Can Women's Empowerment Accelerate Fertility Decline in Angola?

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Paper prepared for presentation at the UAPS 9th Conference

Lilongwe, Malawi, May 20-26, 2024

Abstract

Women's empowerment has been associated with lower fertility. Angola, a country in middle Africa has a TFR of 6.2 and has not yet undergo fertility transition. The purpose of this paper is to examine whether women's empowerment in Angola is associated with fertility preferences. More specifically, we assess which dimensions of empowerment influence fertility preferences, and if so, do fertility preferences differ by age. Our hypothesis is that empowered women have preferences for smaller families and that empowerment influence on fertility preferences is more critical for younger women. Using data from Angola DHS 2015-2016, we construct three empowerment dimensions: socio-cultural, control over sexual and reproductive health, and decision making. Results show that when adjusting for other socio-demographic and reproductive factors, only the socio-cultural dimensions of empowerment are associated with the desire to have no more children and only among the younger women (15-34 years of age). A decline in fertility could contribute greatly to faster declines in both maternal and child mortalities, it could also help accelerate demographic transition and allow the country to benefit from the demographic dividend. Although many factors can be associated with high fertility, it seems that younger and more empowered women in Angola are more likely to desire to stop childbearing. More exploration on the factors associated with fertility preferences, including qualitative studies, using a reproductive justice lens should be conducted.

Introduction

Gender equality and women's empowerment is recognized as key to achieving each of the 17 Sustainable Development Goals (UN Women, n.d.). An entire field of research dedicated to measuring and capturing women's empowerment and fertility and contraception has appeared in the literature (Prata et al. 2017; Castro Lopes et al. 2021; Atake and Gnakou Ali 2019) since Naila Kabeer's seminal work, which defined women's empowerment as the process by which those who have been denied the ability make strategy life choices are able to increase their self-efficacy, make life-improving decisions, and gain control over resources (Kabeer 1999). For women to be empowered, they must have key resources, including education and health, access to financial opportunities and employment, as well as autonomy and control to achieve their self-determined goals (Kabeer 2005; Ewerling et al. 2017). Household decision-making has most commonly been used as a proxy for empowerment (Upadhyay et al. 2014), but more recently, women's status has been explored more in depth with other measures in Demographic Health Surveys (DHS). Using DHS data from currently partnered women in 34 African countries, the Survey-based Women's Empowerment (SWPER) index identified three dimensions of empowerment including social independence, decision making and attitude to violence that had a moderate to high correlation with the Gender Development Index (Ewerling et al. 2017). In addition, social independence was associated with higher coverage of maternal and child interventions, while attitude to violence and decision making were more consistently associated with the use of modern contraception (Ewerling et al. 2017).

Increasing women's empowerment in developing countries has also been associated with lower fertility levels. A study conducted in Timor-Leste found that exposures that indicate women's empowerment in DHS, including the employment status of women, house and land ownership, ownership of the mobile phone, and independent bank account status, contraceptive use, and the attitude of women towards negotiating sexual relations were significantly associated with fertility preferences (Samad et al. 2022). In Mozambique, researchers used a principal component analysis with 2015 DHS data to identify three domains of empowerment: beliefs about violence against women, decision making, and control over sexuality and safe sex (Castro Lopes et al. 2021). The study found that each domain had a different effect over fertility and contraceptive outcomes, while also establishing the key role of control over sexuality and safe

sex domain for improving women's decision-making related to fertility and contraceptive practices. An analysis of women's empowerment and fertility preferences in high fertility countries (Burkina Faso, Mali, Chad and Niger) concluded that in all countries, more empowered women desire significantly fewer children and that paid employment and access to resources are factors that significantly affect the ideal number of children (Atake and Gnakou Ali 2019).

The purpose of this paper is to examine whether women's empowerment in Angola is associated with fertility preferences. More specifically, we assess which dimensions of empowerment (e.g socio-cultural, control over sexual and reproductive health, and decision making) influence fertility preferences; and if so, whether fertility preferences differ by age. Our hypothesis is that empowered women have preferences for smaller families; and the influence of empowerment on fertility preferences is more critical for younger women with more childbearing years left.

Background: Fertility in Angola

Angola is one of the countries in sub-Saharan Africa (SSA) where the fertility transition has yet to occur. It is a country in central Africa with over 36 million people and a population growth rate of 3.2%. The total fertility rate (TFR) is stalled at 6.2 even though the desired TFR is estimated to be 5.2 children (ICF 2015). Only 13% of married or cohabiting women are using modern contraceptive methods, and among those using, injectables (5%) are the most popular method. For the 2023 Global Gender Gap Index, Angola ranked 118 out of 146 globally and 27 out of 36 for countries in SSA (World Economic Forum 2023).

Analytical framework and hypothesis

Our analytical framework is grounded in existing empowerment and fertility conceptual frameworks (Karp et al. 2020; Cardona et al. 2020; Humble 1995) with recognition of the socio-economic and cultural norms in Angola (Donkoh et al. 2024) (Fig 1). We propose to assess three dimensions of empowerment: socio-cultural, decision making and control over reproductive health. The socio-cultural dimension addresses the domestic violence beliefs that

beating is justified. Many women in SSA believe that domestic violence is justified for certain reasons, holding onto the cultural norms and beliefs that are likely to be present in Angola (Zegeye et al. 2022). Decision making processes, although arguably also influenced by socio-cultural norms, have been independently assessed in empowerment studies. More empowered women tend to report higher decision-making power overall (Haque et al. 2021). Decision to use or not use contraception, ability to refuse sex in a relationship and ability to ask partner to use a condom were grouped under the empowerment dimension – control over sexual and reproductive health. Previous studies have demonstrated that those who report ability to decide on measures of control over reproduction have power over fertility preferences (Castro Lopes et al. 2021).

Our overarching hypothesis is that more empowered women have different fertility preferences than less empowered women, expressed by lower ideal number of children or desire for no more children. Furthermore, we hypothesize that the influence of empowerment in fertility preferences is more critical for younger women.

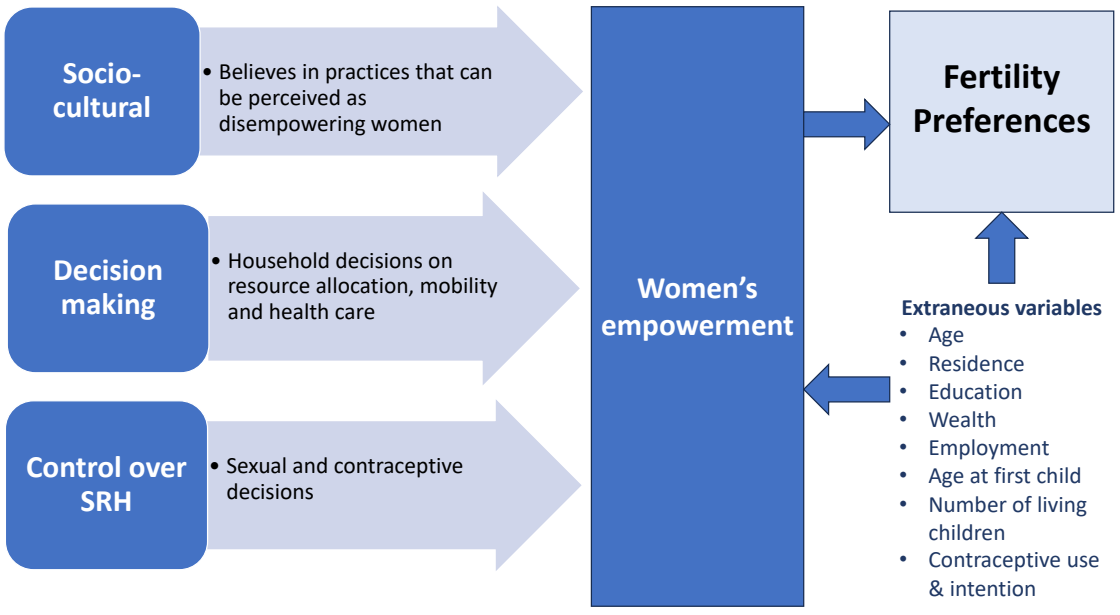

Fig. 1 Analytical framework: Empowerment and fertility in Angola

Data and Methods

Data for this analysis comes from the Angola most recent Demographic and Health Survey 2015-2016. The unit of analysis were all women 15-49 years old, excluding those sterilized and those declared infecund. Sub-analyses with younger women 15-34 years old were also conducted given that these women were less likely to have completed their fertility. In addition, only women reporting being married or living with a partner were considered in this analysis, since some key survey questions included in this analysis were only asked married or cohabiting women.

Dependent variables. We use two outcomes in the analysis: i) ideal number of children, as a continuous variable in multivariable models and as a categorical variable in bivariate associations; and ii) desire for more children, as categorical variable (1=wants no more children; 0=wants more children).

Independent variables: Women's empowerment Indices. Three dimensions of empowerment were constructed using Principal Components Analysis (PCA) informed by the literature and taking into consideration the Angolan context. As such, three indices were constructed, each representing one dimension of empowerment:

(1) **Sociocultural index** – addresses the domestic violence beliefs rooted in socio-cultural underpinnings (beating justified=0; beatings not justified=1). Variables included: *going out without telling husband; neglects children; argues with husband/partner; refuse to have sex; and burns food*.

(2) **Control over sexual and reproductive health index** – captures the decision *to use contraception or not use contraception* (self=1), *ability to refuse* sex (yes=1), and *ability to ask partner to use a condom* (yes=1).

(3) **Decision making index** – includes *household purchases; respondent's health; visit family/friends; spend respondent's money; and spend husband's money* (respondent alone=1; joint with husband=0; joint with others/ husband/others/ husband/another alone=-1; Joint with husband=0).

For each empowerment dimension, only variables with eigen values more than 1 were considered significant and included. Kaiser-Meyer-Olkin measure of sampling adequacy was

estimated to ensure all were above 0.5. Predicted values from PCA results were divided into terciles, resulting in coding the indices into *low, moderate or high empowerment*.

Covariates for this study include: age in 5-year age groups, urban/rural residence, level of education, wealth index, age at first child, number of living children, employment status, and contraceptive use and intention – all self-explanatory.

Data analysis. Descriptive statistics were used to describe the study sample. Bivariate analysis with Chi-squared test for significance was used to assess associations between sample characteristics and fertility preferences (outcomes) and sample characteristics and independent variables – empowerment dimensions. Logistic regression models to assess associations between each empowerment dimension and desire for more children were conducted on the entire study sample and among women 15-34 years of age. Unadjusted and adjusted odds ratios (ORs) with 95% CI are presented. Negative binomial regression models of ideal number of children (as continuous variable) and empowerment dimensions were conducted on the entire study sample and among women 15-34 years old. Crude and adjusted coefficient estimates with 95% CI are presented. Statistical significance using p-values was established at <1%, 1%-<5% and between 5%-9% considered marginally significant.

Results

Of the 2,405 women 15-49 years old surveyed, 2,290 were included in this analysis. Of those, 71.3% were 15-34 years old - the population for the sub-analysis. Table 1 shows that in addition to being young, women in the study sample are mostly urban residing (64.37%), with only 35% have secondary or higher education. Around 40% are poor and about half (48%) are employed year-round. In terms of contraceptive use, 12% are using modern contraceptive methods and 59% does not intend to use a method. Most women in the study sample have started childbearing, only less than 5% did not have children, with 31% having 5 or more children already.

[Table one about here]

Overall, high fertility preferences in Angola can be observed with the majority of women wanting more children and reporting 5 or more children as ideal number of children. While most women were considered to be highly empowered socio-culturally (71.2%), the same was not true with the other 2 dimensions of empowerment. Almost 48% of women scored low empowerment in decision making and only 33% of women scored high in control over reproductive health (Table 2). Overall, the empowerment dimensions significantly associated with ideal number of children were socio-cultural (p=0.0003) and control over sexual and reproductive health (p<0.001). With respect to desire for no more children, only the decision-making index was significantly associated (p=0.0291).

[Table two about here]

Results from the logistic regression models for all women 15-49 assessing the crude relationship between wanting no more children and empowerment dimensions show statistical significance for decision making, with highly empowered women more likely to desire no more children [OR 1.46; 95% CI 1.10 1.92]. However, once adjusted for the covariates, the decision-making index is no longer statistically significant (Table 3).

[Table three about here]

The same analysis with only younger women 15-34 years old shows that the only empowerment dimension with statistically significant results is the socio-cultural index. Younger women in Angola with moderate and high empowerment are two times more likely to desire no more children. This association maintains even when adjusted for the covariates; socio-culturally moderately empowered and highly empowered younger women are more likely to desire no more children (aOR 2.59 [95% CI 1.13-6.00] and aOR 1.94 [95%CI 0.90-4.29] respectively (Table 3A). Other variables associated with desire for no more children include number of living children, age and current contraceptive use.

[Table 3A about here]

Results from the negative binomial regression of ideal number of children and empowerment show that for all women all three dimensions of empowerment show negative and significant

associations. However, those become non-significant once the models are adjusted for the covariates (Table 4).

[Table four about here]

Similar results are found for younger women 15-34 (Table 4A). In the adjusted models, variables such as higher than secondary education, having more wealth, older age at first child, and number of living children are significantly associated with ideal number of children.

[Table 4A about here]

Discussion

In this paper, we assessed whether empowerment was associated with fertility preferences in Angola. Understanding fertility preferences is important for population studies and planning programs. We hypothesized that more empowered women would have lower fertility preferences and that the effect of empowerment on fertility in Angola would be greater among younger women. Two indicators of fertility preference were used, ideal family size and wanting no more children. The ideal family size, which is the number of children wanted in one's lifetime, is one of variables used to measure fertility preferences (Sarnak et al. 2021) and the desire for more children was added as a measure of complete fertility.

Our results show that after adjusting for socio-demographic factors, of the empowerment dimensions assessed – socio-cultural, household decisions, and control over reproduction – only socio-cultural empowerment was associated with desire for no more children and only among younger women (15-34 years old). Although with this analysis we were not able to verify entirely our hypothesis, important insights can be drawn as this is the first time Angolan fertility preferences is being assessed in relation to women's empowerment.

As suggested in the literature (Upadhyay et al. 2014) the decision to assess empowerment using individual dimensions is again an indication of the complexity of how empowerment might be operating in relation to fertility preferences in Angola. By assessing two different indicators of fertility preferences, we also learned how fertility preferences are explained through

empowerment. In Angola, a country with a high fertility and relatively high ideal number of children, wanting no more children seemed to be a better indicator of current fertility desires, but not necessarily one that can be interpreted as desire for a small family. The relationship between ideal number of children and fertility is not straightforward. In many settings, desired family size is higher than fertility (Starkey, Marian 2022). However, studies of populations with high fertility have shown that ideal number of children is also high in these contexts. A study from southern Ethiopia illustrates these issues well and demonstrated that ideal number of children when high (>4 children) is associated with level of education, knowledge and use of contraceptives, place of residence, number of living children and marital status (Endriyas, Gebru, and Assefa 2023).

The fact that younger Angolan women that feel more empowered with respect to sociocultural issues are more likely to want no more children is noteworthy for those interested in knowing when the country will undergo a demographic transition. Researchers have shown a trend in SSA, where in general, younger women tend to desire smaller families and their ideal number of children is associated with exposure to family planning messages (Phiri et al. 2023).

Although the general direction of more empowered women desiring smaller families can be attested in Angola, contrary to many Francophone SSA countries, the association is not the same for economic empowerment (Atake and Gnakou Ali 2019). Paid employment and access to economic resources were not predictors of fertility preferences and we were not statistically able to construct an economic empowerment dimension.

Study Limitations

When we designed this study, we planned to use most recent 2020 DHS which was delayed initially due to the pandemic with results expected in the third quarter of 2023. Unfortunately, it was further delayed, with data collection only completed in January 2024. Interpretation of the results from this analysis may be affected by some study limitations. First the cross-sectional nature of the data only allows us to establish associations and not causation. Second, the empowerment dimensions measured are limited by the availability of the data – DHS survey- but many other individual, family and community factors may exercise a greater influence in fertility desire, factors we were not able to adjust for. Third, one of the indicators for fertility preference – wanting no more children – measures complete fertility, while many women in the

study are young and have a desired family size of more than 5 children. However, it was the indicator that showed association with one of the dimensions of empowerment. Despite these limitations, results provide important insights into empowerment and fertility preferences in Angola.

Implications

Angola's population continues to grow rapidly. Its gross domestic product (GDP) is projected to grow 3.5% in 2023, leading to low projected GDP per capita growth of 0.2%. Angola's child mortality is 69 per 1,000, far above the 38/1,000 globally and even further from the goal of 25 deaths per 1,000 live births by 2030; maternal mortality in Angola, although decreasing, is at 222 maternal deaths per 100,000 live births (UNICEF 2024). While a decline in fertility could contribute greatly to faster declines in both maternal and child mortalities, it could also help accelerate a demographic transition and allow the country to benefit from the demographic dividend.

Although many factors can be associated with high fertility, it seems that younger and more empowered women in Angola are more likely to desire to stop childbearing. More exploration on the factors associated with fertility preferences, including qualitative studies, using a reproductive justice lens should be conducted.

Tables

Table 1. Characteristics of the Study Sample

Characteristics of the study sample		N=2290	%
Age			
	15-19	222	9.17
	20-24	535	22.67
	25-29	508	22.18
	30-34	403	17.26
	35-39	326	14.64
	40-44	203	9.72
	45-49	93	4.35
Residence			
	Urban	1315	64.37
	Rural	975	35.63
Education			
	No education	736	27.39
	primary	855	37.97
	secondary	641	31.17
	Higher	58	3.46
Wealth Index			
	Poorest	471	17.85
	poorer	603	21.61
	middle	557	20.89
	richer	370	20.34
	Richest	289	19.32
Employment status			
	not employed	644	25.87
	employed year round	974	48.06
	temp/ocassional	672	26.07
Age at first child			
	no children	107	4.87
	12-14	202	8.58
	15-19	1299	57.00
	20-24	531	23.67
	25+	151	5.88
Number of living children			
	None	131	5.76
	1-2	733	32.32
	3-4	730	30.83
	5+	696	31.09
Contraceptive use & Intention			
	using modern	206	11.89
	Using traditional	28	0.99
	non-use intend to use	576	27.81
	does not intend to use	1480	59.31

Table 2. Empowerment dimensions and fertility preferences.

Empowerment Dimensions		Ideal number of children					Desire for more children			
		0-2	3-4	5+	% total	p-value	Wants NO MORE	Wants MORE	% total	p-value
Socio-cultural Index										
	low	10.81	5.47	12.49	10.06	0.0003	9.81	10.19	10.06	0.8643
	moderate	18.57	16.54	19.99	18.74		19.48	18.38	18.74	
	high	70.62	77.99	67.52	71.2		70.71	71.44	71.20	
Decision Making Index										
	low	44.07	45.81	49.79	47.97	0.3536	42.05	50.85	47.97	0.0291
	moderate	23.16	18.69	20.36	20.08		21.89	19.21	20.00	
	high	32.77	35.5	29.85	29.85		36.06	29.95	31.95	
Control over RH Index										
	low	42.05	22.65	37.45	33.09	<0.001	34.44	32.44	33.09	0.6905
	moderate	27.91	33.7	35.32	34.1		32.49	34.89	34.10	
	high	30.04	43.64	27.23	32.8		33.07	32.67	32.80	
	N	216	681	1393			642	1648		

Table 3. Logistic regression results of desire for more children and empowerment dimensions.

Empowerment Dimensions		Desire for no more children (all women)			
		OR	[95% CI]	aOR	95% CI
Socio-cultural Index					
	low	[1]		[1]	
	moderate	1.10	.7276 1.6660	1.59	.9012 2.8029
	high	1.03	.7086 1.4911	1.12	.6839 1.8291
Decision Making Index					
	low	[1]		[1]	
	moderate	1.38	0 .9555 - 1.9874	1.17	.7491 1.8189
	high	1.456**	1.1021 1.9234	1.33	.9031 1.9667
Control over RH Index					
	low	[1]			
	moderate	0.88	.6628 1.1606	0.91	.6152 1.3560
	high	0.95	.7029 1.2924	0.85	.5613 1.2896
	N				

Note: significance levels=***<1%; **1%-<5%; *5%-9%

aOR: age, residence, education, wealth index, age at first child, number of living children; contraceptive use and intention, employment status.

Table 3A. Logistic regression results of desire for more children and empowerment dimensions (women 15-34)

Empowerment Dimensions		Desire for no more children (women 15-34)			
		OR	[95% CI]	aOR	95% CI
Socio-cultural Index					
	low	[1]		[1]	
	moderate	**2.04****	[1.09 - 3.83]	**2.59****	[1.13 - 6.00]
	high	**1.64***	[0.90 - 2.99]	**1.94***	[0.90 - 4.29]
Decision Making Index					
	low	[1]			
	moderate	0.98	[0.63 - 1.53]	n/a	
	high	1.11	[0.72 - 1.71]	n/a	
Control over RH Index					
	low	[1]			
	moderate	0.88	[0.61 - 1.27]	n/a	
	high	0.87	[0.59 - 1.29]	n/a	
	N=1668				

Note: significance levels=***<1%; **1%-<5%; *5%-9%

aOR: age, residence, education, wealth index, age at first child, number of living children; contraceptive use and intention, employment status.

Table 4. Negative binomial regression coefficients for ideal number of children and empowerment dimensions.

Empowerment Dimensions	Ideal number of children children (all women)			
	Model 1	[95% CI]	Model 2	95% CI
Socio-cultural Index	-0.05***	-.0944 -.0133	0.017	-.0202 .0534
Decision Making Index	-0.03**	-.0656 -.0035	-0.004	-.0339 .0250
Control over RH Index	-0.09***	-.1255 -.0469	0.010	-.0305 .0501

Note: significance levels=***<1%; **1%-<5%; *5%-9%

Model 2 adjusted for: age, residence, education, wealth index, age at first child, number of living children; contraceptive use and intention, employment status.

Table 4A. Negative binomial regression coefficients for ideal number of children and empowerment dimensions (women 15-34)

Empowerment Dimensions	Ideal number of children children (women 15-34)			
	Model 1 (unadjusted)	[95% CI]	Model 2 (adjusted)	95% CI
Socio-cultural Index	**-0.09*** **	[-0.14 - -0.04]	-0.02	[-0.07 - 0.04]
Decision Making Index	**-0.04***	[-0.07 - -0.01]	-0.02	[-0.05 - 0.02]
Control over RH Index	**-.09*** **	[-0.14 - -0.04]	0.01	[-0.04 - 0.06]

Note: significance levels=***<1%; **1%-<5%; *5%-9%

Model 2 adjusted for: residence, education, wealth index, age at first child, number of living children; contraceptive use and intention, employment status.

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