Changes in use of family planning methods among the urban poor: Evidence from Nairobi slums, Kenya

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Background

The mushrooming of informal settlements in urban areas in sub-Saharan Africa (SSA) is one of the tangible manifestations of the rapid urban growth in this region over the past twenty years. Indeed, the mismatch between rapid population growth of cities and the ability of the state to provide infrastructure and opportunities essential for leading fulfilling lives, led to a new face of abject urban poverty that is concentrated in slum settlements or slums. Slums are characterized by overcrowding, social and economic marginalization, poor environmental conditions, insecurity and little or no basic social services. During the period 1990-2010, the population of slum dwellers has doubled from 103 to 200 million but the proportion of urban residents living in slum settlements decreased from 70 to 62% during the same period.

Unlike in other developing regions, rapid urban population growth has been mostly driven by high natural increase in SSA, which accounts for about 75% of its urban growth and rural-urban migration accounting for only 25%. The relatively high fertility levels, that are far above replacement levels in most SSA countries contributes mostly to this high natural increase. The vast majority of countries whose total fertility rates (TFR) are higher than 5 are situated in the sub-Saharan Africa region. Ezeh and colleagues show that in many SSA countries, much of the high fertility among the urban poor is either mistimed or unwanted fertility. The urban poor may be in need of effective family planning services. Meeting this need will go a long way in improving their reproductive health through reduction of unintended pregnancies. Besides, reducing unintended pregnancies in poor urban areas in SSA will contribute to slowing rates of urban growth in the region. Consequently, improving access to voluntary family planning services will play a key role in reducing the pace of urban growth in SSA countries.

Kenya provides a typical example of SSA’s unabated urban crisis, with its urban population increasing from 17% in 1990 to 25% in 2014 and expected to reach 44% in 2050. About 55% of the country’s urban dwellers live in slum settlements in Nairobi, its capital city is a testimony of an African city that is growing at a rapid rate, despite poor urban governance and the limited employment and other life enhancing
opportunities that it offers to existing and incoming dwellers. Its population grew from 120,000 in 1948 to 3,138,369\(^2\). Consequently, between 60 and 70\% of the city’s residents are estimated to now live in slums or slum-like conditions, without proper access to such basic social services as sanitation and affordable clean water or employment opportunities,\(^4,6,14\). They have limited access to health services including reproductive health services, higher morbidity and mortality and engage in risky sexual behaviors, relative to other segments of the population\(^15,16,15-21\) 22-24 14,25,26 27. In particular, slum residents are known to have poorer sexual and reproductive health outcomes than their counterparts living in other parts of the city or even those living in rural areas. Within urban areas in Kenya, Ezeh et al. show that unmet need for contraception is greater among the poorest women as compared to their richest counterparts.\(^11\). Evidence also show that women from the lowest wealth quintiles in Kenya such as those living in urban slum settlements exhibit the greatest gap between wanted and observed fertility.\(^28\). However, Fotso and colleagues suggest that the poor-rich gap in the use of modern contraception in urban Kenya is dwindling, and that insignificant difference in modern CPR was observed in 2008/09 between the poor as defined by the lowest wealth quintile and the rich as defined by the highest quintile\(^29\).

This suggests that family planning programs may be increasingly reaching the urban poor. But mainly due to lack of specific data about these populations, it is difficult to confirm the increase of use family planning services and examine the mechanisms through which this important change is happening. Actually, beyond the lack of specific data, not much attention has been given to the reproductive outcomes of poor urban dwellers in Kenya and in SSA in general despite their increasing share in urban areas. In particular, the plight of the urban poor living in slums has been often hidden in urban indicators without any possibility of getting any meaningful evidence to guide targeted actions geared towards improving their living conditions. Yet, as urbanization continues unabated in Kenya, the wellbeing of the urban poor - whose majority live in slum settlements - will increasingly drive national development indicators including the Millennium Development Goals (MDGs), the upcoming Sustainable Development Goals, the FP2020 goals and other development indicators in the country and beyond. It is therefore central to understand and identify ways to address the poor reproductive health outcomes among poor urban slum populations in the country.

In this paper, we take advantage of unique data collected among representative samples of the slum population in Nairobi city in 2002 and 2012 to contribute to a better understanding of the reproductive outcomes among urban slum populations by examining 1) the changes in use of family planning services in slum settlements in Nairobi city, Kenya between 2000 and 2012; and 2) factors associated with changes observed in use of FP services between 2000 and 2012. Using decomposition analysis techniques, we aim to respond to the following questions: 1) how much of the change in use of modern contraceptive methods could be attributed to the compositional change
in the population during the period 2000-2012, and 2) how much of the change is actually brought about by possible changes in the relationship between contraceptive use and its determinants over time. The findings could help in understanding of the circumstances and factors surrounding use of FP services among the urban poor in order to design and implement appropriate intervention programs.

**Family planning in Kenya: Policy context**

Kenya was one of the pioneer countries in sub-Saharan Africa to initiate a nationwide family planning program in 1967. A strong political will enabled the success of the program throughout the 1980s and early 1990s. As a result, the contraceptive prevalence rate among married women (CPR) increased from 7% in 1978 to 33% in 1993 and 46% in 2008-09. Despite this impressive increase, unmet need for family planning is high and estimated at 24% among married women of reproductive age in 2008-09 with the poor and other socially marginalized groups being more disadvantaged. There are also wide regional as well as social strata differentials in use of contraceptive methods. Family planning utilization is poorest among adolescents with a CPR of 19.6% for any modern method. Over half of HIV positive women have unmet need for FP. This is largely due to inadequate service provision, poor access to FP commodities and lack of support for contraceptive commodity. In the late 1990s, the family planning program suffered from lack of funding that was majorly dedicated to the HIV epidemic and lack of political leadership. Other factors contributing to this situation include social and cultural beliefs and practices, lack of women’s empowerment, lack of male involvement, poverty, and weak health management systems.

A number of policies and programs have been formulated by the government of Kenya to remedy this situation, in line with Kenya’s commitment to the achievement of the ICPD and MDG goals, as well as other international development goals and targets. The Vision 2030 noted the need to address the reversals in reproductive health gains made in the 1980s and the early 1990s. Most notably, the National Reproductive Health Strategy 2009-2015 - a revision of the National Reproductive Health Strategy (NRHS) 1997-2010 - which was developed in 2009 aims at contributing to improved access, quality and equity of reproductive health services, explicitly advocating for expanding the uptake of services to underserved groups such as adolescents and people living with HIV/AIDS, and aiming at reducing the regional disparities in uptake of services. Reaching women living with HIV is in line with the National Reproductive Health and HIV Integration Strategy of 2010 whose main objective was to integrate HIV & AIDS services into the expanded reproductive health care and vice versa. In addition, the National Population Policy 2012-2030 aims to reposition family planning in the national development agenda, providing impetus that may accelerate the implementation of family planning programs in the country, thereby helping achieve
MDGs 4 and 5. Also, the 2010 Kenya constitution provides an enabling environment for improving access to family planning services as it guarantees the right to healthcare services including provision of reproductive health and family planning services. Similarly, it is expected that the adoption of devolution as part of this constitution will contribute to make RH services available in underserved areas. The National Roadmap for the attainment of the MDGs related to maternal and newborn health of 2010 complements the National Reproductive Health Strategy of 2009 in guiding the implementation of the reproductive health program. Through these policies and programs, Kenya clearly identified FP as one of the pillars by which to accelerate reduction of maternal and newborn mortality and morbidity, in addition to emergency obstetric and new born care, and skilled birth attendance.

For instance, the Ministry of Health in Kenya, in particular, introduced budget line for contraceptive commodities and made a policy shift on health service access whereby children under 5 years of age received free treatment at public health facilities. It is of special interest to assess the extent to which wellbeing and FP/RH indicators have changed among the slum dwellers in Nairobi in light of these programs and policies in the country.

**Data and Methods**

*Data*

We use unique DHS-type data from the Nairobi Cross-sectional Slum Surveys (NCSS) conducted by the African Population and Health Research Center (APHRC) in 2000 and 2012 in all the slums in Nairobi city, Kenya. The first Nairobi Cross-Sectional Slum Survey (NCSS 1) was conducted in 2000 among a random sample of 3256 women aged 15-49 years living in Nairobi slums, whereas in 2012, a random sample of 4240 women aged 12-49 years were interviewed in the second NCSS (NCSS 2). Only women who were married or living together are considered in this analysis, yielding an analytical sample of 1931 women in 2000 and 2345 in 2012. Data from both surveys were pooled together for the decomposition analysis, yielding a total sample of 4276 women aged 15-49.

The NCSSs constitute critical part of the search for pathways to reduce health inequities and improve FP/RH outcomes among vulnerable populations in Kenya and in other parts of sub-Saharan Africa. We collected data relevant to understanding the local situation of the urban poor on population, family planning and reproductive health (FP/RH), and maternal and child health.

The NCSS 1 was conducted in 2000 to document population and health problems among the residents of Nairobi’s informal settlements and to compare these with indicators from national surveys for other sub-groups of the Kenyan population. The survey report titled “Population and Health Dynamics in Nairobi’s Informal Settlements”
for the first time brought to light the plight of slum residents in Kenya which hitherto had been hidden in national data systems and urban averages. In particular, the survey brought to focus the excess mortality and disease burden among the urban poor compared to any other subgroup in the country; their limited access to health care and family planning services; and the debilitating environment that characterize slum life, including inadequate access to water and sanitation, poor housing conditions, high levels of unemployment and low and poor learning outcome, and last but not least, the complete absence of the public sector and other state players in the daily lives of slum residents.

In 2012, a little over a decade since the NCSS 1 survey was conducted, the Center implemented the NCSS 2 to take stock of the changes (or the lack there of) in health and demographic indicators among the urban poor since 2000, identify current challenges faced by the urban poor in access to and use of basic FP/RH services, particularly women and adolescents; assess the extent to which wellbeing and FP/RH indicators have changed among the urban poor in Nairobi in light of programs and policies targeting them since 2000.

Table 1. Sample size and key indicators, NCSS 2000 and 2012

<table>
<thead>
<tr>
<th></th>
<th>NCSS 2000</th>
<th>NCSS 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample size</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Households</td>
<td>5,490</td>
<td>4,564</td>
</tr>
<tr>
<td>Women (15-49)</td>
<td>3,892</td>
<td>3,256</td>
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<tr>
<td><strong>Key indicators</strong></td>
<td></td>
<td></td>
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<tr>
<td>TFR</td>
<td>4.0</td>
<td>3.5</td>
</tr>
<tr>
<td>% of women currently married</td>
<td>59.3%</td>
<td>60.6%</td>
</tr>
<tr>
<td>Median age at first marriage (25-39)</td>
<td>20.5</td>
<td>22.0</td>
</tr>
<tr>
<td>Median age at first birth (25-49)</td>
<td>19.9</td>
<td>20.0</td>
</tr>
<tr>
<td>Contraceptive Prevalence Rate</td>
<td>45.8</td>
<td>57.3</td>
</tr>
</tbody>
</table>

**Methods**

We used decomposition analysis techniques given our interest in identifying characteristics that may explain the difference in modern contraceptive use between 2000 and 2012 in Nairobi slums. Using this method, changes over time in levels of an outcome variable are decomposed in two components: one that explains changes due to differences in observable characteristics (endowments) and the other that explains changes due to the different effects of these characteristics (coefficients). In other words, it helps separate clearly the component of the difference in modern CPR between 2000 and 2012 that is due to compositional effects (endowments), due to behavioral effects (coefficients), and due to combined interaction between the two effects.
This technique is implemented in Stata 13.1 under the Blinder-Oaxaca decomposition model\textsuperscript{34,35}. It is also known as multivariate decomposition, component analysis, shift-share analysis or regression decomposition\textsuperscript{36,37}. Using this method, differences in means and proportions are decomposed using linear regression models, and logit or probit regression models, respectively\textsuperscript{38}. Given the binary type of the outcome variable used in this analysis, we will use the second option – a logit regression model – to estimate the factors associated with the changes in modern contraceptive use between 2000 and 2012 in Nairobi slums. The equation formula for the decomposition can be presented as follows:

\[
\text{Logit (NCSS2012)} - \text{Logit (NCSS2000)} = [\beta_0(2012) - \beta_0(2000)] + \Sigma \beta_{ij}(2012 - \beta_{ij}(2000)) + \Sigma \beta_{ij}(2000) * [P_{ij}(2012) - P_{ij}(2000)] + \Sigma \beta_{ij}(2012) - \beta_{ij}(2000)] * [P_{ij}(2012) - P_{ij}(2000)]
\]

Where:
- \( P_{ij}(2000) \) is the proportion of the \( j \)th category of the \( i \)th determinant in the NCSS 2000,
- \( P_{ij}(2012) \) is the proportion of the \( j \)th category of the \( i \)th determinant in NCSS 2012,
- \( \beta_{ij}(2000) \) is the coefficient of the \( j \)th category of the \( i \)th determinant in NCSS 2000,
- \( \beta_{ij}(2012) \) is the coefficient of the \( j \)th category of the \( i \)th determinant in NCSS 2012,
- \( \beta_0(2000) \) and \( \beta_0(2012) \) are the intercepts in the regression for NCSS 2000 and NCSS 2012 respectively.

\( \Sigma \beta_{ij}(2000) * [P_{ij}(2012) - P_{ij}(2000)] \) is the compositional component that reflects the difference in logits capturing the changes in contraceptive use due to variations in proportions of determinants between 2000 and 2012.

\( [\beta_0(2012) - \beta_0(2000)] * \Sigma P_{ij}(2000) \) is the behavioral component i.e. the difference in logits that captures the changes in contraceptive use due to changes in the effect of determinants between 2000 and 2012.

\( \Sigma [\beta_{ij}(2012) - \beta_{ij}(2000)] * [P_{ij}(2011) - P_{ij}(2000)] \) is the interaction component that reflects the changes in contraceptive use due to the interaction between compositional change and behavioral change between 2000 and 2012.

\emph{Outcome variable}

The outcome variable is use of a modern method of contraception at the time of the survey, with two categories (Yes vs. No). Modern contraception include: long-acting and permanent methods such as the intrauterine device (IUD), implants, and vasectomy, and short-acting methods such as include pills, injections, condoms, diaphragm/foam/jelly, lactational amenorrhoea (LAM).
Explanatory variables

A number of variables were found to be associated with use of contraception and will be used in the decomposition of the change in use of modern contraception between 2000 and 2012. These include: age group, education level, employment status, ethnic group, religion, whether or not the woman experienced the death of one or more children, the number of living children, wealth index, exposure to family planning information at a health facility, fertility preferences. We will separate the contribution of the change in the population structure from the change which is due to shifts in women’s behaviour.

Age group has three categories: 15-24, 25-34 and 35-49. Educational attainment is divided into three categories: Never attended school, primary, secondary or higher. Ethnicity comprises five groups – Kikuyu, Luyha, Luo, Kamba, and a combined group of other ethnic groups. Fertility preferences had 3 categories: wanting more, want no more, undecided. Religion has 4 categories: Catholic, Protestant/other Christian, Muslim and others. Number of living children have 5 categories: 0, 1, 2, 3, 4, 5 and plus. Wealth index is divided into poor, middle and rich categories. Women’s child mortality experience has 2 categories: No death and At least one child dead. To know whether women were exposed to FP messages, we created a 3-category variable: not visited a health facility over the past 12 months, visited and received FP information and visited but did not received any FP information.

Key findings

Descriptive Statistics

The socio-demographic characteristics of the sample of currently married women from the 2000 and 2012 NCSS are presented in Table 2. It shows that the composition of the population have changed, which could contribute to changes in use of modern contraception among these women. The percentage of young people decreased over time, going from 10% to 6% for 15-19 years-old, and from 31% to 27% for 20-24 years-old. On the contrary, the proportion of women aged 25-29 has increased from 27% to 32%. With respect to ethnicity, the proportion of Kamba has increased over time while that of Luhya and Luo had decreased during the same period. The proportion of Kikuyu women has not changed over time.

Data show an increase in educational attainment, with the percentage of women with no formal education significantly decreasing over time (from 6 to 2%) while that of those with at least secondary level of education increasing from 34% in 2000 to 46% in 2012. At the same time, the proportion of those with a primary level of education dropping from 61 to 52%, suggesting that the transition to secondary education might have improved during the survey periods.
The share of Christians in the sample has not changed much (95% in 2000 and 2012) although the percentage of Catholics dropped slightly while that of Protestant/Other Christian increased marginally during the period. The percentage of Muslims went down from 5 to 3% during the period.

The composition by wealth index has not changed much over time, with data showing that the percentage of women in the richest tertile increased from 28 to 32% between 2000 and 2012. Employment seems to have increased among the married women in the sample, with the proportion of those in employment going from 41% in 2000 to 46% in 2012.

There is not much change in the number of living children between 2000 and 2012, expect for the drop in the proportion of women with at least 5 children from 12% in 2000 to 6% in 2012. Woman’s child mortality experience declined over time, with the percentage of women who lost at least one child decreasing from 20% in 2000 to 9% in 2012.

In terms of fertility preferences, the percentage of married women who wanted to cease childbearing increased from 39% to 42% between 2000 and 2012, while the proportion of those who want another child dropped from 59% to 53% during the same period. Data show that the percentage of women who did not visit a health facility over the past 12 months decreased from 26 to 35% over time. Notably, the percentage of those who visited but did not receive any FP info significantly decreased between 2000 and 2012, going from 45 to 32%, suggesting that FP services may be reaching an increasing number of married women in the slums.

Table 2. Characteristics of currently married women in Nairobi slums – 2000 and 2012.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>2000 (1)</th>
<th>2012 (2)</th>
<th>% absolute change (3) = (2) − (1)</th>
<th>% relative change (4) = (3)/(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15-19</td>
<td>9.9</td>
<td>5.9</td>
<td>-4.0</td>
<td>-40.4</td>
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<tr>
<td>20-24</td>
<td>30.8</td>
<td>26.5</td>
<td>-4.3</td>
<td>-14.0</td>
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<tr>
<td>25-29</td>
<td>26.6</td>
<td>32.3</td>
<td>5.7</td>
<td>21.4</td>
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<tr>
<td>30-34</td>
<td>15.2</td>
<td>16.7</td>
<td>1.5</td>
<td>9.9</td>
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<tr>
<td>35-39</td>
<td>10.4</td>
<td>9.8</td>
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<td>-5.8</td>
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<tr>
<td>40-44</td>
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<td>5</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>45-49</td>
<td>2.2</td>
<td>3.8</td>
<td>1.6</td>
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<tr>
<td>Ethnic group</td>
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<td>16.8</td>
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<td>Religion</td>
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<tr>
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<td>Catholic</td>
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<td>Not Visited</td>
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<td>34.9</td>
<td>9.2</td>
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<td>Visited and told about FP</td>
<td>29.5</td>
<td>32.8</td>
<td>3.3</td>
<td>11.2</td>
</tr>
<tr>
<td>Visited but not told about FP</td>
<td>44.8</td>
<td>32.3</td>
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<tr>
<td>Number of living children</td>
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<td>Woman’s child mortality experience</td>
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<td>90.9</td>
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<tr>
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</tr>
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</table>

**Changes in modern contraceptive use between 2000 and 2012**

Overall, there was a dramatic increase in use of modern contraception among female slum residents between 2000 and 2012 – the modern CPR went from 34% in 2000 to 53% in 2012. In addition, there are marked variations in use of contraception by socio-demographics and economic characteristics (Table 3).

Overall, almost all groups showed some gains, with the magnitude of gains varying considerably. Modern CPR has dramatically increase among all age categories, with the 15-24 years old exhibiting the lowest use despite a considerable increase between 2000 and 2012. Luo women who were the lowest users recorded the highest increase between 2000 and 2012 (25%), followed by Kamba and Luhya women. The differences in use between ethnic groups dwindled over time.

Women with at least a secondary level of education continue to be the highest users but exhibited the lowest increase between 2000 and 2012. The gap between women with
primary education and those with at least a secondary level of education considerably narrowed down during the period, going from 13% in 2000 to 0.1% in 2012. The 15% percentage point gap in favor of employed women declined to only 6% between 2000 and 2012; use among unemployed women almost doubled during the 12-year period. The gap between rich and poor dwindled over time, with women from the poorest and middle categories recording the highest gains in terms of use of modern contraception.

Catholics exhibited the highest increase during the period, with Muslim remaining the lowest users despite a considerable increase over time.

The number of living children increase over time, with the percentage of women with at least 5 children almost doubling during the period. The percentage of women who experience the death of at least one child increased over time, going from 23% in 2000 to 47% in 2012. But the gap between women who did not lose any child and those who lost a child decreased over time.

Use of modern contraception significantly increased among women who did not visited any health facility during the 12 months preceding the survey (921%) and those who visited but did not receive any information about family planning (26%).

Contraceptive use was higher among those who want to stop giving birth both in 2000 and 2012. The difference between women who want to limit and those who want additional children increased from 9% in 2000 to 13% in 2012.

Table 3. Percentage of women using modern contraception by selected characteristics, NCSS 2000 and 2012.

<table>
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<tr>
<th>Characteristics</th>
<th>2000</th>
<th>2012</th>
<th>Absolute change</th>
<th>Relative change</th>
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<td>N</td>
<td>%</td>
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### Woman's Child mortality experience

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### Told about FP at a health facility

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#### Visited but not told about FP

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### Fertility preferences

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### Multivariate decomposition analysis

There is a huge and significant difference in the mean between 2000 and 2012, which seems to be brought about by positive effect of both net compositional change and net behavioral change. Overall, data in Table 4 suggest that the gap explained by changes in the effects of selected explanatory variables is higher than the gap explained by changes in these characteristics. In other words, increase in modern CPR is mostly brought about by changes in behavior of women of reproductive age between 2000 and 2012. If the behavior of women in reproductive age has not changed between 2000 and 2012, use of modern contraceptive use would have been much lower in 2012.

Table 4. Mean value of modern contraceptive use in 2000 and 2012
Table 5 shows that the contribution of independent variables varies considerably from one variable to another, reflecting which groups contribute most to the increase in use of modern contraception in Nairobi slums. In terms of compositional differences, woman’s education, ethnicity, woman’s child mortality experience, exposure to FP message through health facilities, and employment status seem to contribute the most to the overall endowment. These characteristics contribute 27%, 20%, 17%, 13% and 12%, respectively to the total difference between 2000 and 2012. The increase in the proportion of women with at least a secondary level of education contributes the most to the increase in contraception between 2000 and 2012. Similarly, the decrease in the share of women without formal education contribute to the observed increase. The effect of ethnicity seems to be driven by the decrease in the proportion of Luo women during the period, from 25 to 16%. With respect to woman’s child mortality experience, decreasing proportion of women who had lost at least one child from 80% in 2000 to 91% in 2012 is positively associated with the increase in contraceptive use during the period. The increase in the proportion of women who did not visit any facility over the past 12 months has a reversal effect on contraceptive use, whereas visiting a health facility improve access to modern contraception. Actually, the increase in the proportion of those who receive some FP information during a visit significantly contributed to the increase in modern contraceptive use. At the same time, the decrease in the share of women who visited a health facility but did not receive any FP information has also contributed significantly to the increase in use of modern contraception between 2000 and 2012.

When looking at the coefficients, it is worth noting that the high level of intercept suggests that there is an overall shift towards higher use of contraception between 2000 and 2012. But it also means that much of the increase in modern contraceptive use between 2000 and 2012 remains unexplained. The main explanatory variable whose changes in effects contribute the most to the overall increase in use of modern contraception between 2000 and 2012 is fertility preferences, contributing 28% to the total difference between 2000 and 2012. In particular, changes in use of modern contraception among Nairobi slum women is mainly explained by the behavior of women who want to cease childbearing. The overall increase in use of modern
contraception is mainly related to increased use by women who do not want to give birth during the period.

Some interaction effects were also apparent. Main interaction effects observed are for exposure to FP messages through health facilities, number of living children, and education. For instance, for education, one would say that the interaction effect of the increase in the proportion of those with at least a secondary level of education (from 34 to 46%) and the change in their behavior accounted for 10% of the total increase in contraception.

Table 5. Contribution of selected variables to the difference in use of modern contraception between 2000 and 2012

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<tr>
<th>Variable</th>
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<th>Coefficients</th>
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<th>Interactions</th>
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<td>Coef.</td>
<td>Sig.</td>
<td>%</td>
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<td>Sig.</td>
<td>%</td>
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<td>Sig.</td>
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*10% significance level; ** 5%; and *** 1% level.

**Discussions and Conclusion**

Using decomposition analysis techniques, we have examined the changes in use of family planning services in slum settlements in Nairobi city, Kenya between 2000 and 2012; factors associated with changes observed in use of modern contraception during this period. The technique helped separate clearly the component of the difference in modern CPR between 2000 and 2012 that is due to changes in the composition of women of reproductive age from the component that is due to shifts in behavioral effects during the period 2000-2012.

Findings show a dramatic 19% increase in use of modern contraception among women in Nairobi slums, going from 34% in 2000 to 53% in 2012. This suggests that an increasing number of urban poor women is accessing family planning services. This may be the result of efforts by the government of Kenya to reduce the disparities in uptake and use of family planning services through various programs and policies targeting the poor. Data also show that a slightly increased proportion of women want to cease childbearing (from 39 to 42% between 2000 and 2012) on one hand, and that the percentage of women who want additional children declined substantially from 59% in 2000 to 53% in 2012. Perhaps urban poor women are implementing their fertility preferences through uptake of modern methods.

Findings from the decomposition analysis show that the observed increase of modern CPR among Nairobi slum resident women is due to a change in their reproductive
behavior, which is consistent with findings from a recent study by Emina et al.\textsuperscript{39} who demonstrated that changes in behavior explain much of the increase in modern CPR in about 27 countries in SSA including Kenya. Again, this is probably due to the revival of family planning programs in Kenya over the past few years. In particular, data suggest that much of the increase in use of modern contraception by Nairobi slum women is due to the changes in the effect of fertility preferences on contraceptive use. Specifically, the changes is brought about by changes in behavior of women who want to cease childbearing. It is possible that an increasing number of women who want to limit childbearing are using effective modern methods of contraception to implement their fertility preferences. It is encouraging that such women with limited financial autonomy are able to implement their fertility preferences by adopting methods of contraception that are deemed efficient. A wide choice of family planning methods should be made available so as that those women who wish to stop giving birth find the appropriate methods to implement their desire.

The analysis also show that compositional changes in woman’s education contribute the most to the increase in contraception between 2000 and 2012. In particular, the increase in the proportion of women with at least a secondary level of education from 34\% to 46\% seem to play the biggest role in increasing modern contraception between 2000 and 2012. Also, the decrease share of women without formal education from 6\% to 2\% contributed to increased use of modern contraception. This corroborates women’s education as a key determinant of modern contraceptive use as evidenced elsewhere. This means that even in such impoverished areas such as slum settlements, education may be powerful in bringing social changes. Women with higher education are more likely to use modern contraception, mainly because of greater autonomy, financial and access to FP services, and greater social interaction. This provides a good reason for the government to continue improving women’s school participation through programs such as the Free Primary Education.

Changes in composition by ethnicity, woman’s child mortality experience and exposure to FP message through health facilities contribute also to the overall change due to endowment. It seems that slum women are benefiting from improved access to family planning information and services when they visit health facilities, which in turn contribute to better use of modern contraception. This is a call for continued efforts to reinforce family planning information and counselling efforts in health facilities.

Changes in woman’s experience of a child death is also key in increasing contraceptive use over time, with increasing survival of children from 80\% to 91\% being positively associated with the increase in contraceptive use between 2000 and 2012. When children survive, women engage less in replacing them and may therefore be more likely to use contraception, suggesting that survival of children appear to motivate women to practice contraception. This supports the assumption that a replacement effect exists in the relationship between child survival and fertility. Programs need to be
responsive to the increasing demand for effective contraception arising from the decline in child mortality in Nairobi slums.

References