail to address the marginalized conditions for this low educated, impoverished, poorly educated, and rural Rohingya population with high birth rates. In an attempt to mitigate a security threat, the government designed these policies to directly suppress population growth. Yet instead of improving the situation, by restricting the rights of the Rohingya, these policies only maintain high population rates, preventing a significant population to contribute to the society and economy, thus creating tensions and increasing communal conflict.

## **Conclusion**

The analysis of a potential Rohingya age structure, median age and TFR disproves that the Rohingya's total fertility rate and population growth rate are not statistically different from the local Myanmar citizens. Therefore, this study suggests that differential population growth between the Rohingya and the Rakhine citizen populations significantly contributes to communal conflict in the northern Rakhine State and to tensions in Myanmar. In addition, the limitations of government-enacted

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<sup>43</sup> Szep, J., Marshall, A.R.C. (2013). Myanmar minister backs two-child policy for Rohingya minority. *Reuters*. Retrieved from <http://www.reuters.com/article/2013/06/11/us-myanmar-rohingya-idUSBRE95A04B20130611>

<sup>44</sup> Aye Aye Win. (2015). Burma President Signs Off on Contested Population Law. *The Irrawaddy*. Retrieved from <http://www.irrawaddy.org/burma/burma-president-signs-off-on-contested-population-law.html>

<sup>45</sup> Amnesty International. (2015). Myanmar: Scrap 'race and religion laws' that could fuel discrimination and violence. Retrieved from <https://www.amnesty.org/en/latest/news/2015/03/myanmar-race-and-religion-laws/>, Human Rights Watch. (2015). Burma: Reject Discriminatory Population Bill. Retrieved from <https://www.hrw.org/news/2015/05/16/burma-reject-discriminatory-population-bill>

population control measures of the Rohingya exacerbate conflict rather than address the local perceptions of a growing Rohingya population. These policies, then, prolong the marginalization of the Rohingya. While this analysis is not without its limitations, such as lack of demographic data, it does provide a new understanding of tensions in Myanmar. However, additional demographic studies that have measured data on the Rohingya will provide a fuller understanding of the effect that differential population growth has at the sub-national level in Myanmar.

By understanding the relationship of population and policy, this study does not only provide a new context for policymakers within Myanmar, but for stakeholders outside of Myanmar, such as the United States. As Myanmar enters into a new NLD-led government after the 2015 elections, solutions to the conflict in the Rakhine State will soon be addressed. These solutions must account for the plight of the Rohingya through inclusive policies designed to increase the well-being of the Rakhine citizens and Rohingya as well as decrease characteristics of a marginalized people.

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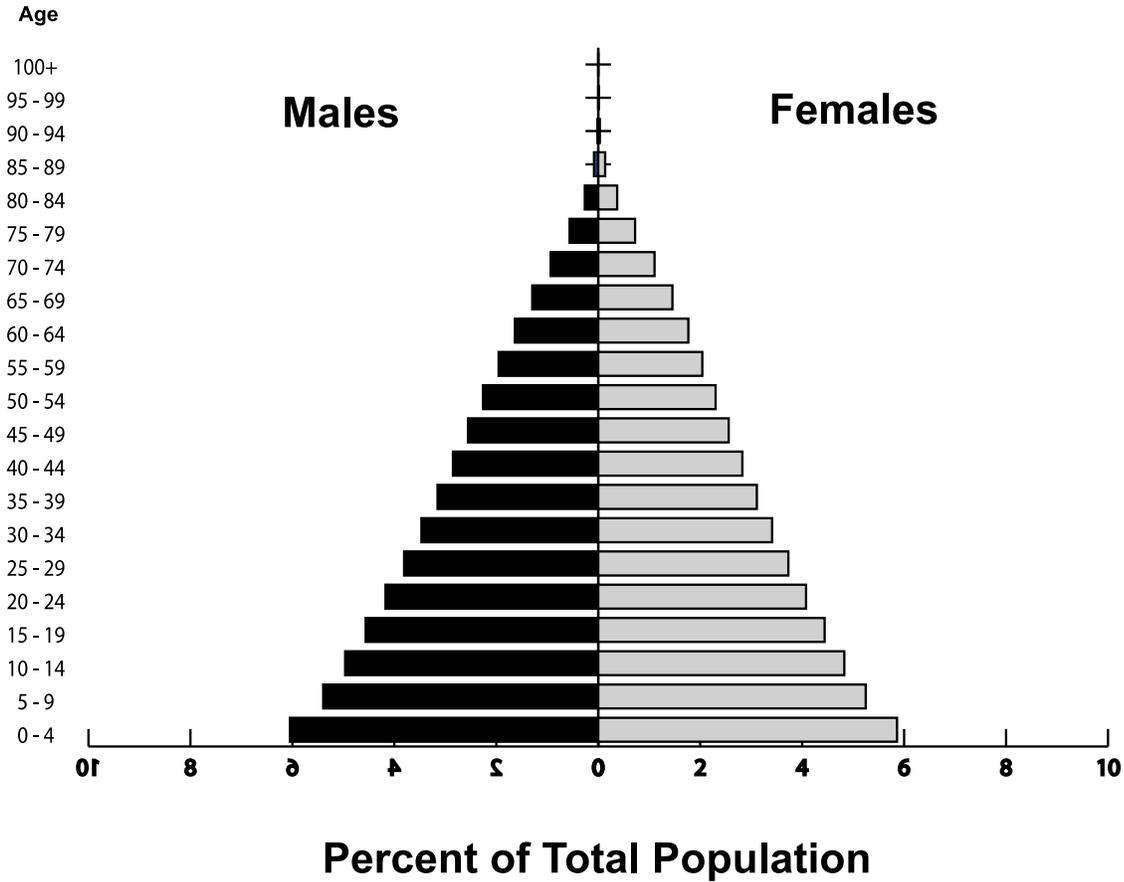
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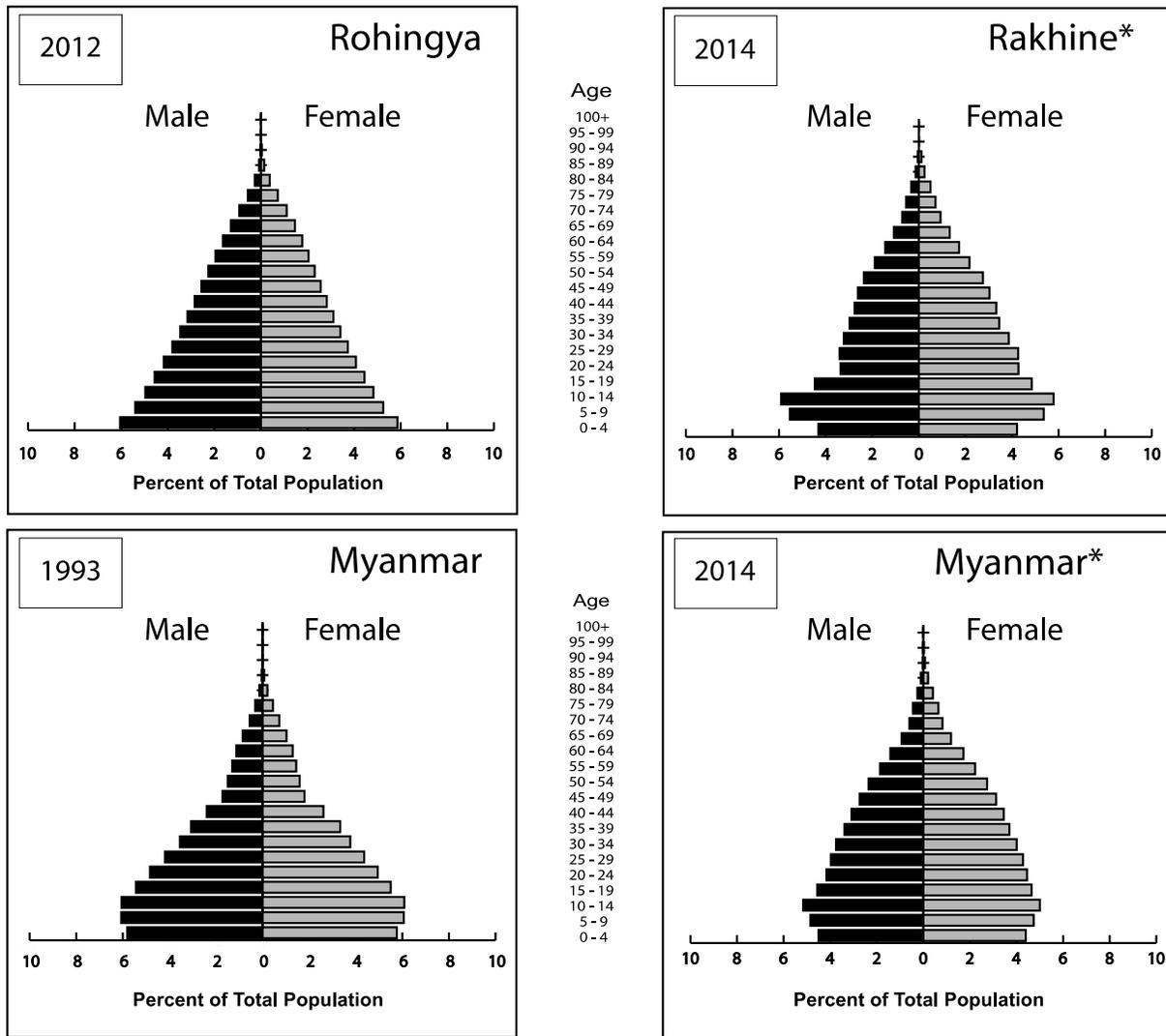
APPENDIX

Figure 1: Rohingya Age Structure in 2012



Source: *Blomquist and Cincotta, 2015 (Unpublished)*  
 Data retrieved from: *Republic of the Union of Myanmar. The 2014 Population and Housing Census of Myanmar, Main Report (2014); United Nations, General Assembly, Committee on the Elimination of Discrimination Against Women, CEDAW/C/MMR/CO/3/Add.4 (2013); United Nations High Commissioner for Refugees. Fact Sheet 2009 Public Health & HIV (2009).*

Figure 2: Comparison of Regional Age Structures

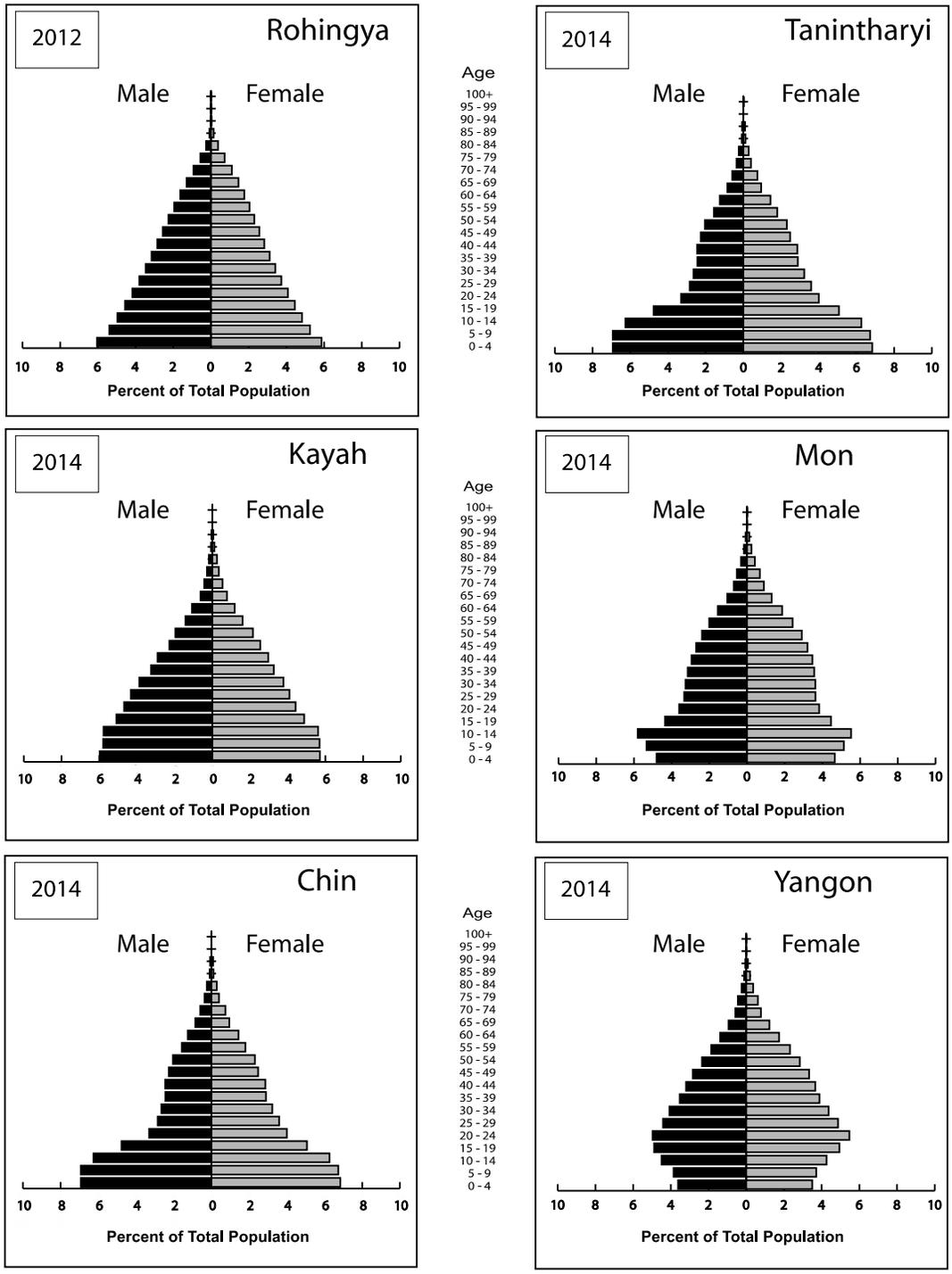


\*Note: Estimated persons not enumerated: Myanmar- 1,206,353  
Rakhine- 1,090,000

Source: Blomquist and Cincotta, 2015 (Unpublished)

Data retrieved from: Republic of the Union of Myanmar. The 2014 Population and Housing Census of Myanmar, Main Report (2014); United Nations, General Assembly, Committee on the Elimination of Discrimination Against Women, CEDAW/C/MMR/CO/3/Add.4 (2013); United Nations High Commissioner for Refugees. Fact Sheet 2009 Public Health & HIV (2009).

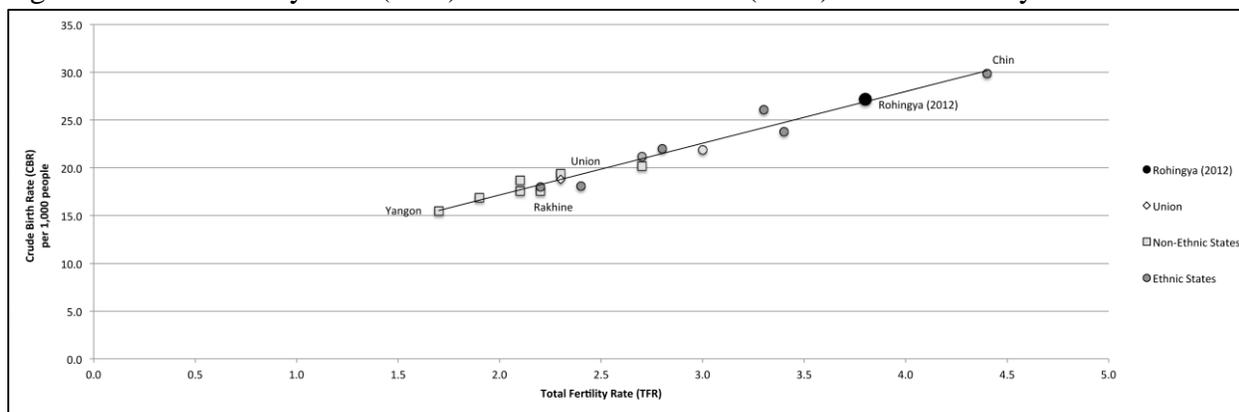
Figure 3: Age Structures of Selected States in Myanmar



Source: Blomquist and Cincotta, 2015 (Unpublished)

Data retrieved from: Republic of the Union of Myanmar. The 2014 Population and Housing Census of Myanmar, Main Report (2014); United Nations, General Assembly, Committee on the Elimination of Discrimination Against Women, CEDAW/C/MMR/CO/3/Add.4 (2013); United Nations High Commissioner for Refugees. Fact Sheet 2009 Public Health & HIV (2009).

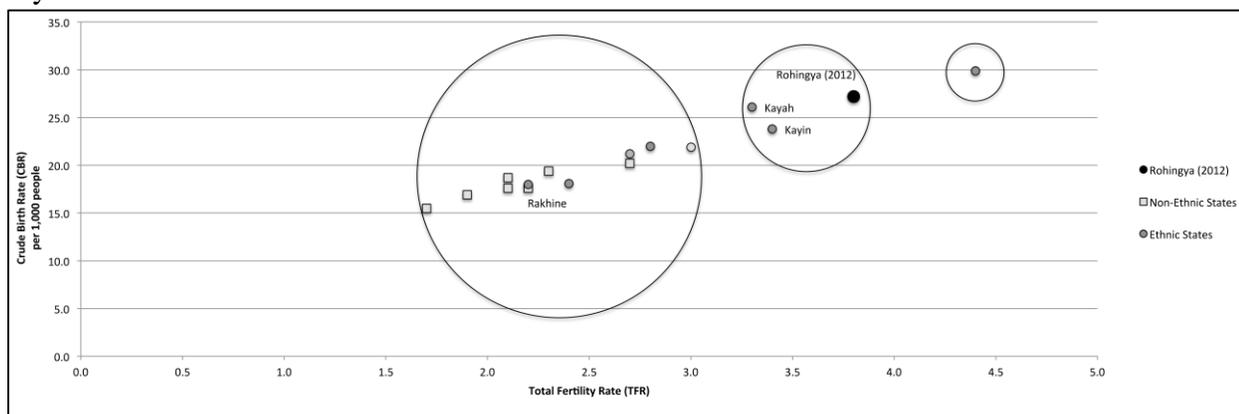
Figure 4: Total Fertility Rate (TFR) and Crude Birth Rate (CBR) of States in Myanmar



Source: *Blomquist and Cincotta, 2015 (Unpublished)*

Data retrieved from: *Republic of the Union of Myanmar. The 2014 Population and Housing Census of Myanmar, Main Report (2014); United Nations, General Assembly, Committee on the Elimination of Discrimination Against Women, CEDAW/C/MMR/CO/3/Add.4 (2013); United Nations High Commissioner for Refugees. Fact Sheet 2009 Public Health & HIV (2009).*

Figure 5: Cluster Analysis of the Total Fertility Rate (TFR) and Crude Birth Rate (CBR) of States in Myanmar



Source: Blomquist and Cincotta, 2015 (Unpublished)

Data retrieved from: Republic of the Union of Myanmar. *The 2014 Population and Housing Census of Myanmar, Main Report (2014)*; United Nations, General Assembly, Committee on the Elimination of Discrimination Against Women, *CEDAW/C/MMR/CO/3/Add.4 (2013)*; United Nations High Commissioner for Refugees. *Fact Sheet 2009 Public Health & HIV (2009)*.