Institution: University of Northumbria at Newcastle		
Unit of Assessment: 14 (Geography and Environmental Studies)		
Title of case study: Transforming international efforts to end Female Genital Mutilation/Cutting		
Period when the underpinning research was undertaken: 2016 – 2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	**Role(s) (e.g. job title):**	**Period(s) employed by submitting HEI:**
Ngianga-Bakwin Kandala	Professor	01/09/2015 – 13/04/2020
Paul Komba	Senior Research Fellow	01/05/2018 – present
Lubanzadio Mavatikua	Research Fellow	20/09/2018 – 30/11/2019
Chibuzor Nnanatu	Research Fellow	01/09/2018 – 01/11/2019
Period when the claimed impact occurred: 2017 – 2020		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact

In 2015, the United Nations (UN) unanimously agreed to eliminate Female Genital Mutilation/Cutting (FGM/C) by 2030 as part of the Sustainable Development Goals. However, progress towards ending these harmful practices has been sporadic. Since 2016, Northumbria University has been investigating spatial and temporal trends in FGM/C using demographic and health datasets. This analysis enabled the UN to estimate that 68,000,000 girls worldwide are at risk of FGM/C by 2030. The research more accurately identified FGM/C hotspots which transformed the UN's FGM/C programmes through better strategic allocation of over USD70,000,000 of UNFPA-UNICEF funding (2018-2020) across 17 countries. Northumbria's research also identified new avenues of legal recourse, which led to The World Bank adopting a new legal and capacity-building framework designed to hold states to account. These international changes have resulted in country-level improvements in anti-FGM/C efforts, including new initiatives in Kenya, Egypt, and the UK, as well as new legislation in Sierra Leone, Guinea Bissau, and Equatorial Guinea. Northumbria's research also informed one of the key international policy documents focused on the elimination of FGM/C, the UN's Human Rights Council's resolution A/HRC/RES/38/6.

2. Underpinning research

Female Genital Mutilation/Cutting (FGM/C) is an internationally-recognised human rights violation. Its elimination is one of the targets under the United Nations (UN) Sustainable Development Goals (SDG 5.3). Northumbria University research, led by Professor Ngianga-Bakwin Kandala, investigated spatial and temporal FGM/C trends to build evidence in support of international interventions in high-prevalence countries.

In 2016, Northumbria University was commissioned by the Population Council to use innovative approaches to analysing successive household data in order to reveal FGM/C trends, geographic patterns, and risk factors among girls aged 14 and younger in Kenya. The research was conducted using a statistical modelling technique called survival analysis, which is utilised to estimate the expected duration of time until an event (typically the occurrence of death or disease). Professor Kandala realised that the age of girls' genital cutting could be treated as an event for survival analysis. The innovative decision to use this form of analysis allowed for the interpretation of complex data sets with a dynamic interaction of factors [**R1**]. This was enabled by advanced Bayesian geo-additive modelling techniques. The study revealed the prevalent spatial and temporal trends across different geographical scales (national, regional, county, district), showing that whereas the overall number of FGM/C cases on a national scale had decreased between 1998 and 2014, some regions continued to exhibit large volumes of cases [**R1**]. These high-risk regions were identified as FGM/C hotspots. Funding of GBP362,000 for this work was awarded to Kandala by UK Aid and the UK Government through the Department for International Development-funded project, *'Evidence to End FGM/C: Research to Help Girls and Women Thrive'*, coordinated by the Population Council (grant number SR1801).

The success of these novel techniques in revealing new insights into the prevalence and patterns of FGM/C was recognised by the United Nations Population Fund (UNFPA) and the United Nations Children's Fund (UNICEF). Northumbria University developed the research to build a detailed, granular understanding of FGM/C practices for the '*UNFPA-UNICEF Joint Programme to Eliminate Female Genital Mutilation: Accelerating Change*' designed to estimate the number of girls at risk worldwide. Employing data sets from 17 countries spread across Africa and the Middle East, this research investigated the geographical variations of FGM/C practices over sustained periods of time (1990-2017) in low- and middle-income countries [**R2**]. Research revealed significant downward trends in FGM/C on the regional level in East Africa. By contrast, the decline in prevalence has been much slower in North Africa and West Africa.

Further work revisited FGM/C in Kenya [**R3**], but also focused on new locations, such as Senegal [**R4**] and Nigeria [**R5**]. The objective of this research was to identify and map FGM/C hotspots in order to give an accurate picture of the dynamics of FGM/C in these countries. These studies recommended re-allocating resources to FGM/C hotspots and using campaigns targeted at specific populations. Collectively, these studies demonstrated the importance of creating evidence-based policies that account for the global trends in FGM/C as well as in-depth understanding of the socio-cultural differences between communities.

Northumbria's research assessed individual- and community-level characteristics, as well as the geographical location of a girl and her mother. Other characteristics included socio-demographic variables such as age of a girl and her mother, mother's education, ethnicity, and household wealth. Researchers also developed a variable called the ethnic fractionalization index (EFI), which measured the level of ethnic mixing of a given community. Including the EFI variable in the models was justified by the hypothesis that different social norms may be influenced by different reference groups, with tolerance towards change higher among certain groups. In regions where there is little ethnic diversity, and where the prevalence of FGM/C is near-universal, there may be little opportunity to shift to a reference group that does not uphold the practices. For example, the prevalence of FGM/C among the Somali ethnic group is high, irrespective of whether the group lives in Somalia, Kenya, Ethiopia, or Tanzania [**R3**].

Northumbria researchers also conducted the first systematic interdisciplinary research study into the legal aspects of FGM/C on the global scale [**R6**]. This research demonstrated a significant gap between existing regulations and enforcement practices on the ground. The authors argued that making states liable for the actions of FGM/C perpetrators and imposing penalties and compensation could encourage states to assume a more robust and proactive role in enforcing the law and allowing more victims to obtain redress [**R6**]. The research demonstrated how international human rights law may be used effectively to make a difference to the lives of FGM/C survivors and enable their representatives to make arguable cases for civil remedies before the appropriate jurisdictions. The research was published as a book [**R6**] and was supported by the World Bank's '*Empowering Women by Balancing the Law*' initiative.

3. References to the research

R1. **Ngianga-Bakwin Kandala**, Kinyoki, D., Sarki, A., Gathara, D., Komba, P., and Shell-Duncan, B. (**2017**) Project report 'Modelling and mapping of girls' Female Genital Mutilation/Cutting in the context of economic, social and regional disparities: Kenya demographic and health surveys 1998-2014' *Population Council Programme 'Evidence to End FGM/C'* https://www.popcouncil.org/uploads/pdfs/2017RH_FGMC-ModelingMappingKenyaDHS.pdf Available on request

R2. **Ngianga-Bakwin Kandala**, Ezejimofor, M., Uthman, O., and **Paul Komba** (**2018**) 'Secular trends in the prevalence of Female Genital Mutilation/Cuttings among girls: a systematic analysis' *BMJ Global Health* **3**(5): 1-7 http://dx.doi.org/10.1136/bmjgh-2017-000549

R3. **Ngianga-Bakwin Kandala**, **Chibuzor Nnanatu**, Atilola, G., **Paul Komba**, **Lubanzadio Mavatikua**, Moore, Z., Mackie, G., and Shell-Duncan, B. (**2019**) 'A spatial analysis of the prevalence of Female Genital Mutilation/Cutting among 0-14 year old girls in Kenya' *International Journal of Environmental Research and Public Health* **16**(21): 4155 https://doi.org/10.3390/ijerph16214155

R4. **Ngianga-Bakwin Kandala** and Shell-Duncan, B. (**2019**) 'Trends in Female Genital

Mutilation/Cutting in Senegal: What can we learn from successive household surveys in sub-Saharan African countries?' *International Journal of Equity and Health* **18**(25) https://doi.org/10.1186/s12939-018-0907-9

R5. **Ngianga-Bakwin Kandala**, **Paul Komba**, **Chibuzor Nnanatu**, Atilola, G., **Lubanzadio Mavatikua**, Moore, Z., and Matanda, D. (**2020**) 'Modelling and mapping of risk factors of Female Genital Mutilation/Cutting prevalence among girls aged 0-14 in Nigeria: Evidence from DHS and MICS 2003-2017' *Population Council Programme 'Evidence to End FGM/C'* https://www.popcouncil.org/uploads/pdfs/2020RH_FGMC_ModellingMappingNigeria.pdf Available on request

R6. **Ngianga-Bakwin Kandala** and Komba, P. (**2018**) *Female Genital Mutilation Around the World: Analysis of Medical Aspects, Law and Practice* (Springer, Cham) Print ISBN 978-3-319-78005-4 https://doi.org/10.1007/978-3-319-78007-8

Professor Kandala was PI on all of this work, conducted in collaboration with colleagues from the Universities of Warwick and Cambridge in the UK, California and Washington in the USA, and non-academic partners.

4. Details of the impact

By utilising novel techniques to more accurately identify the number and characteristics of girls at risk of FGM/C, Northumbria University's research has transformed international efforts to end the FGM/C practices. Through the UNFPA-UNICEF programme and revised funding allocation strategy, Northumbria's research impacted national roadmaps to end FGM/C in 17 African countries. The research led the World Bank to change its strategy on holding states to account and supporting legislators. This resulted in new legislation in three countries and improved efforts by other states. The research also informed a UN resolution on FGM/C.

4.1 Transforming international efforts to end FGM/C through UNFPA

Prior to Northumbria's research utilising survival analysis to identify the geo-spatial distribution of FGM/C, the figures on the number of girls at risk used by UNFPA were outdated and incomplete [**E1**, p1]. The new data generated by Kandala and his team on the distribution of FGM/C according to different variables (age groups, ethnicity, religion) and across geographical scales (national, regional, county, district) was adopted by the UNFPA-UNICEF programme [**E1**, p1; **E2**]. The research enabled UNFPA to account for the changes in population growth and allowed the agency to revise their data on girls and women at risk of FGM/C. Accurate calculation of the number of girls at risk is crucial for evidence-based anti-FGM/C efforts [**E1**, p1]. The new method was applied across 17 high-prevalence countries. Dr Nafissatou Diop, Chief of the Gender and Human Rights Branch at the UNFPA, confirmed:

> '*Based on the survival analysis, Professor Kandala and his research team from Northumbria University and UNFPA demographers developed a methodology for analysing the annual number of girls at risk of FGM… This work provided the UNFPA with detailed, accurate and up-to-date representation of FGM prevalence… [This] allowed us to revise the earlier used incorrect number of 3 million of girls and women at risk of FGM… As a direct result of Northumbria University's research, UNFPA started to use the new methodology of calculating number of girls at risk of FGM (based on survival analysis of datasets) … Once the analysis of number of girls at risk was completed for individual countries, we were able to calculate the aggregated number of 68,000,000 girls at risk of FGM by 2030'* [**E1**, p1-2].

Dr Diop added: *'The number of 68 million girls at risk by 2030 is frightening, and due to its frightening nature UNFPA was able to bring attention to FGM in international media and through an array of high-profile events'* [**E1**, p4]. In February 2019, UNFPA launched the '68 Million Girls at Risk' exhibition that was presented in New York, Geneva, and Brussels. The new data about the numbers of girls at risk was vitally important in bringing the attention of media, policy-makers, and the public to the issue of FGM/C, raising the visibility and urgency to eliminate the practices. UNFPA's media analysis estimated the exhibition led to an estimated 4,660,000,000 (non-unique) webpage views via the international media coverage [**E1**, p6]. Dr Diop stated: *'I am happy to note that… practitioners and advocacy groups around the world abandoned the previously-used statistics of FGM, and now use more accurate and up-to-date FGM prevalence numbers based on survival analysis'* [**E1**, p4].

Furthermore, Dr Diop confirmed that Northumbria's research *"transformed the Phase III of the 'UNFPA-UNICEF Joint Programme on the Elimination of FGM/C: Accelerate Change' (2018-2021). Based on the new understanding of the FGM hotspots, UNFPA changed the way funding is allocated to individual countries on the programme"* [**E1**, p2]. This transformation occurred in 2018 when, for the first time, UNFPA-UNICEF funding was allocated to countries through a three-tiered system that built on the research, to correspond to the number of girls at risk in each country [**E1**]. Countries identified as having more girls at risk received more funding. In 2018, this meant the Tier 1 countries of Burkina Faso, Djibouti, Egypt, Ethiopia, Kenya, Nigeria, Senegal, and the Sudan received USD11,806,482 from a total raised of USD14,387,090 [**E3**, p107]. The total funding for the project grew from USD14,400,000 in 2018 [**E3**, p107] to USD25,800,000 in 2019 [**E3**, p190], reaching USD30,000,000 in 2020 [**E1**, p2]. Hence, over three years of Phase III, Northumbria's research has shaped the allocation of over USD70,000,000 (2018-2020).

In Tier 1 countries, new funding led to significantly stronger and more impactful anti-FGM/C efforts. Dr Diop said *'[the new funding system is] unquestionably changing the national efforts to eliminate this harmful traditional practice, as it allows national coordination bodies, third sector organisations, advocacy groups, legal practitioners, religious and traditional leaders to build capacity for resisting FGM'* [**E1**, p3]. Two important examples are Egypt and Kenya. In Egypt, few steps were being taken to eliminate FGM/C, yet the number of girls at risk in the country was very large. The new funding directly led to a growth in the scale of ambition of anti-FGM/C efforts and the strength of the national workplan [**E1**, p2]. The new funding allowed Egypt to move away from small interventions into a full-scale national vision in terms of education, communication, work with the ministry of health, and wider society's perception of the issue. For Tier 1 country Kenya, the anti-FGM/C allocation increased from USD500,000 in 2018 [**E3**, p109] to USD4,500,000 in 2020 [**E1**, p2]. Enhanced funding has enabled national anti-FGM/C bodies and civil society to realise joint efforts to work towards the elimination of FGM/C and this has contributed to a presidential initiative to end FGM/C by 2022 [**E4**]. The Population Council also reported that the research enabled them to work more closely with stakeholders in partner countries. For example, the research informed the Kenyan Anti-FGM/C Board's 2019–2023 strategic plan [**E5**, p19].

Northumbria's research on the role of ethnicity in the prevalence of FGM/C also influenced where UNFPA directed interventions. Research findings were important, as they enabled coordination of policy efforts to eliminate FGM/C across borders. UNFPA worked with five countries (Uganda, Kenya, Ethiopia, Somalia, Tanzania) to develop cross-border collaboration and legal and policy frameworks aimed at eliminating FGM/C [**E1**, p3; **E6**]. In the UK, the same research enabled the UK's National FGM/C Centre to identify specific communities at risk and allocate resources accordingly [**E7**]. The Head of the National FGM Centre stated: '*Kandala's research has been indispensable to the success of our approach… The research has also been instrumental in identifying specific communities that practice FGM (e.g. particular ethnic groups)… For instance, without Kandala's research we would not be able to put in place a better strategy for the safeguarding of children in the London Boroughs of Barking and Dagenham* [**E7**].

4.2 Transforming legislative approaches through the World Bank

Northumbria's research enhanced context-specific understanding of FGM/C issues and, according to the World Bank's Senior Legal Counsel: *'As a result of Komba's and Kandala's research there has been a substantial transformation in the way in which The World Bank regards the role of the state in the face of FGM'* [**E8**, p2]. In particular, the World Bank used the research to develop a new policy on creating legislation that enabled victims of FGM/C to hold states liable for failures to protect them against the practices [**E8**, p2]. In February 2020, this led to new national legislation in Sierra Leone, Guinea Bissau, and Equatorial Guinea [**E8**, p2].

Advocacy programmes and training delivered by the World Bank in Africa have been influenced by the research, leading to the development of a new roadmap holding states to account for FGM/C practices. In Guinea Bissau and Equatorial Guinea, the research has been used to train 200 prosecutors, 140 lawyers, and 200 judges on litigation matters involved in the practices of

FGM/C. This resulted in improved legal practice [**E8**]. In Sierra Leone, research led to new evidence-based recommendations for advisers and judges in magistrate and high courts. As a result, a record number of lawyers in Sierra Leone have taken action for compensation for victims of FGM/C [**E8**, p2]. Thanks to these legal pressures, the World Bank is now seeing more efforts being made by the governments of Sierra Leone, Guinea Bissau, and Equatorial Guinea to enforce the law to protect victims of FGM/C and to provide justice for women and girls affected [**E8**]. The World Bank's Senior Legal Counsel stated: '*research by Komba and Kandala has changed fundamentally our approach to scrutinising the actions of governments in respect of FGM. The research by Komba and Kandala has provided new insights that we have incorporated into our own approach to FGM prevention and risk reduction*' [**E8**, p3].

4.3 Informing Human Rights Council's resolution

Through the estimate that 68 million girls are at risk of FGM/C by 2030 globally, which emerged from research at Northumbria, the UNFPA was able to influence the adoption of a resolution by the Human Rights Council to eliminate FGM/C [**E9**]. According to Dr Diop at the UNFPA:

> *'[Northumbria's research] findings informed the policy brief developed by the African Union (UNFPA's formal partners) for the 73rd Session of the UN General Assembly [2018]. During this session, the African Union presented the resolution A/HRC/RES/38/6 on the elimination of FGM that took into account key evidence emerging from the UNFPA-UNICEF Joint Programme… Through the UNFPA-UNICEF Joint Programme, Northumbria University's research informed one of the key international policy documents focused on elimination of FGM… Furthermore, during the 44th Session of the Human Rights Council [2020], resolution A/HRC/L.20 on the elimination of FGM was adopted, which was based on the 2018 A/HRC/RES/38/6 resolution... These policy documents are used as reference to guide and assess countries progress… This shows the wide influence of our programme and Northumbria University's transformative research'* [**E1**, p3-4].

5. Sources to corroborate the impact

Ref	Source of corroboration	Link to claimed impact
E1	Compilation of a testimonial from Dr Nafissatou Diop (Chief of the Gender and Human Rights Branch UNFPA), and Media Report	Corroborates more accurate calculation of number of girls at risk of FGM/C globally, changes to the UNFPA-UNICEF Joint Programme, transformed allocation of resources and benefits to countries
E2	UNFPA report 'Behind the curve: FGM trends we aim to change' (2018)	Confirms that UNFPA used Northumbria's statistical analysis to calculate projection of numbers of girls at risk 2015 - 2030
E3	UNFPA-UNICEF Joint Programme on the elimination of FGM/C: Accelerating Change, Two Annual Reports for 2018 and 2019	Illustrates new allocation of resources as a result of Northumbria's research
E4	UNFPA press release (2020)	Evidence of Kenyan presidential initiative to end FGM/C by 2022
E5	Population Council Evidence to End FGM/C report 'Reflections from five years of research' (2020)	Corroborates effect on national FGM/C activity
E6	UNFPA report 'Beyond the crossing: FGM across borders' (2019)	Cross-border interventions that have been informed by Northumbria's research
E7	Testimonial - Leethen Bartholomew (Head of the National FGM Centre, UK)	Highlights impact on the national efforts to eliminate FGM/C in the UK
E8	Testimonial - Isabella Micalli Drossos (Senior Legal Counsel, The World Bank)	Evidence of new approach to legal recourses, training, and legislation in Sierra Leone, Guinea Bissau and Equatorial Guinea
E9	Two Human Rights Council's resolutions: A/HRC/RES/38/6 (2018) and A/HRC/L.20 (2020)	Corroborates impact on international policy regarding the FGM/C