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THE INFLUENCE OF MATERNAL HEALTH ON THE EFFECT OF BREASTFEEDING ON MATERNAL LABOUR FORCE PARTICIPATION IN CAMEROON

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Abstract: Improving women's share in the labour market has been of utmost importance in developing countries. Breastfeeding and maternal health are important influencers of female labour participation in any economy. Generally, health has a profound impact on individual's wellbeing and productivity. Particularly, the health of women is fundamental to their development given that a healthy person cannot only work more effectively but also devote more time to productive activities. This research investigates the influence of maternal health on the effect of breastfeeding on maternal labour participation in Cameroon. To achieve this objective, the study used the 2018 Cameroon Demographic Health Survey (DHS) data set and specifically the women module with a sample size of 9733 women. The study employed the IV Probit interaction approach to test the influence of maternal health on the effect of breastfeeding on maternal labour force participation. The findings revealed that maternal health significantly influences the effect of breastfeeding on maternal labour force participation. Hence, there exist a nexus between breastfeeding, maternal health and maternal labour force participation as revealed by this study. As policy implications, the study strongly recommends policies to be put in place like breastfeeding support programs at work sites which will go a long way to ensure continuous breastfeeding by lactating women even after maternity leave.

Key words: Breastfeeding, interaction, Maternal Health, Maternal Labour Force Participation, moderation.

1. Introduction

Economic well-being is strongly related to health status, and the reproductive health of women is at risk particularly the health of women in poor households (Schneider & Harknett, 2019). The basic concepts of human capital suggest that individuals develop their skills to enhance their career prospects and thereby generate income by investing in on-the-job training and healthcare. Human Capital does not only enhance labour market performance but it is also a important determinant of a country's economic development and in particular its productivity and progress. On this note, the advancement of human capital and welfare is indispensible for a country that intends to lift its industrial sector to have sufficient and good quality labour force. There is therefore a need to implement appropriate policies in the areas of education, health, access to basic social facilities and social security (Becker, 1975). As concerns the health of women in relation to labour participation, gender equality and the empowerment of women are essential for improving maternal health and thus, higher levels of women's autonomy, education, wages, and labour force participation are linked with better reproductive health outcomes (Canning & Schultz, 2012; Acharya et al., 2010).

Female labour force participation (FLFP) is imperative for the advancement and socio-economic development of a nation because it encourages efficiency and equity. In general, an increase in the participation of women in the labour market means two things; progress in a country's economic and social conditions and women's empowerment. This promotes equality and increases the use of human resources, which helps to create a greater potential for economic growth and poverty reduction (Mujahid, 2014). Women in spite of being fully committed members of the work force, they still remain almost wholly responsible for reproductive duties and must combine household and child care responsibilities with employment demand. These child care responsibilities involve mainly child bearing and breastfeeding practices which might go a long way to affect the health status of women and also make them unavailable for labour market opportunities.

Although the Cameroon labour code in section 84 gives provision for a maternity leave of 14 weeks for pregnant women and also specifies nursing breaks of one hour daily for nursing mothers (Cameroon labour Code, 1992), some of these policies might make nursing /lactating women to find work strenuous or not to even have jobs at all. With this, women in some parts of the country still face a problem with breastfeeding their infants due to lack or absence of maternity leave (Boh &Richard, 2019). Moreover, too few women have access to adequate maternity entitlements that enable breastfeeding, either because they are not provided or because they are working in the informal economy and therefore not eligible. Although virtually all countries have maternity protection legislation, only 42 (23 percent) meet or exceed the International Labour Organization's (ILO) recommendation of 18 week's paid leave. (Rossin-Slater, 2017).

It is worth noting that breastfeeding has been reported to confer lower risk of breast and ovarian carcinoma (González-Jiménez et al., 2014), greater postpartum weight loss (Binns et al., 2016) and decreased blood pressure (Binns et al., 2016; Ciampo &Ciampo, 2018) compared with no breastfeeding.

There is a direct link between health and labour market outcomes. This is because, chronic health conditions that diminish basic physical and mental capabilities are classically expected to upset normal work functioning, not only by preventing the performance of some job-related responsibilities altogether, but also by raising the difficulty or cost of discharging these responsibilities beyond levels that a rational person would judge tolerable (Harvey et al., 2017). As a result, individuals with diminished health are expected to reduce the amount of time spent in the labour force, the date or age of their complete withdrawal from the job market, and/or the kind of work they perform.

In an attempt to increase women share of the labour market, the government of Cameroon has over the past years tried to put policies to encourage female involvement in the country's economic activities. It is in this light that the National Development Strategy 2020-2030, in an attempt to ensure social protection of women, has outlined the importance of strengthening entrepreneurship and women empowerment. This will be achieved by increasing the number of women and girls trained in income generating undertakings from 5000 in 2019 to 200,000 between 2026 to 2029. In this same view, the share of unemployed unskilled working women with vocational training should increase to 15% between 2026 and 2029 (NDS 30, 2020). The interest here is how some activities of women like breastfeeding together with their health status will enhance or deter this objective.

As if not enough, one of the major objectives of the National Employment Policy of 2017 was to promote complete and decent employment in Cameroon through the enlargement and enhancement of job creation openings in the country. As a continuation of this policy, the National Development Strategy points out the need to ensure decent employment through the relocation of workers from the informal to the formal sector. In view to implement greater use of labour intensive approach in the labour market in Cameroon, the NDS spells out measures to improve and reinforce the labour market observation system to better forecast the short, medium and long term progress of the structure of job supply and women can benefit from the job supply strategy with improved health situations to ensure their constant availability to participate in the

labour market (NDS 30, 2020). Bearing in mind that women have to juggle household responsibilities (breastfeeding inclusive) with employment demands and that breastfeeding has important effects on women's health, this paper is therefore set out to examine the influence of maternal health on the effect of breastfeeding on maternal labour force participation in Cameroon.

The rest of the paper is presented as follows: Section two of the paper is the methodology which describes the scope of the study area, the data source, technique of data analysis and measurement of variables used in the paper. Section three presents and discusses the results. Then section four presents the conclusion and policy recommendations.

2. Methodology

This section of the paper presents the background of the study area and the scope of the study, method of data collection, the adopted empirical models and their justification and definition and justification of main variables used in this paper.

2.1. Scope and Area of Study

The study area Cameroon is a country of Central Africa; whose terrain covers nearly 475,650 km². The country has almost 590 km of coastline along the Atlantic seaboard and 4591 km of land boundaries including Nigeria in the West (1690 km), Chad in the North East (1094 km), the Central African Republic in the east (797 km), and Congo (523 km), Gabon and Equatorial Guinea (189 km) in the south. The country has a contrasted relief made of plateaus of unequally distributed uplands and bounded by narrow plains. The relief if Cameroon is marked by two hydrographic areas on both sides of the Adamawa plateau: the Niger-Chad basin in the north and the Atlantic basins and the Congo in the south. Cameroon has 03 climatic zones (Equatorial, Sudanese and Sudano-Sahelian). Cameroon has 10 regions, 360 districts, 360 municipalities and 14 major city councils that make a probable total population of 27,911,548 in 2022, a 2.52% increase from 2021(Macrotrends, 2022).

On the economic front, the targeted 5.5% average growth rate for the first five years of the implementation of the Growth and Employment Strategy Paper (GESP) was not achieved. To achieve this, the government expanded a three-year emergency plan 2015-2017, which was envisioned to assist in eliminating the bottlenecks in the attainment of GESP objectives within a short timeframe. However there is an on-going National Development Strategy 2020-2030 for structural transformation and inclusive development which is geared towards the emergence of Cameroon. This study adopts the ex-post factor research design. Ex post facto design attempts to determine a cause-and-effect relationship between an independent variable and a dependent variable. The independent variable, however, cannot be manipulated or altered, in which ex post facto studies look at how a particular characteristic, trait, or past occurrence affects the dependent variable. Considering this fact the researchers interpret the results as given from the secondary data analysed.

The scope of this study is limited to the 2018 Cameroon Demographic Health survey data. The justification of the time scope and data is based on the time the data set was collected and published and on the fact that the data set provides information on the variables of interest. In terms of content, the study is limited to the areas of breastfeeding, maternal health and maternal labour force participation.

2.2. Method of Data Collection and Technique of Data Analysis

This subsection of the paper provides information on the source of data and the empirical technique of data analysis.

2.2.1. Method of data collection

The study uses secondary data collected from the 2018 Cameroon Demographic Health Survey data set. The 2018 DHS project was out to provide high quality data on child and maternal health, nutritional status of

young children and women, childhood mortality levels and treatment of childhood illnesses amongst other aspects and as such it provides data on the variables of interest in this study. Specifically, the women's module data is used which has a sample of 9733 women of the child bearing age.

2.2.2. Technique of Data Analysis

Becker (1975) suggests in his human capital theory that capabilities are built through engagement in activities such as breastfeeding which can improve health and lead to labour market participation. Breastfeeding and maternal health are considered endogenous hence estimate the influence of maternal health on the effect of breastfeeding on maternal labour force participation in Cameroon this study makes use of the IV probit interaction effect. The functional equation it is expressed as:

$$MLFP = f\{BF, BF * MH, X\}\ 1$$

The econometric model is given as:

$$MLFP = \alpha_P + \beta_P BF + \gamma_P BF * MH + \delta_P X_P + \varepsilon_P\ 2$$

Equation 1 shows that maternal labour force participation is also a function of breastfeeding, the interaction between breastfeeding and maternal health and exogenous variables(X_p). ε_p represents the error term of the maternal labour force participation equation. This is estimated using the IV probit regression technique.

According to Ekpenyong (2019) and Awang (2019), the moderator variable effect is represented by the interaction effect between the dependent variable and the factor variable and the moderation effect is tested from the regression coefficient of the interaction term. Hence to further examine the moderating role of maternal health on the effect of breastfeeding on maternal labour force participation, the following participation model which is estimated including an interaction term for breastfeeding and maternal health and considering the endogenous nature of breastfeeding and maternal health. The residual for breastfeeding $\hat{v}1$ is predicted from its reduced form estimates. Following a similar procedure, the OLS reduced form for the interaction term, BF*MH is projected on other exogenous variables and instrumental variables. The predicted residuals denoted by $\hat{v}2$ is added to the estimating structural equation as another variable as in equation 3

$$P(MLFP = 1 \parallel X) = \alpha_1 + \alpha_2 BF + \alpha_3 (BF * MH) + \sum_{k=4}^{m} \alpha_k X_{ik} + \lambda_1 \hat{v}1 + \lambda_2 \hat{v}2 + \varepsilon_i\ 3$$

To obtain the effects of breastfeeding on maternal labour force participation on maternal health we can take the first derivative of equation 3 with respect to breast feeding.

$$\frac{dp(MLFP=1)}{dBF} = \alpha_2 + \alpha_3 MH\ 4$$

Where the responsiveness of maternal labour force participation to breastfeeding for breastfeeding only α_2, and when breastfeeding is interacted with maternal health α_3.

Maternal labour force participation is a function of breastfeeding (BF), an interaction term for breastfeeding and maternal health and exogenous variables (X). ε_i represents the error term of the interacted maternal labour force participation equation. The interaction term $BF * MH$ in equation 3 reveals the influence that maternal health has on the relationship between maternal labour force participation and breastfeeding. Hence, in estimating this interaction equation using the IV probit regression, if the interaction term is significant there is a significant moderation effect (Fairchild & McQuillin, 2010). And if maternal health strengthens or reduces the estimated effect of breastfeeding on maternal labour force participation, then we conclude it plays a moderation role.

2.3. Justification and Measurability of Variables

2.3.1. Maternal Health (MH)

According to Lengerich (1999) a health indicator is a construct of public health surveillance that defines a measure of health (that is, the occurrence of a disease or other health-related event) or a factor associated with health (that is, health status or other risk factor) among a specified population." Generally, health indicators embody summary measures that capture pertinent information on diverse health attributes and magnitudes, and the performance of the health system. These measures put together attempt to reflect and monitor the health status of a population. Maternal health outcomes for this study are birth interval, and obesity.

Birth interval is a continuous variable and is calculated as the difference in months between the current birth and the previous birth, counting twins as one birth. The World Health Organization (WHO) recommends at least 33 months of an inter-birth interval between two consecutive live births. Inter-birth interval of <33 months is considered a short birth interval, and 33 months and above is considered the optimum birth interval (WHO, 2017). Obesity is defined as abnormal or excessive fat accumulation that presents a risk to health. A body mass index (BMI) over 25 is considered overweight, and over 30 is obese (WHO, 2023).

2.3.2. Breastfeeding

Breastfeeding is considered to have both short and long-term benefits for the mother (WHO, 2009a). In this study, breastfeeding is captured the following primary indicators: Currently breastfeeding (yes or no), duration of breastfeeding (yes or no). Breastfeeding may have a strong influence on the health outcomes of breastfeeding mother (Schwarz, & Nothnagle, 2015) as well as on her participation in the labour market (Chuang, et al., 2010). It is assumed that breastfeeding affects maternal health through birth interval and obesity.

With respect to birth interval, when a woman is breastfeeding, it serves as a means of birth control which makes a woman to be able to do proper spacing for her children because there are lower chances of getting pregnant during breastfeeding especially when there is proper use of the Lactational Amenorrhea Method - LAM (Chowdhury et al., 2015 Kouyate et al., 2015).

2.3.3. Maternal labour force participation

Maternal labour force participation is captured as a dummy variable (yes or no). maternal labour force participation is expected to have a negative effect on breastfeeding practice in the on-going study as Kakute et al. (2005) highlighted that work outside home could be a barrier to effective breastfeeding.

3. Presentation and Discussion of Results

The descriptive results for all the variables included in the study and the regression results are presented in this subsection

3.1. Presentation of Weighted Descriptive Statistics

This subsection presents weighted descriptive statistics in three parts. The first presentation is using the full sample, the second is using the participation sub sample and the third part is the presentation using the breastfeeding sub sample. Table 1 hosts the weighted descriptive statistics of all the variables used in the study.

Descriptive results presented on Table 1 have three major columns of interest. Column 1 presents the full sample descriptive statistics, column 2 hosts descriptive results with respect to the participation sub sample while column 3 hoists descriptive results of the variables used in the study by those who were breastfeeding. The full sample presented in column 1 reveals that as concerns maternal labour force participation, out of

the 9,733 women considered in the survey on average, 69.8% of the women were working women while 30.2% of the women were not working. These statistics included women working both in the formal and informal sectors of the country. With respect to breastfeeding on average, 48.6% of the women were breastfeeding while 51.4% of the women were not breastfeeding mothers. As for the body mass indices of the women considered, the descriptive statistics shows that the average of their body mass indices was 24.29524 Kg/m2. Out of the total sample considered, only about 6.2% of the women were obese on average.

With respect to birth interval of the women, the average of birth interval was 28.67751 months. 35% of the women had optimum birth interval while a greater majority of 65% had short birth intervals on average.

Table Error! No text of specified style in document.**-1: Weighted Descriptive Statistics of Variables Considered**

Variables	Modalities	(1) Full sample		(2) Participation sub-sample		(3) Breastfeeding sub-sample			
		Obs	Mean	Obs	Mean	Obs	Mean	Min	Max
Maternal labour force participation	1=yes and 0 =otherwise	9,733	0.697646 (0.459301)	6,571	1 (0)	4,353	0.682177 (0.4657)	0	1
Breastfeeding	1=yes and 0 =otherwise	9,733	0.485976 (0.499829)	6,571	0.4752 (0.499423)	4,353	1 (0)	0	1
	Non-self-cluster breastfeeding	9,732	0.4725892 (0.1802912)	6,571	0.48341 (0.180118)	4,353	0.52216 (0.1612)	0	1
Obesity/BMI	BMI	9,733	24.29524 (4.870068)	6,571	24.29023 (4.819259)	4,353	23.67327 (4.4027)	14.7	54.37
	Obesity	9,733	0.0622675 (0.2416531)	6,571	0.061057 (0.239453)	4,353	0.04852 (0.2149)	0	1
Birth interval(BI)	Birth interval (months)	9,733	28.67751 (23.5729)	6,571	30.40704 (23.39198)	4,353	27.2354 (20.839)	8	276
	Optimum BI	9,733	0.350606 (0.4771843)	6,571	0.37305 (0.483652)	4,353	0.67658 (0.4678)	0	1
	Short BI	9,733	0.649394 (0.4771843)	6,571	0.62695 (0.483652)	4,353	0.32342 (0.4678)	0	1
Maternal education (ME)	Higher education	9,733	0.043342 (0.203636)	6,571	0.034566 (0.182691)	4,353	0.026225 (0.15982)	0	1
	Secondary education	9,733	0.331981 (0.470948)	6,571	0.309853 (0.462468)	4,353	0.28318 (0.45059)	0	1
	Primary education	9,733	0.326707 (0.469033)	6,571	0.356813 (0.479096)	4,353	0.34261 (0.4746)	0	1
	No education	9,733	0.29797 (0.45739)	6,571	0.298768 (0.457753)	4,353	0.34798 (0.47639)	0	1
Marital status	Married (1=yes and 0 =otherwise)	9,733	0.826368 (0.378812)	6,571	0.842188 (0.364593)	4,353	0.86825 (0.33826)	0	1
Place of residence	Urban(1=yes and 0 =otherwise)	9,733	0.401403 (0.490208)	6,571	0.350442 (0.477145)	4,353	0.32837 (0.46967)	0	1
Maternal age	[15-24]	9,733	0.282453 (0.450216)	6,571	0.239596 (0.42687)	4,353	0.32565 (0.46867)	0	1
	[25-34]	9,733	0.50005 (0.500026)	6,571	0.514235 (0.499835)	4,353	0.49552 (0.50004)	0	1
	[35-49]	9,733	0.217497 (0.412565)	6,571	0.246168 (0.43081)	4,353	0.17883 (0.3833)	0	1
Spouse's level of education	No education	9,733	0.417916 (0.493241)	6,571	0.389552 (0.487686)	4,353	0.41387 (0.4926)	0	1
	Primary education	9,733	0.280881 (0.449453)	6,571	0.314165 (0.464218)	4,353	0.30422 (0.4601)	0	1
	Secondary education	9,733	0.249001 (0.432457)	6,571	0.249176 (0.432569)	4,353	0.2453 (0.43029)	0	1
	Higher education	9,733	0.052202 (0.222445)	6,571	0.047108 (0.211885)	4,353	0.03664 (0.1879)	0	1
Husband's age	Continuous	9,733	35.45247 (13.41704)	6,571	36.19782 (13.32825)	4,353	36.0774 (13.1195)	15	95
Husband's occupation	Working (1=yes and 0 =otherwise)	9,733	0.814869 (0.388423)	6,571	0.836073 (0.370238)	4,353	0.85916 (0.34789)	0	1

Number of children ever born	Continuous	9,733	4.266659 (2.523711)	6,571	4.562329 (2.53231)	4,353	4.429397 (2.5331)	1	16
Mother gave child milk	(1=yes and 0 =otherwise)	9,733	0.054125 (0.226276)	6,571	0.040056 (0.196104)	4,353	0.05376 (0.2256)	0	1
Protected source of drinking water	(1=yes and 0 =otherwise)	9,733	0.626517 (0.483754)	6,571	0.617819 (0.485957)	4,353	0.59034 (0.4918)	0	1
Wealth index	Richest	9,733	0.131067 (0.337491)	6,571	0.111359 (0.3146)	4,353	0.0832 (0.2762)	0	1
	Richer	9,733	0.181296 (0.385283)	6,571	0.154459 (0.361416)	4,353	0.15433 (0.3613)	0	1
	Middle	9,733	0.21584 (0.411425)	6,571	0.206492 (0.404818)	4,353	0.2226 (0.4160)	0	1
	Poorer	9,733	0.242594 (0.428674)	6,571	0.263555 (0.440594)	4,353	0.2594 (0.4383)	0	1
	Poorest	9,733	0.229203 (0.420342)	6,571	0.264135 (0.440905)	4,353	0.2806 (0.4493)	0	1
Religion	Christian	9,733	0.642341 (0.479336)	6,571	0.681314 (0.466003)	4,353	0.58716 (0.4924)	0	1
	Muslim	9,733	0.317037 (0.465346)	6,571	0.272283 (0.445169)	4,353	0.36918 (0.4826)	0	1
	Others	9,733	0.040622 (0.197422)	6,571	0.046404 (0.210373)	4,353	0.0437 (0.2044)	0	1
Contraceptive use	1=yes and 0 =otherwise	9,733	0.224107 (0.417014)	6,571	0.230783 (0.421366)	4,353	0.17668 (0.3814)	0	1
Pop weight		82101.1498		57277.55		39899.2008			

Standard deviations in parenthesis

Source: Computed by authors using CDHS 2018 and Stata 14.

3.2. Presentation of Regression Results on the Influence Of Maternal Health on The Effect of Breastfeeding on Maternal Labour Force Participation (Moderation)

Table 2 presents results on the influence of maternal health (birth interval and obesity) on the effect of breastfeeding on maternal labour force participation. Column (1) on Table 2 presents results on the reduced form estimates for breastfeeding, Column (2) hosts the reduced form estimates for the interaction between breastfeeding and birth interval , Column (3) presents reduced form estimates for the interaction between breastfeeding and obesity, Column (4) hosts the probit estimates without interaction and with no correction for endogeniety and Columns (5) And (6) present the probit estimation with interaction and correction for endogeniety for birth interval and obesity respectively.

The results on columns (4), (5) and (6) reveal that breastfeeding has a negative effect on maternal labour force participation. This effect is statistically significant at 1% level. By implication it shows that, when a woman is breastfeeding, this reduces her probability of participating in the labour force. In line with these findings are the findings of Chowdhury et al. (2021), Wyatt (2002), Chuang et al. (2010) and Khan &Kabir (2021).

Table 2: The influence of maternal health on the effect of breastfeeding on maternal labour force participation (interaction effect)

	(Col 1)	(Col 2)	(Col 3)	(Col 4)	(Col 5)	(Col 6)
VARIABLES	**Reduced Form Estimates For Breastfeeding**	**Reduced Form Estimates For The Interaction Between Breastfeeding And Birth Interval (bfmh)**	**Reduced Form Estimates For The Interaction Between Breastfeeding And Obesity (bfmhob)**	**Probit Without Interaction With No Correction For Endogeniety (MLFP)**	**Probit With Interaction And Correction For Endogeniety Using Birth Interval (MLFP)**	**Probit With Interaction And Correction For Endogeniety Using Obesity (MLFP)**

Breastfeeding				-0.051***	-0.083***	-0.049***
				(0.01017)	(0.0147)	(0.0102)
ME higher	0.0446	-2.721**	0.028*	-0.025	-0.280***	0.283***
	(0.03417)	(1.274)	(0.016)	(0.03077)	(0.0602)	(0.0253)
ME secondary	0.00197	-1.352*	0.025***	0.020	-0.111***	0.457***
	(0.01968)	(0.760)	(0.0078)	(0.01848)	(0.02974)	(0.0617)
ME primary	-0.00478	-0.741	-0.017	0.089***	0.0172**	0.382***
	(0.01692)	(0.657)	(0.0070)	(0.01558)	(0.0206)	(0.0430)
Married	0.199***	0.708	0.0014	-0.307***	-0.267***	-0.321***
	(0.04758)	(1.933)	(0.0149)	(0.02505)	(0.02977)	(0.024)
Urban residence	0.0063	-0.840	0.002	-0.055***	-0.130***	-0.0088
	(0.01441)	(0.550)	(0.0032)	(0.0132)	(0.0187)	(0.0153)
Maternal age [15-24]	0.332***	0.887	-0.008*	-0.121***	-0.042***	-0.356***
	(0.02041)	(0.824)	(0.0043)	(0.0215)	(0.0251)	(0.0446)
Maternal age [25-34]	0.178***	2.785***	-0.0024	-0.036**	0.198***	0.102***
	(0.01662)	(0.632)	(0.0036)	(0.01606)	(0.0431)	(0.0198)
Spouse's no education	0.00533	0.335	-0.0056***	-0.075***	-0.042	-0.209***
	(0.03012)	(1.137)	(0.00596)	(0.02733)	(0.0278)	(0.0374)
Spouse's primary educ	0.0019	0.367	-0.0042	0.0261	0.055**	-0.078***
	(0.02749)	(1.033)	(0.0045)	(0.02387)	(0.0239)	(0.0328)
Spouse's secondary educ	0.0152	1.022	-0.0054	0.0207	0.105***	-0.115***
	(0.02612)	(0.978)	(0.0041)	(0.02244)	(0.0253)	(0.00354)
Husband's age	-0.00273***	0.00623	-0.00036*	0.000238	0.00065***	-0.0088***
	(0.00073)	(0.0278)	(0.00019)	(0.00069)	(0.00069)	(0.0017)
Working husband	0.0213	1.696	-0.0132*	0.359***	0.500***	0.706**
	(0.0438)	(1.671)	(0.0078)	(0.04233)	(0.04408)	(0.0491)
Number of children	0.0357***	1.036***	0.003***	0.0225***	0.112***	0.097***
	(0.0032)	(0.121)	(0.00072)	(0.0031)	(0.0158)	(0.0132)
Wealth index richest	-0.0858***	-2.268**	0.052***	-0.228***	-0.438***	0.354***
	(0.02569)	(1.001)	(0.0182)	(0.02743)	(0.0434)	(0.0438)
Wealth index richer	-0.0540**	-1.067	0.0502***	-0.248***	-0.350***	0.374***
	(0.02227)	(0.862)	(00152)	(0.0237)	(0.0291)	(0.0551)
Wealth index middle	-0.0414**	-0.700	0.0278***	-0.212***	-0.282***	0.271***
	(0.01863)	(0.721)	(0.0102)	(0.02009)	(0.0234)	(0.0610)
Wealth index poorer	-0.0470***	-0.786	0.0212**	-0.096***	-0.172***	0.278***
	(0.01685)	(0.659)	(0.0092)	(0.01829)	(0.0229)	(0.0487)
Christian	-0.0166	-0.330	0.018**	0.0240	-0.009	0.586***
	(0.02926)	(1.112)	(0.0085)	(0.02896)	(0.02896)	(0.0842)
Muslim	0.0110	0.619	0.021	-0.185***	-0.128***	0.221***
	(0.03027)	(1.151)	(0.019)	(0.0315)	(0.0325)	(0.0598)
Constant		7.031***				
		(2.106)				
Interaction breastfeeding and birth interval predicted					-0.086***	
					(0.150)	
Breastfeeding residual					-0.718	-0.728
					(0.7129)	(0.7131)
Predicted residual Interaction breastfeeding and birth interval					0.0011***	
					(0.00036)	
Non-self-cluster breastfeeding	0.592***					
	(0.03371)					
Interacted instruments(nscbf and contraceptive use		-1.793*	-0.0063			
		(1.060)	(0.0063)			
Predicted residual Interaction breastfeeding and obesity						0.990***
						(0.6319)
Interaction breastfeeding and obesity predicted						-1.090***
						(0.18297)
R-squared/Pseudo R2	0.080	0.038	0.075	0.107	0.111	0.110
LRchi2/F920,9711)	1070.32	19.26	171.02	1313.73	1357.79	1350.44
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Number of observations	9,732	9,732	9,732	9,732	9,732	9,732

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Reference categories are: no maternal education, not married, rural residence, mat age 35-49, spouse's educ higher, non-working husband, wealth index poorest and other religion.

Source: Computed by authors using CDHS 2018 and Stata 14

Empirical results on column (1) further reveal that the coefficient for the non-self-cluster breastfeeding is positive and stands at 0.592 points and is statistically significant at 1% level indicating that the probability to breastfeed is positively associated with the non-self-cluster breastfeeding. The statistical importance of the non-self-cluster breastfeeding shows that it is a relevant instrument for breastfeeding. The results in columns (2) and (3) show that the interaction term of the instruments for breastfeeding and birth interval and obesity is negatively associated with the interaction between breastfeeding and maternal health outcomes. The coefficient is statistically significant for birth interval at 10% level but statistically insignificant for obesity.

Looking closely at the results on columns 5 and 6, the interaction term has not changed the sign/direction of the breastfeeding effect on maternal labour force participation but the interaction term is also negative and statistically significant at 1% level. Thus, when breastfeeding is interacted with birth interval/obesity, the coefficient of the interaction term is negative and significant showing that an increase in birth interval or obesity, increases (moderates up) the negative effect of breastfeeding on maternal labour force participation.

This study hypothesized that maternal health should influence (moderate) the effect of breastfeeding on maternal labour force participation. Employing the IV probit with an interaction term the results found that maternal health significantly moderates the effect of breastfeeding on maternal labour force participation. This implies that maternal health strengthens the effect of breastfeeding on maternal labour force participation in Cameroon.

These findings corroborate the findings of Horta (2019) who investigated the use of breastfeeding as an investment for the future and concluded that there is increasing evidence on the long-term benefits of breastfeeding not only in health and disease, but also in the development of human capital. There is also evidence to suggest that breastfeeding may provide long-term health benefits to the mother. With these health benefits of breastfeeding, it holds that a worker cannot work well if he or she is unhealthy and as such, breastfeeding being an investment for the future is likely to improve on the human capital that a woman needs to participate in the labour force.

4. Conclusion and Policy Implications

The findings of this paper reveal that maternal health has a significant influence on the effect of breastfeeding on maternal labour force participation. Hence maternal labour force participation in Cameroon can be enhanced upon from the lens of breastfeeding and maternal health in order to meet up with the objectives of the National Development Strategy 2030.

As policy implications to encourage maternal labour force participation in Cameroon, the results of this study strongly recommend that employers should provide encouragement and support for working mothers to continue breastfeeding after returning to work to strike a balance between breastfeeding and maternal labour force participation. Again, in addressing this problem, the government of Cameroon, especially the ministry of Public health and women empowerment should propose bills to create baby friendly work places. Mothers might bring babies to work where during breastfeeding hours she can go and breastfeed the baby. Day cares should be created in work places for mothers to keep their babies close to them during working hours. Most private sector employers should be obliged to give employees paid maternity leaves and give at least 3 months maternity leaves as stipulated in the Cameroon labour code.

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