

The Global, the Local, and Population Policy in Sub-Saharan Africa¹

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Abstract Despite pronatalist governments and populations, starting in the late 1980s and continuing through the 1990s, one sub-Saharan African country after another announced national population policies aimed at reducing population growth through fertility limitation. I use country-level data for the period 1984-2003 to describe the diffusion of population policy across the continent and to determine why some governments were willing to take the risky move of adopting a population policy but not others, and why some governments did so earlier than others. My treatment of this subject rests on an understanding of policymaking in the African context as one that is mediated by a variety of actors at the global and local levels, including African governments but also multilateral and bilateral organizations. Unlike the standard diffusion story, in which the most modern actors play the role of innovators, I find that the first countries to adopt policies actually had lower levels of governmental capacity and were more traditional than those who adopted policies later or that did not adopt policies at all. I explain this paradox based on these countries' greater desire to signal their modernity to outsiders, and their relatively weak position vis-à-vis powerful external organizations like the World Bank.

¹ Chapter 3 of my dissertation, "Managing Modernity: African Responses to Rapid Population Growth." The dissertation as a whole analyzes the emergence of national population policies and reproductive health care organizations in Africa as a means to understand the factors that structure how poor countries choose to "develop" themselves. I extend heartfelt thanks to many people for their feedback on this chapter: Jenna Johnson-Hanks, Neil Fligstein, Ann Swidler, and the participants in the UC Berkeley Demography Department Brown Bag Series and the UC Berkeley Sociology Department Job Market Practice Talk Series. Previous versions of this paper were presented at the 2006 meetings of the International Sociological Association and the American Sociological Association.

INTRODUCTION

Despite pronatalist governments and populations, starting in the late 1980s and continuing through the 1990s, one sub-Saharan African country after another announced national population policies aimed at reducing population growth. Why were some governments willing to take this risk but not others, and among those that did, why did some governments take this risk sooner than others? This chapter uses country-level data for the period 1984-2003 to answer these questions regarding the diffusion of population policy across sub-Saharan Africa and determine the factors that predict which countries announced national population policies, and among those that did, what influenced when they did so. In so doing, I address the commonality (why did countries adopt policies largely around the same time?) as well as the heterogeneity (what caused variation in policy adoption timing?) in the African case. The adoption of population policies is one example among many of actions poor countries have chosen to take in order to “develop” themselves. These actions do not of course occur in a vacuum, but are influenced by a variety of factors, including a host of actors concerned with development as well as characteristics of countries themselves, including their political cultures and the relative balance between economic and demographic growth. I explore the interrelationship between these factors in the analysis presented below.

The first countries in sub-Saharan Africa to announce population policies after the wave of independence struggles in the 1960s were Kenya in 1967 and Ghana in 1969 (Chimwete et al. 2005; Loco and Makdessi 1996). Following these early declarations, however, there was an almost 20 year lag before a glut of policy announcements started in 1988 with Nigeria, Senegal, and Liberia (ARPL 1988, 1990, 1991, 1993, 1994/95, 1996/97; UNFPA 2003). This trend continued through 1999, with 30 additional countries adopting policies, but since then, no

country out of the 15 remaining countries without policies has announced one. Figure 1 shows this process graphically (excluding the countries of northern Africa above the thicker dark line), while Table 1 describes the process country-by-country. The 15 countries without population policies are white in Figure 1 and are listed in the note at the bottom of the Table 1. Although the geographic correspondence is not perfect, there is a general trend in policy adoption: first coastal West Africa, then Sahelian West Africa, then southern Africa, leaving central African countries largely without population policies.

Although a great deal of research has been conducted on fertility-reduction policies, it has tended to emphasize the effects of these policies on fertility rather than their motivations. Indeed, many authors have presumed that countries that experienced rapid population growth in conjunction with relatively slow economic growth simply “realized” that political and programmatic measures should be taken to reduce population growth in order to ensure socioeconomic development. Analysis of *patterns* in policy adoption across time and space, however, suggests that something more interesting took place in Africa. In particular, as I will show below, it was the weakest, most traditional countries that adopted policies first. Then the majority of the remaining countries adopted policies, leaving a select group of countries without population policies. This finding suggests that the case of population policy adoption in Africa is one of diffusion, but not in the usual way. The standard diffusion story is one where the most “modern” actors drive change by adopting innovative behavior first. After that behavior is legitimated (either because it achieves desired outcomes or because enough actors engage in it to normalize it), the remaining actors copy the first one. The exact opposite of the standard diffusion story appears to have started off the process of policy diffusion in Africa, a paradox that I explain through the analysis presented below.

In this chapter, I argue that we should make use of a more nuanced view of social policymaking, however. Specifically, population policies, like all social policies, are not the result of a cost-benefit analysis where the best policy is the one that costs the least and helps the most people, nor are they based on what is scientifically most appropriate. Instead, they are social objects that result from a contest between multiple actors over defining both problems and their solutions. Looking at policy and policymaking in this way provides a richer set of factors to explain outcomes, and is particularly relevant in the African case where the actors involved in policymaking have widely divergent levels of power. In the case of population policy in Africa, the relationships between first and third world governments are mediated by diverse organizations ranging from local non-governmental ones to large multilateral and bilateral ones. Nonetheless, there are also very local aspects of policymaking which are important to capture, because “population policy is not something that is only made in foundation meetings, legislative hearings, or international conferences” (Connelly 2003: 133).

In this chapter, I use the understanding of policymaking described above to explain the diffusion of national population policies across sub-Saharan Africa. To explain differential timing in policy adoption, I explore the degree of interference by outside organizations, the capacity of countries’ governments, and countries’ levels of economic dependence on external organizations. I contrast the explanatory ability of these factors against the relative levels of economic and demographic growth. Using bivariate comparisons and event-history analysis, I find that politically “weaker” countries who wished to appear modern were more likely to adopt policies early or at all, and that diffusion via economic communities explains policy adoption among later-adopters. The findings presented in this chapter make an important contribution to our understanding of political action among sub-Saharan African states while simultaneously

informing on a relatively understudied topic, that of the antecedents to population policy adoption.

BACKGROUND

The term “population policy” can refer to policies targeting demographic areas as diverse as fertility, mortality, population growth, migration, or the distribution of people across physical space. These policies outline negative impacts associated with any one or more of these areas, propose a policy-related solution, and describe how to programmatically implement that solution (Dixon-Mueller 1993). I consider only those policies whose main goal is to limit fertility or population growth rates, and are designated “national population policies.” For the purposes of this paper, then, a population policy is a policy approved by a country’s government, called a “population” policy, and whose aim is to reduce population growth rates by limiting individuals’ fertility. This means that I exclude, for example, “health” or “family” policies that call for contraception provision programs because these policies’ main goal is health, not fertility reduction. I am particularly interested in national population policies because, following Barrett and Tsui (1999), *national* population policies have symbolic value, and because they are better defined objects of study.

A brief discussion of Nigeria and Senegal’s national population policies provides a sense for what these policies look like. Nigeria’s 1988 population policy was adopted under the military regime of General Babangida (Federal Republic of Nigeria, 1988) and was published in a small green and white pamphlet (the colors of Nigeria’s flag), as if though intended for widespread distribution. Its official title is the “National Policy on Population for Development, Unity, Progress, and Self-Reliance,” clearly indicating that population policies are objects rich with meaning. The specific targets associated with the policy to be achieved by 2000 were to: 1)

reduce the number of children per woman from six to four, 2) reduce the population growth rate from 3.3% to 2.0% per year, and 3) reduce the infant mortality rate from 115 to 30 deaths per 1000 live births. Senegal's policy, in contrast, also adopted in 1988, had no specific demographic targets, but had a similar goal to Nigeria's, namely to "improve the quality of life and enable the well-being of the whole population" through a focus on maternal health and child spacing (Républic du Sénégal 1988). Adopted by the democratically elected parliament and government of Abdou Diouf, intervention in citizens' lives is justified by the role given to the state by the federal constitution. Although only two cases, the examples of Nigeria and Senegal show that although these policies were ultimately intended to reduce fertility, they also reflected larger state goals of prosperity and modernity.

Understanding why, how, and when governments intervene in the most private aspects of their citizens' lives (those relating to sex) provides a window into larger issues relating to state power, nation-building, and visions of modernity. Because of this, population policies matter on a global scale as well as a local one. Globally, countries that adopted population policies received more bilateral funding from the US (Barrett and Tsui 1999). Locally, "policies both anticipate future events and attempt to change the course of future events. Whether explicitly or not, policy planning is a form of social projection" (Montgomery et al. 1979). More specifically, the collection of demographic data associated with population policies enables *African*-directed development, and the discussions of sex, gender, and ultimately power invoked by population policies are key precursors to improving human rights. Somewhat contradictorily, policies are also very cheap: until implemented, they are just words. This tension between reality and script for an imagined future contained within population policies makes their study an important way to address these larger issues as well as to understand policymaking in the African context.

THEORETICAL UNDERPINNINGS

Only a small literature directly addresses the process of population policy adoption. I briefly discuss this existing research below and then move on to the key literatures that I associate with the process of population policy adoption in sub-Saharan Africa: those relating to diffusion and state capacity.

Most basically, research that touches on population policy tends to assume, rather than test, why countries adopted population policies: governments “realized” they needed to slow population growth in order to ensure socioeconomic development. The following quotes are good examples of this type of explanation:

“Because of both the economic and demographic trends facing most African countries, governments are experiencing great difficulty in feeding, educating, and providing health care services and jobs to growing population. The majority of African countries that are developing population policies are [thus] influenced by the economic realities facing them.” (Lacey 1990: 137)

“[A]s time has elapsed since Independence, many African governments have come to accept that control over their own destinies involves slowing their rates of population growth.” (Nassim and Sai 1990: 522)

Undeniably, it would be perplexing if the balance between economic and demographic growth rates did not effect which countries adopted population policies. The main problem with this explanation, however, is that it fails to identify why this balance between economy and demography “tipped” in the 1980s, why the appropriate response to perceived problems was a population policy, or what role a variety of interested organizations and actors might have played.

A second explanation for population policy adoption *does* focus on the role played by powerful external organizations exercising their own agendas (including population policy) in African countries, but exaggerates it. This stance, as exemplified by Hartmann (1995), also

targets organizations such as the United States Agency for International Development (USAID), the United Nations Population Fund (UNFPA), the International Planned Parenthood Foundation (IPPF), and the Population Council. The basic story describes these organizations as leveraging their power as important donors to a variety of types of projects in order to force developing world governments to implement population policies. One drawback to this explanation is its reliance on there being a neo-colonial project to reduce fertility in the third world (see Connelly 2003 for a full critique). Indeed, this view ignores the fact that countries might have *wanted* population policies, both for their potential to lower population growth rates but also as vehicles for expressing goals and desires for their nations' futures. Another drawback is that for the influence of external organizations to explain the timing of policy adoption, there must be systematic variance in these organizations' involvement at the country-level that then relates to policy adoption timing.

Although other literature provides compelling explications of population policy in particular cases (cf. Chimbwete et al. (2005) for Kenya and Malawi, Greenhalgh (1990) and White (1994) for China, Hoodfar and Assadpour (2000) for Iran, Kaler (2003) for Zimbabwe), a drawback of much of this research is that even though it documents policy adoption, it does not do so from a fully comparative perspective². Given that the pattern of population policy adoption in sub-Saharan Africa is one of diffusion, I turn next to this literature.

Any discussion of diffusion requires designating what is diffusing and who it is diffusing between. Usually we describe the diffusion of some sort of new behavior between actors, who can be individual people or collectives (organizations, countries, etc.). An actor starts the diffusion process by doing something new, and then others follow suit, either because they see

² Ness and Ando (1984) and Warwick (1982) are notable exceptions, although their work does not focus on Africa and predates most policy adoption there.

the benefits that accrue to the first actor, or because they become normatively compelled to do so (with still relates to expected payoffs, albeit in a different way). The demographic literature has focused extensively on the diffusion of fertility-related behaviors between individuals while the sociological literature has focused more on collective actors. Either way, however, the bulk of the literature assumes that the first actors to exhibit a behavior that then diffuses are innovative, and usually more “modern” in some important way.

The demographic literature has been preoccupied with explaining the diffusion of fertility behavior, usually smaller families, which behavior-wise relate to techniques for fertility limitation but also to ideational change. This is a case where actual diffusion occurs at the individual level, but its effects are strongly visible in the aggregate. I use Bongaarts and Watkins’ (1996) classic article on the predictors of the societal-level transition from high to low levels of childbearing as an example of the demographic perspective on diffusion, although many others certainly exist. Bongaarts and Watkins (1996) turn to diffusion as an explanatory variable because levels of socioeconomic development do a less than ideal job of predicting the timing and pace of significant declines in fertility at both country and regional levels. Although “development” increases the cost of children, and thus reduces parental desire for large families, development does not immediately lead to fertility reduction. Instead, there is a period of uncertainty during which the benefits to adopting new behavior are unknown and people wait until the effects of the new behavior on innovators are known. Knowledge of these effects, positive or negative, is then spread through social interaction via networks. Because the length of this period varies, the length of time until changed in behavior are observed also varies. Regardless of these facts, however, someone has to be the first to try out new behavior, and these are usually the most “modern” of individuals: those living in cities, with more education.

Diffusion of behaviors and ideas also occurs between larger units of social organization, such as countries. Literature about world culture, the culture associated with the world polity, centers on cases of such diffusion. As the argument goes, in the process of the development of a global culture, norms have emerged regarding the proper behavior of organizations and nation-states that apply to the whole world (Boli and Thomas 1997; Meyer 2004). Global culture motivates nation-states to adopt particular principles in order to legitimate themselves and to maintain their status with the global community (Meyer 2004). Population policy is one such example of policies adopted for these purposes (Barrett 1995; Barrett and Frank 1999). In her analysis of population policy adoption around the world, Barrett (1995) finds that international population conference attendance is the best predictor of population policy adoption. Clearly the concept of a population policy as a solution for poor socioeconomic outcomes is a model condoned by the international community for use in the developing world. However, the causality associated with this mechanism is problematic (it is unclear whether going to population conferences gives national elites the idea to adopt policies or indicates that they were interested in population policy and so attended the conferences). Furthermore, this explanation fails to discuss the mechanisms through which nations conform to world cultural norms. In the analysis below, I rectify this shortcoming by investigating which countries chose to draw on population policy as a model for addressing a set of demographic and economic realities.

Another example of diffusion between macro-level entities that I draw on is Tolbert and Zucker's (1983) analysis of the timing of civil service reform among US cities at the turn of the twentieth century. The authors show that while city characteristics predicted the early adoption of civil service reform, they did *not* predict later adoptions, which were instead better understood as the result of institutional isomorphism.

Assuming then that diffusion is a key part of the story, how do we explain which countries started the trend, and why some countries never participated? Here I turn to the role played by what I refer to as “governmental capacity.” By this I mean governments’ ability to define and carry out a desired course of action for their country. Capacity relates to state strength, but is not the same as strength measured as a state’s military power, or its ability to intervene in the market (e.g., Atkinson and Coleman 1989). The concept of state capacity and strength touches on debates in a variety of literatures in sociology, political science, and development studies about state “strength” and power (and its absence, weakness). Without getting into a discussion of whether one conceptualization is better than the other, I describe below why a government’s level of capacity matters very much to the adoption of population policy. Then, when discussing data analysis, describe in greater detail the measures that I use.

States in sub-Saharan Africa have generally low capacity. Most broadly, this outcome results from a combination of the effects of colonization (including arbitrarily drawn borders), decolonization, and the fact that inhospitable territory and low population density have made it expensive for African leaders throughout history to extend their power (Herbst 2000). Indeed, only a small minority of African states experienced any sort of historical continuity of institutions across decolonization (Englebert 2000), and then there are also the cases of “escaped” peasantries that returned to traditional social structures, breaking nationalist bonds between state and society following decolonization (Hyden 1980). In addition to these factors, African states are almost all new (only 6 were independent prior to 1960), contain multiple different ethnic groups, and faced extreme economic downturns starting in the 1980s, making the art of governing particularly difficult. Structural adjustment programs, implemented in the 1980s and designed to improve African economies, lead to high levels of instability due to job loss,

currency devaluation, and increases in prices, particularly for food (Herbst 1990). Although African leaders do not always act in the best interest of their countries, there is no reason to believe they would not generally be interested in strengthening their states. Drawing on Foucault, I argue that a population policy is one way to try to do so.

One of Foucault's fundamental insights is that modern, European states achieve power through access to individual bodies. States strive to solidify their power by strengthening their population, making the population an object of care and thus intervening in individuals' lives via schools, hospitals, prisons, and the military (Foucault 1988; 1991). Population policy is a good way to exert control over the population, and in so doing, strengthen the state. Indeed, "The adoption of a comprehensive population policy marks an eventful change in the conception of the role of government in civic life" (Eberstadt 1994: 30). Indonesia used its family planning program as a means to restructure the relationship between citizens and the state (Newland 2001). In examining antinatalist policies in Asia during the 1960s, Ness and Ando (1984) find that population density predicted the timing of policy implementation, but that density was not a necessary or sufficient predictor of policy. Instead, they argue that highly centralized political structures resulting from deeply penetrated colonialism, strong nationalist movements, and a commitment to economic development facilitated the promulgation of antinatalist policies. All of these factors suggest that the capacity of African governments may be related to population policy adoption.

For the above reasons, I use the analysis below to argue that politically weak countries were more likely to adopt population policies, and were more likely to adopt them first. They did so to symbolically indicate to citizens, as well as to outsiders, that they had control over their populations and were worthy of governing as well as of receiving foreign aid. Additionally,

given that policies are cheap to adopt (though not necessarily to implement), they were actually a tool that weak states could use. Furthermore, weak states are more vulnerable to intervention by outsiders (Acemoglu 2005), again making them more likely to adopt population policies.

Although African states are generally weak, there is variation between states, making political strength a useful predictor to explore.

DATA AND METHODS

The data for the analysis of population policy adoption are all country-level. Some variables are constant, while others vary over time. The small number of countries in sub-Saharan Africa (47) limits the number of observations and also the maximum number of explanatory variables. This section describes the different variables used to operationalize ideas surrounding policy adoption as well as the methods used to test them.

Year of Population Policy Adoption The dependent variable, year of national population policy adoption, comes from the United Nations as well as the Annual Review of Population Law (ARPL 1988, 1990, 1991, 1993, 1994/95, 1996/97; UNFPA 2003). This variable differs somewhat from the one used by the biennial United Nations publication *World Population Policies* as it refers specifically to national population policies, and not other policies that include provisions about population growth. It is preferred because it best captures the efforts a nation makes to signal to its citizens as well as outsiders its intentions for the nations' future, and is also easier to measure.

State Capacity I experiment with a number of measures for state capacity. The first is a country's polity score, which captures the government's degree of autocracy or democracy (Polity IV Project 2003). The original scale ranges from -10 (strongly autocratic) to +10 (strongly democratic), which I square, resulting in a measure ranging from 0 (weak) to 100

(strong). This variable changes over time and is available for all but two countries (Cape Verde and Sao Tomé et Príncipe).

A second measure of state capacity is a country's level of ethnolinguistic fractionalization (ELF), which captures the diversity of ethnic and lingual groups contained within a country's borders. ELF is the probability that two people drawn randomly from the population will be from two different groups as defined by ethnicity and language. It ranges from 0 (no diversity) to 1 (complete diversity) (Alesina et al. 2003). A diverse population will intrinsically be harder to govern, most likely resulting in a weaker state. I treat this variable as fixed and use the value from 1985 (from Roeder (2001); available for all countries but Sao Tomé et Príncipe).

A third measure of state capacity is a country's political geography (Herbst 2000). This concept captures the ability of a state to broadcast its power and depends both on physical geography as well as population density. Large countries with small pockets of population that are hard to reach either because of distance or mountains/jungle have difficult political geographies (Democratic Republic of the Congo, Sudan), while those that are smaller and have more concentrated populations have favorable political geographies (Botswana, Rwanda). Herbst's original measure (from Table 5.2, p. 161) has four values: difficult, hinterland, favorable, and neutral. This is a fixed variable that code from categorical into binary where 1 equals not favorable (difficult, hinterland, and neutral) and 0 equals favorable. For the seven countries that Herbst does not code, I attribute the following values: favorable to islands (except Madagascar) and Djibouti, and not favorable to Madagascar and South Africa.

A fourth, and final measure, of state capacity is the degree of intervention by outside organizations. I have two measures for this concept. The first is the amount of International Bank for Reconstruction and Development (IBRD) loans and International Development

Association (IDA) credits expressed as a percentage of gross domestic product (GDP). This comes from the *World Development Indicators* (WDI) database (World Bank 2005), varies over time, and captures the degree of dependence on specifically the World Bank, but also as a proxy for dependence on other organizations. The second measure is the number of structural adjustment loans received from the World Bank and International Monetary Fund from 1980-89 (Bratton and van de Walle 1997). This variable is fixed and is again missing for Namibia and Eritrea because of the time period it covers. Both of these measures capture dependence on external organizations, which increases the ability of donors to make population policies a condition of loan receipt.

Modernity & Tradition Because I see population policies as vehicles for expressing hoped-for visions of modernity, I need a measure that picks up how much a particular country has invested in either being or appearing more “modern,” in addition to something that captures how “traditional” a country actually is. I use three measures, all related to the position of women in society. The first is the percentage of women in parliament in 1995 (IPU 2004), the earliest date for which this variable is widely available. A country with more women in parliament counts as more modern, although those women could be there because of quotas. The second measure is the year in which a country ratified the Convention on the Elimination of All forms of Discrimination against Women (CEDAW). CEDAW is a UN convention adopted by the General Assembly in 1979 which promotes the rights of women. All but two sub-Saharan African countries (Somalia and Sudan) have ratified CEDAW³. Ratification can be thought of as a) a country being more modern, or b) a country wishing to appear more modern. The third measure best captures how “traditional” a country is in terms of its laws. Specifically, I code countries as having more or less traditional marriage laws – a country with no minimum legal

age at marriage and where customary laws are allowed to trump civil law would count as traditional. A country with a minimum legal age at marriage that is the same for men and women and includes a formal statement of equality of both sexes before the law would not be traditional. This variable is fixed and comes from a variety of sources; it is currently missing for seven countries. [ADD CITES]

Control Variables I investigate a remaining set of variables as controls for factors that might influence population policy adoption. These include variables related to demographic and economic growth that change each year, including the growth rate in gross domestic product, the population growth rate, and the population density (World Bank 2005). I also want to control for the history of the family planning movement in a given country, which I operationalize as the year in which the country affiliate of the International Planned Parenthood Federation (IPPF) was established. Although this organization was not necessarily affiliated with the IPPF at the time of its founding, most organizations that were the first to provide family planning services in their countries did go on to be the IPPF country affiliate. This variable comes from the IPPF (2006) and exists for all but seven countries. Finally, I also consider the country's former colonial power (Belgian, British, French, Portuguese, or some other country/no country), and the predominant religion, both from Bratton and van de Walle (1997).

The rationale for including former colonial power (besides the fact that all analyses of African countries include it) is that most African countries have maintained ties with former colonial powers, either formally or more informally through means such as development assistance. If former colonial powers differentially decided to promote neo-Malthusian agendas, this could explain patterns in policy adoption. The inclusion of religion is less justified theoretically than that of former colonial power. One would expect a strongly religious country

³ As is the case with many UN treaties, the US has never ratified CEDAW.

to be less likely to adopt a population policy, given that such policies bring up public discussions of sex, women's roles, and contraception. There is no reason to believe, however, that a devout Muslim country would be any less likely than a devout Christian country to adopt a population policy. Ideally, then, I would use a measure of a country's level of religiosity. I don't have this measure, however, and so include information on the religious identification of each countries' population.

I analyze the relationship between population policy adoption and the measures above using a variety of techniques. The first is bivariate analyses between groups of interest: a comparison of those countries that adopted policies to those that did not, and then a second comparison of those countries that adopted policies prior to 1994 to those that adopted policies after 1994. Because it is difficult to include time-varying variables in a bivariate comparison, particularly one that includes those countries that did not adopt policies, the second methodological technique is analytical and makes up for these shortcomings: event-history analysis to examine which factors predict when countries adopted population policies. I use discrete-time methods because policy adoption is a discrete-time process and because it makes it easier to handle tied data (years in which more than one country adopted a policy). The process of policy adoption is best thought of as discrete because when in a given year a policy was passed by a legislature or signed into law by a military ruler is not particularly significant and most likely depends on factors unrelated to policy adoption. Event history analysis results in a logistic regression of the following form:

$$\text{Log}(P_{it}/(1 - P_{it})) = \alpha_t + \beta_1 x_i + \beta_2 z_{it}$$

where P_{it} is the probability that country i adopts a population policy in year t assuming that it has not already done so, α is a constant in year t , x_i is a time-constant vector of covariates for country

i , z_{it} is a vector of time-varying covariates for country i , and β_1 and β_2 are vectors of effects describing x_i and z_{it} , respectively (Allison 1995). The data are organized into country-years of observations. Countries are observed either until they adopt a population policy, or until 2003 (the most recent year for which data were readily available), whichever comes sooner. I finish the analysis by exploring possible diffusion mechanisms.

I begin data analysis in 1984, the year of the United Nations population conference in Mexico City where developing nations first expressed strong interest in international assistance for population activities. This date thus marks the beginning of the period in which population policy was a viable option. Given the size of the sample (47 countries, of which only 32 ever adopt policies), the sample can only be split into two groups based on countries' date of policy adoption. Kenya and Ghana, who adopted policies in the 1960s, are outliers and are excluded, leaving a total of 30 adopters out of 45 possible adopters.

For the two-group comparison by time, I use 1994 as the breakpoint in time. This makes sense because of the influence that the UN International Conference on Population and Development (ICPD), held that year in Cairo, had on population policy adoption. Conveniently, 15 countries adopted population policies before 1994 and another 15 did so after. Specifically, the Programme of Action produced at the ICPD and signed by 179 countries states as Principle 5 of 15 that "Population-related goals and policies are integral parts of cultural, economic and social development, the principal aim of which is to improve the quality of life of all people" (UN 1994). In a related vein, Principle 6 states, "To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate policies, including population-related policies, in order to meet the needs of current generations without compromising the ability of

future generations to meet their own needs” (ibid.). These explicit statements, in addition to the Programme of Action’s overall message that government-managed policies and programs can bring about desirable social change, indicate that countries who did not already have a population policy in 1994 and whose delegates attended the conference would have most likely started to feel pressured to adopt such a policy after that date.

EVIDENCE

I start with a bivariate analysis of whether countries adopted population policies at all. Table 3 compares the characteristics of countries that ever adopted population policies to those that did not. (Refer to Table 1 for the countries that make up each group.) This table includes only those variables that are fixed; bolded values indicate a statistically significant difference between the two groups. The first set of variables refers to state capacity. We see that relative to those countries that never adopted population policies, the countries that did adopt policies have more difficult political geographies, greater levels of ethnolinguistic fractionalization, and received more structural adjustment loans during the 1980s. In other words, countries that adopted policies had lower governmental capacity than those that did not. The second set of variables relates to modernity and tradition and although none of the differences between adopters and non-adopters are significant, the values of the variables still tell an important story. Countries that adopted population policies have more traditional marriage laws yet ratified the CEDAW convention earlier, suggesting tension between actual law and how countries desired to appear on the international scene. The percentage of parliamentary seats held by women goes in the opposite direction than expected, namely those countries who adopted population policies had greater percentages of women in parliament.

The third group of variables in Table 2 is the controls. The only variable that is significantly different for the two groups is the year in which the International Planned Parenthood Federation (IPPF) affiliate was founded: countries that adopted population policies had an IPPF affiliate earlier than those that did not. This variable suggests that the existence of a family planning movement smoothed the way for a population policy – most likely the same forces that influenced the creation of an IPPF affiliate also influenced the creation of a population policy. In terms of former colonial power, former British and French colonies are more likely to have adopted a population policy than former Belgian, Portuguese, or other (not shown) colonies. Finally, there does not seem to be an effect of religion, when measured as either the percentage of the population that is Muslim or the percentage who practice a traditional religion. Table 2 thus shows that countries that adopted population policies had lower capacity and were perhaps more “traditional” but wanted to appear “modern.”

Table 3 examines the group of countries that adopted population policies to see whether those who adopted policies first (1993 and earlier) are different than those who adopted policies later (1994 or after). For characteristics that vary over time, the table includes the average value for the five years preceding the year of policy adoption. As a result, Table 3 includes all the variables from Table 2, in addition to variables that are not fixed in time. Again, statistically significant differences between groups are bolded. Looking first at state capacity, the characteristics of early adopters partially support the findings from Table 2: these countries have more difficult political geographies and greater ethnolinguistic fractionalization than later adopters. The number of structural adjustment loans received during the 1980s, as well as the values for Polity², are very similar for both groups of countries. Interestingly, countries that

adopted policies earlier actually had significantly *lower* levels of IBRD loans (relative to GDP) than those that adopted policies later. This finding is somewhat contrary to expectations.

In terms of the measurement of factors related to modernity and tradition, Table 3 parallels Table 2: a greater percentage of early adopters had traditional marriage laws, yet these same countries ratified CEDAW on average five years earlier than later adopters. In this table, the percentage of parliamentary seats held by women goes in the expected direction, with early adopters having fewer women in parliament than later adopters (suggesting they were particularly interested in finding a way to show that they were modern). The inclusion of time-varying factors makes the control variables in Table 3 more interesting than Table 2. Here we see that the first countries to adopt policies had higher levels of population growth accompanied by lower levels of GDP growth, as well as higher levels of population density. Again, like Table 2, the year of founding of the IPPF affiliate is significantly earlier for the early adopters of population policy than for the later adopters, and we observe similar patterns by former colonial power. The major difference, then, that appears is the difference in the mean percentage of each groups' countries' populations that is Muslim: the early adopters are on average only 16% Muslim, while the late adopters are 47% Muslim. These results suggest that countries with large Muslim populations were unwilling to be the innovators and adopt population policies first⁴.

Overall, the results from the bivariate analyses suggest that the same sorts of characteristics are associated with countries who adopted policies at all, as well with those countries that adopted policies first. Specifically, countries with lower governmental capacity and who were striving to appear more modern were more likely to adopt population policies and to adopt them sooner.

⁴ Although it is worth noting that Senegal, one of the first countries to adopt a policy, in 1988, is approximately 90% Muslim.

Next, I consider the same question of the differences between adopters and non-adopters, as well as between early and late adopters, using event-history analysis, which makes it possible to include information in the analysis on those countries that never adopted policies, as well as to include time-varying covariates. The data are organized into country-years of observations, starting in 1984 and carrying on until a country either adopts a population policy or 2003, whichever is earlier. Table 4 shows odds ratios for the effect of characteristics on the likelihood of policy adoption in a given year for a variety of different models. To capture a country's desire to appear "modern," all models include a variable that ranks countries by the year in which it ratified CEDAW. Higher values correspond to later (or no) ratification at all. To pick up on a country's dependence on outside organizations, all models include the variable that measures the level of IBRD loans as a percentage of GDP. In addition, all models include the same control variables: the percentage of a country's population that is Muslim, the country's former colonial power (the comparison group is not British or French, the two main colonizers), the population growth rate, the GDP growth rate, and an interaction term for these two growth rates.

The first three models serve as a comparison between different measures of governmental capacity. The first model uses Polity², which varies over time and is larger for countries with greater capacity. Here we see that countries whose IBRD loans make up a greater percentage of their GDP and that have lower capacity are more likely to adopt population policies. The direction and significance of the odds ratio for IBRD loans is different than that observed in the bivariate analysis, but now in the expected direction. Countries that ratified CEDAW later are less likely to adopt population policies, although this coefficient is not significant, and former British and French colonies are more likely to adopt population policies than countries that are former colonies of other countries (or were never colonies at all). Perhaps most interestingly, the

importance of the percentage of the population that is Muslim, GDP growth rates, and population growth rates observed in the bivariate analysis completely disappears in the multivariate setting. These findings are mirrored in the next two models, which substitute different measures of state capacity, political geography and then ethnolinguistic fractionalization, for Polity². The results from the multivariate analysis can be summarized as follows: countries with lower capacity, who wished to appear modern, and who were former British or French colonies were more likely to adopt population policies.

Given that the first countries to adopt policies were different from those that did so later, what explains population policy adoption by these later countries? Diffusion makes sense, either because countries that had not adopted population policies saw benefits accruing to countries that had, or because a population policy did become something that a “modern” nation should have. Without deeply analyzing the motivations for mimicry, it is at least possible to speculate on the mechanism for how countries might have communicated with one another about population policies. Based on the map in Figure 1, there appears to have been some geographic pattern in policy adoption: first countries in coastal West Africa, then Sahelian (inland) West Africa, and then southern Africa. Although neighboring countries do communicate with one another, a more likely vehicle for diffusion is economic communities, which are geographically based. Most African countries are a member of one or more economic communities, whose member states hold meetings and regularly communicate with one another. The timing of policy adoption shown in the map in Figure 1 matches fairly well with Africa’s economic communities: 16 countries in West Africa form the Economic Community of West African States (ECOWAS) and 14 countries in southern Africa make up the Southern African Development Community (SADC). These regions adopted population policies first. The region associated the least with

policy adoption, central Africa, happens to comprise the Economic Community of Central African States (ECCAS), which has had a somewhat disorganized past 20 years⁵. This correspondence between the larger and more established regional economic communities and the timing of policy adoption suggests that the idea of population policies may have diffused through these economic communities, and/or that these communities may have served as points of contact for interested outside organizations. The remaining three models (Models 4-6) in Table 4 explore the possibility of diffusion as an explanatory factor for population policy adoption.

Model (3), the first diffusion model, is the same as Model (1) except it includes a variable that measures the percentage of countries in a given country's economic community (or communities) that have adopted a population policy. In Model (3), inclusion of the diffusion variable washes out the effect of the level of IBRD loans but leaves the effect of being a former British or French colony. Population growth rates and GDP growth rates still have no effect. It is clear, however, that economic communities play a big role in population policy adoption. The final two models are another way to check for the role of diffusion. Model (5) includes the period from 1984 to 1993 while Model (6) includes the period from 1994 to 2003. Following Tolbert and Zucker (1983), if diffusion is at play, we would expect the model to fit better in the first time period than the second. Model (5) does indeed fit better than Model (6), although this is somewhat of an artifact of sample size (larger in the first time period than the second). The most important thing to note about Model (5) is that the diffusion effect washes out all other variables except the effect of the year of CEDAW ratification (countries that ratified the convention early were more likely to adopt population policies) and the effect of the percentage of the population that is Muslim (which *increases* the likelihood of adopting a population

⁵ The former Portuguese colonies, mainly located in central Africa, also have a community whose status may provide an explanation for their general failure to adopt population policies [ADD CITE].

policy). In Model (6), the effect of state capacity returns (stronger states are less likely to adopt policies) while the direction switches on the effect of desiring to appear more modern (year of CEDAW ratification). This latter finding is most likely the result of a greater proportion of the sample being made up of countries that had not yet ratified CEDAW or did so only very late.

Taken together, the models presented in Table 4 show that countries with lower capacity who wished to appear more modern, and who were former British or French colonies were more likely to adopt population policies. There is strong evidence for diffusion, most likely through economic communities. Interestingly, although hypothetically important characteristics (GDP growth rates and population growth rates) predict earlier population policy adoption in the bivariate analysis, these factors cease to matter once other variables are taken into account in the multivariate setting.

If the first countries that adopted policies differ from the later countries (and from the countries that never adopted policies), what prompted the very first countries to adopt population policies? I explore this question in the next chapter, a case study of Nigeria and Senegal, where I analyze further why these countries were the first two to adopt population policies (in 1988). This analysis is based on archival research as well as data from interviews conducted in-country with population experts. In the case of Senegal, the World Bank required the development of a population policy before releasing part of its third structural adjustment loan to Senegal (Sai and Chester 1990)⁶. There is also evidence, however, that Senegal (a resource-poor country), has become particularly adept at extracting resources from foreign donors (cf. Bayart 2000).

CONCLUSION

⁶ Interestingly, in fieldwork conducted by the author in Dakar, Senegal in 2004 and 2006 with multiple members of Senegal's population community, only several people mentioned the role of the World Bank in the development of Senegal's 1988 population policy.

The process of population policy adoption in sub-Saharan Africa is best explained as one in which a set of innovative countries, which had lower capacity but who wished to appear modern in spite of being more traditional, adopted policies. Their neighbors and peers in economic communities were influenced to do the same, most likely because they desired to obtain the same outcomes as their neighbors, including legitimacy within the global and African communities, and perhaps even increased foreign aid. Thus the case of population policy adoption in Africa is ultimately one of diffusion, but one where the first to act were actually the least modern, unlike most cases of diffusion. These early adopters did so both out of a desire to appear more modern, but also because their relatively low levels of capacity allowed external organizations with interests in population policy to exert influence on them.

This analysis indicates that although the influence of outside organizations was important across time, even after taking it into account, governmental capacity is an important predictive factor. The unique contribution of this chapter is that it successfully combines the impact of forces from different levels of social organization into a dynamic and complete story about population policy adoption. The findings presented in this chapter also describe the operation of macro-level structures associated with population policy and thus provide important background for studying the impact of these policies on the lived, reproductive experience of men and women.

AFTERTHOUGHTS

There are still a variety of variables whose relationship to policy adoption I plan to test. These include where prominent leaders were trained (to see whether those trained abroad might be more open to population policy) and spells of socialism (to see if non-socialist governments were more likely to adopt policies).

BIBLIOGRAPHY

- Acemoglu, Daron. 2005. "Politics and Economics in Weak and Strong States." NBER Working Paper Series #11275. Available online at www.nber.org/papers/w11275.
- Alesina, Alberto, Arnaud Devleeshauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg. 2003. "Fractionalization." *Journal of Economic Growth* 8: 155-194.
- Allison, Paul D. 1995. *Survival Analysis Using SAS: A Practical Guide*. Cary, NC: SAS Institute.
- Annual Review of Population Law (ARPL). 1988, 1990, 1991, 1993, 1994/95, and 1996/97. Available online at http://annualreview.law.harvard.edu/annual_review.htm.
- Atkinson, Michael M. and William D. Coleman. 1989. "Strong States and Weak States: Sectoral Policy Networks in Advanced Capitalist Economies." *British Journal of Political Science* 19(1): 47-67.
- Barrett, Deborah. 1995. *Reproducing Persons as a Global Concern: The Making of an Institution*. PhD. Diss, Sociology Department, Stanford University, Stanford, CA.
- Barrett, Deborah and Amy Ong Tsui. 1999. "Policy as Symbolic Statement: International Response to National Population Policies." *Social Forces* 78(1): 213-234.
- Barrett, Deborah and David John Frank. 1999. "Population Control for National Development: From World Discourse to National Policies." Pp. 198-221 in *Constructing World Culture: International Nongovernmental Organizations Since 1875*, edited by John Boli and George M. Thomas. Stanford, CA: Stanford University Press.
- Bayart, Jean-François. 2000. "Africa in the World: A History of Extraversion." *African Affairs* 99: 217-267.
- Beckfield, J. 2003. "Inequality in the World Polity: The Structure of International Organization." *American Sociological Review* 68(3): 401-424.
- Boli, John and George M. Thomas. 1997. "World Culture in the World Polity: A Century of International Non-Governmental Organization." *American Sociological Review* 62: 171-190.
- Bongaarts, John and Susan Cotts Watkins. 1996. "Social Interactions and Contemporary Fertility Transitions." *Population and Development Review* 22(4): 639-682.
- Bourdieu, Pierre and Loïc JD Wacquant. 1992. *An Invitation to Reflexive Sociology*. Chicago: University of Chicago Press.
- Chimbwete, Chiweni, Susan Cotts Watkins, and Eliya Msiyaphazi Zulu. 2005. "The Evolution of Population Policies in Kenya and Malawi." *Population Research and Policy Review* 24: 85-106.
- Connelly, Matthew. 2003. "Population Control is History: New Perspectives on the International Campaign to Limit Population Growth." *Comparative Studies in Society and History* 45 (1): 122-147.
- Dixon-Mueller, Ruth. 1993. *Population Policy and Women's Rights: Transforming Reproductive Choice*. Westport, CT: Praeger.
- Eberstadt, Nicolas. 1994. "Population Policy: Ideology as Science." *First Things* 40: 30-38.
- Englebort, Pierre. 2000. *State Legitimacy and Development in Africa*. Boulder, CO: Lynne Rienner Publishers.
- Federal Republic of Nigeria. 1988. *National Policy on Population for Development, Unity, Progress, and Self-Reliance*. Lagos: Federal Ministry of Health/Department of Population Activities.

- Foucault, Michel. 1988. "Political Technology of Individuals." Pp. 145-162 in *Technologies of the Self: A Seminar with Michel Foucault*, edited by Luther H. Martin, Huck Gutman, and Patrick H. Hutton. London: Tavistock.
- . 1991. "Governmentality." Pp. 87-104 in *The Foucault Effect: Studies in Governmentality*, edited by G. Burchell, C. Gordon, and P. Miller. Chicago: University of Chicago Press.
- Greenhalgh, Susan. 1990. "The Evolution of the One-Child Policy in Shaanxi, 1979-88." *The China Quarterly* 122: 191-229.
- Herbst, Jeffrey. 1990. "The Structural Adjustment of Politics in Africa." *World Development* 18(7): 949-958.
- . 2000. *States and Power in Africa*. Princeton, NJ: Princeton University Press.
- Hartmann, Betsy. 1995. *Reproductive Rights and Wrongs*. Boston, MA: South End Press.
- Hoodfar, Homa and Sasmad Assadpour. 2000. "The Politics of Population Policy in the Islamic Republic of Iran." *Studies in Family Planning* 31(1): 19-34.
- Hyden, Goren. 1980. *Beyond Ujamaa in Tanzania: Underdevelopment and an Uncaptured Peasantry*. London: Heinemann Educational.
- Kaler, Amy. 2003. *Running After Pills*. Portsmouth, NH: Heinemann.
- Lacey, Linda. 1990. "The New Generation of African Population Policies." Pp. 135-146 in *Population Policy: Contemporary Issues*, edited by Godfrey Roberts. New York: Praeger.
- Meyer, John W. 2004. "The Nation as Babbitt: How Countries Conform." *Contexts* 3(3): 42-47.
- Montgomery, John D., Harold D. Lasswell, and Joel S. Migdal, eds. 1979. *Patterns of Policy: Comparative and Longitudinal Studies of Population Events*. New Brunswick, NJ: Transaction Books.
- Nassim, Janet and Fred T. Sai. 1990. "Family Planning and Maternal and Child Health in the World Bank's Population, Health, and Nutrition Program," in *Health Care for Women and Children in Developing Countries*, edited by Helen M. Wallace and Giri Kanti. Oakland, CA: Third Party Press.
- Ness, Gayl D. and Hirofumi Ando. 1984. *The Land is Shrinking: Population Planning in Asia*. Baltimore, MD: The Johns Hopkins University Press.
- Newland, Lynda. 2001. "The Development of the Prosperous Family: Family Planning in West Java." *National Women's Studies Association Journal* 13(3): 22-48.
- Polity IV Project. 2003. *Polity IV Data Series*. University of Maryland, College Park, MD: INSCR Program. Available online at <http://www.cidcm.umd.edu/inscr/polity/>.
- Républic du Sénégal. 1988. *Déclaration de la Politique de la Population*. Dakar, Senegal: Ministry of Planning and Cooperation, Directorate of Human Resources.
- Sai, Fred T. and Lauren A. Chester. 1990. "The Role of the World Bank in Shaping Third World Population Policy." Pp. 179-191 in *Population Policy: Contemporary Issues*, edited by Godfrey Roberts. New York: Praeger.
- Tolbert, Pamela S. and Lynne G. Zucker. 1983. "Institutional Sources of Change in the Formal Structure of Organizations: The Diffusion of Civil Service Reform, 1880-1935." *Administrative Science Quarterly* 28(1): 22-39.
- United Nations (UN). 1994. *Programme of Action of the International Conference on Population and Development*. Available online at http://www.unfpa.org/icpd/icpd_poa.htm.

- _____. 2004. *World Population Policies 2003*. New York: United Nations.
- United Nations Population Fund (UNFPA). 2003. *Country Profiles for Population and Reproductive Health: Policy Developments and Indicators*. New York: UNFPA.
- White, Tyrene. 1994. "Two Kinds of Production: The Evolution of China's Family Planning Policy in the 1980s." *Population and Development Review* 20 (supplement): 137-158.
- World Bank. 2005. *World Development Indicators*. Available online at <http://www.worldbank.org/data/wdi2005/index.html>.

Table 1. Adoption of National Population Policies in Sub-Saharan Africa, 1988-99

Year	Country	Annual Frequency	Cumulative Frequency	Cumulative Percentage
1988	Liberia, Senegal, Nigeria	3	3	7%
1989	Sierra Leone, Zambia	2	5	11
1990	Madagascar, Rwanda	2	7	16
1991	Burkina Faso, Mali	2	9	20
1992	Cameroon, Gambia, Guinea, Niger, Tanzania	5	14	31
1993	Ethiopia	1	15	33
1994	Chad, Malawi, Lesotho	3	18	40
1995	Cape Verde, Mauritania, Uganda	3	21	47
1996	Benin	1	22	49
1997	Botswana, Côte d'Ivoire, Namibia	3	25	56
1998	Central African Republic, South Africa, Togo, Zimbabwe	4	29	64
1999	Mozambique	1	30	67
<i>Total</i>		<i>30</i>	<i>30</i>	<i>67</i>

Source: Author's data (see text for details)

Note: Kenya and Ghana adopted population policies in 1967 and 1969, respectively, but are treated as outliers for this analysis. Thus they are excluded from the denominator for the cumulative percentage, which is treated as constant over time (at 45 countries), although new states were created during the period of interest (Namibia in 1990, Eritrea in 1993)

States that have not yet adopted population policies include: Angola, Burundi, Comoros, Congo, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Gabon, Guinea-Bissau, Mauritius, Sao Tomé et Príncipe, Somalia, Sudan, and Swaziland

Table 2. Mean Values of Non-Varying Characteristics Influencing Population Policy Adoption, 1984 –2003, Sub-Saharan Africa, by Whether Country Adopted a Policy

<i>Measure</i>	<i>Policy Adopter?</i>	
	Yes	No
<i>State Capacity</i>		
Countries with Difficult Political Geography (%)	57	27
Ethnolinguistic Fractionalization (mean)	0.70**	0.55**
Structural Adjustment Loans Received (#, 1980-89)	5.5	4.1
<i>Modernity & Tradition</i>		
Countries with “Traditional” Marriage Laws (%)	71	60
Parliamentary Seats Held by Women (% , 1995)	9.4	6.4
Year of Ratification of CEDAW (mean)	1989	1991
<i>Control Variables</i>		
Year of Founding of IPPF Affiliate (mean)	1977	1985
Former Belgian Colony (%)	3.3	13.3
Former British Colony (%)	36.7	26.7
Former French Colony (%)	43.3	26.7
Former Portuguese Colony (%)	6.7	20.0
Muslim (mean % of population)	31.4	27.5
“Traditional” Religion (mean % of population)	32.1	27.9

Source: Author’s data (see text for details).

- **Bold** indicates values are statistically different using pooled t-test at the $p < 0.10$ level
- * indicates values are statistically different using pooled t-test at the $p < 0.05$ level
- ** indicates values are statistically different using pooled t-test as the $p < 0.01$ level

Table 3. Mean Values of Characteristics Influencing Population Policy Adoption, 1984 – 2003, Sub-Saharan Africa, by Timing of Policy Adoption

<i>Measure</i>	<i>Date of Policy Adoption</i>	
	1993 and Earlier	1994 and Later
<i>State Capacity</i>		
Countries with Difficult Political Geography (%)	0.60	0.53
Ethnolinguistic Fractionalization (mean)	0.77	0.64
Structural Adjustment Loans Received (#, 1980-89)	5.3	5.6
Total IBRD Loans (as % of GDP)	0.17	0.28
Political Strength (Polity ² , 0 = weak, 100 = strong)	46	42
<i>Modernity & Tradition</i>		
Countries with “Traditional” Marriage Laws (%)	0.80	0.62
Parliamentary Seats Held by Women (% , 1995)	7.6	10.8
Year of Ratification of CEDAW (mean)	1987*	1992*
<i>Control Variables</i>		
Population Growth Rate (annual %)	3.0*	2.5*
GDP Growth Rate (annual %)	1.4**	4.2**
Population Density (people per km ²)	50	40
Year of Founding of IPPF Affiliate (mean)	1973*	1983*
Former Belgian Colony (%)	6.7	0.0
Former British Colony (%)	33.3	40.0
Former French Colony (%)	46.7	40.0
Former Portuguese Colony (%)	0.0	13.3
Muslim (mean % of population)	15.9*	46.9*
“Traditional” Religion (mean % of population)	27.4	36.9

Source: Author’s data (see text for details). Time-varying characteristics are the average values for the five years preceding (and not including the year of) population policy adoption.

- **Bold** indicates values are statistically different using pooled t-test at the $p < 0.10$ level
- * indicates values are statistically different using pooled t-test at the $p < 0.05$ level
- ** indicates values are statistically different using pooled t-test at the $p < 0.01$ level

Table 4. Odds Ratio Estimates from Selected Logistic Regressions Predicting Population Policy Adoption over Time, 1984-2003, Sub-Saharan Africa

Timing	Different Measures of State Capacity			Addition of Diffusion		
	All Years			All Years	1993 and Earlier	1994 and Later
Model Number	(1)	(2)	(3)	(4)	(5)	(6)
Mode Name	Polity ²	Political Geography	ELF	Polity ²	Polity ²	Polity ²
<i>State Capacity</i>						
Total IBRD Loans (as % of GDP)	4.14	2.86	4.21	1.91	0.41	35.4
Political Strength (Polity ²)	0.98			0.98	0.98	0.98*
Difficult Political Geography		2.31*				
Ethnolinguistic Fractionalization (ELF)			7.97			
<i>Modernity & Tradition</i>						
Rank of Year of Ratification of CEDAW	0.96	0.93	0.97	0.96	0.88*	1.16
<i>Controls</i>						
Muslim (% of population)	1.00	1.01	1.01	1.01	1.02*	0.98
Former British Colony	6.72*	3.16	3.23	10.34**	2.91	80.64*
Former French Colony	3.91	3.32	2.87	4.55	0.92	67.94**
GDP Growth Rate	1.09	1.06	1.06	1.12	1.12	0.95**
Population Growth Rate	0.69	0.65	0.61	0.77	0.79	0.33
GDP Growth rate * Population Growth rate	0.97	0.98	0.98	0.96	0.96	1.03
<i>Diffusion</i>						
Economic Community Members with Policy (%)				17.99**	160.90*	16.38
N	504	536	519	504	343	161
-2 Log L	199	208	207	189	99	69

Source: Author's data (see text for details)

- **Bold** indicates values are statistically different using pooled t-test at the $p < 0.10$ level
- * indicates values are statistically different using pooled t-test at the $p < 0.05$ level
- ** indicates values are statistically different using pooled t-test at the $p < 0.01$ level

Figure 1. Population Policy Adoption across Time and Space in Sub-Saharan Africa

