ADDRESSING FERTILITY DECLINE IN THE EUROPEAN UNION THROUGH SEXUAL AND REPRODUCTIVE RIGHTS

Reilly Anne Dempsey, JD

Masters Integrative Project

Global Health Track
Review Article

Sponsor: Miguel Muñoz-Laboy

Department of Sociomedical Sciences
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ABSTRACT[1]

Fertility is declining at a rapid pace in European Union member states, where a majority of countries have fallen below replacement level fertility rates. If this trend continues (and it is expected to do so), there will likely be severe economic and social impacts, ranging from an inability to support ageing populations to a lack of taxable income for social sector funding. Studies on individual level preferences for childbearing show that this decline is not due to people's desires to have less children, but due to economic, social, and health burdens which have developed in recent years as a result of social liberalism and new capitalism. To that end, the European Union has taken steps to research, develop, and implement new policies aimed at employment and childcare sectors in an attempt to address some of the causes of declining fertility. Yet these policies alone are not capable of having a significant positive impact on fertility. Rather, it is a systems-thinking, human rights based approach to policy that will likely lead to increases in fertility. A necessary (though not sufficient) piece is a robust sexual and reproductive health and rights policy. My research shows a strong relationship between comprehensive sexual and reproductive health care and higher fertility. This paper explores this relationship in great detail, culminating in proposed policy language for the European Union to adopt and implement such a policy under systems thinking, human rights based framework.

INTRODUCTION

More than 60 nations worldwide are reporting critically low levels of fertility. This trend is moving at a faster pace than any other demographic transition the world has seen, particularly in the European Union.[2] Declining fertility began over a century ago in some European countries apart from the post-war baby boom of the 1950s and 1960s.[3] These trends are now stretching across the globe.[4] Coupled with the overall ageing of many populations, the world is facing an imminent and drastic change in demographics. By 2100, the length of life will have tripled from that in 1800; births per woman will have dropped from six to two (globally).[3]

This decline in fertility is following the social gradient. In general, at the higher end of the gradient there is lower fertility, and at the lower end of the gradient there is trend towards higher fertility. Policy makers should take a systems thinking, human rights based approach to develop overlapping and interconnected policies and programmes to effectively address fertility declines. Stronger economic, social, and health policies will not only allow for individuals to more freely achieve desired fertility, but will also alleviate the potentially severe impacts of changing demographics. I posit that sexual and reproductive health and rights, along with other social programs such as employment policies, education systems, primary health care, and housing, are all necessary (but not sufficient if taken alone) to adequately address declining fertility rates.[5]

Though some hold that the introduction of radical new forms of contraception played a role in global fertility decline,[6] others posit that the transition was occurring long before the advent of these reproductive technologies.[7] The argument in contemporary contexts is that governments need to shift from traditional family planning programs to the broader social agenda sexual and

reproductive health programs outlined in the Programme of Action from the International Conference on Population and Development held in Cairo in 1994.[6] Unfortunately, many policy makers have recently responded to fears about declining fertility with restrictions on reproductive health care, rather than moving to this broader social agenda. Restricting access to sexual and reproductive health services will lead to negative outcomes, both direct and indirect, and will not lead to increased fertility. Conversely "good fertility policy also involves widespread access to a full range of methods of fertility control…[for example,] if women are not in a position to control their own fertility, they may not form a relationship with a man."[8 (p. 434)] At issue in the paper is the development of such a policy.

The overall goal for this review is to develop a robust sexual and reproductive health and rights policy for the European Union that will strategically address the challenges of low and lowest-low fertility rates alongside ageing populations, as well as broad sexual and reproductive health needs. This paper has five sections. I will first briefly explore the background and significance of fertility decline in the European Union. Second, I will lay out the theoretical and applied frameworks that will guide and structure the development of the policy. In the third section, I explore in more detail how fertility acts along the social gradient, positing explanations for this trend. Next, through statistical and contextual analyses, I will show the relationship between sexual and reproductive health and rights and fertility, highlighting the variations in Northern, Western, Southern, and Eastern Europe. Finally, I propose specific policy language.

BACKGROUND AND SIGNIFICANCE

Fertility is declining across the globe. In more developed nations, fertility rates have plunged below replacement level (2.1 children per woman). Developing nations are following the same trend, although it will take some time before these nations fall below replacement level. Fertility rates below replacement level, coupled with improvements in health technology leading to a longer life and ageing populations, lead to severe social and economic challenges. Yet policy makers have been slow to address the problem. Many thought that declining fertility rates in the 1980s were temporary phenomena and would cyclically return to replacement levels (the "tempo effect").[9] This theory has essentially been abandoned with the persistence of low and declining fertility.[10] Some decision makers were wary of policies that harkened to fascism and eugenics. Despite these early theories and fears, fertility decline continues. Because fertility decline is largely dependent on government decisions regarding economic and social policies, there is an onus on governments to enact policies and programmes to assist individuals in achieving ideal fertility.

Is declining fertility necessarily a bad thing?

The first question many ask is: why is declining fertility a *bad* thing? With the current strain on natural and economic resources, is population decline a *good* thing? The answers to these questions are admittedly speculation, as this is a phenomenon not seen before.[4] However, most scholars and practitioners agree that falling below replacement level fertility will have negative consequences, some severe.[3] First and foremost, when coupled with the ageing of populations, dependency ratios will be heavily skewed (proportion of economically active individuals ages 15-64 to those over 65).[11] The economic challenges of the ageing population are, on their own,

potentially severe. But together with declining fertility the problems are exponentially worse. At bottom, there will not be enough young people to take care of the older generations. Second, there will simply not be enough workers to sustain current systems, especially young skilled workers who are more readily able to implement new technology.[9] This shortage will also result in a lack of income feeding social security and welfare programs, rendering it difficult for countries to survive in the international competitive economy.[9] Third, with this lack of economic activity comes a lack of taxable income.[12] Without taxes, government programs on education, health, housing, insurance schemes, and so on will likely be cut back or cut altogether.[4] This poses a direct challenge to public health. Additionally, though many fear that populations are and will continue to overtax natural resources, the burden on the earth is not from population growth, but over-consumption by relatively few and highly inefficient utilization of resources.

The bleakest outlook holds that rapidly changing demographics worldwide may lead to widespread conflict and major shifts in global power.[11] Declining fertility leads to "deepening concerns about the sustainability of society as we know it."[4 (p. 203)] But perhaps the most compelling reason to address declining fertility is because rates below replacement levels do not, generally, reflect individual wants and desires. Fertility is not declining because people do not want to have children; fertility is declining largely because economic and social conditions place excess burdens on families rendering the decision to have children (especially more than one) very difficult.[10] A study in the early 1990s shows that in European countries, on average, women wanted to have 2.16 children, but the reported fertility for the cohort averaged 1.88, a 0.28 difference (see annex 1 for full table).[2 (p. 427)] This study supports the theory that policies *can* have an impact on fertility by assisting women and men in achieving their desired number of

children. (Notably, however, this may not hold true in developing countries which remain far above replacement level fertility. In those countries, the decline may still be driven in part by individual preferences to have less children.[13]) Government policies to counter these difficult conditions have the potential for a very positive impact on changing fertility outcomes. If women and men did not want to have more children, policies would have little to no effect.

Why is fertility declining?

The most basic answer to this question is the Industrial Revolution, but the nuanced reasons that will lead to effective policies are much more complex.[14] Though highly dependent on individual level circumstances, there are many ecological level factors and contexts that play an important role in fertility outcomes.[10] Biological factors such as infertility and poor sexual health certainly contribute to the decline.[15] It is most likely a combination of all of these factors, the dynamics of which have been changing and evolving rapidly in the past fifty years. These changes can be categorized into two broad groups: social liberalism and new capitalism.[9] Social liberalism seems to affect fertility mostly in the evolution of women's rights. As women strive to achieve gender equality in the workplace, they necessarily take on more male-centric roles. These roles traditionally did not prioritize childbearing. In achieving equal opportunities for women in the public sphere, the private sphere has arguably suffered.

New capitalism has led to significant financial cutbacks in economic and social support structures.[9] Widespread reductions in social services have a significant impact on fertility, rendering the decision whether or not to have a child heavily dependent on financial determinants, rather than individual choice.[14] The demands of a capitalist neoliberal workforce

do not often allow for parents to adequately balance personal and professional lives.[8] Women and men both need to work in order to support a family. Most lucrative employment today is largely dependent on higher education. This leads to a postponement of first birth, which then leads to lower fertility rates per woman, decreasing the window of opportunity for childbearing.[10] Additionally, women's biological ability to reproduce decreases significantly with age, thus postponement makes it physically more challenging to have children, especially more than one. Other determining factors are delays in marriage, overall economic hardships, and, at issue in this paper, health care systems and reproductive and sexual health. Religion, gender relations, individual autonomy are other underlying reasons that scholars have posited affect fertility. To create a comprehensive list of why fertility is declining would be impossible; there are simply too many contextual factors and determinants. To that end, policies and programmes must take a broad, multidisciplinary, systems approach to even begin to have an impact.

What is the European Union doing about it?

Over the past few years, European Union governing bodies have recognized the dual problem of low fertility rates and ageing populations, which together are challenging policy makers in the region.[16] The European Commission in particular has been gathering facts, opinions, and policy proposals in order to potentially develop a future programme of action and new European Union policies to address the problem.[17] Solutions are often viewed through an isolated lens of employment, and, increasingly, geriatrics. Currently, the focus is on creating conditions and environments which are conducive to childbearing at younger ages, looking at workplace issues, the cost of child care and housing, non-discrimination in the employment sector, and various tax

benefits and economic incentives.[18] Notably, while public health issues are acknowledged as a critical factor, to date the European Union does not have a policy on sexual and reproductive health and rights.[19] While the European Court of Human Rights has handed down judgments relating to sexual and reproductive rights, these decisions are generally only applied to individuals and do not touch the systematic issues. Though a vote is pending to decriminalize abortion in Europe, the European Union has otherwise been reticent when it comes to sexual and reproductive health, leaving these policies to the jurisdiction of individual member states.[20] Continuing to leave sexual and reproductive health in the hands of national governments will have irreversible negative impacts on populations, ranging from strains on social welfare systems to gross disparities across socioeconomic classes to poor health outcomes. At bottom, it will also amount to a vast increase in spending on healthcare and benefits, as a sexual and reproductive health and rights strategy focusing on prevention and planning is highly cost effective. Piecemeal national sexual and reproductive health and rights strategies and European Union policies on employment are not adequate solutions to the challenges that lie ahead, both in terms of changing demographics and sexual and reproductive health and rights. This policy addresses both in a comprehensive and strategic manner.

APPROACHES

Public health framework

What is public health? In short, it is the study of health and health-related issues at a community level, paying particular attention to the social determinants of health. In application, public health practitioners rely on quantitative and qualitative research to develop interventions, programmes, and policies to improve health outcomes at the community level. The fundamental

aspects of public health are assessment, policy development, and the assurance of services to ensure that the underlying conditions needed for physical, mental, or social well being are provided to all people in society.[21]

In recent years, public health scholars and practitioners have begun to move to a systems thinking approach. This approach is cognizant of the fact that public health is intimately dependant on wide contexts and relationships. At the community level, people become ill not just because of a germ or a virus; they become ill because of the social, economic, political, and cultural contexts which increase their vulnerability and exposure to germs and viruses and then create barriers in access to health care which exacerbate the illness.[22] Therefore, a systems thinking approach looks at public health through different lenses, creating a mosaic of perspectives and solutions to improve health outcomes. This framework provides space for understanding the interactions and interdependencies of these various aspects of health, providing a more in depth and responsive approach to public health. The systems thinking framework has four critical aspects.[23] First, a systems thinking framework is built upon the idea that the whole is made up of its parts.[23] While a systems thinking approach takes a larger view, that view must be based on specialized studies and scientific evidence on specific issues. Second, this approach is dependent on multidisciplinary understandings of health.[23] Public health practitioners must work across boundaries and interact with other practitioners and academics, mimicking how health itself crosses boundaries. Third, on a practical level, systems thinking methodology must also reflect the interaction and interconnectedness of public health. As practitioners, we must match appropriate research methods to public health problems. Often times, a systems thinking approach is best applied through mixed methods research. Fourth and

finally, a systems thinking framework looks at relationships, operating within a social ecological model.[23] This model, when applied to public health, shifts away from vertical, silo style policies and interventions to more comprehensive "ecological" approaches and solutions at the individual, community, and state levels.[24] Utilizing this model allows us to understand the complex socioeconomic, political, and environmental conditions which breed poor health outcomes and to design policies and programmes around this understanding.[24] The policy proposal in this paper will operate under a systems thinking framework with the social ecological model in order to address the incredibly complex and interrelated conditions which lead to declines in fertility. As Caldwell and Schindlmayr have observed, while there are many different specific explanations for fertility at the national level, there are also overarching commonalities that should not be overlooked.[14] A systems thinking approach leaves room for both.

Human rights framework/right to health

To be truly effective, policies to address fertility must also respect human rights.[11] But what are these rights? There are two different ways of engaging with human rights.[25] The first is the actual set of international and regional treaties, conventions, and other programmes of action which are legally binding. These legal instruments regulate the relationship between people and the state, although when actors (such as transnational corporations) act as a state would, some of the legal provisions apply. These rights apply to all individuals as the most fundamental rights of human beings, addressing principles of basic humanity.[21] The second side of human rights is more of an application – using the principles and ideas behind these legally binding fundamental aspects of humanity to policies and programmes in a variety of disciplines.[25] This is

conceptualized as the human rights based approach, providing a framework for policy-makers and practitioners to add value to their work.

Employing a rights-based approach incorporates the basic principles of human rights and the pillars of how human rights work. It is this rights-based approach that I will use in the development of a sexual and reproductive rights policy in the European Union. In the following paragraphs, I will lay out the primary principles and pillars.

Principles

While all human rights provisions differ, there are some core principles that apply to all rights based work. One of the key principles of a human rights based approach is participation, ensuring that policies and programmes are grounded in the needs and desires of those that will be affected. For fertility, participation is absolutely critical. As introduced earlier, researchers have noted that much of the decline seen in fertility does not reflect a drastic change in individual desires to have less children; rather, there is difference between ideal fertility and realistic fertility. Fertility has become dependent on "the degree of confidence that potential parents have about their capacity to undertake family formation." [9(p. 495)] This leads to the conclusion that fertility will increase to meet personal preferences if the government can provide the social services and care necessary to counter the challenges of modern economic and social conditions. Sexual and reproductive rights and health care, developed and implemented in a participatory manner, will provide an important (and necessary) platform for individuals to achieve their desired fertility.

Some of the other key principles which will be inherent in this proposed policy are: a focus on vulnerable groups, non-discrimination, participation, transparency, and accountability.[26] These concepts are of particular concern when developing a sexual and reproductive health and rights policy. The policy must pay special attention to vulnerable groups, namely communities that are marginalized socially or economically.[26] Non-discrimination must play an important role in the policy to protect individuals. Transparency is also a key aspect of a rights based policy, allowing individuals and communities to have access to information and knowledge of government activity.[26] Finally, there must be a provision for accountability. Governments must be held to task through a functioning system of accountability in order to see truly meaningful results and realization of rights.[26] All of these principles will play a key role in the development of this policy and should continue to play a role in the implementation of the policy as well.

Pillars

In ratifying legally binding human rights instruments, states agree to 1) respect, 2) protect, and 3) fulfill the obligations contained within.[27] These three elements apply equally to all human rights. *Respect* requires that the government refrain from interfering with human rights, including adopting or repealing legislation, policies, programs, or other forms of state action.[28] *Protect* requires governments to become pseudo-watchdogs of third parties at risk of violating the human rights of citizens, including intra-governmental safeguard mechanisms.[28] *Fulfill* requires that governments take all appropriate measures towards the full realization of human rights.[29] Similarly, the pillars of availability, accessibility, acceptability, and quality are to be applied to all human rights in order to guide governments.[30] *Availability* refers to the general quantity of programs and resources that the government provides. *Accessibility* encompasses

four factors: government actions relating to the fulfillment of the right must be physically and geographically accessible, economically accessible, non-discriminatory, and must allow access to relevant information.[29] *Acceptability* indicates that measures taken must be respectful of ethical, religious, and other beliefs.[29] In other words, the people who are supposed to benefit from the programs must find them "acceptable" within their own lifestyle. Finally, the *quality* dimension refers simply to the level of quality of the government's actions. The third pillar of a human rights structure is the notion that all rights are interdependent, interrelated, indivisible, and universal.[31] This means that you cannot meaningfully fulfill one right without others and that all rights apply to everyone.[32] These three basic pillars of human rights (respect, protect, and fulfill; availability, accessibility, acceptability, quality; and interdependence, interrelatedness, indivisibility, and universality) are all critical in creating and adopting a rights-based policy. These principles and pillars will weave their way throughout the development of this policy.

The intersection of public health and human rights

Keeping in mind the systems thinking and social ecological approaches discussed previously, it is critical to understand how and why health and human rights can work together in the development of policies and programmes, specifically for sexual and reproductive health. The forefather of this movement was Jonathan Mann. In his seminal book, *Health and Human Rights*, Mann explores this intersection in three ways which are all pertinent to this policy.[33] First, health policies can violate human rights (both the actual legal provisions and the principles and pillars). This is represented by H → HR. Using sexual and reproductive health as an example, states that criminalize abortion violate human rights. Second, human rights violations

often have a health-related impact, represented by HR → H. Quite obviously, rape and other forms of sexual violence are human rights violations with important health impacts. Third, and perhaps most important for this policy, is the interaction of health and human rights, H ←→ HR. Here, Mann posits that "promotion and protection of human rights and promotion and protection of health are fundamentally linked."[33 (p. 11)] Policies and programmes can promote and protect human rights and health in tandem. Although this may seem quite accepted now, this was a groundbreaking framework just one decade ago. This concept engages with the public health understanding of social determinants of health.[34] A policy or programme that can address underlying social determinants will not only have positive health outcomes, but will promote and protect human rights as well. A robust sexual and reproductive rights policy that engages at this third level of health and human rights is the kind of policy needed to address declining fertility. In sum, the systems thinking and social ecological frameworks address public health through both multidisciplinary and interdisciplinary lenses and methods, understanding that there is a complex set of conditions at many ecological levels which affect health outcomes. Policies and programmes should therefore reflect these complexities and address conditions outside the traditional vertical scope of public health. In doing so, public health policies and programmes can also work to fulfill human rights while addressing the underlying social determinants of health. The policy proposal in this proposal will speak to many of these underlying conditions for fertility in both developing an understanding of underlying determinants and creating a horizontal policy which aims to address the interconnectedness of these determinants. This policy also, however, does not attempt to address *all* of the conditions and determinants for fertility, but will be flexible enough to respond to different conditions.

Sexual and reproductive health and rights

With these frameworks in mind, I will now turn to the core subject of this paper: sexual and reproductive health and rights. Reproductive health norms were first officially codified into international law with the Programme of Action adopted at the 1994 International Conference on Population and Development held in Cairo, Egypt. This was the first global affirmation that women and men should have control over the number and spacing of their children and the they had a right to sexual and reproductive health.[35] The Cairo Programme of Action moved away from previous concepts of reproductive health as a means of controlling fertility and towards framing reproductive health as a human right. The Programme of Action addressed these issues in terms of (1) bodily integrity and self-determination, (2) equality, and (3) enabling conditions or social rights,[36] with guiding principles such as "[p]opulation-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," and "[s]tates should take all appropriate measures to ensure, on a basis of equality of men and women, universal access to health-care services, including those related to reproductive health care, which includes family planning and sexual health."[35 (Chapter II)] The following year (1995), the Fourth World Conference on Women in Beijing took these statements even further and endorsed a strong human rights based approach to women's equality and reproductive freedom as well as economic and social rights.[37] These two international conference documents work together to define what we now call sexual and reproductive health and rights. Though lengthy, it is important for this paper to work from the Cairo definition of reproductive health:

> Reproductive health…implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the right of men and women to be informed and to have access to safe, effective, affordable and

> acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant…It also includes sexual health, the purpose of which is the enhancement of life and personal relations…[35] (para. 7.2)

The actions and goals of the Programme follow from this definition, specifically addressing family planning, sexually transmitted infections and HIV, human sexuality and gender relations, and adolescent sexual health.[35] The Beijing Platform of Action reiterates this definition and these goals, framed in terms of human rights and gender equality. On the tenth anniversary of the International Conference on Population and Development at Cairo, the Special Rapporteur on the right to the highest attainable standard of health dedicated a section of his annual report to considering sexual and reproductive health "through the prism of the right to health."[29] (p. 2) This report provides an excellent overview of sexual and reproductive health and rights under the systems thinking and human rights based approaches I use here, outlining different aspects of sexual and reproductive health in terms of the right to health. First, sexual and reproductive health and rights include freedoms – the freedom to control one's own body, freedom from harmful practices, and freedom from discrimination.[29] Second, sexual and reproductive health and rights call for entitlements to functioning health systems, maternal and child health care, and safe and accessible abortion services.[29] Third, reproductive rights should guard against vulnerability, discrimination, and stigma.[29] States are required to provide sexual and reproductive health services to everyone, paying special attention to vulnerable communities, while taking steps at the policy level to reduce stigma. Fourth, as introduced in the human rights framework, sexual and reproductive health and rights must be available, accessible, acceptable, and of good quality, and governments must respect, protect, and fulfill the right to reproductive

health.[29] Finally, the report stresses the importance of participation and accountability in state obligations to fulfill the right to sexual and reproductive health.[29]

The policy developed in this paper is therefore based on the international agreements from Cairo and Beijing and the right to health perspective of sexual and reproductive rights. These definitions and interpretations fall squarely under the systems thinking framework and the human rights based approach and will serve to most effectively address the complexities of fertility decline.

European Union goals

The next obvious question is: how does all of this fit into the European Union? Four areas that have been identified by various organs of the European Union directly relate to the intersection of sexual and reproductive health and rights and fertility. First and foremost, as described in the background and significance section, the European Union is very concerned with declining fertility through the lens of social policy and demography. This is the clearest entry point for any policy aiming to address fertility decline. But there are three other areas of work under the European Union that also warrant adopting a sexual and reproductive health and rights policy to confront declining fertility rates: human rights, public health, and gender equality.[38] It is no coincidence that these areas mirror the frameworks outlined above for the development of this work.

Human rights, democracy and the rule of law are core values of the European Union, embedded in its founding treaty and reinforced by the adoption of a Charter of Fundamental Rights.[39] The

European Union takes on many human rights activities through the Fundamental Rights Agency, most of which are centered around freedom, security, justice, and democracy. In other words, classically defined civil and political rights. However, there is a trend to moving into economic and social rights work (which are more applicable to a sexual and reproductive health and rights policy). The 2006 European Union Annual Report on Human Rights does include a section on economic, social, and cultural rights, especially as these rights relate to development.[40] While most of the European Union work on human rights takes place under foreign relations, this is still an important area of activity which directly relates to adopting a sexual and reproductive health policy to address declining fertility.

Second, the European Union has named public health as an important area of work.[41] The European Union's work on public health has been fairly progressive (on paper at least), addressing underlying social, behavioral, and environmental determinants of health. Health is present in all three arms of the European Union (the Council, the Commission, and the Parliament). Public health policy for the European Union is outlined in two complimentary documents: a framework which includes a community plan of action, and an integrated health strategy.[42] Both of these guiding documents aim to improve health promotion through the provision of information, setting up mechanisms for health emergency preparedness and tackling behavioral determinants of health such as smoking and diet.[42] Although there are some provisions addressing HIV and sex education, sexual and reproductive health has not, to date, been a focal area for the public health activities of the European Union.[42] Yet sexual and reproductive is a critical aspect of public health, providing another inroad for adopting a policy to address declining fertility through reproductive rights.

Finally, the European Union does much work in the area of gender equality, primarily through the recently established European Institute for Gender Equality.[43] Previously, two separate units under the Employment, Social Affairs, and Equal Opportunities handled all European Union activities on gender equality.[44] These activities focused on legislation, mainstreaming, and positive actions in order to attain equality between men and women. There is also an active Parliamentary Committee on Women's Rights and Equal Opportunities.[45] The only European Union document dedicated to reproductive rights, the Van Lancker Report, was published by this committee.[46] The Report, while quite comprehensive and robust in terms of sexual and reproductive health and rights, does not go so far as to adopt an European Union-wide policy; it was written for legislators to contemplate adopting a policy. While this did not happen at that time, framing sexual and reproductive rights as a means to address fertility decline provides a different strategy still tying into equity. Gender equality therefore provides yet another European Union area of interest to take the next step and adopt a formal policy. Though gender equality may not be *explicitly* part of the policy, a good sexual and reproductive health and rights policy will inherently address issues of gender equity.

HOW DOES FERTILITY FOLLOW THE SOCIAL GRADIENT?

Michael Marmot has developed a powerful theory to explain disparities broadly across all health outcomes.[47] He has found that health follows a social gradient. Not only does this mean the best outcomes for those at the very top and the worst outcomes for those at the very bottom, but for a near perfect gradient of change for everyone in between. It appears that fertility follows this gradient as well. That is, the people at the very top of the gradient have the lowest fertility,

flowing down to very high fertility for those at the bottom of the gradient. This makes logical sense, as the gradient is determined by socio-economic factors, such as income, education, social class, and employment – the surface level elements impacting fertility outcomes. Individuals at the highest end of the gradient are more likely to feel constrained in their fertility decision-making by social liberalism and new capitalism; additionally, these individuals may be more cognizant of losing social standing and class membership. These individuals are likely to be more affected by the issues that lead to fertility decline. At the core of my argument, I put forward that the underlying factors which have also been shown to affect fertility outcomes serve to *mediate* the social gradient. Therefore, policies need to address not only the most obvious determinants such as employment and childcare, but also the deeper economic, social, and health conditions which can mediate the gradient and lead to increases in fertility. I will now turn to show in greater detail how fertility acts along a gradient.

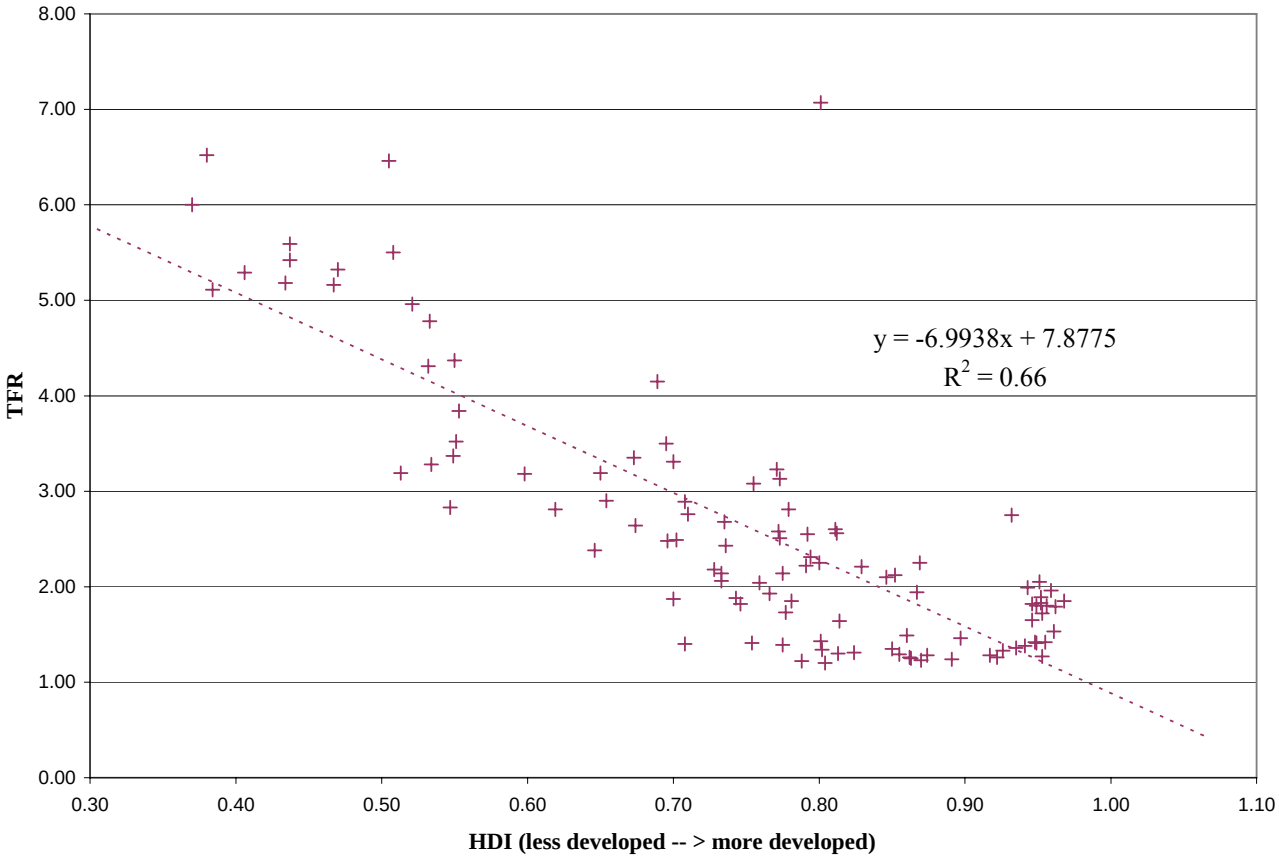
Development

The relationship between development and fertility has been widely accepted for decades.[48] Underlying this relationship, however, are many different theories. One holds that more developed countries have greater access to reproductive technologies and the tools to limit fertility. The other theory finds that changes in social and economic conditions lead women and men to limit fertility for other reasons.[48] I believe that access to reproductive technology allows women and men in countries with very high fertility rates to reach ideal fertility, most likely resulting in an overall decline. Once ideal fertility is reached, however, then economic and social conditions are likely the underlying cause of further (arguably unwanted) decline. This essentially marks the difference between developing countries and developed countries,

reflecting the differences in total fertility rates. One way to look at this relationship more closely is through the UN Human Development Index.

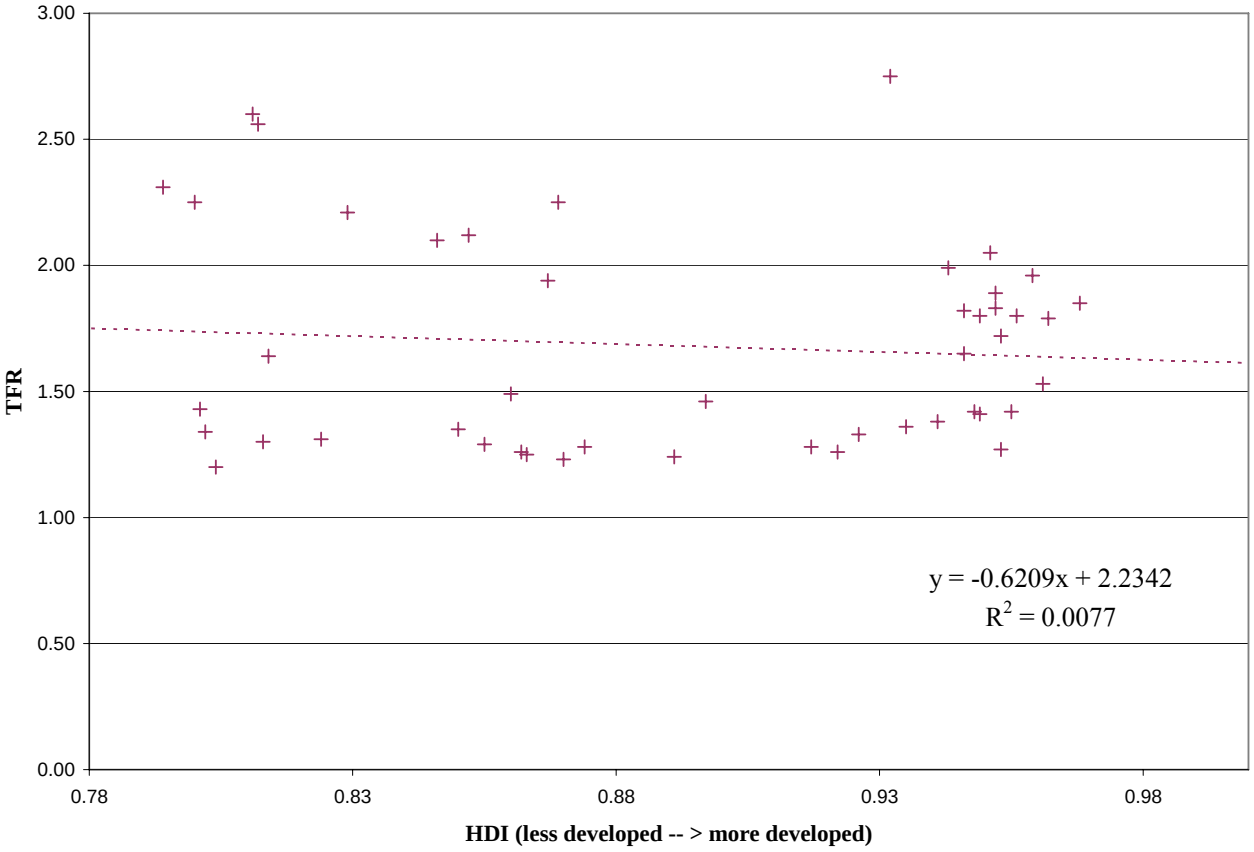
The human development index quantifies three basic dimensions of development: a long and healthy life, access to knowledge, and a decent standard of living.[49] These are measured by indicators looking at life expectancy at birth, adult literacy and combined gross enrolment in primary, secondary, and tertiary education, and gross domestic product per capita in purchasing power parity.[49] The index runs between 0 and 1, with 1 being the most developed and 0 being the least. As a sweeping generalization, Europe, along with US, Canada, and Australia, tend to make up the most developed countries, Asia and South America middle developed, and Africa least developed.[49] Figure 1 shows the remarkable association the human development index (HDI) and total fertility rates (TFR) ($\underline{R}$: 0.812, $\underline{R}^2$: 0.66, $\underline{p}<0.001$).[50] According to the regression model, fertility drops approximately 0.06 (children per woman) for each 0.01 point increase in the human development index.

Figure 1: HDI and total fertility rate, all countries



As figure 2 shows, however, this relationship nearly disappears when we focus on the top fifty developed countries (R: 0.08, R^2: 0.008, p>0.5).

Figure 2: HDI and total fertility rate, top 50 developed countries



Demographers have offered theories for this differential. Bongaarts, as early as 1978, warned against using socioeconomic measures that focus on outcomes as opposed to the mechanism which give rise to those outcomes.[51] The development index largely looks at outcomes and not mechanisms, thus less sensitive. Bryant also proposes that the relationship between development indicators and fertility is weaker than predicted by socioeconomic theories (which capture mechanisms).[48] According to this explanation, "the development indicators…do not directly measure the social and economic changes that are depicted by sophisticated socioeconomic theories of fertility decline."[48 (p. 105)] The Human Development Report itself notes that the differences in indicators in the most developed nations become less significant, as these countries tend to have achieved more similar levels of life expectancy, educational attainment, and

economic power. Yet they *will* differ significantly in specific socioeconomic conditions, institutions, and policies.[48] This serves to explain continued variation in fertility rates in these developed countries (variations not captured by the measurements included in the "crude proxy" of the human development index).[48 (p. 105)]

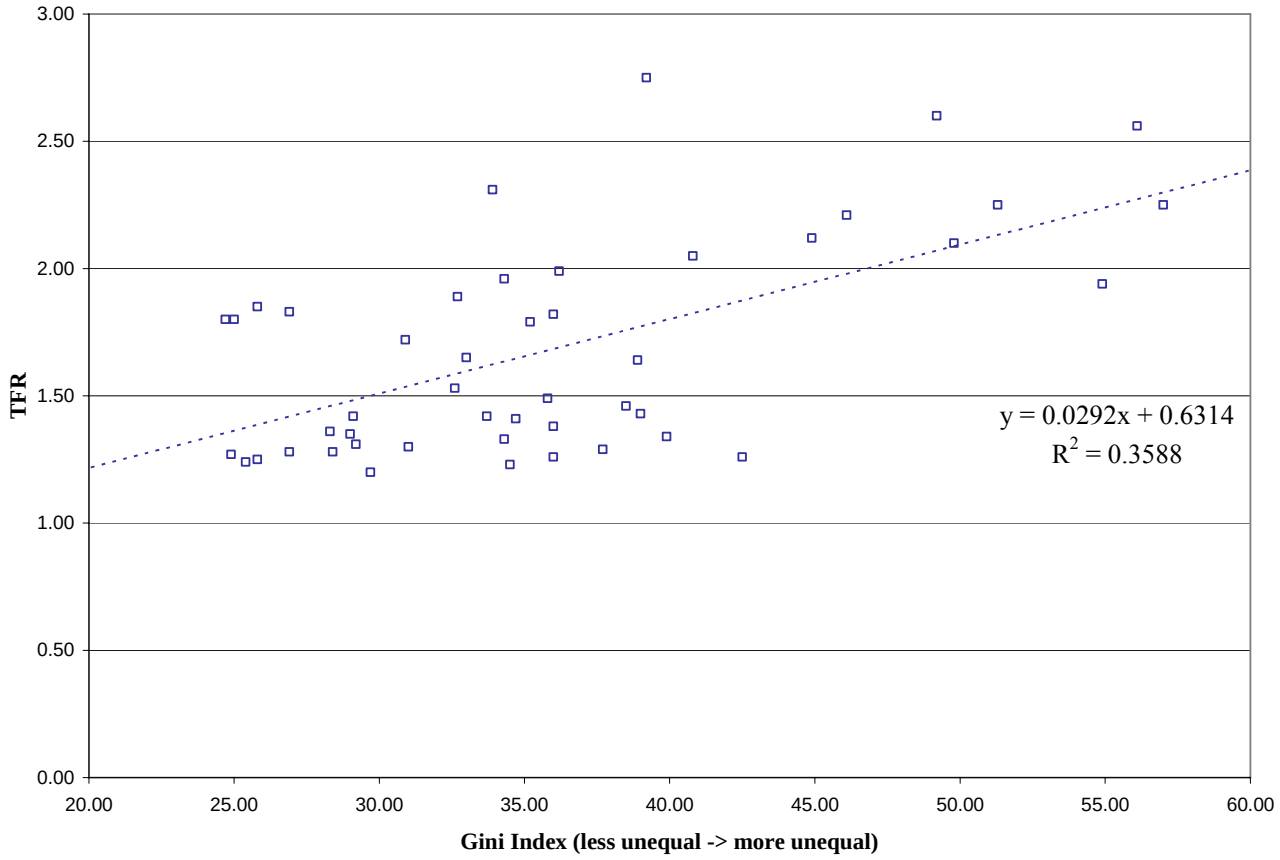
Gini Coefficient

In order to determine if fertility does follow a gradient (a premise supported by the finding that fertility does not correlate to development indicators above a certain threshold), I chose to look at the Gini coefficient. I hypothesized that higher income inequality would be associated with higher fertility, not only globally but also in more developed countries; a higher Gini coefficient would indicate a steeper social gradient, and therefore more variability in fertility outcomes (and a higher overall total fertility rate).[52] A more equal Gini coefficient is a proxy for a milder gradient, where fertility rates are likely to be lower. My findings upheld this hypothesis, another step in showing that there is fertility gradient.

The Gini coefficient was developed by an Italian statistician in the early 1900s.[53] It is now one of the most widely used statistical barometers for examining inequality of income distribution. A coefficient of 0 indicates perfect equality, where everyone would have exactly the same income. A coefficient of 1 indicates perfect inequality, where 1 person has all the income (note that the Gini coefficient is the reverse of the development index, with better scores being less than worse scores). The Gini coefficient is often expressed as a percentage (the "Gini index"). For reference, Denmark ranks 1st as the most equal, the US ranks 71st, and Namibia ranks 126th.[49] As figure 3 shows, income inequality is inversely related with fertility. The more unequal a

state is, the higher the fertility (R: 0.599, R^2: 0.359, p<0.001). Notably, this relationship is stronger looking at the top fifty developed nations than globally. (For all countries, the relationship is less: R: 0.27, R^2: 0.07, p<0.004). The regression model predicts that, in developed countries, for each point increase in the Gini index (more unequal), fertility will increase 0.03 (children per woman).

Figure 3: Gini and total fertility rate, top 50 developed countries



It appears from these findings that, above and beyond development, we can predict that countries with a steeper income gradient (more income inequality) will have higher fertility rates in the poorer communities and lower fertility rates in the richer communities (and therefore an overall higher total fertility rate). However, there is something more complex at play as well. Northern

European countries, ranking quite well in terms of income equality, report slightly *higher* levels of fertility. Denmark, Sweden, Norway, and Finland all report excellent income equality (Gini indices between 24 and 26) and total fertility rates over 1.8. However, Germany, Poland, and Italy all also report fairly high income equality (all under 36) yet very low total fertility rates (all below 1.4). Additionally, eastern European countries such as the Czech Republic and Slovakia (both fairly developed) report very little income inequality (around 25) and extremely low fertility (around 1.25). These apparent contradictions indicate that there are policies, programmes, and other factors which must be mitigating and mediating the fertility gradient.[10]

MITIGATING THE FERTILITY GRADIENT

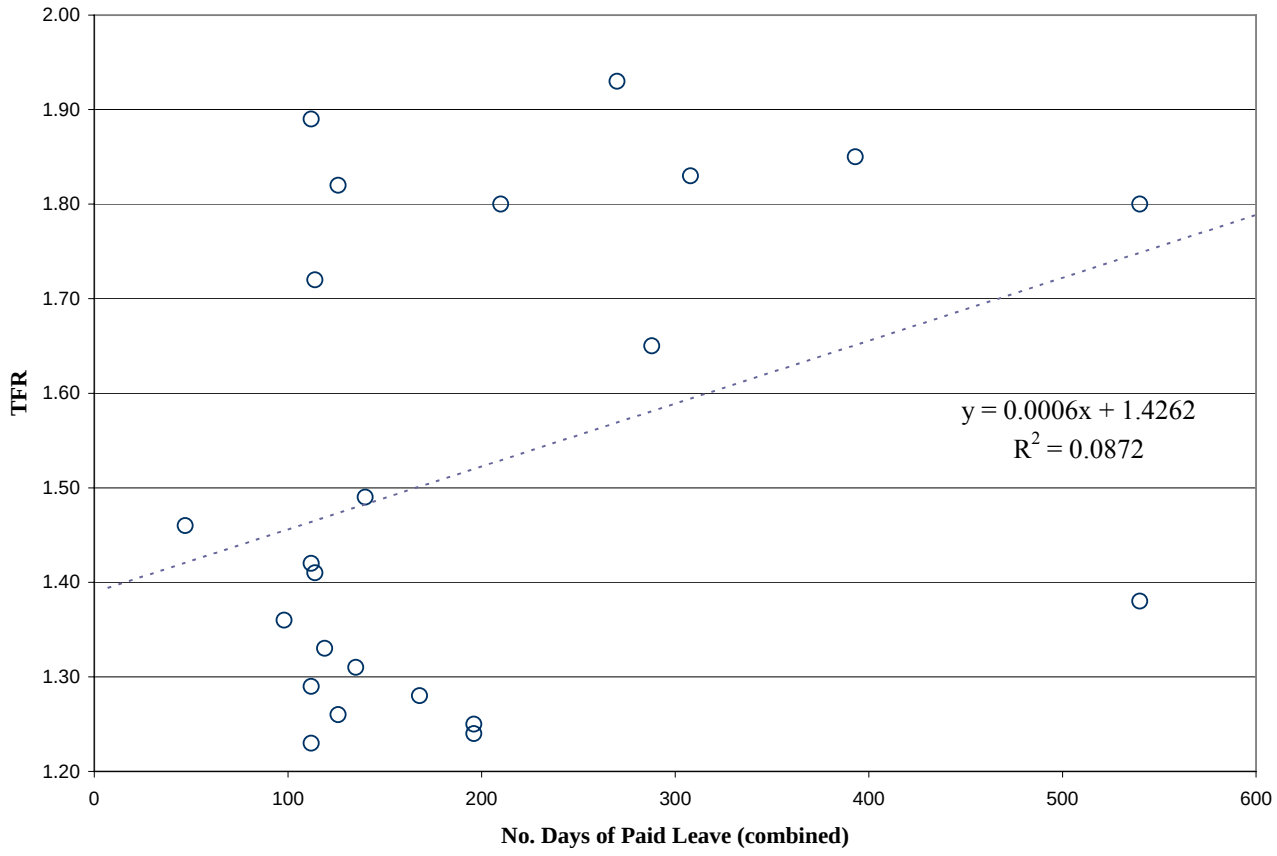
In this section, I will first explore the two main focal points of European Union policies to date: increasing parental leave (for both mothers and fathers) through employment policies and increasing accessibility to childcare facilities. There is a weak relationship between both paid parental leave and affordable childcare and fertility rates. This again indicates that while employment policies can help in addressing fertility declines and mitigating the fertility gradient on a surface level, this is not enough, alone, to have a meaningful impact on fertility rates.[11]

Paid Leave for Childbearing

As introduced earlier in this paper, the European Union has spent much time and energy on moving forward with employment policies to tackle fertility decline. At first blush, this is the obvious route – if employment appears to be the most direct barrier to increasing fertility, then implementing policies aimed at overcoming this barrier will be effective. In order to explore this basic tenet, I looked at the statistical relationship between paid leave for childbearing (combining

paid maternity, paternity, and parental leave). As figure 4 shows, the relationship between paid leave and fertility is somewhat weak. Including non-paid leave becomes quite complicated, as national policies are extremely varied and cannot be easily quantified; perhaps including non-paid leave would strengthen the relationship. It is also possible that some of these policies may be relatively recent and we would not see the impact on fertility rates yet. However, even taking these potential challenges into account, it remains clear that merely providing paid leave for childbearing will not significantly affect fertility rates.

Figure 4: Paid leave and total fertility rate, selected European countries[54]

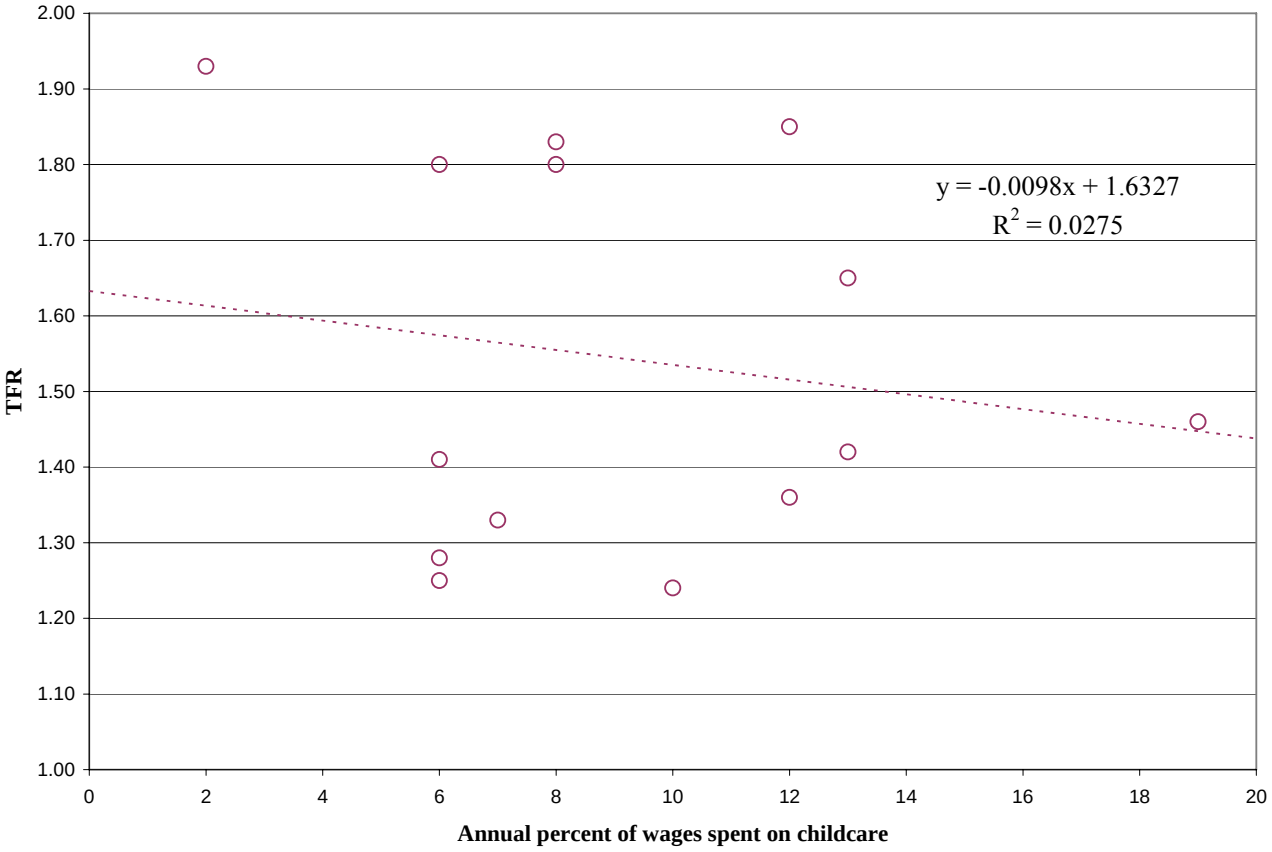


I argue that a country that does not provide other strong economic and social safety net systems and/or is operating under a relatively conservative or restrictive regime will still have low fertility, regardless of employment focused policies and programmes.[55]

Cost of Childcare

Another interesting area of work is the availability of affordable and reliable childcare. Children do cost money, after all, both directly and indirectly, adding an important factor into the fertility decision-making process. This indicator shows how easy it is financially for parents to return to work after childbearing leave. To examine the relationship between state provided childcare and fertility, I chose to look at the annual percentage of wages spent on childcare.[56] Here, the hypothesis is that the more parents have to spend on childcare, the lower the fertility rate. Although still a fairly weak relationship, we can see that there is some correlation between childcare and fertility. A study in Norway showed that women become mothers at a younger age where there is more available childcare.[9] This relationship does not hold for countries where families spend close to or more than a third of their income on childcare; at that point, we see higher fertility levels. These high cost countries also tend to have more favorable economic benefits for parents, such as tax credits, child allowances, and reimbursement or assistance for childcare (this is not true for the low cost countries where childcare is generally directly subsidized by the government, e.g. Sweden). For example, while care for a two year old child in France costs nearly a third of annual wages, this figure drops to about 15% when taking into account other benefits.[56] However, the most important observation about this relationship is that it confirms that other factors must play a role in predicting fertility.[56]

Figure 5: Annual percentage of wages spent on childcare and fertility



The relationship between sexual and reproductive health and rights and fertility rates

It is becoming clear that mitigating the fertility gradient cannot be accomplished by employment related policies alone. Deeper underlying economic, social, and health-related determinants must affect fertility. To that end, both in reaction to some nations that are attempted to restrict access to sexual and reproductive health care (under the false pretense that this will increase fertility) and as a strategic point of entry to advocate for sexual and reproductive health, I posit that robust and comprehensive sexual and reproductive health policies will correlate with increased fertility. An as initial observation, employment and childcare policies all focus on what happens *after* a woman and a man have a child; sexual and reproductive health and rights focus on what happens *before* a woman and a man have a child, a piece often overlooked.

I hypothesized that a strong policy in sexual and reproductive health will lead to increased fertility for several reasons. First, and perhaps most generalized, it seems clear that access to better sexual and reproductive health care would improve sexual and reproductive health, necessary for fertility. Infertility is a critical, and often overlooked, worldwide problem. As many as 10% of all couples will experience fertility problems in their lifetime.[15] Sexually transmitted infections, if not detected, become a leading cause of infertility in women and a cause of infertility in men as well (though not to the same extent). Protecting fertility through sexual and reproductive health care, in services, access to education and contraception, and awareness campaigns, should be a primary tool for addressing declining fertility.

Second, women who are denied access to safe abortions either suffer serious health problems which affect later pregnancies or are too economically and socially disadvantaged to be able to have more children later in life. Giving women and men the tools necessary to freely decide the number of spacing of their children, including access to information, contraception, and safe abortion, will likely lead to increased fertility. Unsafe abortions cause approximately 70,000 maternal deaths annually, out of which an estimated 26% occur in Eastern Europe, while 20% of women who endure unsafe abortions are left with reproductive tract infections which can lead to fertility problems.[57] In many Eastern European countries (notably with very low fertility), abortion remains a common form of contraception, as preventative forms are often too expensive or not easily accessible. Many of these countries have restricted access to abortion services, forcing women to seek underground abortion services. If abortion services in countries with poorly functioning health care systems are prohibitively expensive or providers charge excess

fees, women will be also forced to turn to unsafe abortions. Though perhaps not as much of a problem in Western Europe, unsafe abortion almost certainly adds to the fertility problem in Eastern Europe.

Third, comprehensive, accurate sex education for adolescents and youth will allow young women and men to make informed decisions about childbearing throughout their lives. These informed decisions and early awareness about sex and sexuality will lead to healthier and more progressive attitudes towards reproduction and gender equality, thus leading to increased wanted pregnancies. Additionally, sex education and access to contraception specifically for adolescents decreases teenage birth rates.[58] There is some evidence that shows that women who bear children during their teenage years are *less* likely to have children later in life, due largely due the lifetime disadvantage faced by teenage mothers (though they are more likely to have greater lifetime fertility, childbearing tends to be concentrated in youth, disadvantaging these women and ultimately limiting their potential optimal fertility).[59]

Fourth, men's sexual and reproductive health is critical to addressing these issues and calls for comprehensive accessible services for men as well as men's equal partnership and responsibility in childbearing.[60] The reproductive health of adolescent boys is also of critical importance to overall sexual health, self-esteem, and attitudes towards sex and sexuality which lead to ideal fertility.[61] Men's infertility is also an important factor in declining fertility rates yet utilization of sexual and reproductive health services tends to be low for young men. Men's reproductive health is all too often overlooked in current policies.

Fifth, safe motherhood can lead to more children and healthier mothers capable of contributing to the labor force. This requires a functioning health care system that is available, accessible, acceptable, and of good quality.[62] At bottom, the situation clearly illustrates the need for health system reform, with a focus on comprehensive primary preventative care. As officially stated in Alma Ata, this not only includes but prioritizes sexual and reproductive health care.[63] All of these factors fall squarely within a systems thinking approach.

While there is good evidence to show that these various aspects of sexual and reproductive health and rights are likely to increase fertility, I sought to quantify this hypothesize (a systems thinking approach is firmly grounded in reliable scientific evidence). To this end, I developed what I call the Sexual and Reproductive Health and Rights Index. It was my goal to evaluate European countries on various aspects of what I argue a robust sexual and reproductive health policy should contain, creating a composite score which could be regressed against fertility rates. Similar indicators have been used to hold governments accountable for providing services and political will to fulfill reproductive rights in Latin America[64] and for the individual U.S. states.[65]

In sum, the index scores countries from 1-3 on five aspects of sexual and reproductive health, 1 being poor, 2 being average, and 3 being excellent. These scores are averaged together to give a composite score.

Table 1: Five elements of the SRHR Index

	1 – Poor	**2 – Average**	**3 – Excellent**
Abortion services	Near total ban, highly restricted access	Allowed for some reasons OR parental authorization required	Allowed for any reason
Teenage birth rates	20 +	10-19	< 10
Sex education	Not mandatory No minimum standards Religiously influenced	Mandatory, but introduced at a later age and taught by any teacher	Comprehensive sex education introduced before age 10, taught by a dedicated sex education teacher or health professional
Women ages 15-49 using modern methods of contraception	< 50%	50-75%	> 75%
Access to emergency contraception	Not available or no information	Available, but only with a prescription	Available without a prescription/Over the counter

These elements together provide a snapshot of the policies, services, and availability of sexual and reproductive health care. Abortion policies reflect political will to provide sexual and reproductive rights and the general attitude to providing women and men the means necessary to control their fertility. It also tends to reflect the strength of religious influences which can interfere with the provision of sexual and reproductive health services. I choose teenage birth rates rather than conception rates for women under 18 years of age to indicate adolescent sexual health services, including access to abortion. The higher the teenage birth rate, the less available and accessible these services are. As described above, sex education programs are also critical to the sexual and reproductive health of a population and show a systems thinking approach through tying into education systems.[66] The two contraception indicators are used to indicate the accessibility, acceptability, and availability of family planning tools. Though I considered using sexually transmitted infection rates to also evaluate national service delivery, this is often a

difficult indicator to use. Higher rates may actually indicate a better health system with good sexual health services, able to detect more infections through regular screenings and awareness campaigns. Therefore I chose not to use this indicator. I recognize the simplicity of this index and the many caveats necessary when using this indicator; however, I also argue that this index is an excellent first step in beginning to explore the relationship between sexual and reproductive health and rights policies and programmes and fertility rates (see annex 1 for sources).

Table 2: Composite scores and TFRs

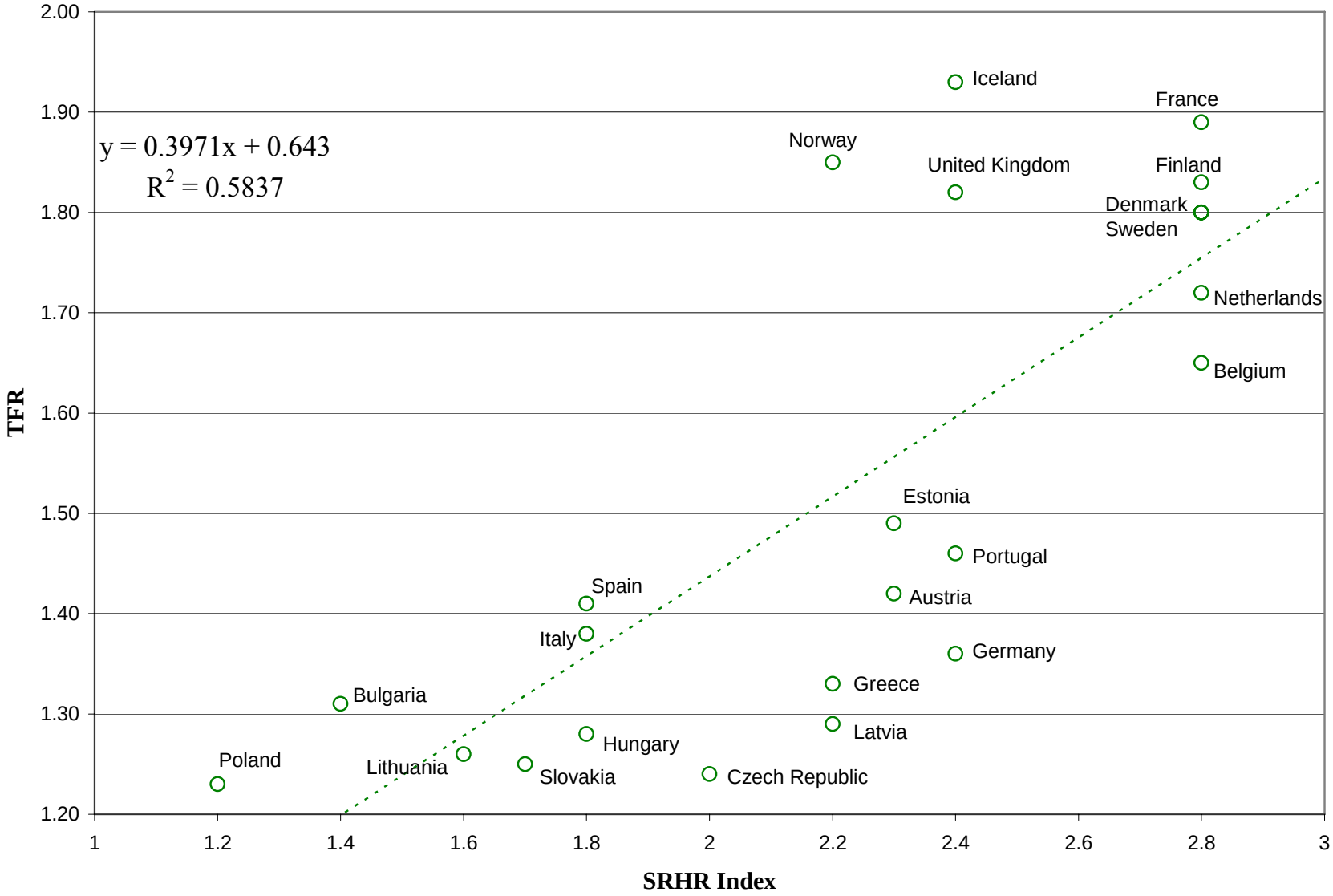
	Abortion	Sex education	EC	Modern contraception usage (married women, ages 15-49)	Births per 1000 women aged 15-19	sexual and reproductive health and rights Index	UN total fertility rate (2000-2005)
Sweden	3	3	3	2	3	2.8	1.80
Finland	2	3	3	3	3	2.8	1.83
Denmark	3	2	3	3	3	2.8	1.80
Belgium	3	3	3	2	3	2.8	1.65
France	3	3	3	2	3	2.8	1.89
Netherlands	3	2	3	3	3	2.8	1.72
Germany	3	3	2	2	2	2.4	1.36
Iceland	3	2	3	2	2	2.4	1.93
United Kingdom	2	3	3	3	1	2.4	1.82
Portugal	3	3	3	1	2	2.4	1.46
Austria	3	2.5	2	2	2	2.3	1.42
Estonia	3	2.5	3	2	1	2.3	1.49
Norway	2	2	3	2	2	2.2	1.85
Greece	2	2	3	2	2	2.2	1.33
Latvia	3	2	3	2	1	2.2	1.29
Czech Republic	2	3	1	2	2	2	1.24
Hungary	3	2	1	2	1	1.8	1.28
Ireland	1	2	2	2	2	1.8	1.96
Italy	2	1	2	1	3	1.8	1.38
Spain	2	1	1	2	3	1.8	1.41
Slovakia	2	1.5	3	1	1	1.7	1.25
Lithuania	3	1	2	1	1	1.6	1.26
Bulgaria	3	1	1	1	1	1.4	1.31
Poland	1	1	1	1	2	1.2	1.23

At first glance, it is clear that, generally, countries with robust sexual and reproductive health care and liberal policies have higher fertility rates. These tend to be Northern European countries. Countries that tend to have more restricted access to sexual and reproductive health care and conservative policies, such as Poland, Italy, and Spain, have much lower fertility rates.

Methods and results of statistical analyses

To quantify this relationship further, I ran a series of statistical analyses. Figure 6 shows the scatterplot and simple linear regression line for the relationship between the sexual and reproductive health and rights index and total fertility rates in European countries for which data is available. As the plot shows, the sexual and reproductive health and rights index is a statistically significant predictor of total fertility rates in these countries. Although I again stress that this is a very simplistic and basic proxy, there is much that can be learned from this relationship.

Figure 6: Sexual and reproductive health and rights index and total fertility rates:



To further clarify this relationship, I ran a correlation matrix and a series of regressions (see Annex 2 for full statistical tables). The sexual and reproductive health and rights index was significantly stronger in predicting fertility than paid leave for childbearing and percent of wages spent on childcare, explaining (alone) 58% of the variability in total fertility rates ($p<<0.001$). Running a multiple regression with all three variables did not significantly change the power of prediction of the index alone. Looking at the individual elements of the index, availability of emergency contraception showed the strongest correlation with total fertility rates (R: 0.637, $p<0.001$). I believe that this variable is the strongest indicator of the accessibility of sexual and reproductive health care, as it is dependent on a functioning health care system that is capable of approving and registering the drugs and relies on a network of physicians and pharmacies to bring the drugs to market, as well as political will to provide family planning tools. The second strongest correlation was the indicator of modern contraception use (R: 0.631, $p<0.001$). Though counter-intuitive to many, this relationship indicates that the more individuals are able to control fertility decisions, the better the fertility outcomes (this point was raised in the introduction). Teen birth rates and sex education were also significantly related (R:0.497, $p<0.01$ and R:0.46, $p=0.02$). Though abortion policies were not as closely correlated statistically, this is an important piece of any evaluation of sexual and reproductive health care and should be included in the overall index. Removing the abortion policy element of the index does not significantly change the relationship (new R^2: 0.61).

Therefore, there is a positive, strongly correlated association between sexual and reproductive health policies and total fertility rates, more so than the employment-centered policies that have garnered decision-maker attention.

This finding is an important indicator of many other aspects of economic and social systems; therefore, it is critical to examine key individual country points to further distill this relationship. Most importantly, I excluded the outlier Ireland from my final analyses. Ireland is a special case, with a relatively low sexual and reproductive health and rights index (1.8) yet a very high fertility rate (1.96). (This country case study is examined in more detail in the following section.) Next, France showed the best ratings – scoring a 2.8 on the index (the highest reported index) and a total fertility rate of 1.89. Across all countries, those which scored 2.8 on the sexual and reproductive health index all report total fertility rates at or above 1.65. On the other end of the scale, countries which scored 1.8 or lower in sexual and reproductive health care all reported fertility rates at or below 1.41. In looking at fertility rates, these differences are crucial, as just a tenth of a point can have a large impact on the overall population structure. It is also interesting to note that in the countries scoring just above average on the sexual and reproductive health care index (scoring 2.3 or 2.4), there is very wide variation in fertility. Iceland scored 2.4, yet has a total fertility rate of 1.93. This may be attributable to the very favorable employment benefits offered in Iceland; it may also be because Iceland has a small population and is thus more able to provide economic and social services to residents. The United Kingdom scored a 2.4 on the sexual and reproductive health index with a fertility rate of 1.82. This is largely due in part to the high teenage birth rates in the UK (the UK scored 1 on this indicator, but much better on the others.) The UK's overall sexual and reproductive health index would have scored a 2.6 or a 2.8 if teenage birth rates were improved. (Note that teenage birth rates are not often high enough to affect total fertility rates, but the indicator is useful when evaluating services and policies) On the other hand, Germany, Portugal, and Estonia all scored either 2.3 or 2.4 on the index yet report low fertility rates (1.36, 1.46, and 1.49 respectively). It is likely that some other factor is

at play in these countries which is not favorable to childbearing. In Germany, for example, there is very limited paid leave for childbearing and the cost of childcare is quite high.[67] A 2003 study showed that as Germany reduced support structures, fertility fell. As noted earlier, though those employment related policies do not completely explain fertility, there is a relationship, and in a country which has average sexual and reproductive health care policies, it is possible that the employment policies make a difference (which is why both are necessary but not sufficient).

Case studies

I will now briefly present on four different countries and tie this into regional differences. In general, the European Union can be divided into four sub-regions: Western, Southern, Northern, and Eastern. Each region has a different overarching political context which tends to fuel fertility outcomes. In broad terms, Western European countries tend to be "conservative (support according to employment status, sex differences, limited childcare)"; Southern Europe is heavily influenced by the Catholic Church and are "generous with cash transfers but their supply of social services is almost non-existent…expecting the mother to stay at home as the primary carer, they lack childcare provisions."; Northern Europe is a "social democracy (universal welfare, good leave conditions for mothers, good childcare)"; and Eastern Europe is essentially in "shock" after the fall of communism and socialism.[14,68,69] Sexual and reproductive health policies also fall into these broad categories: Western Europe tends to rank average on the index, Southern Europe ranges from low-average to poor, Northern Europe is excellent, and Eastern Europe is poor. It is no surprise, then, that fertility rates can also be grouped similarly. Here, though sexual and reproductive health policies may be a proxy for overall political contexts which explain fertility, as shown in the previous sections, economic policies alone are

indeterminate and cannot fully explain fertility. Therefore, it is also important to look at sexual and reproductive health and rights as a necessary piece of the policies needed to address fertility.

Ireland

As briefly noted earlier, Ireland is an outlier when looking at fertility, reporting a rate higher than the rest of Europe (1.96).[70] One basic explanation for this difference is that Ireland has experienced similar declines to other countries in Europe, but this decline did not start as early as in other nations.[70] This might serve to explain some of the variation. Fertility in Ireland did fall almost 50 percent from 1975-1995.[70] Therefore, it is likely that Ireland, with its conservative and religiously-influenced reproductive health policies, is reporting higher than expected fertility because of the late move into Europe's demographic transition (had Ireland's fertility started declining earlier, we might expect to see rates more similar to Italy or Poland). The higher fertility rate could, on the other hand, be attributable to the lessening hold the religious right and their policies have on individual activity. Non-marital fertility has increased while large family sizes have decreased in recent decades.[70] It is now legal for Irish women to access abortion services in the UK under certain circumstances.[71] A 1995 change in law made contraception accessible. These aspects all explain the higher fertility, highlighting the differences between policies and activity on the ground and the need for contextual analysis when looking at trends.

Poland/Eastern Europe

There is a quiet revolution among younger women and men against the highly conservative and religious traditions in Poland.[72] Declining fertility is just one outcome. The church, through its complex and influential relationship with the state, has pushed many new laws and policies

through that attempt to encourage fertility through restrictions on modern contraception and abortion. These policies are simply not working and are likely contributing to the decline as younger generations of childbearing age react. Additionally, poor sexual and reproductive health services combined with the deficient sex education for youth and lack of access to contraception lead to increased sexually transmitted infections and a high risk of infertility. Other poor economic and social policies in this post-socialist country have led to deep economic hardships which also have an impact on fertility.[73] Yet the religiously influenced and conservative government continues to ignore sexual and reproductive health and rights and focuses on ineffective reliance on tradition.

Notably, of all countries across the globe, Eastern European states are reporting the lowest fertility. Of the lowest (fertility rates) 25 nations, 15 are located in Eastern Europe. These nations are in the economic throes of the fall of communism, the backlash against socialist rule and social rights, and widespread ethnic conflicts of the 1990s. These governments are providing very little, if any, economic and social support, hitting health care, housing, and employment the hardest. Sexual and reproductive health services are generally inaccessible and of relatively poor quality.[74] The main problems in the field of sexual and reproductive health and rights in the region include:

> "lack of commitment of governments to address issues of reproductive health and rights; inadequate legislation and policy inadequate access to family planning information and services; high rates of unmet contraceptive needs and the high reliance on abortion as a mean of controlling one's fertility; excessive reliance on unsafe abortion services and poor quality of abortion services; low priority to adolescents reproductive health and rights, including lack of adequate sexual education; rapidly growing rates of STIs, including HIV / AIDS"[74 (§3)]

All of these issues clearly relate to poor fertility. A rights-based approach from the European Union is one solution that will not only directly address these pressing issues, but will also work to increase fertility across the region.

France

France has the second highest fertility in Europe, second only to the outlier Ireland. Other than simply making it easier to take time off from work, France has also heavily subsidized childcare, schooling, family activities, transportation, and other various benefits from a systems thinking approach to make life easy and enjoyable with children (there is even a subsidy for family vacations).[75] France *also* scored a 2.8 on the sexual and reproductive health and rights index, the highest reported score (six other countries also scored 2.8). As with Sweden, France ranked as "excellent" on all elements except modern contraception usage. The French government has been particularly active in making emergency contraception easily accessible, especially for adolescents.[76] France has also taken steps to ensure that sexual health services are available and acceptable to teens, thus reporting low teen birth rates and excellent sex education programs.[77] The attitude towards prioritizing sexual health and encouraging public discourse gives men and women the information, resources, and empowerment to truly control their own fertility and plan families. This commitment to sexual and reproductive health and rights, coupled with the robust economic and social systems, has led France to fertility rates more closely approximating ideal individual fertility.

Sweden/Northern Europe

In 1934, Swedish economists Alva and Gunnar Myrdal proposed a solution to the post-war population crisis in Sweden: increase birth rates through government sponsored programs that provided maternal and child healthcare, free delivery, maternity and housing benefits, and general child allowances.[78] The birth rate in Sweden peaked in the mid-1940s with the first introduction of a child allowance and fluctuated around replacement level for most of the 20th century. Though there was a decline in the 1990s, the fertility rate in Sweden is again increasing with the addition of more government sponsored programs providing men and women the economic, social, and health care support necessary to freely procreate. The welfare state model adopted after the world wars allowed women and men in Sweden to have children essentially without worry about financial hardships, while at the same time providing the kind of sexual and reproductive health services needed for individuals to plan a family and stay healthy. Sweden today, still embracing this welfare model, scored a 2.8 on the sexual and reproductive health and rights index, achieving "excellent" on all indicators except modern contraception usage.

Northern European countries are essentially the mirror image of Eastern European countries: free from conflict, strong governmental commitments to economic and social rights, and strong liberal sexual and reproductive health policies. Northern European countries also show the highest fertility rates in Europe. Of the European countries assessed in this paper, Finland, Sweden, Denmark, and the Netherlands were among the highest seven fertility rates. These countries were also among the top six scoring countries on the sexual and reproductive health and rights index.[79]

Why do sexual and reproductive health and rights mediate the fertility gradient?

Because fertility declines along a gradient, it is likely affected by many, if not all, of the determinants of the social gradient. It is a complex set of economic, social, political, and health conditions that lead to fertility outcomes – either increased or decreased. While employment policies address a piece of the gradient at its core by creating more favorable conditions along the gradient, other policies and programmes ease the other underlying determinants of the gradient by addressing the deeper root causes of health outcomes. Sexual and reproductive health and rights act on two levels. First, as presented in the beginning of the previous section, there is a direct relationship between reproductive health and fertility rates. The better one's reproductive health, the more likely they are to be able to reproduce. Second, and perhaps more importantly, sexual and reproductive health and rights can improve both individual and community level conditions that can ease the effects of the gradient, including fertility rates. In this way, the health policies work on the third level of Jonathan Mann's health and human rights framework, as a policy that protects and promotes health *and* human rights. Notably, fertility rates are just one of the many positive outcomes a robust sexual and reproductive health and rights policy can achieve. It is critical, however, that a sexual and reproductive health and rights policy is developed from this systems-thinking, human rights based approach to mitigate the gradient.

PROPOSED POLICY LANGUAGE

In recognition of the relationship between sexual and reproductive health and rights and fertility rates,

In recognition of the importance of human rights, public health, and gender equality to the European Union,

In addressing the pressing economic and social concerns of declining fertility rates,

Upholding a humans-rights based, systems thinking approach necessary to take meaningful steps to give individuals the confidence and freedom to reach their ideal fertility,

And in continued support of the Programme of Action adopted at the International Conference on Population and Development (Cairo, 1994) and the Beijing Declaration and Platform for Action adopted at the Fourth World Conference on Women (Beijing, 1995),

The European Union hereby adopts this policy on the provision of sexual and reproductive health care in member states:

All member states should prioritize and integrate sexual and reproductive health care as part of primary, preventative care. Sexual and reproductive health services should also be readily available in primary, secondary, and tertiary care institutions as appropriate..

Sexual and reproductive health services include, but are not limited to, access to affordable, quality contraception, early comprehensive sex education taught by a health professional with minimum, non-religious standards, access to safe abortion services, a full range of maternal and child care, preferably free for those who cannot afford to pay, sexual and reproductive health services for men, and wide reaching screening and awareness programs for sexually transmitted

infections (including HIV), cervical cancer and HPV, and other potential sexual health problems. Member states should also consider adopting policies making assisted reproductive technologies available.

These programs must pay special attention to vulnerable groups, including but not limited to adolescent girls and boys, ethnic and racial minorities, immigrants and asylum seekers, substance mis-users and recovering substance mis-users, prisoners, and other nationally identified marginalized communities (i.e. Roma populations). Gender equality must be addressed as well.

Sexual and reproductive health services must be integrated with other economic and social services, including but not limited to those from ministries of education, ministries for employment, social services, services for children, transportation networks, media and communications, and other ministries or organizations deemed appropriate by national officials. Services should also integrate with existing organs of civil society and non-governmental organizations.

Governments must immediately engage in meaningful participatory research to develop culturally appropriate and acceptable services and to monitor and evaluate policies and programmes after implementation. Governments must uphold principles of non-discrimination and equity in the development and implementation of these policies and programmes. Governments must respect the right to information and the principle of transparency in the development and implementation of these policies and programmes.

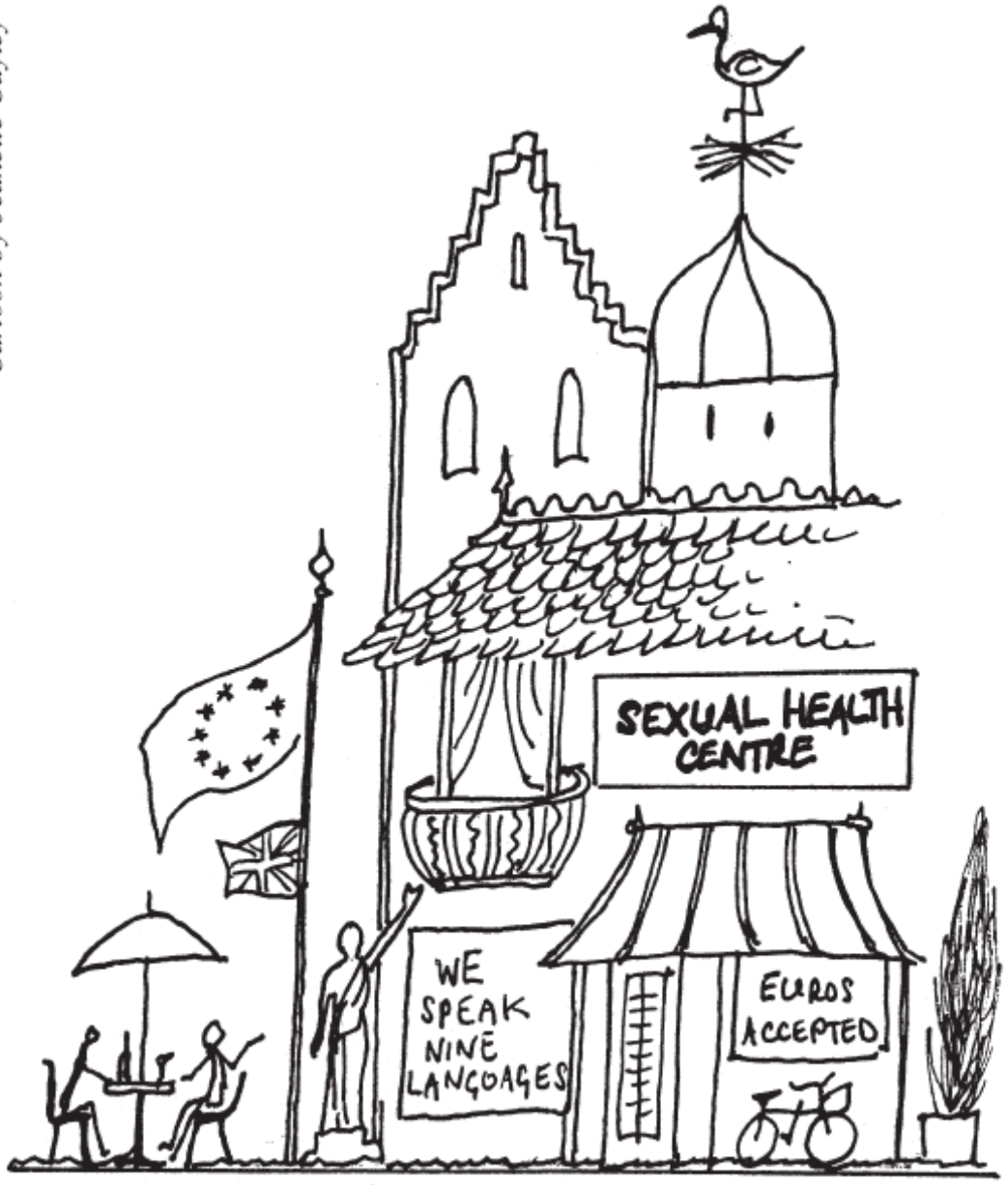
Governments agree to respect, protect, and fulfill human rights obligations in the development and implementation of this policy. Governments agree to provide available, accessible, acceptable, good quality services. Governments must note the interdependence, interrelatedness, indivisibility, and universality of the rights within this policy.

The European Union hereby declares to hold member states accountable for the realization of this policy, and will consider sanctions for violations of this resolution. The European Union will also consider these points when evaluating a state for membership in the European Union.

CONCLUSION

Men and women should not have to make overly burdensome sacrifices to have children. The onus is on governments to ensure that individuals can freely decide when to have children, unconstrained by financial, social, or health concerns. Taking a systems-thinking, human rights based approach to provide those economic, social, and health-related safety nets must include sexual and reproductive health services. Men and women have the right to accessible, available, acceptable, quality services and care – from sex education in primary school to contraception available to adolescents to preventative care for sexual and reproductive health throughout the life cycle. Only when people have full access to family planning tools and enabling economic and social conditions will they be able to have their desired number of children and, ultimately, increase fertility rates.

Cartoon by Jeanette Cayley



"We're trying to present a more European image."

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ANNEX 1: FULL TABLES

Country	Number of children wanted	Completed fertility	Difference
Austria	2	1.69	0.31
Belgium	2.1	1.84	0.26
Finland	2.2	1.95	0.25
France	2.2	1.95	0.25
Germany	2	1.65	0.35
Hungary	2.1	2.02	0.08
Italy	2.1	1.65	0.45
Netherlands	2.1	1.85	0.25
Norway	2.2	2.09	0.11
Poland	2.3	2.18	0.12
Portugal	2.1	1.9	0.2
Spain	2.2	1.75	0.45
Sweden	2.5	2.04	0.46
Switzerland	2.2	1.77	0.43
Averages	*2.16*	*1.88*	*0.28*

Source: Bongaarts J. The end of the fertility transition in the developed world. *Population and Development Review*. 2002;28:419-443

	Abortion	
Poland	To save the woman's life and to preserve physical health, in cases of rape, incest, or fetal impairment, parental authorization required	1
Spain	To save the woman's life and physical health, to preserve mental health, in cases of rape, fetal impairment	2
Czech Republic	Without restriction as to reason, parental authorization required	2
Denmark	Without restriction as to reason	3
Finland	To save the woman's life, physical health, and mental health; socioeconomic grounds, in cases of rape, fetal impairment, permitted on other grounds such as the woman's age or capacity to care for a child	2
Greece	Without restriction as to reason, parental authorization required	2
Italy	Without restriction as to reason, parental authorization required, gestational limit of 90 days	2
Norway	Without restriction as to reason, parental authorization required	2

Portugal	Without restriction as to reason, parental authorization required, gestational limit of 10 weeks	2
Slovakia	Without restriction as to reason, parental authorization required	2
United Kingdom	To save the woman's life, physical health, and mental health; socioeconomic grounds, in cases of fetal impairment	2
Iceland	To save the woman's life, physical health, and mental health; socioeconomic grounds, in cases of rape, incest, fetal impairment, permitted on other grounds such as the woman's age or capacity to care for a child	3
Austria	Without restriction as to reason, gestational limit of 14 weeks	3
Belgium	Without restriction as to reason, gestational limit of 14 weeks	3
Bulgaria	Without restriction as to reason	3
Estonia	Without restriction as to reason	3
France	Without restriction as to reason, gestational limit of 14 weeks	3
Germany	Without restriction as to reason, gestational limit of 14 weeks	3
Hungary	Without restriction as to reason	3
Latvia	Without restriction as to reason	3
Lithuania	Without restriction as to reason	3
Netherlands	Without restriction as to reason, law does not limit pre-viability abortion	3
Sweden	Without restriction as to reason, gestational limit of 18 weeks	3
Source: Center for Reproductive Rights, The World's Abortion Laws		
	Sex Education	
Bulgaria	Not mandatory, no minimum standards	1
Italy	Not mandatory, no minimum standards	1
Lithuania	No information known	1
Poland	Not mandatory, poor minimum standards	1
Spain	Not mandatory, no minimum standards	1
Slovakia	Mandatory, begins at age 12, no minimum standards, dedicated teacher	1.5
Denmark	Mandatory, begins at age 12, minimum standards, health professional	2
Greece	Mandatory, begins at age 6, any teacher or health professional	2
Hungary	Mandatory, begins at age 10, NO minimum standard, dedicated teacher or health professional	2

Iceland	Mandatory, begins at age 11, minimum standards, dedicated teacher or health professional	2
Latvia	Mandatory, begins at age 11, minimum standards, dedicated teacher or health professional	2
Netherlands	Mandatory, begins at age 13, no minimum standards, dedicated teacher	2
Norway	Mandatory, begins at age 12, minimum standards, dedicated teacher or health professional	2
Austria	Mandatory, begins at age 10, minimum standards, dedicated teacher	2.5
Estonia	Mandatory, begins at age 10, minimum standards, dedicated teacher or health professional	2.5
Belgium	Mandatory, begins at age 6, minimum standards, dedicated teacher/health professional	3
Czech Republic	Mandatory, begins at age 7, minimum standards, dedicated teacher	3
Finland	Mandatory, begins at age 7, minimum standards, dedicated teacher or health professional	3
France	Mandatory, begins at age 6, minimum standards, dedicated teacher or health professional	3
Germany	Mandatory, begins at age 9, minimum standards, dedicated teacher or health professional	3
Portugal	Mandatory, begins at age 5, minimum standards, any teacher	3
Sweden	Mandatory, begins at age 6, minimum standards, any teacher	3
United Kingdom	Not mandatory, begins at age 5, minimum standards, dedicated teacher/health professional	3
Source: The Safe Project, Sex Ed in Europe		
	Availability of EC	
Bulgaria	No information available	1
Czech Republic	No information available	1
Hungary	No information available	1
Poland	No information available	1
Spain	No information available	1
Austria	Pharmacies with a prescription	2
Germany	From pharmacies with prescription. Non-prescription application denied in 2004.	2
Italy	Pharmacies with a prescription	2
Lithuania	Pharmacies with a prescription	2
Belgium	Pharmacies without a prescription	3
Denmark	Pharmacies without a prescription	3
Estonia	Pharmacist without a prescription	3

Finland	Pharmacies without a prescription	3
France	Behind the Counter status: pharmacist without prescription, reimbursed when dispensed upon prescription by a physician or a midwife, free for minors from pharmacists, free from Family Planning services and from school nurses	3
Greece	Pharmacist without a prescription	3
Iceland	Doctors, school nurses, OTC in pharmacies	3
Latvia	Pharmacist without a prescription	3
Netherlands	In drugstores and pharmacies without a prescription	3
Norway	Available in pharmacies without a prescription directly on the shelf	3
Portugal	Pharmacist without a prescription	3
Slovakia	Pharmacist without a prescription	3
Sweden	OTC in pharmacies	3
United Kingdom	Pharmacies without a prescription	3
Source: International Consortium for Emergency Contraception		
	Modern contraception usage (married women, ages 15-49)	
Bulgaria	26	1
Italy	39	1
Lithuania	30	1
Poland	19	1
Portugal	33	1
Slovakia	41	1
Austria	65	2
Belgium	75	2
Czech Republic	58	2
Estonia	56	2
France	69	2
Germany	72	2
Greece	* *Based on other indicators*	2
Hungary	68	2
Iceland	* *Based on other indicators*	2
Latvia	60	2
Norway	69	2
Spain	53	2
Sweden	71	2
Denmark	78	3
Finland	78	3
Netherlands	76	3
United Kingdom	79	3
Source: Population Reference Bureau; UN Economic and Social Development, Abortion Papers		

	Births per 1000 women 15-19	
Bulgaria	41	1
Estonia	26	1
Hungary	21	1
Latvia	24	1
Lithuania	26	1
Slovakia	24	1
United Kingdom	20	1
Austria	12	2
Czech Republic	17	2
Germany	11	2
Greece	10	2
Iceland	19	2
Norway	11	2
Poland	16	2
Portugal	17	2
Belgium	9	3
Denmark	7	3
Finland	8	3
France	9	3
Italy	6	3
Netherlands	5	3
Spain	6	3
Sweden	7	3
Source: UNFPA		

	Percent of Annual Wages spent on Childcare (based on fee per two year old child, 2001 or later)
Iceland	2
Slovakia	6
Hungary	6
Spain	6
Sweden	6
Greece	7
Denmark	8
Finland	8
Czech Republic	10
Germany	12
Norway	12
Austria	13
Belgium	13
Portugal	19
Source: OECD	
	Paid days for childbearing (maternity, paternity, and parental)
Portugal	47
Germany	98
Austria	112
France	112
Poland	112
Latvia	112
Spain	114
Netherlands	114
Greece	119
United Kingdom	126
Lithuania	126
Bulgaria	135
Estonia	140
Hungary	168
Slovakia	196
Czech Republic	196
Denmark	210
Iceland	270
Belgium	288
Finland	308
Norway	393
Sweden	540
Italy	540
Source: UN Department of Statistics	

Country	UN total fertility rate (2000-2005)	Human development index value (2005)	GINI Coefficient
Belarus	1.20	0.80	29.70
Ukraine	1.22	0.79	28.10
Poland	**1.23**	**0.87**	**34.50**
Czech Republic	**1.24**	**0.89**	**25.40**
Slovakia	1.25	0.86	25.80
Lithuania	**1.26**	**0.86**	**36.00**
Singapore	1.26	0.92	42.50
Japan	1.27	0.95	24.90
Hungary	**1.28**	**0.87**	**26.90**
Slovenia	1.28	0.92	28.40
Latvia	**1.29**	**0.86**	**37.70**
Romania	1.30	0.81	31.00
Bulgaria	**1.31**	**0.82**	**29.20**
Greece	**1.33**	**0.93**	**34.30**
Russian Federation	1.34	0.80	39.90
Croatia	1.35	0.85	29.00
Germany	**1.36**	**0.94**	**28.30**
Italy	**1.38**	**0.94**	**36.00**
Armenia	1.39	0.78	33.80
Moldova	1.40	0.71	33.20
Georgia	1.41	0.75	40.40
Spain	**1.41**	**0.95**	**34.70**
Austria	**1.42**	**0.95**	**29.10**
Switzerland	1.42	0.96	33.70
Macedonia (TFYR)	1.43	0.80	39.00
Portugal	**1.46**	**0.90**	**38.50**
Estonia	**1.49**	**0.86**	**35.80**
Canada	1.53	0.96	32.60
Trinidad and Tobago	1.64	0.81	38.90
Belgium	**1.65**	**0.95**	**33.00**
Netherlands	**1.72**	**0.95**	**30.90**
China	1.73	0.78	46.90
Australia	1.79	0.96	35.20
Denmark	**1.80**	**0.95**	**24.70**
Sweden	**1.80**	**0.96**	**25.00**
Azerbaijan	1.82	0.75	36.50
United Kingdom	**1.82**	**0.95**	**36.00**
Finland	**1.83**	**0.95**	**26.90**
Norway	**1.85**	**0.97**	**25.80**
Thailand	1.85	0.78	42.00
Mongolia	1.87	0.70	32.80
Sri Lanka	1.88	0.74	40.20
France	**1.89**	**0.95**	**32.70**
Tunisia	1.93	0.77	39.80

Chile	1.94	0.87	54.90
Ireland	1.96	0.96	34.30
New Zealand	1.99	0.94	36.20
Iran (Islamic Republic of)	2.04	0.76	43.00
United States	2.05	0.95	40.80
Algeria	2.06	0.73	35.30
Costa Rica	2.10	0.85	49.80
Uruguay	2.12	0.85	44.90
Turkey	2.14	0.78	43.60
Viet Nam	2.14	0.73	34.40
Indonesia	2.18	0.73	34.30
Mexico	2.21	0.83	46.10
Colombia	2.22	0.79	58.60
Argentina	2.25	0.87	51.30
Brazil	2.25	0.80	57.00
Kazakhstan	2.31	0.79	33.90
Morocco	2.38	0.65	39.50
Jamaica	2.43	0.74	45.50
Kyrgyzstan	2.48	0.70	30.30
Uzbekistan	2.49	0.70	36.80
Peru	2.51	0.77	52.00
Venezuela (Bolivarian Republic of)	2.55	0.79	48.20
Panama	2.56	0.81	56.10
Ecuador	2.58	0.77	53.60
Malaysia	2.60	0.81	49.20
South Africa	2.64	0.67	57.80
El Salvador	2.68	0.74	52.40
Israel	2.75	0.93	39.20
Nicaragua	2.76	0.71	43.10
Dominican Republic	2.81	0.78	51.60
India	2.81	0.62	36.80
Bangladesh	2.83	0.55	33.40
Egypt	2.89	0.71	34.40
Botswana	2.90	0.65	60.50
Paraguay	3.08	0.76	58.40
Jordan	3.13	0.77	38.80
Cambodia	3.18	0.60	41.70
Namibia	3.19	0.65	74.30
Zimbabwe	3.19	0.51	50.10
Philippines	3.23	0.77	44.50
Nepal	3.28	0.53	47.20
Honduras	3.31	0.70	53.80
Tajikistan	3.35	0.67	32.60
Lesotho	3.37	0.55	63.20
Bolivia	3.50	0.70	60.10

Pakistan	3.52	0.55	30.60
Ghana	3.84	0.55	40.80
Guatemala	4.15	0.69	55.10
Cameroon	4.31	0.53	44.60
Mauritania	4.37	0.55	39.00
Madagascar	4.78	0.53	47.50
Kenya	4.96	0.52	42.50
Mozambique	5.11	0.38	47.30
Tanzania (United Republic of)	5.16	0.47	34.60
Zambia	5.18	0.43	50.80
Ethiopia	5.29	0.41	30.00
Nigeria	5.32	0.47	43.70
Benin	5.42	0.44	36.50
Yemen	5.50	0.51	33.40
Malawi	5.59	0.44	39.00
Burkina Faso	6.00	0.37	39.50
Uganda	6.46	0.51	45.70
Mali	6.52	0.38	40.10
Albania	7.07	0.80	31.10
Korea (Republic of)		0.92	31.60

ANNEX 2: STATISTICAL ANALYSIS

Correlation Matrix	**total fertility rate**	
Availability of EC	**0.637**	*R*
	0.00107343	*P-value*
Modern contraception (married women, ages 15-49)	**0.631**	*R*
	0.00123967	*P-value*
Teen birth rate	**0.497**	*R*
	0.01578056	*P-value*
Sex education	**0.46**	*R*
	0.02721082	*P-value*
Abortion	0.1992837	*R*
	0.36196635	*P-value*
Paid leave for childbearing	0.35769013	*R*
	0.09379202	*P-value*
% of APW spent on child care	0.31057551	*R*
	0.22502096	*P-value*

Regression 1	*R*	*R Square*	*R Square Change*	*Sig. F Change*
sexual and reproductive health and rights Index	0.764	0.583739	0.583739206	**2.20428E-05**
% APW	0.765	0.585844	0.002104526	0.753188203
Paid leave	0.81	0.656843	0.070998815	0.062049561
Regression 2	*R*	*R Square*	*P-value*	
APW, Leave, sexual and reproductive health and rights Index	0.804	0.64634	**0.003**	
Regression 3	*R*	*R Square*	*R Square Change*	*Sig. F Change*
Availability of EC	0.637	0.406117	0.406116582	**0.001073434**
Modern contraception usage	0.761	0.579703	0.173586201	**0.009381417**
Sex education	0.762	0.580074	0.000370898	0.898288728
Teen birth rate	0.812	0.659646	0.079572536	**0.055069795**
Abortion	0.814	0.662105	0.002458641	0.729379666
Paid leave for childbearing	0.833	0.694511	0.03240585	0.211086701
% of APW spent on child care	0.849	0.721392	0.026880842	0.247616604
Regression 4	*R*	*R Square*	*P-value*	
sexual and reproductive health and rights Index	0.764	0.583739	**2.20428E-05**	
Regression 5	*R*	*R Square*	*P-value*	
Abortion, Sex Education, Availability of EC, Modern contraception usage, Teen birth rate	0.814	0.662105	**0.001**	