Migrant Women's Use of Modern Contraception in Cotonou, Benin Republic

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ABSTRACT

Evidence shows that migration has critical consequences for sexual and reproductive health services utilization. Very few studies address the issue of contraceptive use among internal migrants in sub-Saharan Africa countries, partly because of the limitations of available data. Using data from a survey we conducted in Cotonou in 2018, this study examines how internal migration affects modern contraceptive use in Cotonou, the largest city of Benin Republic. The results firstly show that there was non-significant association between internal migration and modern contraceptive use. Then, statistically significant differences emerged when migration status is interacted with reason for migration. Migrants in Cotonou for school or work motive had the highest probability of using modern contraception (32%), compared with the other groups (predicted probability values ranging from 17% to 21%). In conclusion, disaggregating migration status by reason for migration leads to better understanding of the effect migration status has on modern contraceptive use.

BACKGROUND

Empirical evidence from sub-Saharan Africa shows an urban advantage in terms of contraceptive use. Contraceptive use levels in cities are generally higher than those of rural areas (Gueye et al. 2015; Beguy et al. 2017; Berhanu 2017; Mberu et al. 2017; Okigbo et al. 2017); which is in line with studies suggesting that rural inhabitants experience poorer reproductive health status than urban dwellers (Chintsanya 2013). In most of sub-Saharan Africa countries, where the economies are predominantly rural (Bocquier 2017), access to, or availability of reproductive health services is still problematic (World Health Organization 2017; Choudhury et al. 2018). As an immediate result, the pace of the decline in fertility rates is not sufficient as such to sustain economic growth and reduce poverty (Cleland and Machiyama 2017; Mbacké 2017).

In Benin Republic, a predominantly rural country (INSAE 2016), the level of modern contraceptive use is among the lowest in sub-Saharan Africa, and the fertility rate is moderately high (ICF International 2018). As reported in the 2012 Demographic and Health Survey (DHS) report, 7.9% of married women were using modern contraceptive methods, and the total fertility rate (TFR) was 4.9 children per woman (INSAE and ICF International 2013). These national figures conceal disparities between urban and rural areas. About 7 percent of rural women of reproductive age (15-49 years) were using a modern contraceptive method, compared with 10 percent of urban women (INSAE and ICF International 2013). The TFR in rural areas was 5.4 children per woman, compared with 4.3 in urban areas (INSAE and ICF International 2013). The current TFR is lower than that of 2006 where each woman had 5.7 children on average (ICF International 2018).

Like in many sub-Saharan Africa countries, the decline in fertility observed in Benin Republic occurred in a context of growing urbanization. In Benin Republic, the urbanization rate has increased from 34% in 1990 (United Nations 2014) to 45% in 2013 (INSAE 2016). Engel et al. (2017) have shown that the increased urbanization in Benin Republic is mainly driven by migrations from rural to urban areas. Also, migration from rural areas to cities is shifting the rural-urban balance of the population of Benin Republic. In consequence, the urbanization rate of the country will probably reach 61% according

to demographic projections of the United Nations (2014). Moreover, Anglewicz et al. (2017) suggested that rural-to-urban migration could have implications for population health. Migration to cities could either increase or decrease urban inequities in contraceptive use between migrants and non-migrants (Akinyemi et al. 2017; Anglewicz et al. 2017). In this regard, it is critical to know how migrants contribute to contraceptive uptake in cities; so, national policymakers and programme implementers can take appropriate action to improve family planning services utilization.

How migration to cities affects fertility as well as reproductive health issues has been extensively studied by demographers and other scientists (Subaiya 2007; Khanal et al. 2013; Cau 2016). However, there are very few studies on contraceptive use among migrants (Akinyemi et al. 2017; Shittu and Akinyemi 2017). This lack of attention is partly due to the relative scarcity of surveys that collect detailed data on both migration and contraceptive use (Lindstrom and Hernández 2006). For example, many DHS data do not include any direct question on migration. Some DHS data record the childhood place of residence—from which researchers can approach the concept of migration—but not the duration of stay in the current place of residence (Measure DHS 2008). Nevertheless, the 2012 Benin Republic DHS includes questions on migration and duration of stay, even though it is only in the household questionnaire (INSAE and ICF International 2013). Although statistical matching techniques provide a way to merge data coming from household and women questionnaire into a unique database, some bias can occur. Indeed, within the same household, information provided by the household respondent may be different from those provided by eligible respondents for any individual questionnaire.

The main contribution of the study is to use suitable data recording migration and birth histories as well as family planning use information in order to address appropriately migrant women's use of modern contraception. We conducted the study in Cotonou—the largest city of Benin Republic, where the high levels of immigration (INSAE 2016) coexist with inequities in access to and utilization of family planning services (INSAE and ICF International 2013). We use data from the Cotonou Fertility and Migration Survey (FMS) and examine modern contraceptive use among migrant and non-migrant women. Findings from this work will guide stakeholders that seek to influence family planning use, especially among the most vulnerable groups.

THEORETICAL FRAMEWORK

Research has identified migration as a life changing event with critical consequences for sexual and reproductive health services utilization (Subaiya 2007; Khanal et al. 2013; Cau 2016). Researchers suggest three main models or hypotheses for explaining differentials in contraceptive use between migrants and non-migrants: the adaptation hypothesis, the selection hypothesis and the disruption hypothesis (Brockerhoff 1995; Lindstrom and Hernández 2006; Subaiya 2007; Khanal et al. 2013; Sevoyan and Agadjanian 2013; Cau 2016). These hypotheses differ in several respects, the main difference being in the relationship between the timing of migration and change in the behaviours of migrants towards contraception. On the other hand, the three hypotheses are partly complementary and partly contradictory.

First, the adaptation model postulates that the higher utilization of contraception among migrant women in cities results from their adaptability to new socio-economic and

environmental constraints (Lindstrom and Hernández 2006; Sevoyan and Agadjanian 2013; Ochako et al. 2016). The living conditions in cities favour low fertility and an increased use of modern methods of contraception. Brockerhoff (1995) was one of the first authors to test the adaptation hypothesis in the African context. The author found that the odds of modern contraceptive use generally increased among migrants in cities around the time of migration, and remained high in the long run among most migrant groups. Research attributes the increase in modern contraceptive use among migrants to a high access to mass media education, urban living, and higher economic status, among others (Wang 2017). In Bangladesh for instance, Kamruzzaman and Hakim (2015) found that urban areas provide greater exposure to information about family planning through print and broadcast media. However, it takes time before migrants adapt to reproductive behaviours in cities. The accumulation of knowledge and the expansion of the range of social contacts in the new urban environment occur over time (Uprety et al. 2016). On behalf of the adaptation theory, we initially expect—in a relatively short-term—migrants in Cotonou to be less likely to use modern contraceptives than non-migrants in Cotonou (Hypothesis 1a). Then, with time passing, we expect no significant difference in modern contraceptive use between migrants and non-migrants in Cotonou (Hypothesis 1b).

Second, the selection model defines migrants in cities as a self-selected group with socioeconomic characteristics different from those of non-migrants in rural areas (Lindstrom and Hernández 2006; Ochako et al. 2016). The socioeconomic characteristics of migrants in urban areas predispose them to a preference for smaller families, and consequently greater odds of modern contraceptive use (Sevoyan and Agadjanian 2013). Particularly, empirical findings support that the higher level of contraceptive use among rural-urban migrants is mainly due to their higher socioeconomic status (Lindstrom and Hernández 2006; Sevoyan and Agadjanian 2013; Ochako et al. 2016). Migrants in cities are usually well-educated, often move to cities in search of well-paying jobs; which can lead to a delay in childbearing (Chattopadhyay et al. 2006; Rokicki et al. 2014; Marcén et al. 2016) and an increase in modern contraceptive use (Khanal et al. 2013; Ochako et al. 2016). Ochako et al. (2016) have pointed out a non-significant difference in modern contraceptive use between migrants and non-migrants in urban areas of Kenya. The authors have attributed this result to the specific high socioeconomic status of women who migrated to urban areas. Several other studies in sub-Saharan have found that migrants and non-migrants in cities have similar high socio- economic and demographic characteristics (De Brauw et al. 2014; Cau 2016; Mberu et al. 2017). Just like these sub-Saharan Africa countries, migrant women in Cotonou are supposed to have socio-economic and demographic characteristics relatively similar to those of non-migrant women in Cotonou. In consequence, after adjusting for women' socio- economic and demographic backgrounds, we expect migrant and non-migrant women in Cotonou to have similar chances of using modern contraceptives (Hypothesis 2).

Third, the disruption theory suggests that certain migrations implying temporary spousal separation lead to delays in childbearing (Bongaarts and Potter 1979; Khanal et al. 2013; Sevoyan and Agadjanian 2013; Khan et al. 2016). One of the first developments of this theory resulted from a study carried out by Goldstein and Tirasawat (1977) on the analysis of migrants' fertility in urban areas of Thailand. It was not until years later that some researchers tested the disruption hypothesis while focusing on family planning use among migrants (Moreno 1993; Brockerhoff 1995; Lindstrom and Hernández 2006; Sevoyan and Agadjanian 2013; Ochako et al. 2016). Most of them showed that temporary labour migrants, for example, were more likely to use modern contraception, particularly

as some of them were involved in extra-marital relations. In consequence, migration for economic reasons might contribute to an increase in contraceptive use, at least in the short-term. Moreno (1993), Lindstrom and Hernández (2006), and Ochako et al. (2016) confirmed the disruption hypothesis respectively in northeaster Brazil, Guatemala and Kenya. They argued that the higher likelihood of contraceptive use among migrants in cities reflects the possible disruptive nature of migration on childbearing. In line with these research findings, we expect that migrants for job or school reason have the highest chances of using modern methods of contraception (Hypothesis 3).

METHODOLOGY

Source of data

This paper used data from the Fertility and Migration Survey (FMS) we conducted in Cotonou from March-May, 2018. The survey used a sampling strategy stratified by Cotonou's 13 arrondissements (administrative districts) to select a total of 56 enumeration areas (EAs). We drew the EAs from the sampling frame from the 2013 General Census of Population and Housing. After listing and mapping each EA, we selected randomly 35 households per EA. Occupants in selected households were enumerated and eligible women of reproductive age (15-49 years) were contacted and considered for interview. The sample size is 1913 complete household surveys and 1949 complete female surveys. The survey gathers data on migration history, childbearing, fertility preference, family planning and other socio- economic and demographic variables. Especially, the migration history section contains information on locations where respondents previously lived. It also includes the year and month in which they moved to Cotonou, along with reasons for the migration. We excluded from the analysis moves that took place within Cotonou and those from other countries. The final sample used consists of 792 (1,068 weighted) currently sexually active women, with the exception of those who reported being pregnant at the time of the survey.

Variables

The dependent variable is the current use of any modern method of contraception. It is a binary variable taking the value of 1 if the woman reported using a modern method of contraception and 0 otherwise. Modern contraceptive methods include pill, intrauterine device, injectables, female condom, male condom, female sterilization, male sterilization, implants and lactational amenorrhea as classified by the DHS program (Rutstein and Rojas 2006).

The main independent variable of the study is the migration status. Drawing on the work of Garcia et al. (2015), we used information on the previous place of residence and duration of residence of women in Cotonou—the largest city of Benin Republic—to define migration. Migrants in this study are women who were living in Cotonou at least six months before the survey and who were residing somewhere else—in Benin Republic—previously. We then classified migrants into two groups: recent migrants and earlier migrants. Migrants who spent up to ten years in Cotonou at the time of the survey were considered as recent migrants. And those who spent more than ten years were considered as earlier migrants. This classification helps to test the gradual process of

adaptation as suggested by many researchers when studying the relationship between migration and reproductive behaviours (Sevoyan and Agadjanian 2013; Rokicki et al. 2014; Cau 2016; Khan et al. 2016; Akinyemi et al. 2017).

Other socio- economic and demographic variables—education among others—have also been found to greatly affect modern contraceptive use as well (Adebowale and Palamuleni 2014; Nair and Navaneetham 2015; Ochako et al. 2017). Some authors who analyzed the effect of migration on contraceptive use have repeatedly used these variables in order to control for selective migration (Lindstrom and Hernández 2006; Decat et al. 2011; Cau 2016; Ochako et al. 2016; Akinyemi et al. 2017). In this work, the other key independent variables are media exposure, education, fertility preference and religion. The variable of media exposure is a composite indicator including the frequency of: reading newspaper or magazine, listening to radio and watching television. We employed principal components analysis (PCA) method to assign the indicator weights that enabled to generate the media exposure index. Filmer and Pritchett (2001) recommended this technique for constructing index values. This procedure first standardizes the indicator variables (calculating z-scores); then the factor coefficient scores (factor loadings) are calculated; and finally, for each observation, the indicator values are multiplied by the scores and summed to produce the observation's index value. DHS experts use this technique on behalf of the construction of the DHS wealth index. Here, we used the first factor to represent the media exposure index. The media exposure index has two categories: low exposure and high exposure (see Appendix for statistical summary). Age and number of living children are our control variables. Finally, we created interaction terms using the motive for living in Cotonou and migration status.

Methods

We used binary logistic regression models to estimate how internal migration and other socio- economic and demographic variables affect modern contraceptive use in Cotonou. We presented findings through three different models. The first model presents the effect of migration on modern contraceptive use. The second model shows the relationship between migration and modern contraceptive use, after adjusting for the socio- economic and demographic variables mentioned above. The second regression model enables to see whether the odds of modern contraceptive use could be affected by the selective character of migration. Finally, interaction terms constructed from the combination of migration status and motive for living in Cotonou were introduced in the third model. This model enables to test the disruption hypothesis. Results are presented as odds ratios and, in the case of the interactions, as predicted probabilities. All models are presented after controlling for age and number of living children.

RESULTS

We first reported in Table 1 some descriptive statistics of the variables used in our analysis. There is no missing value for any of the variables. Table 1 indicates that the sample had more migrant women (59.06% including recent migrant women and earlier migrant women—32.94% and 26.12% respectively) than non-migrant women (40.94%). Few of the women (13.95%) were living in Cotonou exclusively for school or job motive. At the moment of the survey, only 2 in 10 women were using modern contraceptive

methods. Most of the respondents (72.06%) have attained at least a primary education. Approximatively two-thirds (64.09%) of the women had a high exposure to media through magazine, radio and television. At the time of the survey, the respondents were, on average, 31 years old; most of them were non-Muslims (85.80%); and more than one half (55.98%) wanted to have at least four children.

Table 1 Distribution of the dependent variable and independent variables: percentages / mean (standard deviations)

Variable	% / Mean (SD)	Observations
Modern contraception		
User	79.51	849
Non-user	20.49	219
Migration status		
Non-Migrant	40.94	437
Recent migrant	32.94	352
Less recent migrant	26.12	279
Living in Cotonou for work or school motive		
Yes	13.95	149
No	86.05	919
Education		
No education	27.94	298
Primary	28.08	300
Secondary or higher	43.98	470
Media exposure		
Low	35.91	384
High	64.09	684
Fertility preference		
0-3	44.02	470
4 or more	55.98	598
Religion		
Muslim	14.20	152
Non-Muslim	85.80	916
Living children		
None	23.87	255
1-2	40.09	428
3-4	28.91	309
5 or more	7.13	76
Woman's age (15-49)	31.00 (7.56)	1068
Number of observation	1,068	

Note: % = percentage; SD = standard deviation
Source: Fertility and Migration Survey, Cotonou, 2018

Next, we present the results of the multivariate analysis through Table 2 (Model 1-3) and Figure 1 (Model 3). All models were initially controlled for age and number of living children. These models may be summarized as follows.

Model 1. Shows the relationship between migration and modern contraceptive use. It gives an insight into the hypothesis of adaptation (Hypothesis 1).

Model 2. Model 1 plus four other socio- economic and demographic variables. This model enables to test the selection hypothesis (Hypothesis 2).

Model 3. Model 2 with migration status variable being replaced by interaction terms. Hypothesis 3 (disruption hypothesis) is tested through Model 3.

Adaptation hypothesis

The hypothesis regarding adaptation proposed that migrants adapt to non-migrants' contraceptive behaviour, but gradually. We expected that, few time after moving to Cotonou, migrants would be less likely to use modern contraceptive methods than non-migrants in Cotonou (Hypothesis 1a). And, with time passing, we expected no significant difference in modern contraceptive use between migrants and non-migrants in Cotonou (Hypothesis 1b). Findings corresponding to Model 1 in Table 2 show that the odds of using modern contraceptive did not differ significantly between recent migrants (odds ratio = 0.78, p-value > 0.10) and non-migrants. Likewise, migrant women who spent more than ten years in Cotonou had almost similar odds of using modern methods of contraception (non-significant odds ratio of 0.78) as non-migrant women. These results partially confirm Hypothesis 1. The adaptation process depicted in Model 1 in Table 2 is of a short-term rather than a long-term nature. The rapid adaptation of migrants may also be due to a selective migration of women who have preferences for smaller families.

Selection hypothesis

Hypothesis 2 expected non-significant effect of migration on modern contraceptive use after adjusting for women's socio- economic and demographic backgrounds—and regardless of how long migrants have resided in Cotonou. So, women's background variables were included in the analysis to further control for selective character of migration. Although non-significant, the differences of odds between migrants and non-migrants have decreased from 0.22 (in Model 1 in Table 2) to 0.13 (in Model 2 in Table 2). This result may be due to further selectivity of migrant women that is unobserved in this case. As shown in Table 2, Model 2 fit improves significantly. Indeed, the likelihood ratio test statistic value has increased from 34.91 (global p-value = 0.0000) in Model 1 to 58.20 (global p-value = 0.0000) in Model 2. Thus, migrant women (some of them, at least) have unobserved characteristics that increase their odds of modern contraceptive use. Controlling for this unobserved selectivity, however, does not change the previous results substantially. It can be established that some migrations are directly related to a delay in childbearing and therefore, an increase in modern contraceptive use. In other words, the figures obtained from Model 2 are supportive of the selection hypothesis, but the adaptation hypothesis still holds. These findings are consistent with Hypothesis 2 (selection hypothesis).

Table 2 Logistic regression models predicting modern contraceptive use. Odds ratios and predicted probabilities for the interaction effects (displayed in Figure 1)

Variable	Model 1	Model 2	Model 3
	Odds ratios	Odds ratios	Odds ratios
Migration status			
Non-Migrant	Ref.	Ref.	
Recent migrant	0.78	0.87	
Less recent migrant	0.78	0.87	
Education			
No education		Ref.	Ref.
Primary		1.39	1.42
Secondary or higher		1.82***	1.73**
Media exposure			
Low		Ref.	Ref.
High		1.30	1.33
Fertility preference			
0-3		Ref.	Ref.
4 or more		0.66**	0.65***
Religion			
Muslim		Ref.	Ref.
Non-Muslim		0.77	0.80
Living children			
None	Ref.	Ref.	Ref.
1-2	0.86	0.95	0.98
3-4	1.34	1.87**	1.94**
5 or more	2.17**	3.31***	3.33***
Woman's age	0.94***	0.93***	0.93***
			Pred. Prob. [CI min.; max.] [(a)]
Migration * Motive for living in current location			
Migrant * Job/Edu			0.32 [0.23; 0.40]
Migrant * ≠(Job/Edu)			0.17 [0.13; 0.20]
Non-mig * Job/Edu			0.17 [0.06; 0.29]
Non-mig * ≠(Job/Edu)			0.21 [0.18; 0.24]
Observations	792	792	792
Degree of freedom	6	11	12
Likelihood ratio	34.91	58.20	69.43
P-value	0.0000	0.0000	0.0000

Note: CI = confidence interval; Job/Edu = who are in Cotonou for work or school reason; ≠(Job/Edu) = who are in Cotonou neither for work, nor for school reason; Ref. = Reference category; For odds ratios, *** p<0.01, ** p<0.05, * p<0.1

[(a)] All predicted probabilities are significant at 0.0000

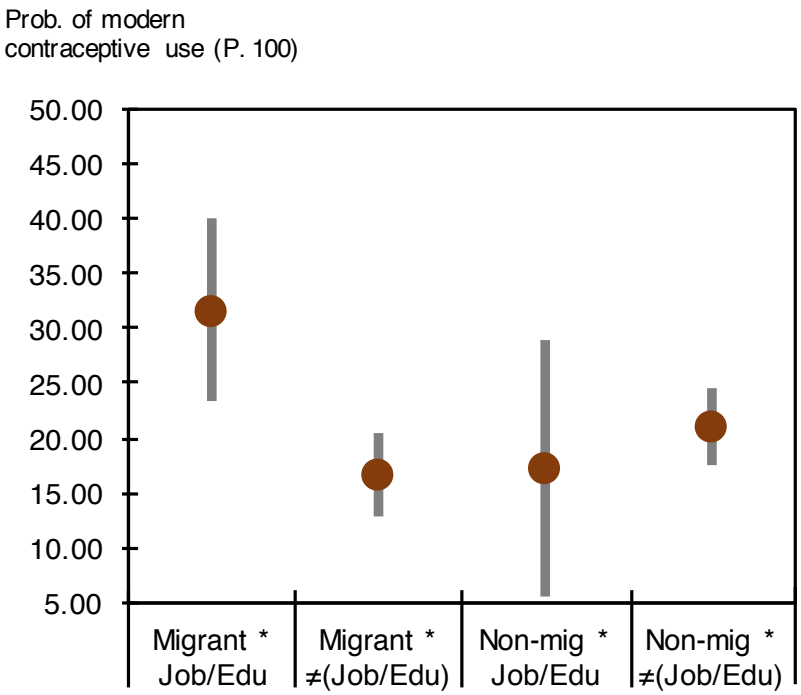
Source: Fertility and Migration Survey, Cotonou, 2018

Disruption hypothesis

In Model 3 in Table 2, we included interactions between migration and motive for living in Cotonou. Hypothesis 3 suggested that migrants for job or school motive would have the highest chances of using modern contraception. The effects of interactions on modern

contraceptive use are presented in Figure 1. Consistent with Hypothesis 3, Figure 1 shows that women who migrated to Cotonou for school or job motive had the highest probability of using modern contraception (32%), compared with the other groups (predicted probability values ranging from 17% to 21%). These probability values are significant. The model fit has, however, improved (likelihood ratio of 69.43 and p-value is 0.000), pointing the validity of the selection hypothesis. On the other hand, findings from Model 1 and Model 2 in Table 2 support a probable complementarity between the selection and adaptation hypotheses. We can therefore conclude that the three hypotheses are probably complementarity.

Figure 1: Effect of internal migration on modern contraceptive use in Cotonou, Benin Republic. Predicted probabilities (with 95% confident interval limits) of interaction terms between migration status and motive for living in Cotonou



Note: Job/Edu = who are in Cotonou for work or school reason;
≠(Job/Edu) = who are in Cotonou neither for work, nor for school reason
Source: Fertility and Migration Survey, Cotonou, 2018

Other variables

Finally, other variables such as education, age, fertility preference and number of living children had significant effect on modern contraceptive use. Women wanting at least four children by the end of their reproductive life were 35% less likely to use modern contraception than those wanting less. The higher the educational level and the number of living children, the higher the odds of modern contraceptive use. Particularly, women

with secondary education were 1.73 times more likely to use modern methods of contraception than their peers with primary education or less. There is an increased likelihood to use modern contraceptives for women with 3-4 children (1.94 times) and more than four children (3.33 times) compared to those with less than three children. And, the older the woman, the lower the odds of modern contraceptive use. The odds of using modern methods of contraception decrease by 7% per one-year increase in the age, all other factors being equal.

CONCLUSION AND DISCUSSION

This research contributes to the literature on the relationship between migration and reproductive health services utilization. We illustrate our case by studying the effects of internal migration on modern contraceptive use in Cotonou, the largest city of Benin Republic. In particular, we examine how internal migration affects modern contraceptive use through the adaptation, selection and disruption models. As previous research has shown, migration produces significant changes in reproductive health services utilization. Using three different logistic regression models, we were able to validate the selection hypothesis, the disruption hypothesis and partially, the adaptation hypothesis. These hypotheses are probably complementary. Additionally, women with secondary education or higher, desiring less than four children, having more than two children and those younger in age had increased odds of using modern contraceptive methods.

Firstly, in a relatively short-time, migrant women adapt their preferences and behaviours to those of the host society (Cotonou). As a result, the modern contraceptive use behaviour of migrant women tends to converge rapidly rather than gradually to that of non-migrants in Cotonou. The adaptation model depicted in recent studies on the relationship between migration and contraceptive use are often gradual rather than rapid (Lindstrom and Hernández 2006; Ochako et al. 2016). The authors of these studies attribute the gradual nature of the adaptation to the time it takes for migrants in cities to learn about modern contraceptive methods. Other researchers have also pointed that the adaptation process may be faster than expected (Kulu and Milewski 2007). Comparing fertility levels of immigrants in Sweden to those of the Swedish-born population, Andersson (2004) arrived at conclusions that support the idea of relatively rapid adaptation of immigrants to childbearing behaviour that prevails in the country of destination. The short-term nature of adaptation may be due to the selective character of migration of women whose fertility preferences are more similar to those of Cotonou dwellers. It may also be due to the disruption effect that seems incompatible with childbearing after migration. Moreover, like Cotonou natives, migrants encounter place-specific cost constraints on childbearing. Future research might aim to identify precisely at what duration of stay in Cotonou migrants and non-migrants have similar odds of using modern methods of contraception.

Secondly, when controlling for women' socio- economic and demographic backgrounds, Model 2 fit improved. And, although non-significant, the differentials in the odds of modern contraceptive use between migrants and non-migrants decreased consistently; which may reflect the advantageous effects of a selective migration towards modern contraceptive use. Migrant selection effect proposes that migrants are a special group of people with specific social and economic characteristics similar to those of people at destination. Indeed, just as urban natives, migrants to cities are not randomly

constituted and they have preferences for smaller family size. Thus, the specific social and economic traits of migrants, especially in urban areas, facilitate the utilization of modern contraceptives (Ochako et al. 2016; Akinyemi et al. 2017; Shittu and Akinyemi 2017), thereby reducing the gap in modern contraceptive use between migrants and migrants in cities. Generally, migrants in Cotonou are more educated and have high access to media. Most of them usually move to Cotonou for job and school opportunities as well as other economic reasons; which may account for the delay in childbearing and consequently, increased odds of using modern contraceptive methods. This explanation found support in a work conducted by Rokicki et al. (2014) on the association between migration and pregnancy outcomes among women in urban slums of Accra. On the other hand, the likelihood of rapid adaptation—highlighted in this work—supports the continued consideration of the way in which the adaptation and the selection hypothesis compete. It points to the need for more research on the relationship between migration and reproductive behaviour through a competing view of adaptation and selection models.

Thirdly, the fact that migrant women for job or school reason have the highest predicted probability of using modern contraceptives is consistent with the disruption hypothesis. The migration process itself is, in some ways, disruptive of childbearing, at least in the short-term. The resulting delay in childbearing may, however, be compensated for, either after longer period of settlement or once the migration is complete (Sargent and Cordell 2003; Chattopadhyay et al. 2006). So, migrants in Cotonou show particularly high levels of modern contraceptive use due to the possible disruptive factors associated with the migration process. Moreover, being non-migrants or being migrants for purposes other than those for job or school does not make much difference with regard to modern contraceptive use. Therefore, it can be argued that newcomers for job or school reason delay their childbearing—by using modern family planning methods—in order to achieve their main goal (work or studies). Then, after a certain period of settlement in Cotonou, the latter adapt so that, they have similar odds of using modern contraceptives as their non-migrant peers. There may also be other reasons for the disruptive character of the migration process. A move for economic reasons may be sufficiently disruptive from a socio-psychological perspective as to interfere with the physiological capacity to bear children (Rutayisire 2015). The “non-readiness” of bearing children among migrant women for economic reasons favours their acceptance and use of modern contraceptive methods. The disruption model can also directly operate through spousal separation. Research has shown that the fear of extramarital pregnancy account for modern contraceptive use among migrant women (Brockerhoff and Biddlecom 1999; Unger 2000). Further research should assess the extent to which migration generating spousal separation affects the utilization of family planning methods.

Internal migration plays an important role in explaining the population dynamics which consequently influence the population structure and distribution as well as reproductive health services use (Cau 2016; Khan et al. 2016). Despite this important role, internal migration receives low priority by policymakers in Benin Republic and other sub-Saharan Africa countries (Khanal et al. 2013; Sevoyan and Agadjanian 2013; Cau 2016; Ochako et al. 2016). Therefore, family planning use among migrants remains of interest to policymakers, due to its influence on fertility, sexual and reproductive health and the implications for provision of appropriate services (Afulani and Asunka 2015; Ochako et al. 2016). The evidence from our findings can be useful to policymakers and programme implementers to help inform future interventions. It also helps to improve

health services among various categories of the population in Benin Republic, especially those who are vulnerable (Sudhinaraset et al. 2012) such as migrant women who are not involved in any socioeconomic activity. Moreover, disaggregating migration status by reason for migration leads to better understanding of the effect migration status has on modern contraceptive use. Programmatically, the differentials in modern contraceptive use by migration status should be considered when designing family planning programmes. This responses to family planning needs of migrant and non-migrant women.

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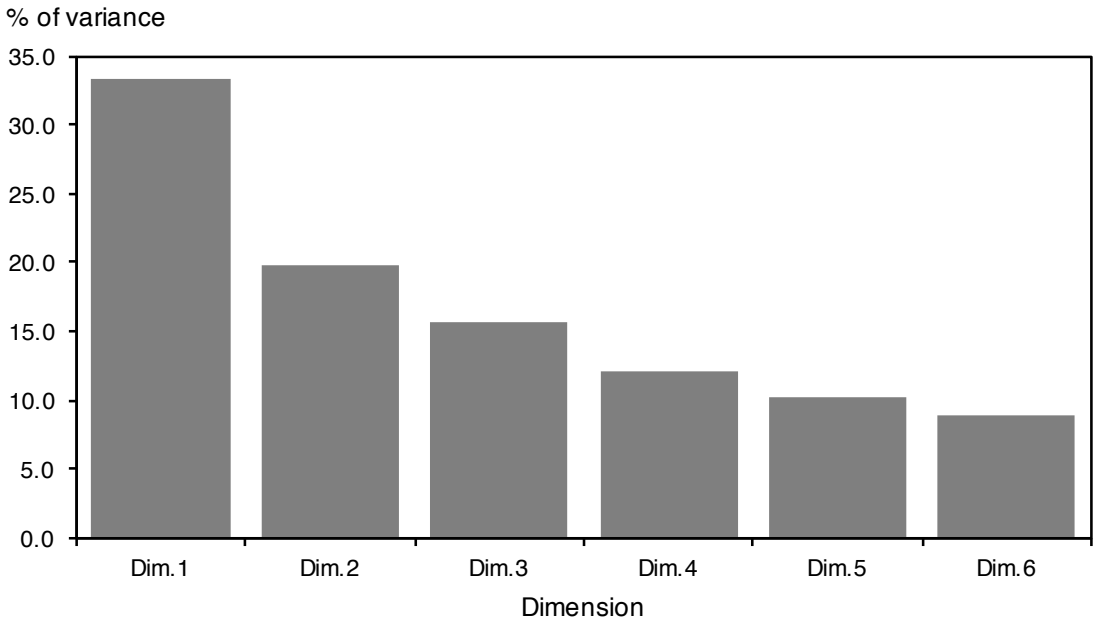
Appendix

Distribution of media exposure's variables by coordinates of the first and second dimensions of the principal component analysis

Variable	Coordinates of the 1st dimension	Coordinates of the 2nd dimension
Frequency of reading newspaper or magazine		
Not at all	-0.5	0.4
Less than once a week	0.5	0.2
At least once a week	0.2	-0.6
Frequency of listening to radio		
Not at all	-0.1	-0.3
Less than once a week	0.5	0.3
At least once a week	-0.2	0.0
Frequency of watching television		
Not at all	-0.1	-0.4
Less than once a week	0.4	0.1
At least once a week	-0.2	0.2

Source: Fertility and Migration Survey, Cotonou, 2018

Plot of eigenvalue



Source: Fertility and Migration Survey, Cotonou, 2018