



Published in final edited form as:

Matern Child Health J. 2014 January ; 18(1): 307–315. doi:10.1007/s10995-013-1266-1.

The Role of Gender Empowerment on Reproductive Health Outcomes in Urban Nigeria

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Abstract

Objectives—To date, limited evidence is available for urban populations in sub-Saharan Africa, specifically research into the association between urban women’s empowerment and reproductive health outcomes. The objective of this study is to investigate whether women’s empowerment in urban Nigerian settings is associated with family planning use and maternal health behaviors. Moreover, we examine whether different effects of empowerment exist by region of residence.

Methods—This study uses baseline household survey data from the Measurement, Learning & Evaluation Project (MLE) for the Nigerian Urban Reproductive Health Initiative (NURHI) being implemented in six major cities. We examine four dimensions of empowerment: economic freedom, attitudes towards domestic violence, partner prohibitions and decision-making. We

determine if the empowerment dimensions have different effects on reproductive health outcomes by region of residence using multivariate analyses.

Results—Results indicate that more empowered women are more likely to use modern contraception, deliver in a health facility and have a skilled attendant at birth. These trends vary by empowerment dimension and by city/region in Nigeria.

Conclusions—We conclude by discussing the implications of these findings on future programs seeking to improve reproductive health outcomes in urban Nigeria and beyond.

Keywords

Maternal Health; Gender; Family Planning; Reproductive Health; Nigeria; Urban

Introduction

Nigeria currently has a low use of family planning (FP) (10% of women use modern FP methods) and persistently high fertility leading to continued high maternal mortality and morbidity (1). Nigeria, the most populous country in Africa, is characterized by one of the highest levels of urbanization in the region (3.7% annually) and high levels of urban poverty with more than two-thirds of the urban population living in slums (2,3). Gender relations, women's participation in the workforce and social and cultural structures dynamically shift with increased levels of urbanization. These shifts indicate the need for more evidence on reproductive health outcomes in urban settings (4). While gender empowerment is viewed as an important factor in development, little is known about the association between gender empowerment and FP use and maternal health behaviors particularly among urban populations in Africa.

Definitions of women's empowerment have spanned a wide range of concepts. Maholtra, Schuler and Boender (5) explore the spectrum of empowerment definitions and present a comprehensive, multidimensional framework that includes empowerment through economic, sociocultural, familial and interpersonal, legal, political and psychological domains. Kabeer's (6) definition of empowerment, "...the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them" is used as a guide for the Maholtra framework. Many of the existing studies that examine empowerment and FP or maternal health outcomes have been from Asia, where definitions and measures of empowerment have been more fully explored. Several studies examining empowerment and maternal health in Asia defined empowerment as a combined measure of bargaining power, spousal awareness of gender equity and greater decision-making authority and found that more empowered women were more likely to make use of maternal healthcare services than less empowered women (7–14).

A smaller number of studies from sub-Saharan Africa were identified; these studies build on the empowerment measures developed in Asia (15–18). A study from Fotso and colleagues from 2009, explored associations between women's autonomy and the utilization of obstetric care services among women living in slums in Nairobi, Kenya. While strong associations were found between education and socio-economic status and service use,

results were weaker with regard to women's autonomy and obstetric service use. A meta-analysis of 31 countries, including some in sub-Saharan Africa, by Ahmed and colleagues (19) defined women's empowerment as a woman's ability to make decisions related to personal health care choices, freedom to visit family and friends, ability to make household purchases and to decide on key activities. This study found that higher levels of women's empowerment were associated with modern contraceptive use, attending four or more antenatal visits and having a skilled attendant at birth (19). A study using Demographic and Health Survey data (DHS) from eight countries in sub-Saharan Africa examined measures of women's status including household and financial decision-making and attitudes towards gender equity in relation to maternal and child health outcomes and found mixed results by country (20). Another multi-country analysis of DHS data in four African countries used a definition of empowerment which included economic independence, household decision-making, control over marriage, fertility, health-care seeking behavior, negotiation of sexual activity and perceptions of domestic violence (21). This study found positive associations between women's empowerment and FP method use in all countries in the analysis (21).

Only a few studies have examined women's empowerment in Nigeria. Kritz and Makinwa – Adebusoye (22) conducted a study in five states in Nigeria that examined the association between gender empowerment and reproductive behaviors. Women's empowerment (termed authority in the Kritz paper) was measured at the household and interpersonal levels and included economic autonomy, decision-making roles, and spousal communication dimensions (22). These measures of women's authority were examined from both the woman's and her partner's perspectives. The findings demonstrated that more empowered women, according to both women and their partners' perceptions of empowerment, were significantly more likely to use a FP method (22). Another study using data from eight states in Nigeria examined the impact of women's income generation on household decision-making (23). This study found that women living in poor households were less likely to have a say in household decision-making compared to women living in wealthy households (23).

The objective of this study is to investigate whether women's empowerment in urban Nigerian settings is associated with FP use and maternal health behaviors. Moreover, we examine whether the empowerment dimensions have different effects by region of residence.

Methods

Data

This study uses baseline household survey data from the Measurement, Learning & Evaluation Project (MLE) for the Nigerian Urban Reproductive Health Initiative (NURHI) being implemented in six major cities namely, Abuja, Benin City, Ibadan, Ilorin, Kaduna and Zaria. The cities were chosen by NURHI to include a mix between the Northern (Ilorin, Kaduna, Zaria and Abuja) and Southern regions (Ibadan and Benin City) of Nigeria and data were collected as part of the NURHI evaluation. The study protocol and tools were approved by the University of North Carolina Institutional Review Board (IRB) and the National Health Research Ethics Committee, Nigeria (NHREC) in Nigeria.

The MLE/NURHI baseline survey used a two-stage sampling approach to select a representative sample of households from each of the six cities. At the first level, we randomly selected city-level primary sampling units (PSU) from a sampling frame, which consisted of 2006 Population and Housing Census enumeration areas (EAs). Only urban EAs (as classified in the census) in study cities were eligible for inclusion in the survey. At the second stage, a random sample of 41 households was selected in each selected PSU for a total of approximately 3,000 women in each city. In selected households, all women ages 15–49 were eligible for interview. Women who provided verbal consent for interview were asked questions on demographics, reproduction, contraception, maternal and child health, fertility preferences, media access and use, and gender relations by a trained female interviewer. The total number of women with completed interviews across the six cities is 16,144. The data were collected between October, 2010 and March, 2011.

The sample used for this analysis varies slightly by the dependent variable of interest. For the FP analyses, only women currently married or in union who were not currently pregnant and had non-missing information on the independent variables were included (n=8,834 weighted sample size; see Table 1 for sample characteristics). For the maternal behaviors (institutional delivery and skilled attendant at delivery), the sample size is limited to women currently married or in union who have had at least one live birth in the last three years and had non-missing information on the independent variables. The analyses of institutional delivery and skilled attendants at delivery included a weighted sample of 5,133 women.

Dependent Variables

There were three dependent variables included in this analysis of FP use and maternal health behaviors. First, we focus on current use of a modern FP method. Next, we measure the presence of a skilled attendant at birth at the time of last delivery (among births within the last three years). The delivery assistance variable was recoded into a dichotomous response; women who responded that they were assisted by a doctor/clinical officer or nurse/midwife were considered to have had an assisted delivery with a skilled attendant and are coded one and all other women are coded zero. Finally, we measure institutional delivery at last birth in the last three years. All deliveries reported to have taken place in a facility were considered institutional births and were coded as one. Non-institutional births were coded as zero.

Independent Variables

A number of measures were included in the questionnaires to capture various dimensions of women's empowerment; each was coded so that a positive response was the more empowered answer. Seven questions on attitudes toward domestic violence were asked based on whether or not the man is justified in beating his wife/partner under various scenarios (see Table 2 for scenarios). For each item, women who responded that the man was not justified were coded one; all other women (i.e., the man is justified, don't know, or missing) were coded as zero. Six questions related to partner prohibition were asked (see Table 2 for details). This particular set of questions was only asked of women in union; hence, factor analyses were limited to the sample of women in union. For each partner prohibition variable, if a woman responded that her partner does not prohibit her from doing an activity she was coded one; all other women were coded zero.

The construct of equitable decision-making included four questions about who should have a greater say in decisions and gives the choice options: the husband, the wife, both equally or don't know/depends (see Table 2 for four questions). Women who responded either that the wife or both partners should have a say equally in decision-making were coded one; all other women were coded zero. To represent economic freedom, women were asked whether they had access to money that they alone could decide how to spend (yes – coded one, or no – coded zero).

To uncover and identify the relationship between the multiple measures of gender empowerment, we undertook exploratory factor analyses on the 17 domestic violence, partner prohibition, and decision-making variables. Factor analysis is a data reduction technique that permits an examination of the linear relationships between a large number of variables to identify a smaller number of factors that can be used to represent the multiple variables. These identified factors are called “latent variables” as they are represented by the full set of variables included, but each variable contributes more or less weight to the latent variable. The latent variable is labeled based on the variables that contribute the most. Using exploratory factor analysis, we determine how many factors are represented in the data based on factors with eigenvalues greater than one as was the case for the first three factors. While all variables loaded on all of the factors, the first factor had the highest loadings (i.e., values of 0.60 or greater) for the attitudes towards domestic violence variables; this factor has been labeled as the “empowered domestic violence latent variable (LV)”. Variables related to prohibition of key activities by a woman's partner loaded highest of any variables on the second factor with the highest loadings on the prohibitions to receive visits or to visit friends or family; this latent variable is labeled “freedom from prohibition LV”. Finally, variables related to autonomous decision-making in the household had the highest factor loadings on factor three with deciding medical care, deciding visits to friends, and small household purchases having the largest factor loadings; this latent variable is labeled “decision-making LV”. Each woman receives a value for the three latent variables based on the weighting and her specific responses to the variables that contribute; each latent variable is a continuous variable with low values representing low empowerment and higher values representing greater empowerment on the latent variable. Several control variables were included in this analysis across models. See Table 1 for a list of control variables and the classifications used.

Analysis

All analyses were performed using STATA statistical software version 12.0. Multivariate logistic regression methods were used to examine the associations between the four key gender latent variables and each of the three dependent variables controlling for key demographic characteristics. The sampling design for the survey was taken into account in the analysis using the STATA 12.0 svy commands; all analyses were weighted. Models are run for all cities and then stratified by region: Southern cities (Ibadan and Benin City), Northern cities (Ilorin, Kaduna and Zaria) and Abuja, as the capital city was run separately.

Results

Demographic characteristics of women

Key demographic characteristics are shown in Table 1 for those women ages 15 – 49 in the two analysis samples: a) women in union who are not currently pregnant and b) women in union who have had at least one birth in the three years preceding the survey. Women in the analysis samples are young (more than half are under 35 years; three-quarters are under 35 among women who had a recent birth), have two or more children (80%), are Muslim (more than 50%), worked in the last year (more than 64%), and a majority have at least junior secondary education or higher. Compared to the full sample of women surveyed, the analysis samples are significantly more likely to be Muslim and slightly less educated (not shown), reflecting greater marriage and fertility among the Muslim women and less educated women in these urban sites. Table 2 presents descriptive statistics for the indicators used to generate the continuous factor scores for the gender empowerment latent variables of freedom from prohibition, decision-making and empowered domestic violence among women in union. For the domestic violence variables, a larger proportion of women felt that a man was justified in beating his wife if he suspects adultery (26.7%) than the other situations presented. Across all cities, the most frequently prohibited activity was working outside the home (21.6%). The lowest levels of prohibition were observed for use of a mobile phone in all cities. Women's participation in household decision-making was highest for making small household purchases and lowest for large household purchases. About two-thirds of the women in union across the regions have access to money of their own. The table also shows differences in the gender variables across the regions included. Generally for the domestic violence variables, a lower percentage of women in the Northern cities tolerate wife beating than in Abuja or the Southern cities; this is the more empowered response. Conversely, a lower percentage of women report participation in household decision-making and working in the last year in the Northern cities. The pattern for prohibition is less clear by region.

Reproductive health and gender empowerment characteristics of women

Table 3 describes each of the reproductive health outcome indicators for all eligible women in union ages 15 – 49 years and presents the outcomes stratified by region. The percent of currently married women using a modern contraceptive method is 27.6% in all cities. Significant regional variation in contraceptive use is observed such that only 21.6% of women currently use a modern method in Northern cities, 33.9% use in the Southern cities and 36.7% use in Abuja ($p = 0.001$). Table 3 demonstrates that slightly less than three-quarters of women in all cities had a skilled attendant at their most recent delivery. This number drops to 64.8% of women living in Northern cities as compared to the Southern cities and Abuja that show higher rates of skilled attendants at birth with 87.9% and 84.6%, respectively; again, these differences are significant at $p = 0.001$. Among urban Nigerian women in union who have given birth recently, only 70.3% gave birth in a facility. Abuja and the Southern cities have significantly more institutional births reported with 83.0% and 87.5%, respectively as compared to only 58.9% in the Northern cities ($p = 0.001$).

Multivariate logistic regression results

Modern family planning use—Table 4 depicts results from the multivariate model with modern FP use as the dependent variable. In the model of all cities, women who have access to money of their own are significantly more likely to be using modern FP than women who do not have access to money of their own (OR=1.16; 95% CI, 1.00 – 1.34). Additionally, the results show that women with more empowered decision-making beliefs are significantly more likely to be modern FP users (OR=1.21; 95% CI, 1.12 – 1.31). A similar relationship is observed between attitudes towards domestic violence and modern FP use (OR=1.09; 95% CI, 1.03 – 1.16).

Table 4 also presents multivariate results stratified by region. Empowered views on domestic violence, freedom from prohibition and decision-making were all found to have a significant, positive relationship with modern contraception use in the Northern cities (OR=1.20; 95% CI, 1.06 – 1.36; OR=1.20; 95% CI, 1.03 – 1.39; and OR=1.25; 95% CI, 1.11 – 1.41, respectively). Results show that women's access to money/economic freedom did not attain significance at the $p<0.05$ level when city/regions are disaggregated. None of the empowerment measures were significantly related to modern FP use in the Southern cities and only decision-making was significant for women living in Abuja (OR=1.25; 95% CI, 1.03 – 1.52).

Skilled attendance and institutional deliveries

Results from the models featuring skilled attendance and institutional deliveries at last birth across cities are shown in Table 5. In all cities, women who have access to their own money are significantly more likely to have had a skilled attendant present at their last birth (OR=1.35; 95% CI, 1.10 – 1.64). These women are also significantly more likely to have given birth in a health facility (OR=1.30; 95% CI, 1.07 – 1.58). Empowered decision-making practices also have a statistically significant positive association with skilled attendance at birth (OR=1.21; 95% CI, 1.08 – 1.34) but did not attain significance at $p<0.05$ for the outcome of delivering in a health facility. Attitudes against domestic violence are significantly and positively associated with delivering in a health facility (OR=1.18; 95% CI, 1.09 – 1.30) and also with a skilled attendant at birth (OR=1.11; 95% CI, 1.01 – 1.21). Partner prohibition of key activities was found to be significantly related to having a skilled attendant present (OR=1.09; 95% CI, 1.00 – 1.19).

Table 5 also presents results by region from the models featuring skilled attendance and institutional deliveries at last birth as the dependent variables. In terms of institutional deliveries, in the Southern cities and Abuja, economic freedom was found to be a significant predictor (OR=1.64; 95% CI, 1.06 – 2.52; OR=2.54; 95% CI, 1.17 – 5.55, respectively). No significant relationship of economic freedom was identified in the Northern cities. In both the Northern and Southern cities, empowered domestic violence was found to be significantly associated with a women giving birth in a health facility (OR=1.16; 95% CI, 1.03 – 1.32 and OR=1.30; 95% CI, 1.10 – 1.52, respectively). This relationship was not significant in Abuja. Freedom from prohibition was found to have a significant relationship with institutional delivery only in the Southern cities (OR=1.20; 95% CI, 1.03 – 1.39).

The multivariate results for skilled attendance at last birth also varied by city-region. Economic freedom was significantly associated with having a skilled delivery for women living in the Southern cities (OR=1.95; 95% CI, 1.26 – 3.02) and in Abuja (OR=2.28; 95% CI, 1.06 – 4.92); this was not significant in the North. Freedom from prohibition was found to have a significant relationship with skilled attendance only in the Southern cities (OR=1.18; 95% CI, 1.03 – 1.36). The relationship between women's decision-making was only found to have a significant relationship with skilled attendance at last birth for women living in the Northern cities (OR=1.23; 95% CI, 1.08 – 1.40).

Discussion

Our study of urban areas in Nigeria demonstrates low levels of FP use, skilled delivery services and facility-level delivery, particularly in the Northern cities included in this study. Results show that women's empowerment within the context of her household and daily life and relations with her partner can play a powerful role in a woman's likelihood to use a modern contraceptive method or to have a birth in a health facility and with a skilled attendant. Our findings corroborate results from several studies from Asia and sub-Saharan Africa (7–14, 19).

Results from our study highlight the importance of context-specific relationships between gender issues and reproductive health behaviors in urban Nigeria. Large differences are observed between the Northern cities, Southern cities and Abuja in terms of the three outcomes of interest. There were also significant differences identified by city/region in terms of the influence of the different empowerment dimensions on the reproductive health outcomes examined. In terms of women's empowerment and modern contraceptive use, the lack of gender effects observed in Abuja and the Southern cities suggests the need to identify other factors that influence contraceptive use. The Northern cities included are more Muslim and tend to have more prohibitions on women and less empowered decision-making. In these sites, programs are needed to address cultural barriers to women accessing reproductive health services. These programs should work with women, men, and households to increase women's decision-making involvement and identify barriers to women accessing FP and safe motherhood options when in need. Our results demonstrate that urban Nigeria, as represented by our six cities, includes important distinctions regionally. Therefore, FP and maternal health programs need to be tailored to specific cities/regions.

This study has certain limitations that need to be articulated. Most of the current gender empowerment measures were originally developed in the context of South Asia and much work remains to fully test and validate adapted measures in the African context (5,20). Moreover, this study focuses on women in union and thus does not represent the empowerment measures for those women who are currently unmarried or not living with a partner; these women were not asked questions on partner prohibitions. Additionally, this sample is cross-sectional and thus not possible to determine the direction of causality between the gender measures and the key outcomes. Longitudinal data that will be available in this study after a midline in 2013 will create a cohort database that could be used to better

understand the causal association between gender empowerment and FP and reproductive health outcomes.

This study has implications for future research and programs in urban Nigeria. In order to better address urgent reproductive health needs, a greater understanding is needed of the barriers women face that prevent or discourage access to high quality FP and maternal health services in the urban context. This evidence should help guide city and region-specific programs that take into account varying contexts and health needs of women and men in Nigeria. Future studies should explore in more depth how and why gender empowerment affects FP and MCH outcomes; this information will be key for designing specific interventions to improve gender empowerment and help all women and men to have safe and healthy reproductive lives.

Acknowledgments

Funding for this work comes from the Bill & Melinda Gates Foundation. This research was also supported by grant, 5 R24 HD050924, Carolina Population Center, awarded to the Carolina Population Center at The University of North Carolina at Chapel Hill by the Eunice Kennedy Shriver National Institute of Child Health and Human Development. The contents of this paper are solely the responsibility of the authors and do not necessarily represent the official views of the funders. Earlier versions of this paper were presented at the International Family Planning Conference in Dakar, Senegal and at the Sixth African Population Conference in Ouagadougou, Burkina Faso. At the time the work on this project was performed, JC Fotso and L Irani were working on the Measurement, Learning & Evaluation project through the organizations listed. The authors would also like to thank Priya Nanda and Barbara Burke for their contributions to this paper.

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Table 1

Demographic characteristics of urban Nigerian women (ages 15 – 49) (%)

Characteristics		Women who are in union and not currently pregnant (N=8834)	Women in union who have had at least one birth three years prior to the survey (N=5133)
Age	< 20–34 years	55.8	77.7
	35–49 years	44.2	22.3
Religion	Christian/Other	46.3	40.7
	Muslim	53.7	59.3
Parity	0–1	18.8	20.8
	2–3	35.5	39.1
	3–4	16.1	15.1
	5+	29.6	25.0
City	Abuja	13.3	12.1
	Benin	11.1	10.0
	Ibadan	21.8	19.7
	Ilorin	17.1	16.8
	Kaduna	23.7	23.9
Zaria	13.0	17.4	
Education	None/Quranic	16.2	15.8
	Primary	19.5	20.7
	Junior sec.	41.7	43.5
	Higher	22.6	20.0
Wealth	Poor	17.3	19.7
	Second	20.9	21.7
	Middle	22.0	23.4
	Third	20.1	19.5
	Richest	19.7	15.7
Worked in the last year	No	30.5	36.0
	Yes	69.5	64.0

Note: the small number of women (n=52 among women in union and not pregnant and n=27 among women in union who had a birth in the last three years) with missing information on independent variables were dropped from this table and all further analyses.

Table 2

Gender empowerment characteristics of urban Nigerian women in union (ages 15 –49) (%)

Characteristics	All cities (N=9974)	Southern cities (Ibadan & Benin) (N=3198)	Abuja (N=1309)	Northern Cities (Ilorin, Kaduna & Zaria) (N=5467)
A man is justified in beating his wife in the following situations [Attitudes towards Domestic Violence]				
If she goes out without telling him	12.0	14.7	16.6	9.4
If she neglects the house or children	14.7	21.0	18.6	10.0
If she argues with him	12.7	16.8	14.2	9.9
If she refuses to have sex with him	11.7	13.8	13.2	10.1
If she cooks the food improperly	9.8	13.7	13.4	6.6
If he suspects her of being unfaithful	26.7	57.3	24.1	18.0
If she refuses to have another child	9.0	12.6	8.6	7.0
The woman's partner prohibits the following activities [Partner Prohibition]				
Work outside the home prohibited	17.4	12.2	15.1	21.0
Visits from people prohibited	7.4	11.6	6.7	5.2
Visiting friends prohibited	9.1	15.4	9.2	5.3
Visiting family prohibited	6.0	8.8	5.2	4.5
Using a mobile phone prohibited	5.2	7.3	4.2	4.3
Using contraceptives	21.6	20.6	17.7	23.1
Woman participates in the following household decisions [Decision-making]				
Making large HH purchases	22.7	23.6	34.8	19.3
Making small HH purchases	72.5	84.2	77.3	64.5
Deciding when to visit family/friends	57.0	64.0	67.9	50.3
Deciding when and where to seek medical care	56.2	64.8	67.6	48.5
Woman has access to money of her own [Economic Freedom]				
	67.4	70.7	72.8	64.2

Table 3

Maternal health characteristics of urban Nigerian women in union (ages 15 – 49) (%)

Characteristics	All cities	Southern cities (Ibadan & Benin City)	Abuja	Northern Cities (Ilorin, Kaduna & Zaria)
Modern family planning use ^{*†} (among women in union and not currently pregnant)	N=8834	N=2901	N=1174	N=4759
No	72.4	66.1	63.3	78.4
Yes	27.6	33.9	36.7	21.6
Skilled attendant at last birth [†] (among women who have had a birth in the last 3 years)	N=5133	N=1525	N=621	N=2987
No	26.0	12.1	15.4	35.2
Yes	74.0	87.9	84.6	64.8
Institutional delivery at last birth [†] (among women who have had a birth in the last 3 years)	N=5133	N=1525	N=621	N=2987
No	29.7	12.5	17.0	41.1
Yes	70.3	87.5	83.0	58.9

* Modern methods include: male and female sterilization, Intrauterine Contraceptive Device (IUCD), implants, injectables, oral contraceptive pills (progestin-only and combined), emergency contraceptive pills, diaphragm, male and female condom and the lactational amenorrhea (LAM) method.

[†] Significant differences across the distributions by city are found using the F-test at $p < 0.001$.

Table 4

Multiple logistic regression odds ratios (95% confidence intervals) of modern family planning use due to latent variable constructs, by region/city

Independent Variables	All cities N=8834	Southern cities (Ibadan, Benin) N=2901	Abuja N=1174	Northern cities (Ilorin, Kaduna, Zaria) N=4759
Empowered domestic violence LV	1.09 (1.03 – 1.16)**	1.06 (0.97 – 1.16)	1.02 (0.87 – 1.19)	1.20 (1.06 – 1.36)**
Freedom from prohibition LV	1.06 (0.99 – 1.12) ⁺	0.99 (0.92 – 1.08)	1.03 (0.89 – 1.21)	1.20 (1.03 – 1.39)*
Decision-making LV	1.21 (1.12 – 1.31)***	1.07 (0.95 – 1.20)	1.25 (1.03 – 1.52)*	1.25 (1.11 – 1.41)***
Access to money	1.16 (1.00 – 1.34)*	1.02 (0.83 – 1.27)	1.25 (0.85 – 1.84)	1.22 (0.98 – 1.53) ⁺

All models control for age, education, city (except for Abuja model), parity, religion, wealth, and woman's working in the last year.

CPR models are among women in union who are not currently pregnant.

OR (95% CI)

⁺ p 0.10;

* p 0.05;

** p 0.01;

*** p 0.001

Table 5

Multiple logistic regression odds ratios (95% confidence intervals) of maternal health outcomes due to latent variable constructs, by region/city

Independent Variables	Institutional Birth OR (95% CI)				Skilled attendant at birth OR (95% CI)			
	All cities N=5133	Southern Cities (Ibadan, Benin) N=1525	Abuja N=621	Northern Cities (Ilorin, Kaduna, Zaria) N=2987	All cities N=5133	Southern Cities (Ibadan, Benin) N=1525	Abuja N=621	Northern Cities (Ilorin, Kaduna, Zaria) N=2987
Empowered domestic violence LV	1.18 (1.09 – 1.30)***	1.30 (1.10 – 1.52)**	1.21 (0.96 – 1.53)	1.16 (1.03 – 1.32)*	1.11 (1.01 – 1.21)*	1.16 (0.98 – 1.37) ⁺	1.14 (0.91 – 1.42)	1.11 (0.98 – 1.26) ⁺
Freedom from prohibition LV	1.08 (0.99 – 1.18) ⁺	1.20 (1.03 – 1.39)*	0.79 (0.58 – 1.07)	1.06 (0.95 – 1.19)	1.09 (1.00 – 1.19)*	1.18 (1.03 – 1.36)*	0.78 (0.58 – 1.06)	1.08 (0.96 – 1.22)
Decision-making LV	1.10 (0.99 – 1.22) ⁺	0.94 (0.73 – 1.20)	1.25 (0.91 – 1.73)	1.13 (1.00 – 1.29) ⁺	1.21 (1.08 – 1.34)***	1.07 (0.84 – 1.36)	1.30 (0.94 – 1.82)	1.23 (1.08 – 1.40)**
Access to money	1.30 (1.07 – 1.58)**	1.64 (1.06 – 2.52)*	2.54 (1.17 – 5.55)*	1.15 (0.91 – 1.45)	1.35 (1.10 – 1.64)**	1.95 (1.26 – 3.02)***	2.28 (1.06 – 4.92)*	1.18 (0.94 – 1.49)

All models control for age, education, city (except for Abuja model), parity, religion, wealth, and woman's working in the last year.

Institutional birth and skilled attendant models are among women in union who have had a birth since 2009.

⁺ p 0.10;

* p 0.05;

** p 0.01;

*** p 0.001