

## ABSTRACT

Title of Thesis: Ujamaa and the Egalitarian Paradox: The Correlation between Socialism and Contemporary Public Service Disparities Among Villages in Rural Tanzania

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Six years after independence, the government of Tanzania implemented Ujamaa, a set of socialist policies emphasizing rural development and the establishment of communal agricultural villages. In this thesis, I focus on how the continuing legacy of Ujamaa may influence the distribution of public services throughout Tanzania. This study uses data collected from interviews with village leaders and villagers in 45 villages from 2010 to 2016 to illustrate the extent of disparities in government-provided services, specifically healthcare, secondary education, and national grid electricity. Despite the end of Ujamaa in the 1980s, rural villages in Tanzania appear to have experienced general bias in government service provision, potentially based on village status during Ujamaa, as former Ujamaa villages possessed higher levels of services than villages not considered to be Ujamaa villages. Other indicators of provision bias include primary livelihood and whether a village is the ward headquarters.

Ujamaa and the Egalitarian Paradox:  
The Correlation between Socialism and Contemporary Public Service Disparities Among  
Villages in Rural Tanzania

By

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## **Discussion on Translations**

Interviews with respondents primarily took place in Kiswahili, with occasional interviews occurring in English. Members of the research team translated interviews, with final translation approval given by lead researchers Professor Kelly Askew and Professor Faustin Maganga.

## Chapter 1 Public Service Provision in Tanzania

The United Republic of Tanzania (hereafter referred to as Tanzania), comprised of mainland Tanzania and the islands of Zanzibar, has a population of over 60 million people,<sup>1</sup> with nearly 44% of the population below age 14.<sup>2</sup> The life expectancy at birth for Tanzania is 65.5 years, and the average Tanzanian receives approximately eight years of schooling. Inequality, specifically income inequality, remains high with a Gini coefficient of 40.5 measured between 2010 and 2018.<sup>3</sup> As of 2019, Tanzania is considered to be a country with low human development, ranking 163 out of 189 countries on the Human Development Index.<sup>4</sup> The United Nations also classifies Tanzania as a Least Developed Country,<sup>5</sup> based on measures of income, the Human Assets Index, and the Economic and Environmental Vulnerability Index.<sup>6</sup>

Each of these rankings and factors indicates a relatively low degree of development and high inequality overall, creating disparities in access to government-provided services such as healthcare, education, and electricity. These disparities are especially pronounced in an urban-rural divide. With more than 65% of Tanzanians residing in rural areas,<sup>7</sup> the high level of disparities implies that a majority of the country's population has potentially unmet needs required to uphold a basic standard of living. To better illustrate services in which unmet needs and disparities in access exist, this chapter contextualizes the public services of healthcare, education, and electricity throughout Tanzania. I also provide a brief history of Ujamaa, or Tanzanian socialism, from the 1960s through the 1980s before delving into the focus of

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<sup>1</sup> UNICEF, n.d.

<sup>2</sup> World Bank, 2019a

<sup>3</sup> United Nations Development Programme, 2020

<sup>4</sup> United Nations Development Programme, 2020

<sup>5</sup> United Nations Department of Economic and Social Affairs, n.d.a

<sup>6</sup> United Nations Department of Economic and Social Affairs, n.d.b

<sup>7</sup> World Bank, 2019b



remaining chapters of this thesis: how Ujamaa policies and contemporary service access are correlated for those residing in rural villages throughout the country. Addressing this correlation provides a foundation for the government of Tanzania, at both local and national levels, to understand where service disparities exist within the country and make efforts to resolve them through new provision strategies. To date, little to no scholarship has investigated the possible relationship between Ujamaa and contemporary service presence, a gap that this study begins to fill.

While blatant disparities in public-service provision exist between rural and urban areas throughout Tanzania, disparities are likewise notable within and between rural areas. Some villages have no access to services, yet a neighboring village might have a healthcare facility and secondary school. Still another may have both of these in addition to electricity. In this thesis, I address the following questions: How are former Ujamaa policies correlated with contemporary government service provision, specifically healthcare, secondary education, and grid electricity, in rural villages of mainland Tanzania? Through what factors might Ujamaa policies continue to influence the provision of these services? Decades after its end, lingering impacts and perceptions of socialism remain prevalent both physically and memorially throughout Tanzania: buildings still stand; the ruling party remains in power; and citizens remember both the good changes and the bad that Ujamaa brought. Underlying these surface-level legacies, however, is a startling layer of complexities indicating that historical policies may contribute at some level to continuing service disparities between former Ujamaa and non-Ujamaa villages. Additionally, a village that is the headquarters for its ward as well as predominantly agricultural villages receive higher objective service provision than other ward villages or pastoralist villages, factors that could also be lingering impacts of Ujamaa.

## **A Brief History of Ujamaa and Rural Villagization<sup>8</sup>**

Following independence from Britain in 1961, the newly sovereign government of Tanganyika,<sup>9</sup> composed of many officials who held positions in the colonial government, adopted two development plans. A World Bank report commissioned and published prior to independence by the colonial government, as well as continuing pervasive colonial ideologies, influenced the creation and implementation of both the three-year development plan (1961-1964) and the five-year development plan (1964-1969).<sup>10</sup> The government adopted resettlement in the five-year development plan, a common tactic under the colonial administration. The Village Settlement Scheme sought to resettle 500,000 villagers chosen through a rigorous selection process into newly formed villages with the ultimate goal of “economic self-sufficiency.”<sup>11</sup> By 1966, however, the Village Settlement Scheme had failed completely. A few thousand, mostly unqualified, settlers moved into 23 poorly managed, government-dependent villages where “[n]o settlement had a permanent school or dispensary, and only two had water supplies,” a situation that fell drastically short of the goals of 69 villages and self-sufficiency.<sup>12</sup>

In the wake of the Village Settlement Scheme failure, Tanzanian president Julius Nyerere seized the opportunity to institute a new form of rural socialism in 1967: Ujamaa. The publication of the Arusha Declaration sought to nationalize industry and prioritize the development of rural Tanzania.<sup>13</sup> Nyerere’s plan prioritized “social equality, not rapid economic

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<sup>8</sup> For a more in-depth explanation of Ujamaa history, see chapter one of *Surrogates of the State: NGO’s, Development, and Ujamaa in Tanzania* (2008) by Michael Jennings and *Limited Choices: The Political Struggle for Socialism in Tanzania* (1994) by Dean McHenry, Jr.

<sup>9</sup> The United Republic of Tanzania officially formed in 1964. Prior to the unification, mainland Tanzania retained the name Tanganyika (South African History Online, 2011).

<sup>10</sup> Jennings, 2008, p. 45

<sup>11</sup> Jennings, 2008, p. 42

<sup>12</sup> Jennings, 2008, p. 43

<sup>13</sup> Jennings, 2008

growth,” implemented through a revised resettlement program that dominated the Tanzanian landscape for more than ten years.<sup>14</sup> Nyerere’s vision of social equity involved service provision to many by expanding free government-provided healthcare and establishing adult education and Universal Primary Education programs.<sup>15</sup> Ujamaa, loosely defined as ““familyhood,”” signified a partial return to ““traditional African socialism.””<sup>16</sup> Every person was part of a community that both took care of, and was taken care of, by its members who lived and worked alongside each other. These communities registered as Ujamaa villages and received the bulk of government funding for a variety of purposes, ranging from the establishment of health services to receiving government loans.<sup>17</sup> Unlike the World Bank-envisioned Village Settlement Scheme, Ujamaa villagization, or the establishment of Ujamaa villages, affected every rural villager rather than a select few chosen to participate, and Ujamaa produced drastic changes throughout the landscape of rural Tanzania as a result. Figure 1.1<sup>18</sup> provides an example for the planning of an Ujamaa village in Mtwara region. This Ujamaa village design included separate areas for a communal field, individual homesteads, political party offices, a school, a dispensary, a postal agency, and religious sites. Plans for other Ujamaa villages may have varied slightly from this design but included similar elements.

Ujamaa villagization proceeded in three distinct waves. From 1967 through the beginning of March 1969, resettlement into an Ujamaa village occurred at the behest of villagers themselves, encouraged and led by local leadership. Following the introduction of the second five-year plan (1969-1974), villagization remained voluntary, but efforts at resettlement came

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<sup>14</sup> Jennings, 2008

<sup>15</sup> McHenry, 1994

<sup>16</sup> Jennings, 2008, pp. 45-46

<sup>17</sup> Jennings, 2008

<sup>18</sup> Lal, 2017

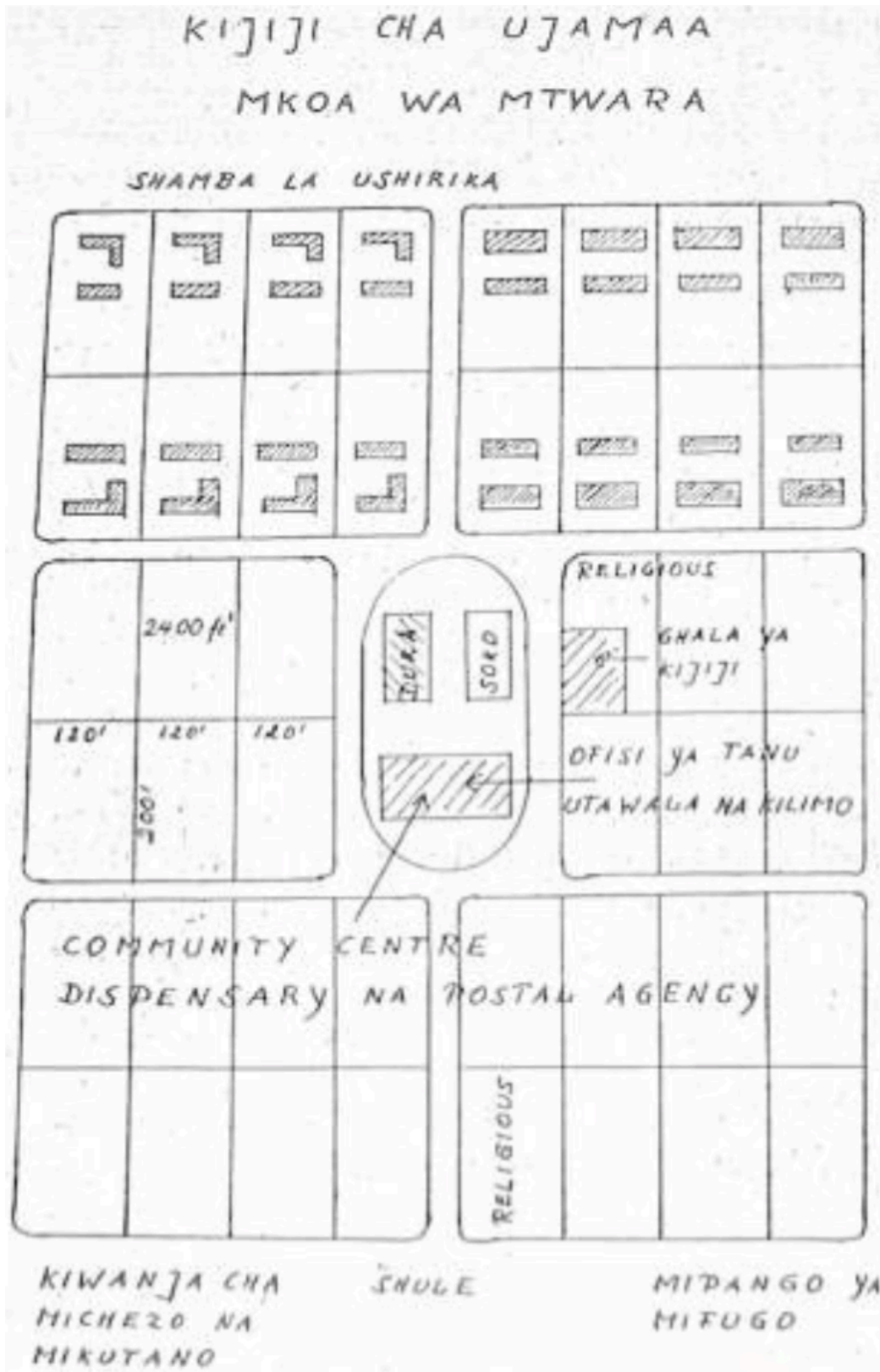


Figure 1.1: Plan for Ujamaa village in Mtwara region, 1968

from local leaders themselves rather than villages; additional government funds were also

directed to these new villages and taken away from villages that did not register as Ujamaa villages.<sup>19</sup> Villagization under these leaders transformed the rural landscape. The government resettled densely populated districts in regions such as Kigoma and Dodoma into newly formed Ujamaa villages at the behest of the government rather than popular initiative. Beginning in 1973, however, the federal government made villagization compulsory, where “all Tanzanians were required to be living in nucleated village settlements within three years.”<sup>20</sup> In 1974, Operation Vijiji launched, focusing on the widespread villagization of areas with smaller populations.<sup>21</sup> The Villages and Ujamaa Villages Act of 1975 formally recognized the existence of two forms of settlements: Ujamaa villages and non-Ujamaa villages.<sup>22</sup> Together, these two types of villages were home to approximately 95% of the Tanzanian population. Despite government implementation of villagization, the initiative had varying regional success dependent on numerous factors such as poverty levels, infrastructure, and the availability of land.<sup>23</sup> Poor areas lacking infrastructure but with high land availability experienced the greatest successes, especially in the first and second phases of villagization. In 1973, for example, only one percent of the populations of Kilimanjaro and Shinyanga regions lived in Ujamaa villages, compared to 64% of Mtwara region’s population.<sup>24</sup>

Ujamaa continued to remain a driving force throughout rural Tanzania through the mid-1980s, though the degree of adherence to Ujamaa’s ideology varied with location. Numerous respondents reported during interviews that the communal tendencies of their village began to falter anywhere from the late 1970s into the 1980s, often due to corruption of local officials and

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<sup>19</sup> Jennings, 2008

<sup>20</sup> Jennings, 2008, pp. 50-51

<sup>21</sup> Jennings, 2008

<sup>22</sup> Government of Tanzania, 1975

<sup>23</sup> Jennings, 2008

<sup>24</sup> Jennings, 2008

the desire to farm individual plots rather than the communal field. The unofficial end to Nyerere’s Ujamaa came in 1985 when Nyerere stepped down as president of Tanzania. From this point forward, Tanzania began liberalizing the economy at the behest of the International Monetary Fund as part of an economic recovery plan.<sup>25</sup> Though economic liberalization symbolized the end of socialism, Ujamaa continues to be an important part of Tanzania’s history, evidenced through existing legacies still present across the country.

### The Health System and Healthcare Provisioning

The Tanzanian healthcare system operates as a decentralized, multi-tiered system, with patients referred from primary care facilities to specialized physicians as necessary. The

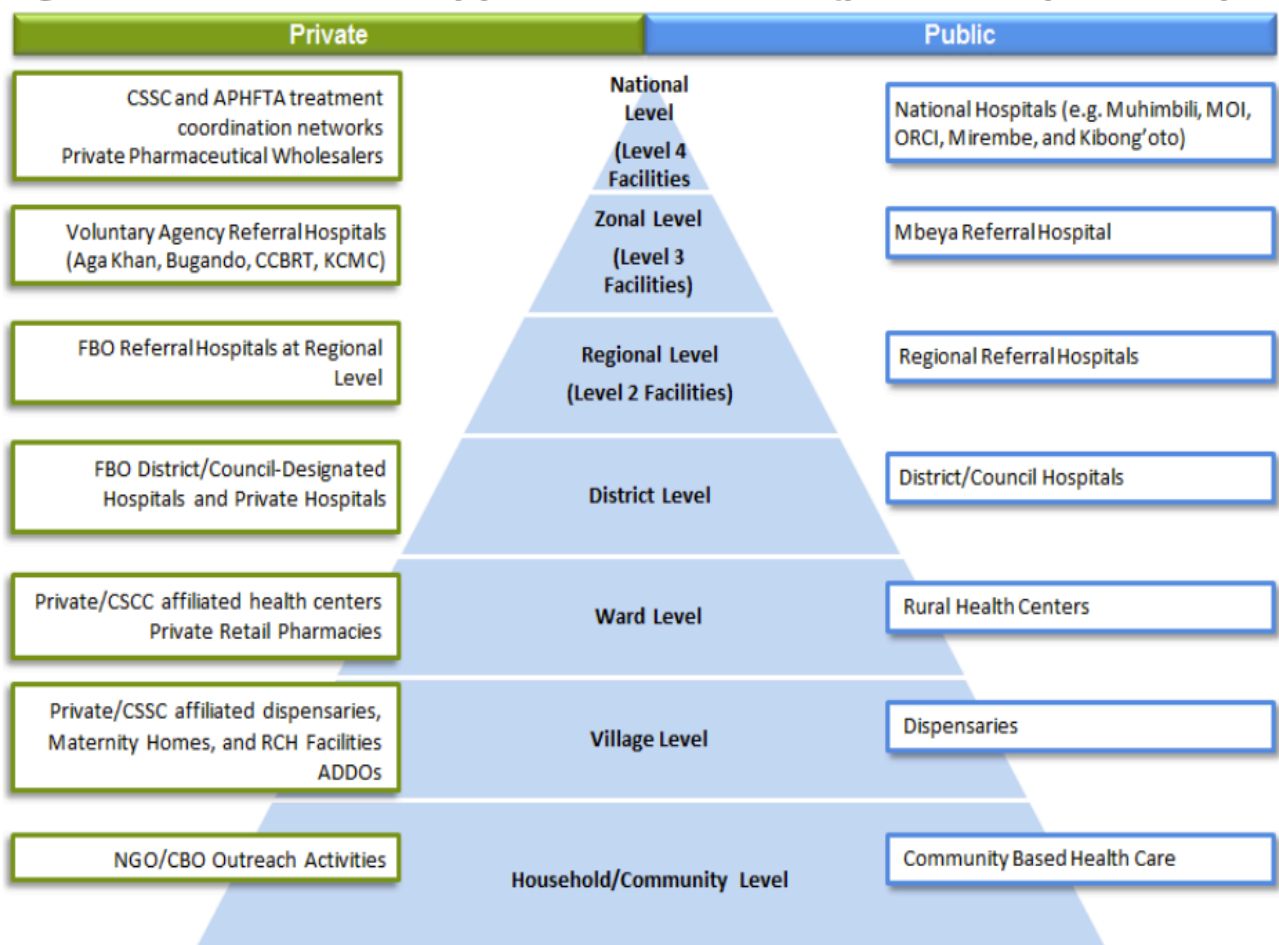


Figure 1.2: Healthcare system level and type

<sup>25</sup> Kamat, 2013

availability of healthcare differs by geographic location, with various levels of primary care existing in rural areas and specialized facilities located in urban settings. As shown in Figure 1.2,<sup>26</sup> the types of primary care facilities within rural areas are as follows: dispensary services (village level), health centre services (ward level), and district hospital services (district level). Formerly, village level community health posts were available in villages without other health services.<sup>27</sup> The government phased out health posts with the 2007 announcement of plans to establish a dispensary in every village.<sup>28</sup> The lowest level of health facility available is thus the dispensary at the village level.

The country-wide rollout of healthcare in Tanzania began during Ujamaa with President Nyerere's goal of providing the right to healthcare to citizens.<sup>29</sup> As a result of Ujamaa's policies, "health expenditures reached their peak in 1973 and 1974 when nine percent of the total government budget was spent on health."<sup>30</sup> Furthermore, much of these funds went to serve the poor in rural areas by increasing the number of dispensaries from 1,847 to 2,644 and tripling and quadrupling the number of medical assistants and rural medical aides, respectively.<sup>31</sup> Overall, these increases in expenditures and health staff meant that "health services had been expanded to reach a higher proportion of the population."<sup>32</sup> By the late 1970s, however, an economic decline plagued the country, and the government could not support the socialist policy of healthcare for all.<sup>33</sup> Nyerere's successor, Ali Hassan Mwinyi, abandoned the policy and privatized the health sector. Privatization returned health facilities to NGOs and organizations whose clinics and other

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<sup>26</sup> Ministry of Health and Social Welfare, 2015

<sup>27</sup> Kwesigabo et al, 2012

<sup>28</sup> Tanzania: President announces "major" healthcare plan, 2007

<sup>29</sup> Kamat, 2013

<sup>30</sup> Kamat, 2013, p. 67

<sup>31</sup> McHenry, 1994

<sup>32</sup> McHenry, 1994, p. 83

<sup>33</sup> McHenry, 1994

facilities had been nationalized by the government during socialism.<sup>34</sup> The early 1990s saw a dramatic decrease in health expenditures, falling to five percent of the government budget.<sup>35</sup>

Throughout the 1990s, a series of healthcare reforms took place that centered healthcare planning at the district level, whereby district officials had both the ability and responsibility to establish and/or maintain equity in healthcare access. The inequitable distribution of funds, however, created blatant disparities between districts.<sup>36</sup> Reforms also led to the introduction of four new medical schools within Tanzania, increasing the number of Tanzanian doctors from 1,265 in 1992 to 3,770 in 2010. Despite the increase in trained physicians, only 34% were available to practice medicine, placing the country at 39% of the minimum number of doctors needed to function.<sup>37</sup> The bureaucracy of the public sector prevented many physicians from practicing, and others refused to practice in the rural areas to which they were assigned due to the perceived undesirability of rural assignments.<sup>38</sup> As a result, a severe shortage of physicians plagues the country, especially in rural areas.

## **Education**

The education sector in Tanzania is divided into three components: primary, secondary, and tertiary. Primary education consists of seven years, with an examination required to move on to secondary school. Secondary education has six forms (levels), with lower secondary consisting of four forms and advanced secondary of two.<sup>39</sup> A student must pass a national

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<sup>34</sup> Kamat, 2013

<sup>35</sup> Kamat, 2013

<sup>36</sup> Sirili, 2018

<sup>37</sup> Sirili, 2018

<sup>38</sup> Sirili, 2018

<sup>39</sup> Asante Sana for Education, 2014



examination to move from lower to upper forms and to enter tertiary education (university) after completing secondary school.<sup>40</sup>

During Ujamaa, the Tanzanian government promoted primary education for all, placing education at the top of priority services. As a result, the proportion of primary school aged children enrolled in primary school reached 100% in 1979.<sup>41</sup> The exceptionally high rate of enrollment declined with Ujamaa, however. By 1990 only 63% of children were registered for primary school, though this enrollment level far surpassed the 34% seen towards the beginning of Ujamaa in 1970.<sup>42</sup> To combat the decreasing levels of registration, in 2001 the government of Tanzania passed the Primary Education Development Plan (PEDP), intended to realize the Universal Primary Education Campaign of Ujamaa whereby all children would have access to free primary school education.<sup>43</sup> Additionally, the government sought to increase the quality of primary education, expand educational programs to children who were not in school, construct new classrooms, and increase the presence of teachers.<sup>44</sup> The PEDP was relatively successful, with primary education enrollment again increasing from 58.8% to 97.3% between 2000 and 2007 and the number of primary schools increasing by more than 4,000 over a six-year time period.<sup>45</sup> In accordance with these findings, all 45 villages in this study had at least one primary school within the village boundaries by 2016, an indicator of continuing primary education enrollment and realized government policy. Despite the advances in primary education

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<sup>40</sup> Asante Sana for Education, 2014

<sup>41</sup> McHenry, 1994

<sup>42</sup> McHenry, 1994

<sup>43</sup> Basic Education Development Committee, 2001

<sup>44</sup> Basic Education Development Committee, 2001

<sup>45</sup> Sitta, 2007

enrollment through 2007, the number of enrolled students has declined. Today, more than two million children are not enrolled in primary school.<sup>46</sup>

Converse to primary education, secondary education enrollment has remained considerably low. Ujamaa policies emphasize primary education rather than secondary to allow more children to achieve some education rather than some children to receive more education. In 1980, for instance, only 2.4 percent of eligible children ages 14 to 17 were enrolled in secondary school.<sup>47</sup> The government has made improvements in secondary education registration post-1980. One such improvement involves legislation from 2006 promising the institution of a secondary school in every ward. The total number of secondary schools in the country increased to approximately 4,370, four times the number present in 2004, and initiated improvement in enrollment from 12.4% to 50.3%.<sup>48</sup> These promising changes in enrollment were short-lived. As of 2016, forms one through four have only about 30% enrollment, while a meager 3.2% of children are enrolled in forms five and six, leaving millions of students without adequate education. Of all children in Tanzania, girls, students from impoverished households or underserved areas, and children with disabilities are more likely to drop out or to forgo school altogether. Nearly 3,700 girls dropped out of school due to pregnancy in 2016 alone.<sup>49</sup>

## **Electrification**

The government has set a goal of electrifying all villages, numbering more than 12,000, that is on track to be completed by June 2021.<sup>50</sup> In previous years, electrification levels have remained low but steadily increasing. Between 2010 and 2018, electricity connections increased

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<sup>46</sup> UNICEF, 2016

<sup>47</sup> McHenry, 1994

<sup>48</sup> Languille, 2015

<sup>49</sup> UNICEF, 2016

<sup>50</sup> Makwetta, 2021

from 11% to 37% of the population.<sup>51</sup> The larger study from which this thesis draws shows support for an increase in grid-electrification in rural areas between wave one from 2010 to 2016 and wave two from 2016 to the present. By 2016, only 35.6% of our study villages (16 of 45 villages) had any access to grid electricity. During wave two, the number of villages with at least some access to grid electricity increased dramatically to 90.5% (19 of 21 villages), a change illustrating the government's dedication to its goal of electrifying the entire country. There are multiple conflicting reports, however, concerning electrification in rural areas of Tanzania. Tanzania Electric Supply Company Limited (TANESCO), a parastatal company that singularly provides national grid electricity throughout Tanzania,<sup>52</sup> currently estimates that 70% of villages on the mainland are electrified.<sup>53</sup> In contrast to TANESCO's estimates, the World Bank reports that approximately 19% of Tanzania's rural population was connected to grid electricity in 2018, strikingly lower than the estimate of 68% electrification in urban areas.<sup>54</sup> Further deviating from TANESCO's estimate, the 2016 Energy Access Situation Report for mainland Tanzania, co-authored by the National Bureau of Statistics and the Rural Energy Agency, found that 34.5% of rural Tanzanians were connected to the grid, much lower than the 96.4% of residents in urban areas. The report also estimates that 65% of rural residents use solar power as their primary form of electricity.<sup>55</sup> Regardless of the data source, obvious disparities between the rates of rural and urban grid-electrification exist as well as between rural areas, which this study shows.

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<sup>51</sup> International Energy Agency, 2019

<sup>52</sup> TANESCO, n.d.(a)

<sup>53</sup> TANESCO, n.d.(b)

<sup>54</sup> World Bank, 2018

<sup>55</sup> Rural Energy Agency and National Bureau of Statistics, 2016

## **Overview of Remaining Chapters**

The remaining four chapters in this thesis weave together a story of Ujamaa, service provision, and factors other than Ujamaa also correlated to service provision. Chapter two describes the literature available about former socialist countries, service provision, as well as the methodology used for the interview process and data collection of the larger study from which this thesis derives. Chapters three and four then provide the process of statistical analysis, results and discussion for three separate tests. The analysis in chapter two reviews the chi-square test between former Ujamaa village status and the presence of services within villages. Chapter three analyzes two tests, both using chi-square as the primary statistical test, and discusses possible explanations of the results. Test one analyzes former Ujamaa village status with ten variables, and the five variables with significant p-values are then analyzed against service presence for test two. Finally, chapter five examines the egalitarian paradox illustrated by the previous chapters' results; demonstrates discrepant service quality through interviews; and wraps up the thesis with hopeful news from Tanzania's new president.

## **Conclusion**

Though Tanzania's development indicators lead to its classification as a Least Developed Country, the objective rate of service provision in mainland Tanzania has increased significantly in recent years, with goals of universal healthcare, primary education, and electrification set by the federal government. Despite pronounced advances in these areas, disparities in service presence remain omnipresent across the country, burdening rural villages most heavily. These disparities may result from a wide variety of public health policies set by local and national governments. One influence may be Ujamaa policies and villagization that took place from the 1960s to the 1980s, although other factors such as livelihood and ward headquarters status have

the potential to either explain or confound the result that former Ujamaa villages have higher rates of government-provided services than non-Ujamaa villages.

## Chapter 2 Literature Review and Methodology

This chapter reviews current literature investigating policies of formerly socialist countries Ukraine and Kyrgyzstan in the context of health and education services, as well as the nature of service provision and political participation in post-socialist Zambia. I use the literature to illustrate the complexities involved in service provision that influence what groups of people obtain access to services and how the considerations present in policy making may be related to factors other than the physical provision of services. The remaining sections of this chapter address the collection of village-level data, defining the variables gathered from village interviews, and the scope and limitations of the study.

### Literature Review

The vast majority of policy feedback research has occurred in industrialized countries.<sup>56</sup> Erin Hern notes that research in industrialized countries tends to focus on the nuances of policy design and the resulting implications, such as that of universal or means-tested provision programs.<sup>57</sup> In contrast, discussion of service provision in low-capacity states should not occur using the same theories of policy feedback as industrialized nations due to the inability of a low-capacity government to provide every constituent with services. Instead, policy feedback should narrow in on the objectivity of service provision and how individuals respond to service provision. An individual within a low-capacity state is more likely to be concerned with whether they receive a service at all and is less focused on both the quality of the service and what groups receive the service as a whole.<sup>58</sup> As a developing country, Tanzania is considered to be a low-capacity state. Considering its status as a low-capacity state thus implies that research should

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<sup>56</sup> Hern, 2019

<sup>57</sup> Hern, 2019

<sup>58</sup> Hern, 2019

focus on objective service provision rather than complex policy design features. While I discuss service quality briefly in chapter five, my analysis of services has an objective focus, in accordance with Hern's argument.

Limited research exists on investigating the relationships between 21<sup>st</sup> century service provision and prior socialist policies or ideologies. Unlike many formerly socialist countries, the socialist party leading Tanzania during Ujamaa, Tanganyika African National Union (TANU), remains in power today, though under the name Chama Cha Mapinduzi (CCM).<sup>59</sup> Due to this significant difference in the political realm, studies researching the relationship between public service presence and socialism may not be generalizable to Tanzania, though there might be similarities between contemporary Tanzania and other formerly socialist countries. To gain a better understanding of what research does exist outside of Tanzania, the remaining portion of this section is devoted to case studies of Zambia, Ukraine, and Kyrgyzstan, with the latter two formerly part of the Soviet Union.

Erin Hern performed research in Zambia, a formerly socialist country, investigating the causal mechanisms of service provision on political behavior and participation. She argues that objective service provision alone does not solely determine who participates in politics; rather, interpretations of government policies and personal experiences with them ultimately lead that individual to engage in politics.<sup>60</sup> She discusses how some experiences, such as empowerment, may increase participation in politics, while other experiences like feeling neglected may lead Zambians to exhibit political apathy. Hern creates a compelling argument for the effects of subjective interpretation of government service provision policies on political behavior, but she

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<sup>59</sup> In 1977, the TANU and the Afro-Shirazi Party (ASP) of Zanzibar merged to form a single party, CCM (Electoral Institute for Sustainable Democracy in Africa, 2010).

<sup>60</sup> Hern, 2019.

does not examine possible biases that influence where and for what groups of people a government chooses to provide services. Likewise, she does not take into consideration potential lingering effects of socialism on either the provision of services or how memories or knowledge of that time period impact political participation, if such a relationship exists in Zambia. My study investigates both the potential impacts of socialism on contemporary service provision in Tanzania and what other factors may be influential to the government in determining where to provide services.

Legacies of socialism and socialist service provision continue to be pervasive in how individuals in formerly socialist countries perceive government provided services. In post-socialist Ukraine, formerly characterized by forced vaccination compliance and a central focus on public health and vaccinations under the Soviet medical system, both physicians and families choose to express freedoms contrary to former practice via choice. More than a decade after demise of the Soviet Union, Ukrainian sources reported that 30% of families opted out of vaccinations for their children in 2008. Doctors participating in Maryna Bazylevych's study reported that approximately half of their patients were hesitant about receiving vaccines.<sup>61</sup> The immunization policy present in Ukraine partially resembles the Soviet model, which leads Ukrainians towards a wariness of vaccines that affects how citizens both receive and perceive healthcare.<sup>62</sup> Bazylevych's research makes fascinating connections between how socialist policies continue to impact contemporary perceptions of healthcare through vaccines. Vaccinations are, however, one specific example of this relationship and may not also exist for general health care or other services more broadly.

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<sup>61</sup> Bazylevych, 2011

<sup>62</sup> Bazylevych, 2011



In Kyrgyzstan, another post-Soviet country, Alan DeYoung illustrates several Soviet educational legacies that may continue to influence general public ideologies surrounding tertiary education through “non-market higher education factors.”<sup>63</sup> Influential factors include emphasis on Soviet education as one of the best in the world, strong prioritization of humanities, and the lack of interest in ““Human Capital formation”” (use of education to gain “private sector rewards”).<sup>64</sup> Under Soviet control, university education also became a means for rural residents to move to urban areas and interact with new social groups of people, functions which continue to play important roles in university selection in Kyrgyzstan today.<sup>65</sup> While insightful, DeYoung’s discussion of Soviet legacies in Kyrgyzstan does not demonstrate differences in service access that might be present within the country as a result of former socialist policies.

In sum, Hern’s case study of Zambia evaluates how service provision and resulting individual interpretations impact political participation, and both Bazylevych’s and DeYoung’s articles analyze the continuing legacies of socialism in perception of services. These articles, however, leave a gap in the literature that, if filled, would delineate the relationship between service provision by the post-socialist governments and previous government policies under socialism. This thesis seeks to construct a foundation that begins to lessen the existing gap in knowledge by analyzing what type of relationship exists between early government policies during Tanzanian Ujamaa and current service provision. Additionally, I offer potential explanations for this relationship and discuss additional factors that may influence service provision alongside former socialist ideologies in the hope that future research can build upon this foundation to ultimately lead to improved service provision in former socialist countries.

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<sup>63</sup> DeYoung, 2008

<sup>64</sup> DeYoung, 2008, p.5

<sup>65</sup> DeYoung, 2008

## Methods

### *Village Selection*<sup>66</sup>

A total of 45 rural villages spanning five regions and nine districts with five villages per district were selected for this study. Interviews were conducted with village leaders (“village-level” interviews) and with individual villagers by my advisor, Professor Kelly Askew, and a team comprised of researchers from the University of Michigan, the University of Dar es Salaam, and the Danish Institute for International Studies. Two villages in Iringa were excluded from my analysis due to my inability to confirm their Ujamaa village status using the criteria discussed later in this chapter. The team selected villages that fit one or more of the following criteria common in rural villages: former Ujamaa villages, predominantly pastoralist villages, villages in close proximity to national parks or other conserved areas, villages with farmer-pastoralist conflicts, villages with large investors, and villages participating in land titling programs. Despite the lack of random sampling during village selection, I argue that inclusion of numerous criteria and villages that meet these criteria make the sample of villages representative of the general population of rural villages in Tanzania. The research team collected interviews in two waves, with the first wave lasting from 2010 to 2016 and the second wave beginning in 2016 and continuing through 2021. Due to the larger sample size (45 villages as compared to 21 villages in wave two), I chose to utilize data from the wave one village-level interviews from the regions and districts shown in Table 2.1, with these areas also marked on a map of Tanzania in Figure 2.1.<sup>67</sup> Wave one interviews in Iringa occurred in 2019, commensurate in time with wave two interviews; however, these interviews are included in this study to expand the sample of

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<sup>66</sup> IRB approval was obtained for the larger study by my advisor, with myself included as a member of the study team under the amended research ID Ame00105468.

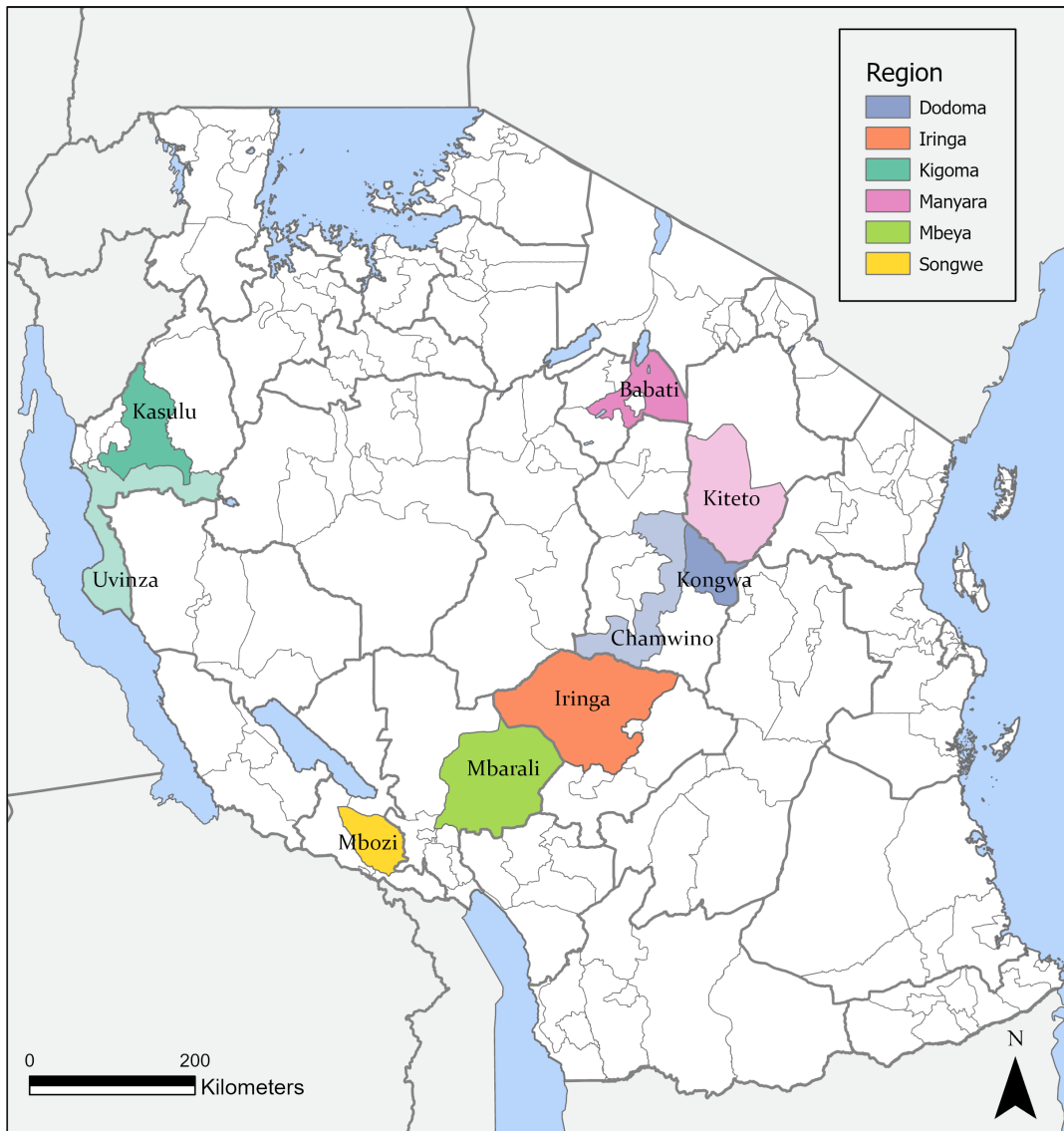
<sup>67</sup> National Bureau of Statistics, 2019; edited by Caitlin Dickinson, 2021

villages and introduce a fifth region. To accommodate the later interviews, all interview answers utilized from Iringa contain relevant dates (i.e., institution establishment or demise). Only answers with pertinent information from 2010 to 2016 are considered, thus orienting this set of interviews to the same time frame as that of the other 40 villages.

*Table 2.1: Study regions and districts*

<b>Region</b>	Manyara		Mbeya <sup>68</sup>		Dodoma		Kigoma		Iringa
<b>District</b>	Babati	Kiteto	Mbozi	Mbarali	Chamwino	Kongwa	Uvinza	Kasulu	Iringa Rural

<sup>68</sup> In February 2016, Mbozi district was shifted to the new region of Songwe seen in Figure 1. For the purpose of this study Mbozi district is considered part of Mbeya region, as interviews in Mbozi were conducted in 2011 and 2012 for wave one, prior to the shift to Songwe.



*Figure 2.1: Map of study regions and districts*

*Village-level Data Collection and Variable Definitions*

During the village-level interviews, village leaders were asked approximately 60 questions on a variety of topics ranging from the acreage of the village to the types of public services present. For the purposes of this study, I chose to examine a smaller dataset comprised

of answers to the following questions and assigned each question or set of questions a variable label as shown in Table 2.2:<sup>69</sup>

*Table 2.2: List of all variables by type used throughout the study*

<b>Primary Variable</b>	<b>Service Variables</b>	<b>Explanatory/Confounding Variables</b>	
Ujamaa village	Healthcare	Near town	National park adjacent
	Secondary school	Near road	Conservation adjacent
	Grid electricity	Ward headquarters	Warehouse/storage
	General service access	Livelihood	Growing seasons
	General services excluding electricity	Social assets	
		Irrigation	

### Primary Variable

1. Ujamaa Village: *When/how was this village established? Was there an Ujamaa field here, and if yes, what happened to it?* In response to the first question, leaders described the year and process for village establishment, including whether the village was incorporated into the Ujamaa system as a formal Ujamaa village. I use a village's prior status as an Ujamaa village as an independent variable to determine if Ujamaa villages were more likely to have access to public services in the early 2000s than villages who did not have this status.

Responses to the second question generally included the original size of the Ujamaa field, which provides an indicator for whether the village was a registered Ujamaa village. Communal agriculture provided the backbone of an Ujamaa village. Under the government's definition of an ideal Ujamaa village, an individual villager would not own land; rather, villages set aside days each week for individuals to work in the communal field. In practice, few, if any, villages fully gave up individual ownership of land. The entire village ate food produced from the communal field. To be qualified as

<sup>69</sup> If the answer to any of the questions was unclear, respondents were asked to clarify their answers either at the time of the interview or at a later date via a telephone call with one of the researchers.

an Ujamaa village by the government's standard, more than 250 families had to reside in the village,<sup>70</sup> and the village needed to be registered as both a village and as a cooperative society. I use 40 acres as the minimum field size to qualify a village as an Ujamaa village. A field smaller than 40 acres could generally not produce enough food to sustain an entire village, and larger villages would have needed a larger field. A 40-acre field is thus a conservative estimate of Ujamaa status.

For villages that did not report their original Ujamaa field size, I use a second qualifier of Ujamaa assets to determine former Ujamaa status. Ujamaa villages often possessed stores or crop warehouses and were occasionally given milling machines or tractors by the government as a reward for their dedication to Ujamaa. If a village had two or more of these assets during Ujamaa, even if they did not know the size of the field or if their field was smaller than 40 acres, I qualify these villages as former Ujamaa villages. In the original sample of 45 villages, two villages in Iringa reported being former Ujamaa villages but did not provide information regarding their field size or assets during Ujamaa. I exclude these two villages from the study, leaving 43 villages remaining.

Two types of villages comprise a non-Ujamaa village in this study. The first are villages that existed during Ujamaa and practiced some communal agriculture but met neither government standards nor those of this study required to be designated as an Ujamaa village. The second type of non-Ujamaa village includes villages that broke away from another village, either during Ujamaa or after, to form a new village.

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<sup>70</sup> Lal, 2017

## Service Variables

1. Healthcare: *Do you have healthcare in the village? Where do you seek medical assistance?* Responses to these questions include both the presence of and the type of healthcare facility present within the village (dispensary, health centre, etc.), if any, and where an individual may go for healthcare if none is available within the village. I analyze responses as the dependent variable regressed on Ujamaa village status to identify if a correlation exists and analyze the same responses in chapter four against ten potentially explanatory or confounding variables. In this study, I deem facilities run by the government as “public” and those led by any other entity as “private.” I exclude two village responses indicating the presence of a private facility from the study because the thesis focuses only on services provided by the government.
2. Secondary school: *Do you have schools?* Leaders identified whether the village has a primary and/or secondary school within the village. They also acknowledged whether the school was built and run by the government or by an outside organization. The government ran the secondary schools in all villages with a secondary school. Only answers discussing secondary schools are considered for this study, as primary schools had a universal presence in the selected villages. Answers to this question are analyzed as a dependent variable to determine if a correlation exists between secondary education and former Ujamaa village status or explanatory/confounding variables.
3. Electricity: *Do you receive electricity?* Responses to this question include the objective presence or absence of electricity as well as the types of electricity present (i.e., solar, national grid) and their respective proportions. Only national grid electricity provided by TANESCO is included in the study, as it is the sole form of electricity run by the

government and thus the only form of public service electricity. Villages reporting solar energy as the sole electricity source are reported as not having grid electricity, while those with both national grid and solar electricity sources are recorded as having grid electricity.

4. General services: General services is a constructed variable based on the presence of healthcare, secondary education, and grid electricity in a village. This is an ordinal variable. Villages with no services received a value of zero, and those with all services received a three.
5. General services excluding electricity (GSE): This is a constructed, ordinal variable created as a result of the findings in chapter three. Only healthcare and secondary education are considered, so a village with both of these services received a value of two.

#### Explanatory/Confounding Variables<sup>71</sup>

1. Near town: Interviewers reported the village's proximity to a town rather than ask interviewees. Near town is a subjective variable with no set distance qualifying a village as near a town. Interviewers with local knowledge of Tanzania determined whether a village is considered close to a town.
2. Near road: Interviewers reported the village's proximity to a major road rather than ask interviewees. Like near town, near road is a subjective variable. The same interviewers that classified villages as near a town also determined if a village is in close proximity to a major road. Additionally, they determined what should be categorized as a major road,

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<sup>71</sup> Due to the inability to determine causality using the chi-square statistical test, I was also unable to determine what factors may mediate or moderate the relationship between Ujamaa status and service provision. As a result, this list of variables received the name explanatory/confounding variables to account for the potential explanatory or confounding nature of each.



since a major road in a developing country would be different from a major road in a developed country.

3. Ward headquarters: Villages that share the same name with the ward they reside in are, in general, the headquarters for that ward and are considered so in this study due to the lack of available publications listing ward headquarters. A village with a similar name to the ward was asked the question *Is this village the ward headquarters?* to clarify its status in follow-up conversations with village leaders in 2021.
4. Livelihood: *What are the main ethnic groups present in the village? What are the main livelihood activities (Farmers, pastoralists, hunter-gatherers, other)? What is the proportion of farmers to pastoralists to other economic pursuits?* Using a combination of responses to these questions usually yielded the percentage of farmers and pastoralists in a village. For villages where a proportion was not reported, I considered ethnicity to be the determining factor of livelihood. Three ethnic groups traditionally practice pastoralism: Sukuma, Maasai, and Barabaig. If 50% or more of a village's population reported engaging in pastoralism or being of the mentioned ethnicities, the village received a value of one.<sup>72</sup> The remaining villages primarily practiced agriculture and were given a value of zero.
5. Social assets: *Do you have cooperatives or income generating groups in the village?* Though a multitude of possible social assets can exist within a village, I focus on three assets commonly in villages: Savings and Credit Cooperatives (SACCOs), Village Community Banks (VICOBA), and other cooperatives, most commonly agricultural

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<sup>72</sup> Most pastoralist villages are also involved farming to a certain extent. Levels of agriculture practiced vary between primarily pastoralist villages, but provided that 50% or higher also reported being pastoralists or of a traditional pastoralist ethnicity, I designate the village as pastoralist.

(irrigation) or pastoralist. Social assets is an ordinal variable, with a value of zero indicating that a village has none of the three assets and a value of three representing the presence of all assets.

6. National park adjacent: *Are there conserved areas adjacent to the village?* Village leaders reported whether a national park is adjacent to the village. National park adjacency is also considered in the conservation adjacent variable. I include national parks as a separate variable because of the high rates of conflict that villages next to a national park often have and wanted to determine if these conflicts could influence service provision.
7. Conservation adjacent: *Are there conserved areas adjacent to the village?* Conservation adjacency was determined based on the same question as the variable national park adjacent. If a leader reported that the village is located adjacent to a conserved area, such as a wildlife management area, national park, or game reserve, I consider the village conservation adjacent.
8. Irrigation: *Does the village have a communal irrigation system/project?* A communal irrigation scheme is a system of irrigation available to the majority of farmers in a village who then have the ability to access irrigation for their crops. Villages with irrigation limited to a few farmers are not considered to have communal irrigation.
9. Warehouse/storage: *Do you have community storage facilities? How can villagers access storage?* Together, responses to these questions indicate the presence or absence of a community storage warehouse where villagers may store crops to use or sell during the off-season. Warehouses must be present within the village to be included as a “yes”

response, and personal facilities for use by one individual or family are excluded from this variable.

10. Growing seasons: *How many growing seasons does your village typically experience per year?* This ordinal variable represents the number of growing seasons a village experiences per year and thus the number of times farmers may harvest crops. Villages with one growing season were given a value of one and villages with two growing seasons a value of two.

### *Quantitative and Qualitative Coding*

Dichotomous variables were created for twelve of the above variables and questions asked of respondents. A response of “yes” to any of the questions was given a code of 1, while 0 was given to responses of “no,” as illustrated in Table 2.3, 2.4, and 2.5. The top row of each table indicates the variable for which the respondent provided an answer, and the first column represents answer choices of yes or no. The ordinal variables general services, GSE, social assets, and growing seasons received a code based on the number reported for that variable. General services and social assets have value ranges of zero through three; GSE zero through two; and growing seasons one through two. I placed codes to all variables in a single spread containing responses from each village.<sup>73</sup>

*Table 2.3: Coding scheme for primary and service variables*

	Ujamaa Village	Health Facility	Secondary School	Grid Electricity
Yes	1	1	1	1
No	0	0	0	0

<sup>73</sup> Table A.1 in the appendix contains summary statistics including N, range, minimum, maximum, mean, and standard deviation for all variables.

*Table 2.4: Coding scheme for four explanatory/confounding variables*

	Near Town	Near Road	Ward Headquarters	Livelihood (Pastoralist majority)
Yes	1	1	1	1
No	0	0	0	0

*Table 2.5: Coding scheme for remaining explanatory/confounding variables*

	National Park Adjacent	Conservation Adjacent	Irrigation	Storage
Yes	1	1	1	1
No	0	0	0	0

To code qualitative interviews, I exported all translated interviews into NVivo 1.0 and created codes relevant to the larger study. The quotes utilized in this thesis are taken from the following interview codes in NVivo: access to healthcare, access to education, and energy access. For each of nearly 500 interviews, I read the interview and coded relevant portions with one or more codes. Additionally, each interview received a minimum of three read-throughs, after which I adjusted the codes accordingly to provide more accurate codes. Quotes are designated with one of four abbreviations. An abbreviation of “V” indicates that the respondent was a villager. “VL” signifies village leader, and quotes given “VI” were taken from village interviews, which may have included village leaders, villagers, and other attendees. Finally, the abbreviation “KI” represents a key informant who does not fall into another category, such as a government or NGO representative.

## **Scope**

Former Ujamaa village status and each of the explanatory/confounding variables provide some insight into what groups of people receive government funding for services, but these are not the only relevant factors. Service provision is a complex process influenced by numerous multidisciplinary factors. One of these potential influences is discussed here to illustrate factors outside this study’s scope that may likewise impact service provision.

Regarding political competition, research has shown that, in some instances, the presence of political competitiveness leads governments to reward loyal constituencies, or those who vote consistently for the ruling party in elections, with higher access to public services, while other governments extend more services to politically competitive constituencies that “swing” between voting for two or more parties. In Kenya from the late 1980s to the mid 1990s, for example, President Daniel arap Moi approached and encouraged international donors to conduct aid projects in constituencies across Kenya that served as Moi’s political base. Moi also used government funds to launch an infrastructure campaign for road construction, with provinces in his base receiving five to ten times more funding than would be expected compared to larger, more densely populated provinces outside his base.<sup>74</sup> In contrast, by targeting “swing” voters with services, a government may ultimately incentivize more residents to vote for the incumbent party in the next election, allowing the party to keep power and potentially creating new pockets of support for the future. Ghanaians in party stronghold areas often have politicians with the ability to win elections without actively serving their constituency. These areas are more likely to be denied access to general public services, especially healthcare and education services. Additionally, constituencies with strong partisanship in favor of the ruling party have higher rates of provider absenteeism, specifically in providers who have ties to government members, causing a decrease in both the accessibility and quality of services rendered.<sup>75</sup>

Unlike Ghana, Tanzania is a dominant-party regime. Whereas Tanzania’s ruling party has been in power since independence, Ghana’s government has undergone regime changes with multiple parties holding power over the course of its history. Rosenzweig notes that although national elections in dominant-party regimes are not competitive enough for an opposition party

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<sup>74</sup> Briggs, 2014

<sup>75</sup> Asunka and Afulani, 2017

to gain power, voting in some constituencies may be competitive, while others consistently vote for the dominant party. Rosenzweig's study on voting trends in local government elections support the conclusions from Asunka and Afulani's study in Ghana. Rosenzweig shows that constituencies with greater competitiveness possess greater access to electricity and piped water than those that are noncompetitive. This study was, however, conducted in a small proportion of Tanzania and may not be applicable to the country as a whole. Districts that elected opposition candidates but were electorally competitive still enjoyed higher rates of public goods provision, despite voting against the CCM candidates. Larger budgets may be allocated to more competitive districts, facilitating the increase in goods provision for those districts.<sup>76</sup>

As Rosenzweig illustrates, political competition may have an influence on what districts receive government service provision, regardless of whether a village within the district had been an Ujamaa village. My study focuses on the relationships between former Ujamaa status and services and between other potentially influential variables and services but does not take into consideration political competition. Political competition and the resulting prioritization of services for specific groups of voters has the potential to confound my findings that Ujamaa villages, ward headquarters, and agricultural villages enjoy higher rates of service provision and may present a course of investigation for future research.

## **Limitations**

Although I attempted to compensate for memory and knowledge errors during village-level interviews through means including second interviews and clarification questions, the results reported in this study are subject to human error during both interviews and the analysis

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<sup>76</sup> Rosenzweig, 2015

process. With the deaths of elders and election of new village leaders every five years, information pertinent to village history and Ujamaa status may be lost or misconstrued. Errors may arise from misinterpretation or mistranslations during and after interviews and in the process of data entry. Occasionally village leaders did not distinguish between acres and hectares,<sup>77</sup> and the two words may be difficult to distinguish when transcribing and translating interviews, which may lead to misclassification of Ujamaa villages. All information and data have been checked and re-checked at various stages of the interview and analysis process and represents the most accurate information I can provide; errors may, however, remain present. Additionally, though the number of village selection criteria may lead the study to appear nationally representative, the selection of villages was not random, preventing assured representativeness. The small sample size also prevents the determination of a variable as either explanatory or confounding, so all variables potentially falling into either of these categories are grouped together, leading to the inability to determine causality of the variables as well as causal direction.

## **Conclusion**

This chapter reviewed current literature examining service provision and access in formerly socialist countries and identified the existing gap in knowledge regarding the relationship between socialist policies and broad public service provision in post-socialist countries. Following the review of the literature, I explained the methods used to select study villages and conduct and code interviews, both qualitatively and quantitatively. I also provided an overview of potential limitations of my analysis and results as well as case studies illustrating

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<sup>77</sup> One hectare is approximately 2.5 acres.

the relationship between political competition and service provision, which may be a factor influencing service provision in Tanzania that I did not analyze in this study.



## **Chapter 3 Implications of Ujamaa Village Status on Service Provision**

The following chapter focuses on analysis of the relationship between a village's prior status as an Ujamaa village and government-provided services. After a review of the methods for statistical analysis and introduction of three hypotheses, I describe the results for each of the five service variables and for two reliability tests using Cronbach's Alpha. For all service variables, I provide a chart containing the results of a chi-square test produced using SPSS 27 before explaining the statistical significance of that variable. The hypotheses are utilized throughout the chapter to determine a conclusion for each variable and for the overall relationship between Ujamaa village status and service provision.

### **Statistical Analysis**

Village leaders in all 43 villages responded to each question asked during the wave one interview or at a later time, either in wave two or in a follow-up conversation by telephone in 2020 or 2021. To account for the potential discrepancies in service presence due to the approximately six-year time difference between the first villages interviewed and the last, a service brought to a village after their initial interview but before the end of all wave one interviews is included in the data analysis.<sup>78</sup> One village, for example, reported receiving grid-electricity in 2016 during a follow-up interview in 2020. Although their wave one interview occurred in 2011, I included this village as having electricity for the study.

Additionally, responses indicating that villages having privately-owned healthcare facilities and secondary schools, including those run by faith-based organizations (FBOs), are excluded from analysis; I exclude these responses for two reasons. The Tanzanian government

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<sup>78</sup> Nine village leaders were unavailable for phone calls in 2021. Data from these villages relies primarily on their wave one and/or wave two interviews, as well as conversations from 2020 if available.

does not administer a service in these instances, so the service does not fit into this study's focus of government service provision. The other potential option for analysis would be to include village responses as a "no" for such services because the government did not procure the service. Coding responses in this way creates a cyclical issue of agency. Did the government plan to place a health facility or secondary school in the village, but the private organization did so first? Conversely, did the organization establish the service because the government would not or could not provide services in the area? Regardless of the answer to these questions, neither of which can be answered accurately from the data and interviews I possess, the government is unlikely to supply a village with any service that a private organization already provides due to cost-ineffectiveness. As each variable of health and secondary education also factors into the general services and general services without electricity variables, villages with one or more private services are also excluded from these two variables. In total, two villages with private health facilities were excluded from analysis for these reasons. Furthermore, any village that utilized only solar electricity was entered into the data as not having grid electricity. The issues that arise with private facilities do not hold for electrification. In wave two of the larger project from which this study is drawn, 14 of the 21 villages surveyed reported utilizing both grid electricity and another form of energy, most commonly solar. Based on this finding the presence of solar power, wind power, hydropower, etc. does not preclude the government from providing grid electricity, so the four villages that reported only solar electricity in wave one are included in analysis.

I used SPSS version 27 to analyze all responses using a chi-square test for independence. A village's status as a former Ujamaa village was used as the independent variable and each measure of service as a dependent variable. I considered a p-value of less than or equal to 0.1 to

be significant ( $p \leq 0.10$ ). Fisher's test was performed in addition to chi-square for healthcare access, secondary school access, and grid-electricity access, and the values are provided in Table 3.1. I used a one-sided Fisher's test since services were unlikely to influence the establishment of an Ujamaa village. Neither the chi-square test nor Fisher's test are perfect models for the data used in this study. Using Fisher's test alone requires no more than two variables with two possible responses each. Both the general service and general services excluding electricity variables exceed the 2x2 format needed to conduct the test due to the service variable having three or four possible responses, respectively. This limitation of Fisher's test prevents comparison between the variables since two separate tests would be required to analyze all variables. Fisher's test is, however, a more accurate test than chi-square for small sample sizes, especially when the test results exhibit low expected counts. Keeping the limitations of each test in mind, I primarily use the chi-square test to analyze results in this chapter for several reasons. First, analyzing results from different tests simultaneously can raise issues of internal validity, which would be required of using Fisher's test. Additionally, Fisher's test results do not change the statistical significance of any variable. Finally, while the sample size for this study is small, only the healthcare variable showed an expected count in more than 20% of the cells. The general rule of thumb when using chi-square is that expected counts below five show instability in the data. The results of Fisher's test are included in parentheses in Table 3.1 to serve as a robustness check of the chi-square analysis specifically for variables with low expected counts.

### **Ujamaa and Service Provision Hypotheses**

The following hypotheses demonstrate three potential relationships between former Ujamaa village status and government-provided services. I formulated the hypotheses based on possible statistical correlations (positive, negative, none).

- *Hypothesis 1a: Former Ujamaa villages have higher rates of government-service provision than non-Ujamaa villages.*
- *Hypothesis 1b: Former Ujamaa and non-Ujamaa villages have equal rates of government-service provision.*
- *Hypothesis 1c: Former Ujamaa villages have lower rates of government-service provision than non-Ujamaa villages.*

H1b describes a situation where no correlation exists, while hypotheses 1a and 1c represent positive and negative relationships, respectively. Although these two latter hypotheses do not imply causation in either direction, I rule out the possibility of reciprocal causality. Prior to the introduction of Ujamaa, settlements were scattered throughout rural Tanzania.<sup>79</sup> These settlements were, in general, spread apart from one another, making it difficult, if not impossible, to build schools and health facilities that could easily serve a significant number of people. Services in all villages were established after 1969, with the majority founded in 1972 or later. Thus, the formation of Ujamaa villages likely did not occur based on service presence; rather, these services were later established as part of the Ujamaa program or after the end of Ujamaa.

## **Results**

This section is separated into four sub-sections, each discussing the results for a single variable. Table 3.1 shows a summary of chi-square results for all variables, with the results of Fisher's test in parentheses. The section for each variable further elaborates on the results found in the table and provides observed counts used in data analysis. Of the variables measured, healthcare access, secondary school access, and access to GSE were all statistically significant.<sup>80</sup>

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<sup>79</sup> Jennings, 2008

<sup>80</sup> Statistical significance refers to the results of the chi-square test only. Fisher's test results are included as a robustness check and are not used in analysis unless specifically stated.

*Table 3.1: Results of chi-square analyses for Ujamaa village status and all service variables*

<b>Service</b>	<b>P-value</b>
Healthcare	0.047 (0.057)**
Secondary School	0.055 (0.054)*
Grid Electricity	0.408 (0.315)
General Services	0.184
General Services excluding Electricity	0.080*

\*p < 0.10

\*\* p < 0.05

### *Healthcare*

The chi-square test analyzing the relationship between Ujamaa village status and healthcare access produced a statistically significant p-value of 0.047 (Table 3.1). Based on the observed counts shown in Table 3.2, only 57.1% of villages without prior Ujamaa status had access to a healthcare facility within the village itself, whereas 85.2% of villages that were included in the Ujamaa system had access to healthcare. These results suggest support for H1a where prior Ujamaa villages have higher levels of access to healthcare than non-Ujamaa villages, though comparison of results with the remaining variables is necessary to rule out disparities in healthcare access as an isolated incident. The cell with an asterisk had an expected count of 3.5 and makes up 25% of the number of cells, potentially raising an issue with using chi-square. Fisher's test, however, is also statistically significant with a value of 0.057 and therefore supports the chi-square result.

*Table 3.2: Observed counts for the analysis of healthcare presence with Ujamaa village status*

	No Healthcare	Healthcare Present	Total
Non-Ujamaa Village	6*	8	14
Ujamaa Village	4	23	27
Total	10	31	41

### *Secondary Education*

Similar to healthcare access, access to secondary education was significant in relation to Ujamaa village status. The p-value for this analysis was 0.055 (Table 3.1), and there were no expected cell counts below five. Secondary education thus indicates support for H1a. The majority of both former Ujamaa and non-Ujamaa villages lack the presence of a secondary school. While a majority of villages did not have a secondary school, there remains a sharp distinction between former Ujamaa villages and non-Ujamaa villages. Half of former Ujamaa villages possessed a secondary school, but this number drops drastically to 20% for non-Ujamaa villages (Table 3.3).

*Table 3.3: Observed counts for the analysis of secondary school presence with Ujamaa village status*

	No Sec. School	Sec. School Present	Total
Non-Ujamaa Village	12	3	15
Ujamaa Village	14	14	28
Total	26	17	43

### *Grid-Electricity*

Unlike both healthcare and secondary school access, access to grid electricity was not statistically significant, with a p-value of 0.408 (Table 3.1). Here, again, the observed counts illustrate an interesting scenario. Although only 39.3% of former Ujamaa villages were on the national grid, a mere 26.6% of non-Ujamaa village utilized grid-electricity. Overall, these results give the study villages a strikingly low electrification rate of 34.9% (Table 3.4), a strikingly different story compared to the study published by the Tanzanian government's Bureau of Statistics. Of the three hypotheses discussed, only H1b can be supported by the grid electricity variable, possibly suggesting that there is no correlation between Ujamaa village status and

service provision though, again, consideration of all variables is necessary. All expected cell counts were greater than five.

*Table 3.4: Observed counts for the analysis of grid electricity with Ujamaa village status*

	No Grid Electricity	Grid Electricity	Total
Non-Ujamaa Village	11	4	15
Ujamaa Village	17	11	28
Total	28	15	43

### *General Service Provision*

Analyzing each of the above three variables implies that former Ujamaa village status may influence some aspects of service provision. Solely analyzing individual variables, however, may conceal a trend across the provision of multiple services. To potentially draw out a relationship that was not realized by analyzing isolated variables, I constructed a fourth variable, general service provision, as a way to spot trends that may not be present in singular variables and conducted a chi-square test. A p-value of 0.184 indicates that general service provision is not significant when considering prior Ujamaa village status (Table 3.1). Asterisks represent expected cell counts less than five.

*Table 3.5: Observed counts for the analysis of the number of services per village with Ujamaa village status*

	General Services				Total
	0	1	2	3	
Non-Ujamaa Village	5*	4*	4	1*	14
Ujamaa Village	3	6	12	6*	27
Total	8	10	16	7	41

At first glance, the insignificant p-value of the general service variables would indicate an improbable relationship between Ujamaa and contemporary services. With both healthcare and secondary school presence having individually significant p-values; however, this result appears incongruent with the data. To determine potential factors that may have skewed the results of the chi-square analysis, I conducted a reliability test using Cronbach's Alpha as the reliability

parameter and found that the data from my study produced unreliable results ( $\alpha = 0.492$ )<sup>81</sup>. I then performed a second reliability test broken down by variable that reevaluated reliability based on the removal of a single variable, as shown in Table 3.6.

*Table 3.6: Results of Cronbach's Alpha reliability test using factor analysis*

	Cronbach's Alpha if Variable Deleted
Healthcare	0.148
Secondary School	0.325
Grid Electricity	0.643

When the electricity variable is removed from analysis, Cronbach's alpha increases to 0.643, an acceptable level of reliability, while removing either the healthcare or secondary school variable decreases the data's reliability. This result suggests that healthcare and secondary school presence can be explained by similar underlying factors. Conversely, the presence of grid electricity in a village cannot be explained by these same factors but may have other influences that impact its provision, which are explored further in chapter four. Due to the unrelated nature of electrification, I re-analyzed the general service provision variable excluding electricity. The chi-square test between the new variable GSE and former Ujamaa village status now indicates a relationship with a significant p-value of 0.080 (Table 3.1) and observed counts shown in Table 3.7. Two cells (33.3%) have a cell count less than five.

*Table 3.7: Observed counts chi-square analysis of general services excluding electricity and former Ujamaa village status*

	GSE			Total
	0	1	2	
Non-Ujamaa Village	6*	5*	3	14
Ujamaa Village	4	9	14	27
Total	10	14	17	41

<sup>81</sup> Though scholars debate the range of acceptable values for Cronbach's alpha, a value from 0.6 to 0.7 may be considered acceptably consistent, and 0.8 or higher seen as consistent (Ursachi et al., 2013).



## **Discussion**

Of the four original service variables tested in this study, both healthcare facilities and secondary schools demonstrated statistical significance, showing a correlation between prior Ujamaa status and healthcare and education access. These two results support H1a. With an insignificant p-value, grid electrification provided support for H1b where there is no difference in service presence between former Ujamaa and non-Ujamaa villages. None of these variables support H1c, which describes an inverse relationship between Ujamaa status and services, so this hypothesis is eliminated, leaving two hypotheses remaining. Reliability tests indicate that the provision of grid electricity results from different underlying factors than in healthcare and secondary education. These differing factors skewed the results of general service analysis to become insignificant and led me to create the new variable GSE to correct for the electricity bias in analysis and provide a more reliable result. GSE reinforces the results found for healthcare and secondary education, showing an obvious pattern in service provision within former Ujamaa villages. GSE provides a better measurement of the relationship between Ujamaa status and services because it both excludes electricity and illustrates a pattern of provision between two services, whereas the individual variables only show isolated incidents of government-provided services. For these reasons, H1b is also rejected. Overall, the former Ujamaa villages in my study received significantly higher rates of objective government-provided services than villages that were not part of the Ujamaa system, supporting H1a.

## **Conclusion**

This chapter analyzed the relationship between former Ujamaa village status and contemporary access to services. By utilizing SPSS, I show that former Ujamaa villages have higher rates of service access for healthcare and secondary education than villages that did not

carry the same status. While the evidence ultimately supports hypothesis 1a, the chi square test for independence does not provide evidence that former Ujamaa status is the causal factor in service access. The provision of national grid electricity appears to have different underlying causes than healthcare or secondary education, which factor analysis shows result from the same underlying factors.

## **Chapter 4 Factors Influencing Service Provision in Ujamaa Villages**

Chapter four investigates ten variables with the potential to explain chapter three's findings that former Ujamaa villages have higher rates of government-service provision than villages that never held Ujamaa status. After running two rounds of chi-square tests, two of the variables tested, ward headquarters status and livelihood, were statistically significant with the number of services that a village received. Additional chi-square analysis makes apparent that geographic location may play a role in access to grid electricity and that this access in turn could produce increases in the number of social assets a village has as well as an increased presence of village irrigation schemes.

### **Statistical Analysis**

Similar to the analysis in chapter three, I utilized SPSS 27 to perform chi-square tests, this time on two separate data groupings. The purpose of the two round system was to demonstrate what factors are statistically significant in relation to both former Ujamaa village status and contemporary service provision and to gain an understanding of what factors may either explain or confound the relationship between former Ujamaa villages and access to services. This system does have drawbacks, namely the inability to determine causality of former Ujamaa status or another factor on service provision. The issues of causality could have been mitigated using regression analysis, but the small sample size prevented the use of this test.

In the first round of tests, I analyzed the relationship between former Ujamaa village status and the following variables: ward headquarters, livelihood (pastoralist majority), national park adjacent, conservation adjacent, near town, near road, growing seasons, irrigation, storage, and social assets. Any variable that had a statistically significant p-value was then run through another chi-square test against the five service variables from chapter three (healthcare access,

secondary school access, grid-electricity access, general services, and GSE). P-values from two-sided Fisher's test are shown in each table in parentheses as a robustness check but are not considered in the discussion of significance. I chose to use two-sided tests because, for most of the variables analyzed, it was not possible to assign a single direction in which causality would occur. For example, conservation adjacent villages were statistically significant in relation to former Ujamaa village status, but I was unable to determine if an Ujamaa village was established because of its proximity to a conserved area or if the area near the Ujamaa village was chosen for conservation due to its nearness to the village.

## **Results**

### *Group 1: Variables in Relation to Ujamaa Village Status*

In the first group of chi-square tests, I tested ten factors against Ujamaa village status to determine if a factor other than Ujamaa status may influence which villages receive services. Of the variables tested, five were significant. Table 4.1 illustrates that ward headquarters were more likely to be prior Ujamaa villages ( $p = 0.055$ ), as were villages with higher numbers of social assets ( $p = 0.044$ ) or those that had some form of community crop storage (i.e., warehouse) ( $p = 0.001$ ). Villages where pastoralism was the primary form of livelihood were significantly less likely to be former Ujamaa villages ( $p = 0.027$ ) (Table 4.1). Of the seven villages with pastoralism as the primary activity, only two had formerly been an Ujamaa village, with residents in the remaining Ujamaa villages focused on agriculture.

*Table 4.1: Results of chi-square (Fisher's test) analysis of Ujamaa village status and explanatory/confounding variables*

Variable	P-Value
Ward Headquarters	0.055 (0.101)*
Livelihood (Pastoralist majority) <sup>82</sup>	0.027 (0.040)**
National Park Adjacent <sup>83</sup>	0.210 (0.324)
Conservation Adjacent	0.030 (0.052)**
Near Town <sup>84</sup>	0.178 (.276)
Near Road	0.666 (0.755)
Growing Seasons <sup>85</sup>	0.119 (0.164)
Irrigation <sup>86</sup>	0.709 (1.000)
Storage	0.001 (0.001)***
Social Assets <sup>87</sup>	0.044**

N=43

\*p < 0.10

\*\*p < 0.05

\*\*\*p < 0.01

### *Group 2: Factors Influencing Service Provision*

The second round of chi-square tests followed the analysis on group one, where the variables ward headquarters, livelihood, conservation adjacent, storage, and social assets were analyzed against the service provision variables. Results of the analysis are discussed in the following three subsections.

#### Ward Headquarters

When I analyzed the service variables using ward headquarters status as the independent variable, four of the five service variables were significant. Healthcare access (p = 0.030), secondary education access (p = 0.001), general services (p = 0.003), and GSE (p = 0.002) are all present at higher rates in villages that are also headquarters for the ward.

<sup>82</sup> Two cells (50%) have an expected count below five.

<sup>83</sup> Two cells (50%) have an expected count below five.

<sup>84</sup> One cell (25%) has an expected count below five.

<sup>85</sup> One cell (25%) has an expected count below five.

<sup>86</sup> One cell (25%) has an expected count below five.

<sup>87</sup> Four cells (50%) have an expected count below five.

Table 4.2: Results of chi-square (Fisher's test) analysis of ward headquarters status and access to services

Dependent Variable	P-Value	N
Healthcare <sup>88</sup>	0.030 (0.059)**	41
Secondary School	0.001 (0.001)***	43
Grid Electricity	0.484 (0.528)	43
General Services <sup>89</sup>	0.003***	41
GSE <sup>90</sup>	0.002***	41

\*\*p < 0.05

\*\*\*p < 0.01

#### Livelihood (Pastoralist Majority)

The village's primary livelihood is also correlated to service provision. Healthcare access (p = 0.009), grid electricity (p = 0.034), general service provision (p = 0.016), and GSE (p = 0.033) are present at greater rates in predominantly agricultural villages, while villages that are primarily pastoralist have fewer services.

Table 4.3: Results of chi-square (Fisher's test) analysis of livelihood and access to services

Dependent Variable	P-Value	N
Healthcare <sup>91</sup>	0.009 (0.024)***	41
Secondary School <sup>92</sup>	0.135 (0.215)	43
Grid Electricity <sup>93</sup>	0.034 (0.077)**	43
General Services <sup>94</sup>	0.016**	41
GSE <sup>95</sup>	0.033**	41

\*\*p < 0.05

\*\*\*p < 0.01

#### Conservation Adjacent

Unlike the ward headquarters and livelihood variables, analysis of the conservation adjacent variable did not produce any statistically significant results. At first glance, the initial

<sup>88</sup> One cell (25%) has an expected count below five.

<sup>89</sup> Five cells (62.5%) have an expected count below five.

<sup>90</sup> One cell (16.7%) has an expected count below five.

<sup>91</sup> Two cells (50%) have an expected count below five.

<sup>92</sup> Two cells (50%) have an expected count below five.

<sup>93</sup> Two cells (50%) have an expected count below five.

<sup>94</sup> Four cells (50%) have an expected count below five.

<sup>95</sup> Three cells (50%) have an expected count below five.

correlation between Ujamaa village status and conservation adjacency may appear coincidental, especially with the lack of significance for any service variable. I explain a potential relationship for this correlation later in this chapter.

*Table 4.4: Results of chi-square (Fisher's test) analysis of conservation adjacent and access to services*

Service Variable	P-Value	N
Healthcare <sup>96</sup>	0.319 (0.469)	41
Secondary School	0.342 (0.369)	43
Grid Electricity	0.294 (0.349)	43
General Services <sup>97</sup>	0.276	41
GSE <sup>98</sup>	0.436	41

### Crop Storage

The presence of crop storage facilities within a village had a similar outcome as conservation adjacency. Crop storage within a village allows villagers to store crops until they are able to obtain a higher price at the market, which should, in theory, help to increase an individual's income. These facilities, however, do not appear to have an impact on the type or number of government-provided services a village receives.

*Table 4.5: Results of chi-square (Fisher's test) analysis of storage and access to services*

Dependent Variable	P-Value	N
Healthcare <sup>99</sup>	0.210 (0.277)	41
Secondary School	0.484 (0.528)	43
Grid Electricity	0.606 (0.740)	43
General Services <sup>100</sup>	0.576	41
GSE <sup>101</sup>	0.454	41

<sup>96</sup> One cell (25%) has an expected count below five.

<sup>97</sup> Five cells (62.5%) have an expected count below five.

<sup>98</sup> One cell (16.7%) has an expected count below five.

<sup>99</sup> One cell (25%) has an expected count below five.

<sup>100</sup> Four cells (50%) have an expected count below five.

<sup>101</sup> One cell (16.7%) has an expected count below five.

## Social Assets

Social assets serve a variety of functions within a village, ranging from credit funds or savings groups to irrigation or women's cooperatives. Higher numbers of social assets are correlated to the presence of electricity within a village as shown in Table 4.7, but no relationship appears to exist between social assets and healthcare, secondary schools, or general service presence.

*Table 4.6: Results of chi-square (Fisher's test) analysis of social assets and access to services*

Dependent Variable	P-Value	N
Healthcare <sup>102</sup>	0.188	41
Secondary School <sup>103</sup>	0.389	43
Grid Electricity <sup>104</sup>	0.077*	43
General Services <sup>105</sup>	0.399	41
GSE <sup>106</sup>	0.515	41

\*p < 0.10

## Discussion<sup>107</sup>

Following group one analysis, the variables ward headquarters, livelihood, conservation adjacent, storage, and social assets were all significant in relation to former Ujamaa village status. This section describes potential explanations for each of these relationships. At its core, Ujamaa policies prioritized agricultural communities and overall agricultural development. Pastoralist communities generally did not form Ujamaa villages, as the transition would have required a drastic shift to a new livelihood and lifestyle. Pressure from the national government

<sup>102</sup> Five cells (62.5%) have an expected count below five.

<sup>103</sup> Three cells (37.5%) have an expected count below five.

<sup>104</sup> Four cells (50%) have an expected count below five.

<sup>105</sup> Fourteen cells (87.5%) have an expected count below five.

<sup>106</sup> Nine cells (75%) have an expected count below five.

<sup>107</sup> All postulations in this section are my own unless otherwise stated. Contextual information about Tanzania comes from the first-hand experiences of my advisor or from themes discussed generally across multiple interviews with study participants. Other probable explanations may also exist that are not described here.



to implement Ujamaa villagization across the country, even in traditional pastoralist areas, does imply that a few pastoralist communities may have formed Ujamaa villages to meet this requirement. In other instances, they formed communal ranches. Despite communal tendencies, these ranches did not receive the designation Ujamaa village because they remained pastoral rather than agricultural. Based on this historical trend, it is thus logical that only two out of seven pastoralist villages in the sample were former Ujamaa villages.

Agricultural villages, both Ujamaa and not, may possess a warehouse for storing crops to sell or consume during the off-season when certain crops cannot grow. Storage warehouses have a higher presence in former Ujamaa villages likely because these villages were agricultural and needed a place to store food to feed the village for months after the harvest season. Pastoralist villages, which form a large portion of the non-Ujamaa villages in this study, would generally not have utilized storage warehouses due their emphasis on livestock keeping rather than farming. Agricultural villages that existed during Ujamaa but were not Ujamaa villages received less government assistance and funding than Ujamaa villages<sup>108</sup>, so a lack of financial capital for materials and labor may have prevented these villages from constructing warehouses. Former Ujamaa villages renovated or made alterations to the warehouses over the years rather than construct a new warehouse. Conversely, both types of non-Ujamaa villages would have needed to construct new warehouses to store crops, a more expensive prospect than renovations. Cost, again, may play a role in a village's ability to build a warehouse, a barrier that could factor into non-Ujamaa villages lacking community storage facilities.

Villages that are their ward's headquarters also have the tendency to be former Ujamaa villages. The link between ward headquarters and Ujamaa village status may be less apparent

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<sup>108</sup> Jennings, 2008

than other relationships discussed in this section, but possible reasons for the correlation exist, one of which is discussed here. As already seen, the Tanzanian government stressed movement into Ujamaa villages and subsequently provided greater access to services and resources for residents of such villages. The presence of such services may have attracted new individuals and families to move to these villages either during Ujamaa or in the years following its end, leading to larger increases in population in former Ujamaa villages than non-Ujamaa villages. Population size may have played a role in the selection of a village to be the ward's headquarters, and by proxy many of the selected headquarters were Ujamaa villages. Ward headquarters in this study did generally have larger populations, ranging from 6,000 to 20,000 people, than other villages in the ward or used to have larger populations before they split into smaller villages. Villages that were not ward headquarters commonly had populations ranging from 2,500 to 5,000, though population size may depend on how densely populated the region or district was.

The relationship between proximity to conserved areas and former Ujamaa villages status also was initially unclear. An interview in 2018 with an official at the National Land Use Planning Commission, however, provided some clarity to the issue. He reported that “[v]illages founded under Ujamaa villagization have superlative legal status as compared to other laws. [It is] [v]ery, very difficult to remove them from forest areas and other protected areas” (KI). If this interviewee’s estimation holds, non-Ujamaa villages are more easily moved when expanding conservation areas, while former Ujamaa villages are difficult to remove and are thus more likely to remain in place. The legal status of former Ujamaa villages produces a “wall” that is difficult for expanding conservation areas to cross, creating the apparent relationship that former Ujamaa villages are in closer proximity to conserved areas than non-Ujamaa villages. The percentage of

land under conservation has increased from 27% in 1990 to approximately 40% in 2014,<sup>109</sup> increasing land scarcity for residents to build livelihoods upon and often forcing residents of villages bordering conserved areas to move to new areas.

Of the five variables with statistical significance in relation to Ujamaa village status, only two also had statistically significant levels of general service provision after group two analysis: ward headquarters and livelihood. Based on chi-square and Fisher's test analyses alone, I cannot determine whether these variables are causal or if they are simply proxy variables with Ujamaa status as the root cause of service disparities. Despite the inability to identify the causal variables, I investigate here possible factors that influence the establishment of services in ward headquarters and pastoralist villages.

Legislation by the federal government of Tanzania prioritizes ward headquarters for public services, specifically secondary schools and health centres. In 2007, former president Jakaya Kikwete announced plans to establish a health centre in every ward headquarters, along with a dispensary in every village.<sup>110</sup> While this healthcare goal had not been fully realized as of 2016, the high levels of healthcare available in ward headquarters implies that the government has made progress in healthcare provision. Health centres provide a greater level of care than dispensaries through patient admittance and some surgical services.<sup>111</sup> Implementing health centre services in a ward's headquarters thus increases the availability of higher-level care for the entire ward. Also during his presidency, Kikwete planned for the provision of a secondary school in every ward.<sup>112</sup> Though his plan did not explicitly announce that the schools would be implemented in ward headquarters, greater population density provides a logical argument for

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<sup>109</sup> Laltaika and Askew, 2021

<sup>110</sup> Tanzania: President announces "major" healthcare plan, 2007

<sup>111</sup> Ministry of Health and Social Welfare, 2015

<sup>112</sup> Languille, 2015

placing schools there. Each piece of legislation from Kikwete's regime offers strong background support for my findings that ward headquarters tend to possess more objective service provision in the form of secondary education and health centres than other villages in the ward.

In the social hierarchy of Tanzania, pastoralists are designated to a lower status than farmers. Thus, Tanzanian society at both governmental and individual levels marginalizes pastoralist communities, saddling them with blame for local conflicts and relegating them to an inferior status. The purpose of this section is not to assign blame for pastoralist marginalization but to acknowledge that widespread discrimination continues to exist and is affecting pastoralist communities in numerous ways. Along with land losses affecting pastoralists' lifestyle, my data analysis makes apparent that pastoralists face discrimination in the establishment of social services. I cannot concretely determine whether the lack of services present in pastoralist villages in this sample is the result of not having Ujamaa status or explicit discrimination by government authorities. Regardless of the cause, significant disparities do exist in access to services between agricultural and pastoralist communities in rural Tanzania. In addition to the results of this study, the disparities between agricultural and pastoralist villages can be seen in the total number of health facilities present between a historically pastoralist region, Manyara, and an agricultural region, Mbeya. In 2006, Manyara region possessed 123 dispensaries, while Mbeya had 307 dispensaries, nearly 2.5 times higher than that of Manyara.<sup>113</sup>

### **Another Look into Electrification**

In chapter three I illustrated how national grid electricity within a village has underlying considerations distinct from health facilities and secondary schools that affect its presence within a village. Time is the most obvious factor that differentiates electricity from other services.

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<sup>113</sup> Ministry of Health and Social Welfare, 2007.

While secondary schools and health facilities in Tanzania have been around for decades and were one of the central foci of Ujamaa, electrification is a relatively new phenomenon.

Electrification, therefore, could not have been influenced by Ujamaa policies during Ujamaa.

*Table 4.7: Results of chi-square (Fisher's test) analysis with electricity presence*

Variable	P-Value
Ward Headquarters	0.484 (0.528)
Livelihood (Pastoralist majority)	0.034 (0.077)**
National Park Adjacent	0.210 (0.324)
Conservation Adjacent	0.294 (0.349)
Near Town	0.020 (0.031)**
Near Road	0.835 (1.000)
Number of Growing Seasons	0.561 (0.723)
Village Irrigation Scheme	0.016 (0.034)**
Storage	0.606 (0.74)
Social Assets	0.077*

N=43

\*p < 0.10

\*\*p < 0.05

On the other hand, if former Ujamaa villages are explicitly targeted for services today, they should theoretically have higher rates of electrification than non-Ujamaa villages. Recall, however, that the analysis of grid electricity and former Ujamaa villages status yielded a statistically insignificant p-value of 0.408, while the same analysis for both health facility and secondary school presence showed statistical significance (Table 3.1). As a means of further exploring influences on electricity provision, I analyzed all ten variables used in this chapter against electricity, with the results shown in Table 4.7.

Analysis produced statistically significant p-values for four variables: livelihood, near town, village irrigation scheme and social assets, of which only livelihood had also been significant for health facility and general services. Proximity to a town provides the most likely causal factor for electricity access, though causality could not be tested using chi-square analysis. Electrifying a village requires a unique geographic factor that constructing health facilities and schools do not, namely proximity to an already electrified village or town. To simplify a

complex engineering feat, electrical wires must be connected to a preexisting power source (i.e., connected to the grid) in order to bring electricity to a village. Whereas health facilities and schools can be constructed anywhere, electrification is bound by geography. Towns, as urbanized, more densely populated centers, have greater access to electricity than less dense areas. Towns thus makes sense as a starting point for extending electricity to rural villages, and the first villages to be connected to the grid would be those closest to a town. That road access did not also correlate to electrification introduces an unexpected result. It is possible that major roads can extend long distances from an electrified town so that, while a village may be on the main road, it remains geographically far from a town and may require a longer time period for electricity to reach the area. In general, pastoralists occupy remote land in order to have space for grazing livestock and for mobility. This remoteness places many pastoralist communities a far distance from electrified towns or other villages, creating a geographic barrier for electrification that cannot be immediately rectified.

Neither irrigation nor social assets require grid electricity to function. Irrigation may rely on diesel or petrol pumps, but these systems are expensive to run and are not feasible for many small-scale farmers. Electrified irrigation systems, however, are less expensive, making them more cost-efficient with higher levels of accessibility. Community-wide irrigation systems are thus available to higher numbers of farmers when run by electricity. Communities are able to introduce or expand irrigation systems once the village receives electricity. Social assets such as credit funds or savings groups generally do not require electricity to successfully function, but performance may be improved with electricity access. Irrigation cooperatives, on the other hand, function at larger capacities when community-wide irrigation systems function with electricity, as more farmers have access to irrigation. Also important to note is that irrigation is likewise

geography-dependent. The implementation of irrigation schemes cannot occur without nearby access to a water source.

## **Conclusion**

To understand if a village possesses greater or fewer services due to its status as a former Ujamaa village or if another factor has the potential to better explain varying rates of service provision between villages, I considered ten factors in relation to Ujamaa village status. Villages that pursue agriculture as their primary activity as well as villages that are headquarters for their ward, are near a conserved area, or have social assets or storage are more likely to have been Ujamaa villages. After performing chi-square tests on these five significant factors and the service variables, I found that ward headquarters and agricultural villages have higher access to services overall in comparison to villages without the status of ward headquarters or those that practice pastoralism as their primary form of livelihood. Additionally, the data showed that agricultural villages, villages with irrigation or social assets, and villages near a town have higher rates of grid electricity access. While it is difficult to differentiate between any of these variables as explanatory or confounding, disparities in service provision remain prevalent between the rural villages used for the study.

## Chapter 5 Conclusions

### Review of Results

Based on the results discussed in chapters three and four, the policies of Tanzania's Ujamaa system from the late 1960s to the mid-1980s is correlated to the provision of public services by the national government more than three decades after its demise. The relationship between individual services and Ujamaa village status varies, but analyzing general service provision rather than isolated services presents an obvious pattern. Former Ujamaa villages are more likely to have a higher level of access to services than villages who did not have Ujamaa village status. Additionally, villages that serve as their ward's headquarters or have a predominantly agricultural population also enjoy higher objective service provision.

### The Egalitarian Paradox

In conjunction with a focus on rural agricultural development, Ujamaa strongly emphasized service provision in Ujamaa villages, specifically healthcare and education.<sup>114</sup> The ideal Ujamaa village provided its residents with a health facility and primary school, neither of which was typically available prior to villagization in rural areas and continued to be mostly unavailable in non-Ujamaa villages. Within Ujamaa villages, the government mandated that these services be egalitarian, available to all residents of that village regardless of their social status prior to Ujamaa, their ethnicity, their position within the village, etc. With the prioritization of egalitarian services in Ujamaa villages, Ujamaa ultimately created a service provision paradox that continues to impact rural communities today, nearly 40 years after its end. Non-Ujamaa villages lack the higher rates of service provision enjoyed by Ujamaa villages.

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<sup>114</sup> Scott, 1998



Thus, the initial Ujamaa policies with a supposedly egalitarian core may be creating widespread inequality throughout rural Tanzania that affects a family's ability to access healthcare, educate their children, and increase social capital via these services. Continuous inaccessibility then reinforces permeating inequalities that affect generations of Tanzanian families.

### **Ujamaa's Success**

Upon examining Ujamaa policies, villagization, and the demise of Tanzania's socialist era, many scholars have come to the consensus that Ujamaa utterly failed in its goals. In *Seeing Like a State*, for example, James Scott tears into the downfalls of Ujamaa. He writes of Ujamaa and other formerly socialist states:

[I]t is apparent from the high-modernist schemes we have examined that the 'rational' plans they imposed were often spectacular failures. As units of production, as human communities, or as a means of delivering services, the planned villages failed the people they were intended, sometimes sincerely, to serve.<sup>115</sup>

By proposing a blanket judgment of Ujamaa policies as a failure, Scott prevents the acknowledgement of separate successes and failures of Ujamaa's individual goals. As part of his vision for Ujamaa, Nyerere proposed several goals, which Scott confirms as "delivery of services; the creation of a more productive, modern agriculture; and the encouragement of communal socialist forms of cooperation."<sup>116</sup> While socialist villagization and agricultural development may not have been fully realized, the goal of service provision did have success during Ujamaa as illustrated by the results of this study.<sup>117</sup>

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<sup>115</sup> Scott, 1998, p.253

<sup>116</sup> Scott, 1998, p.230

<sup>117</sup> Acknowledging the apparent success of service provision during Ujamaa is not intended to bury the traumatic memories and experiences of villagers that plagued forced resettlement. The government coerced many individuals and families to leave ancestral lands with which they had a deep generational attachment, and resettlement into new

## Discussion of Service Quality

Undeniable disparities exist in objective service provision between the villages presented in this study; however, hailing the presence of a service available to villagers as progress may prove irrelevant if the quality of that service is insufficient to meet the basic needs of those it is designed to serve. The theme of low-quality services recurred throughout the hundreds of qualitative interviews conducted with both village leadership and individual villagers. In many instances, the services provided were dysfunctional or even nonfunctional, ultimately providing little improvement in villagers' standard of living. Healthcare, secondary school access, and grid electrification each pose a unique set of problems regarding quality.

Healthcare facilities may lack basic equipment or materials necessary to carry out their prescribed functions. Respondents from one village noted that “[t]here is a lack of proper equipment. Serious cases need to go to [town], which is a problem since the road is so bad” (VI). While a health facility is present directly in this village, it appears often unusable, especially for the patients who require more advanced care. What happens in an emergency, when not only is the facility unable to care for a patient, but the trip to town is difficult if not impossible? On the other hand, what if a village does not have a health facility at all? In some areas, using the health facility in the next village or a nearby town may be relatively easy. Other areas, however, may have long stretches of land or clusters of villages with no facility present, forcing people to go long distances to receive treatment. A village leader reported that “[t]here still is no dispensary or health clinic in the village. People have to go to [another village] (22 km.) for treatment” (VL). Covering 22 kilometers on foot takes hours, and even on a bike the travel time is lengthy.

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villages brought its own unique emotional wounds that, for many, simply accessing new public services could not fully heal.

Perhaps someone needing assistance does make it to another village or town to seek treatment. These facilities may present issues of their own. Staff shortages are omnipresent, missing providers at all levels of care. One villager spoke about the village health facility. ““We have a small dispensary with no medicine and only one nurse to serve about 6,000 people. Government should improve our dispensary, but the government has forgotten us”” (V).

Primary and secondary education alike deal with a similar problem of staff shortages. Alongside a lack of teachers exists the issue of certification and professionalism, as many schools employ former students who did not advance past secondary school or uncertified teachers. Sentiments such as “There is a shortage of teachers, especially skilled, certified teachers” (VI), were commonplace across multiple region and districts. In addition to staff challenges, experiential learning opportunities remain minimal for some students. Laboratories may be noticeably absent, “[s]o science is taught only in theoretical terms, with no practical experience” (VI). Without laboratory experience or sufficient teachers, students take entrance exams unequipped with the knowledge needed to pass, which can ultimately prevent them from moving onto the next phase of schooling and further contributes to the overall low levels of secondary education witnessed throughout the country.

Electrification comprises challenges unique from those of health and education. While electricity may not require the significant involvement of staff past the initial installation of the grid, it is designed to improve the living standards of large numbers of people. Often, however, electricity does not physically reach its intended recipients, even those living in an “electrified” village. According to one key informant, “REA [Rural Energy Agency] will claim a village is covered even if only 20 households have connections to the grid, and there is one transformer. [They agree] that the actual percentage of rural households with electricity is very low” (KI).

This estimate of low electricity access in rural areas directly contradicts TANESCO's assessment of 70% electrification on mainland Tanzania but is in line with REA's assessment of 34.5% discussed in chapter one. Other interviews support this claim as well, with two subvillages of one electrified village having no electricity (VI). In another village, only a few households in one subvillage were connected to the grid out of the multiple subvillages that comprise the village (VI).

As made apparent through interviews, the objective presence of a service does not always function productively to provide quality services in rural areas. In many instances, responsibility for aspects decreasing service quality, such as staff shortages or power outages, do not rest with village leadership or villagers themselves. Instead, responsibility lies with the Tanzanian government, from district officials through national leadership. Simply providing services is not enough to adequately serve the needs of rural Tanzanians.

### **Directions for Future Research**

The results of the village-level interviews and subsequent data analysis show that government service provision is correlated to former Ujamaa village status, village status as ward headquarters, and primary livelihoods. Although I show correlation between these variables, I am unable to determine causation and whether the variables ward headquarters and livelihood explain the relationship between Ujamaa status and service provision or act as confounding variables that prevent delineation of another relationship. While causation may be difficult to support in future research, a larger, randomized sample of villages may provide a strong foundation for supporting causation if such a relationship exists and may determine if the ward headquarters and livelihood variables are explanatory or confounding. As noted in chapter two, one of the largest limitations of the study is the small sample size. By performing a similar study

with a larger sample, a regression may be used in analysis rather than a chi-square test.

Regression analysis may allow for a researcher to show if livelihood and ward headquarters mediate the relationship between Ujamaa status and services, which would indicate that Ujamaa status does not directly lead to higher service provision but that ward headquarter and livelihood status do. Conversely, ward headquarters and livelihood may be moderating variables, where Ujamaa villages are indeed prioritized for service provision over non-Ujamaa villages with ward headquarters and livelihood status increasing or decreasing the effect.

### **Final Thoughts**

This study makes apparent that significant disparities in access to services, specifically healthcare and secondary education, exist between rural villages in Tanzania. Ujamaa villages, agricultural villages, and ward headquarters all receive disproportionate access to services in comparison to their non-Ujamaa villages, pastoralist villages, and non-headquarters counterparts.

The current president of Tanzania, Samia Suluhu Hassan, has recently taken actions to help reduce these disparities, acknowledged at the highest levels of Tanzania's government. In April of 2021, Hassan ordered the employment of 6,000 new teachers to fill vacancies left around the country by retiring teachers, instructed the construction 26 secondary schools for girls in each region by 2025, and reported the availability of positions for physicians and healthcare staff with the completion of new dispensaries and health centres around the country.<sup>118</sup> Positive changes are on the horizon for many living in rural areas, yet only time will tell if former Ujamaa village status will continue to be correlated to the provision of health services or if services will become evenly distributed to all people across the country.

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<sup>118</sup> Mhagama, 2021

## Appendix

*Table A.1: Summary statistics for all variables*

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Ward headquarters	43	1.00	0.00	1.00	0.3953	0.49471
Ujamaa village	43	1.00	0.00	1.00	0.6512	0.48224
Health facility	41	1.00	0.00	1.00	0.7561	0.43477
Secondary school	43	1.00	0.00	1.00	0.3953	0.49471
Grid electricity	43	1.00	0.00	1.00	0.3488	0.48224
General services	41	3.00	0.00	3.00	1.5366	1.00244
GSE	41	2.00	0.00	2.00	1.1707	0.80319
Livelihood	43	1.00	0.00	1.00	0.1628	0.37354
National park adjacent	43	1.00	0.00	1.00	0.1163	0.32435
Conservation adjacent	43	1.00	0.00	1.00	0.4419	0.50249
Near town	43	1.00	0.00	1.00	0.2558	0.44148
Near road	43	1.00	0.00	1.00	0.4884	0.50578
Growing seasons	43	1.00	1.00	2.00	1.2791	0.45385
Irrigation	43	1.00	0.00	1.00	0.3023	0.46470
Storage	43	1.00	0.00	1.00	0.3488	0.48224
Social assets	43	3.00	0.00	3.00	1.0233	0.96334

## References

- Asante Sana for Education. (n.d.) *Tanzania Education System*. Asante Sana for Education. <https://www.asantesanaforeducation.com/tanzania-education-system->
- Asunka, J., & Afulani, P. A. (2018). Politics and Public Service Provision in Africa's New Democracies. *International Journal of Politics, Culture, and Society*, 31(3), 207–227. <https://doi.org/10.1007/s10767-017-9260-z>
- Basic Education Development Committee. (2001). *Primary Education Development Plan (2002-2006)*. Government of Tanzania.
- Bazylevych, M. (2011). Vaccination Campaigns in Postsocialist Ukraine: Health Care Providers Navigating Uncertainty. *Medical Anthropology Quarterly*, 25(4), 436–456. <https://doi.org/10.1111/j.1548-1387.2011.01179.x>
- Briggs, R. C. (2014). Aiding and Abetting: Project Aid and Ethnic Politics in Kenya. *World Development*, 64, 194–205. <https://doi.org/10.1016/j.worlddev.2014.05.027>
- DeYoung, A. J. (2008). Conceptualizing Paradoxes of Post-Socialist Education in Kyrgyzstan. *Nationalities Papers*, 36(4), 641–657. <https://doi.org/10.1080/00905990802230571>
- Electoral Institute for Sustainable Democracy in Africa. (2010). *Tanzania: Political Parties 1950-1995*. <https://www.eisa.org/wep/tanparties7.htm>.
- Fouere, M.-A., & Languille, S. (2015). Ward Secondary Schools, Elite Narratives and Nyerere's Legacy. In *Remembering Julius Nyerere in Tanzania* (pp. 303–337). essay, Mkuki na Nyota Publishers.
- Gabbert, E. C., Gebresenbet, F., Galaty, J. G., Schlee, G., Laltaika, E. I., & Askew, K. M. (2021). Modes of Dispossession of Indigenous Lands and Territories in Africa. In *Lands of the future: anthropological perspectives on pastoralism, land deals and tropes of modernity in eastern Africa*. essay, Berghahn Books.
- Government of Tanzania, The Villages and Ujamaa Villages (Registration, Designation and Administration) Act (1975).
- Hern, E. A. (2019). *Developing states, shaping citizenship: service delivery and political participation in Zambia*. University of Michigan Press.
- International Energy Agency (2019), Tanzania Energy Outlook, IEA, Paris <https://www.iea.org/articles/tanzania-energy-outlook>
- Jennings, M. (2008). *Surrogates of the State: NGOs, development and Ujamaa in Tanzania*. Kumarian Press.

- Kamat, V. R. (2013). *Silent violence: global health, malaria, and child survival in Tanzania*. University of Arizona Press.
- Kwesigabo, G., Mwangi, M. A., Kakoko, D. C., Warriner, I., Mkony, C. A., Killewo, J., Macfarlane, S. B., Kaaya, E. E., & Freeman, P. (2012). Tanzania's health system and workforce crisis. *Journal of Public Health Policy*, 33, s35–s44.
- Lal, P. (2017). *African Socialism in Postcolonial Tanzania: Between the Village and the World*. Cambridge University Press.
- Makweta, H. (2021, January 31). *Tanzania to complete connection of villages to electricity by June*. The Citizen. <https://www.thecitizen.co.tz/tanzania/news/tanzania-to-complete-connection-of-villages-to-electricity-by-june-3275322>.
- McHenry, D. E. (1994). *Limited Choices: The Political Struggle for Socialism in Tanzania*. Lynne Rienner.
- Mhagama, H. (2021, April 8). *Tanzania: Po-Ralg Ordered to Complete Health, Education Infrastructure, Employ 6000 Teachers*. allAfrica.com. <https://allafrica.com/stories/202104080409.html>.
- Ministry of Health and Social Welfare, Tanzania Mainland. Ministry of Health and Social Welfare, Zanzibar. Ministry of Health and Social Welfare & World Health Organization. (2007). *Tanzania service availability mapping: 2005-2006*. Geneva, World Health Organization.
- Ministry of Health and Social Welfare. (2015). *Health Sector Strategic Plan July 2015 – June 2020 (Hssp Iv)*. Author.
- Rosenzweig, S. C. (2015). Does electoral competition affect public goods provision in dominant-party regimes? Evidence from Tanzania. *Electoral Studies*, 39, 72–84. <https://doi.org/10.1016/j.electstud.2015.04.004>
- Rural Energy Agency, & National Bureau of Statistics, *Energy Access Situation Report, Tanzania Mainland* 1–352 (2016). Author.
- Scott, J. C. (2020). *Seeing Like a State: How Certain Schemes to Improve the Human Condition have Failed*. Yale University Press.
- Sirili, N. (2018). Health workforce development post-1990s health sector reforms: The case of medical doctors in Tanzania. <http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-151721>
- Sitta, M. S. (2007). Towards universal primary education. *UN Chronicle*, 44(4), 23–24. <https://doi.org/10.18356/f8478905-en>



- South African History Online. (2011, March). *Tanzania gains independence*.  
<https://www.sahistory.org.za/dated-event/tanzania-gains-independence>.
- Tanzania Electric Supply Company Limited. (n.d.a). *Background*. TANESCO.  
<http://www.tanESCO.co.tz/index.php/about-us/historical-background>.
- Tanzania Electric Supply Company Limited. (n.d.b). *Distribution*. TANESCO.  
<http://www.tanESCO.co.tz/index.php/about-us/functions/distribution>.
- Tanzania District Study Areas. Scale 1: 6,000,000. Tanzania National Bureau of Statistics Districts\_Shapefiles\_2019.zip and OCHA ROSA Tanzania administrative level 1 (region) boundary shapefile tza\_admbnda\_adm1\_20181019.zip. Ann Arbor, MI: Caitlin Dickinson, University of Michigan, March 2021. Using: ArcGIS Pro. Version 2.7.2. Redlands, CA: Environmental Systems Research Institute, Inc.
- Tanzania: President announces "major" healthcare plan. (2007, Nov 17). BBC Monitoring Africa Retrieved from <https://proxy.lib.umich.edu/login?url=https://www-proquest-com.proxy.lib.umich.edu/wire-feeds/tanzania-president-announces-major-healthcare/docview/458540381/se-2?accountid=14667>
- UNICEF. (n.d.). *United Republic of Tanzania (TZA) - Demographics, Health & Infant Mortality*. UNICEF. <https://data.unicef.org/country/tza/>.
- UNICEF. (2016). *Education*. UNICEF. <https://www.unicef.org/tanzania/what-we-do/education>.
- United Nations Department of Economic and Social Affairs. (n.d.b). *LDC Identification Criteria & Indicators*. United Nations. <https://www.un.org/development/desa/dpad/least-developed-country-category/ldc-criteria.html>.
- United Nations Department of Economic and Social Affairs. (n.d.a). *Least Developed Country Category: United Republic of Tanzania Profile*. United Nations. <https://www.un.org/development/desa/dpad/least-developed-country-category-united-republic-of-tanzania.html>.
- United Nations Development Programme. (2020). *Human Development Reports*. | Human Development Reports. <http://hdr.undp.org/en/countries/profiles/TZA>.
- Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How Reliable are Measurement Scales? External Factors with Indirect Influence on Reliability Estimators. *Procedia Economics and Finance*, 20, 679–686. [https://doi.org/10.1016/s2212-5671\(15\)00123-9](https://doi.org/10.1016/s2212-5671(15)00123-9)
- World Bank. (2018). *Access to electricity, rural (% of rural population) - Tanzania*. World Bank. <https://data.worldbank.org/indicator/EG.ELC.ACCS.RU.ZS?locations=TZ>.
- World Bank. (2019a). *Population ages 0-14 (% of total population) - Tanzania*. World Bank. <https://data.worldbank.org/indicator/SP.POP.0014.TO.ZS?locations=TZ&view=chart>.

World Bank. (2019b). *Rural population (% of total population) - Tanzania*. World Bank.  
<https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=TZ>.