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THE IMPACT OF FEMALE EMPLOYMENT ON FERTILITY IN SOUTH SUDAN

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ABSTRACT

Worldwide, females compose around 40 percent of the globe's employment force. Female employment is documented to play a significant role in the disparity in fertility echelons within and amongst nations. This paper sought to identify the impact of female employment on fertility in South Sudan employing primary data collected from females aged 15-49 years in Juba from 2nd to 30st November 2020. The survey used a random sampling method to select the households. A total of 992 females aged 15-49 years old were successfully interviewed. The data were analyzed using cross tabulation with correlations in addition to linear regression analysis. The correlations test found female employment, level of education, age at first birth and contraceptive use were significantly correlated with fertility. The linear regression analysis found female employment, age at first birth, contraceptive use and payam of residence were significantly associated with fertility. The paper concluded that the government should generate programs which rise employment opportunities for females. Also family planning programs should be made accessible to both employed and unemployed females.

Keywords: Impact; female employment; fertility; South Sudan

1. INTRODUCTION

Worldwide, females compose around 40 percent of the globe's employment force (ILO 2015). Female employment is documented to play a significant role in the disparity in fertility echelons within and amongst nations (Shockaert. 2005; Rindfuss and Brewster. 1996; Becker. 1993; Standing. 1983).

In developed nations, the negative statistically significant association between female employment and fertility has been well recognized (Ahn and Mira 2002; Brewster and Rindfuss 2000; Bernhardt 1993; Moen 1991; Waite 1980), though there has been a few indication of a setback in these tendencies in a few locations in latest decades due to adoption of strategies that resolve employment and household clash (Brewster and Rindfuss 2000; Rindfuss and Brewster 1996). There has been fewer study on the female employment and fertility association in developing nations than in developed nations, maybe due to the huge dissimilarity in commonness and category of employment across these locations.

Although a regular negative association has been recognized in developed nations (Budig. 2003; Lloyd. 1991), no evident case has occurred in developing nations (Lloyd. 1991; Piché, Poirier, and Neill; 1989) as existed the case with industrialized economies. Results from study in developing regions have revealed a positive link in addition to the converse.

In Sub-Saharan Africa, it has been mentioned that no association was occurred between female employment and fertility for the reason that of restricted salaried female employment outdoor the household, lengthy family networking, inexpensive domestic

employment, in addition to social norms concerning gender roles and separation of the family obligations between men and women are another circumstance that could lower the association between female employment and fertility because at numerous times limit the skill of females to leave house and work. Though, it is expected that these intermediating factors differ through dissimilar locations in Sub-Saharan Africa, in that way resulting in the inconsistency in the work-fertility association in this region (Oppong, 1991).

In South Sudan, to the best of my knowledge, there is no work that identifies the association between employment and fertility, because of lack of national survey on the topic due to difficult to find data about female employment and fertility.

The aim of this paper is to contribute to literature by providing fresh evidence of the association between female employment and fertility in South Sudan. For this. The paper was to identify the impact of female employment on fertility in South Sudan, so as to judge whether females face a contradiction between their occupational and reproductive roles.

2. REVIEW OF EMPIRICAL STUDIES

Behrman and Pilar (2020) conducted a study to determine the linear association between female employment and fertility around the globe between 1960 and 2015. The results shows that female employment is negatively associated with fertility and positively associated with contemporary contraceptive use in every main globe region.

Baanante (2016) projected the causal influence that the decrease in fertility rates has on females' employment in Peru. Utilizing influential variables previously verified in developed nations. The study finds strong influences of fertility are main in females with kids two years old or younger and drop contrariwise as the first kid rises in age, but are static significant when reaches ten years. Influences too differ with the mother's education level, inclining to be sturdier when females have more education. Lastly, these influences are slighter for married females than for all females.

Shastri (2015) conducted a study to determine the altering association between fertility and female employment. Results establish that there exists a negative statistically significant association between fertility and female employment for the years 1965 – 1985, as there was a high level of mismatch between mother and employee roles at that period.

Broeck, and Maertens (2015) conducted a study to investigate how female employment decreases fertility rates in Senegal. The result shows that female employment has a significant negative effect on fertility rates. Besides female pay employment, the study find that the impact of employment on fertility is strongest for uneducated females than for educated females. Families' wealth level also influences fertility, as a decrease in poverty is linked with a decrease in fertility. Outcomes suggest that female employment is a strong tool for enabling rural females, decreasing fertility rates and increase speed the demographic transition in poor nations. The efficiency of family planning plans can rise if directed to areas where female employment is augmenting or to female workers directly since of a higher probability to reach females with low fertility favorites.

Fang et al (2012) conducted a study to investigate how female employment impacts fertility in China. Using data on 2,355 married females from the 2006 China Health and Nutrition Survey. The results show that female employment decreases a married females' desired number of kids by 0.35 on normal and her real number by 0.50.

Beguy (2009) conducted a study to examine the impact of female employment on fertility in two urban settings in Sub-Saharan Africa: Dakar (Senegal) and Lomé (Togo). The results show that the impact of female employment on fertility over time seems to be more significant in Lomé than in Dakar. In actual fact, females who are engaged in certain economic activity increase the interval between pregnancies; even if they are residing in union. The assumption of mismatch between salaried employment and female duties appears to be validated in Lomé where the findings show that being a salaried worker rather than self-employed reductions the risk of becoming pregnant over time.

Lee and Chung (2008) conducted a study to examine the impact of fertility on female employment in Korea utilizing the data from the government survey. Fertility is negatively and significantly connected to employment in Korea.

Engelhardt and Prskawetz (2005) carried out a study to investigate the impact of female employment on fertility rate. The results reveal that the rise in female employment rate has a negative influence on fertility, and that this negative impact is lessening over time. As well, the study proposes that more elastic policies toward family planning for instance lengthier period of salaried leave for mothers, higher proportion of salary surrogate of salaried leave for mothers, and lengthier breastfeeding coverage aid in augmenting fertility.

Bernhardt (1993) reviewed the experiential proof on the association between fertility and females' employment. In contemporary, developed civilizations there is commonly a negative association between the two. Surely, fertility applies a negative effect on labor force input, in the logic that a new-born baby has a theatrical and directly impeding effect on labor force input for the female who has just become a mother. This impact tends, though, to be provisional and reductions as the child becomes older.

Cho et al (1988) carried a study to determine disparities in females' employment patterns and the association between females' employment and fertility in Korea. Using the Korean Family Life Cycle Survey data. The result shows that females in occupational and priestly work give birth fewer kids on normal than females with no logged economic activity. In domestic home worker and farming work, on the other hand, no such association between employment and fertility is strongly related to the level of socioeconomic growth. Although a strong and regular negative association was detected between specialized employment and fertility in the more urbanized regions, which was not the case amongst the poorer rural regions. In compare, females with farming employments commonly show unusually alike fertility patterns to females with no logged economic activity.

United Nations (1985b) conducted a study to estimate the impact of the category of professional activity on the married fertility in thirty eight developing nations. The results showed that females employed in contemporary and varied professional activities tend to have less kids than those employed in traditional and traditional employments. However, even if employment is considerably linked to fertility in many of nations, the variances are relatively feeble. Further largely, this study established that the association between female employment and fertility is sturdier in nations with high level of growth.

In Philippines, Engracia and Herrin (1984) showed that the impact of employment on fertility depend on the time plan. In the short term, females presently employed finish up with higher fertility whereas in the long term, having regularly worked seems to be linked with lower fertility. However this study has not deliberated the intensity of employment nor the category of employment engaged by females.

3. MATERIALS AND METHODS

The data used in this study was primary data, which was collected to identify the impact of female employment on fertility. The survey collected data on number of children ever born to females aged 15-49 years old and female employment status. Also it collected data about age of the mother at first birth, as it is influenced by female employment status to impact children ever born. The survey used a random sampling method. A total of 992 females aged 15-49 years old were successfully interviewed.

Fertility was measured by children ever born, it was categorized into 0-2 children, 3-5 children, and 6+ children. Female employment status was categorized into three groups termed: waged employee, self-employed, unemployed. Female educational level was categorized into no education, primary, secondary, and higher. Age at first birth was categorized into three groups: < 20 years, 20-24 years, and 25+ years. Marital status was categorized into two groups termed: in union, not in union. Contraceptive use was categorized into two: yes, no. Payam of residence was categorized into three groups: Juba, Kator, and Munuki.

The method used in the analysis were cross tabulation, percentage, and chi-square, and linear regression. Cross tabulation method was used to determine percentage which occur between the independent variables and dependent variable in the study. The correlations was applied to display the relationship between independent variables and the dependent variable. The simple linear regression was applied to identify the impact of female employment on fertility.

4. RESULTS

4.1 Distribution of Respondents by Study Variables

30.4 percent of the respondents have 0-2 children ever born, 39.6 percent have 3-5 children ever born, and 30.0 percent have 6+ children ever born. 26.3 percent of the respondents were wage employed, 30.4 percent were self-employed, and 4.5 percent were unemployed. 39.3 percent of the respondents were no education, 29.4 percent were attained primary school, 25.7 percent were attained secondary school and 5.6 percent were completed university. Without doubt, the level of education has usually been considered as a vital factor which affects children ever born (fertility). Majority 64 percent of the respondents were in union, while only 36 percent were not in union. 51.7 percent of the respondents were in age at first birth group < 20 years, 37.8 percent were in age of at first birth group 20-24 years, and 10.5 percent were in age of at first birth group 25+ years. Majority of the respondents were in age of at first birth group < 20 years. 40.7 percent of the respondents were used contraceptive while 59.3 percent were not used contraceptive. 30.2 percent of the respondents were resided in Juba payam, 28.7 percent in Kator payam, and 41.1 percent in Munuki payam.

Table 1: Percentage Distribution of the Study Variables used in the Analysis.

Variables	Frequency	Percent
Children ever born (fertility)		
0 – 2 children	301	30.4
3 – 5 children	393	39.6
6 + children	298	30.0
Female employment		
Wage employed	261	26.3
Self-employed	302	30.4
Unemployed	429	43.3
Level of Education		
No education	390	39.3
Primary	292	29.4
Secondary	255	25.7
University	55	5.6
Marital Status		
In union	635	64.0
Not in union	357	36.0
Age at first birth		
< 20 years	513	51.7
20-24 years	375	37.8
25+ years	104	10.5
Contraceptive Use		
Yes	404	40.7
No	588	59.3
Payam of Residence		
Juba	299	30.2
Kator	285	28.7
Munuki	408	41.1

4.2 Percentage Distribution of Children Ever Born and its Correlation with Independent Variables

From table 2 below. 41 percent of the females reported to be wage employed had 3-5 children ever born, whereas 31.03 and 27.97 percent had 6+ and 0-2 children ever born, respectively. Similarly, 37.42 percent of the females reported to be self-employed had 3-5 children ever born, while 35.10 and 27.48 percent of them had 6+ and 0-2 children ever born, respectively. 40.33 percent were reported to be unemployed had 3-5 children ever born as compared to 33.80 and 25.87 percent had 0-2 and 6+ children ever born, respectively. The correlations value – 0.066 with p-value 0.038 showed that there is a negative and significant correlation between female employment and children ever born.

With regard to level of education, 35.90 percent of the females with no education had 0-2 children ever born, whereas, 33.59 and 30.51 percent had 3-5 and 6+ children ever born, respectively. 40.70 percent of the females with primary education had 3-5 children ever born compared to 31.16 and 28.77 percent children ever born, respectively. 46.67 percent of the females with secondary education had 3-5 children ever born, whereas 29.80 and 23.53 percent had 6+ and 0-2 children ever born respectively. 47.28 percent of the females with university education had 3-5 children ever born as compared to 34.54 and 18.18 percent 6+ and 0-2 children ever born, respectively. The correlations value 0.076 with p-value 0.016 indicated that there is a positive and significant correlation between female education level sand children ever born.

Regarding, marital status. 36.53 percent of the females reported be in union had 3-5 children ever born, while 32.60 and 30.87 percent had 0-2 and 6+ children ever born, respectively. 45.10 percent were reported be not in union had 3-5 children ever born, whereas 28.57 and 26.67 percent had 6+ and 0-2 children ever born, respectively. The correlations value 0.025 with p-value 0.440 showed no significant correlation between the two variables.

In relation to age at first birth, 36.45 percent of the females got their first birth at age less 20 years had 0-2 children ever born, whereas 36.06 and 27.49 percent had 3-5 and 6+ children ever born, respectively. 40.00 percent of the females got their first birth at age 20-24 years had 3-5 children ever born, whereas 33.33 and 26.67 percent had 6+ and 0-2 children ever born, respectively. 55.77 percent of the females got their first birth at age 25+ years had 3-5 children ever born, whereas 30.77 and 13.46 percent had 6+

and 0-2 children ever born, respectively. The correlations value .0121 with p-value 0.000 showed that there is a positive and high significant correlation between age at first birth and children ever born.

With respect to contraceptive use, from table 2 below the results showed that 43.57 percent of the females reported to use contraceptive had 3-5 children ever born, while 32.67 and 23.76 percent had 0-2 and 6+ children ever born, respectively. 36.91 percent of the females reported be not used contraceptive had 3-5 children ever born while 34.35 and 28.74 percent had 6+ and 0-2 children ever born, respectively. The correlations value 0.092 with p-value 0.004 indicated a positive and high significant correlation between the two variables.

Concerning payam of residence, the results indicated that 35.79 percent of the females resided in Juba payam had 3-5 children ever born, while 32.77 and 31.44 percent had 0-2 and 6+ children ever born, respectively. 42.81 percent of the females resided in Kator payam had 3-5 children ever born, whereas 29.47 and 27.72 percent had 0-2 and 6+ children ever born, respectively. 40.20 percent of the females had 3-5 children ever born, whereas 30.64 and 29.16 percent had 6+ and 0-2 children ever born. The correlations value 0.016 with p-value 0.615 showed a positive and insignificant correlation between payam of residence and children ever born.

Table 2: Percentage Distribution of Children Ever Born and its Correlations with Independent Variables

Variables	Children Ever Born (Fertility)			N	Value	Sig.
	(0-2) (%)	(3-5) (%)	(6+) (%)			
Female employment					- 0.066	0.038
Waged employed	73 (27.97)	107 (41.00)	81 (31.03)	261		
Self-employed	83 (27.48)	113 (37.42)	106 (35.10)	302		
Unemployed	145 (33.80)	173 (40.33)	111 (25.87)	429		
Level of Education					0.076	0.016
No education	140 (35.90)	131(33.59)	119 (30.51)	390		
Primary	91 (31.16)	117 (40.7)	84 (28.77)	292		
Secondary	60 (23.53)	119 (46.67)	76 (29.80)	255		
Higher	10 (18.18)	26 (47.28)	19 (34.54)	55		
Marital Status					0.025	0.440
In union	207 (32.60)	232 (36.53)	196 (30.87)	635		
Not in union	94 (26.33)	161 (45.10)	102 (28.57)	357		
Age at first birth					0.121	0.000
< 20 years	187 (36.45)	185 (36.06)	141 (27.49)	513		
20-24 years	100 (26.67)	150 (40.00)	125 (33.33)	375		
25+ years	14 (13.46)	58 (55.77)	32 (30.77)	104		
Contraceptive Use					0.092	0.004
Yes	132 (32.67)	176 (43.57)	96 (23.76)	404		
No	169 (28.74)	217 (36.91)	202 (34.35)	588		
Payam of residence					0.016	0.615
Juba	98 (32.77)	107 (35.79)	94 (31.44)	299		
Kator	84 (29.47)	122 (42.81)	79 (27.72)	285		
Munuki	119 (29.16)	164 (40.20)	125 (30.64)	408		

4.3 The Relationship between Independent Variables and Dependent Variable

The results revealed that female employment has a negative and significant relationship with children ever born (fertility) ($t = -2.238$, $\text{Beta} = -0.076$; $p < 0.05$). This implies that female employment would lead to -0.072 decrease in children ever born (fertility). Besides, the level of education has a positive and insignificant relationship with children ever born (fertility) ($t = 1.407$, $\text{Beta} = 0.047$; $p > 0.05$). Marital status has a positive and significant relationship with children ever born (fertility) ($t = 1.446$, $\text{Beta} =$

0.047, $p > 0.05$). Age at first birth has a positive and significant relationship with children ever born (fertility) ($t = 4.155$, Beta = 0.139; $p < 0.05$). Similarly, contraceptive use has a positive and significant relationship with children ever born (fertility) ($t = 2.046$, Beta = 0.072; $p < 0.05$). Payam of residence also has a positive and significant relationship with children ever born (fertility) ($t = 2.095$, Beta = 0.070; $p < 0.05$). This implies that age of at first birth, contraceptive use and payam of residence would lead to 0.161, 0.113 and 0.065 increase in children ever born (fertility), respectively.

Table 3: Results of Linear Regression

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Female employment	- 0.072	0.032	- 0.076	-2.238	0.025
Level of Education	0.039	0.028	0.047	1.407	0.160
Marital Status	0.076	0.053	0.047	1.446	0.148
Age at first birth	0.161	0.039	0.139	4.155	0.000
Contraceptive use	0.113	0.055	0.072	2.046	0.041
Payam of residence	0.065	0.031	0.070	2.095	0.036

5. DISCUSSION

From the study findings, female employment was negatively and significantly associated with children ever born in South Sudan. This finding is concurred with previous studies by (Behrman and Pilar, 2020, Baanante, 2016; Shastri, 2015; Broeck, and Maertens, 2015; Fang et al, 2012; Beguy, 2009; Lee and Chung, 2008; Engelhardt and Prskawetz, 2005; Bernhardt, 1993; Cho et al, 1988; United Nations, 1985b) who found that female employment is negatively associated with fertility. The reverse association between fertility and employment arises when financial and social life is organized such that it is challenging to merge both giving birth and employment (United Nations, 1987). Kempeneers (1987) discussed that females' irregular occupational job is one of the major outcomes of the continuous conflict between employment and giving birth fronted by females through their life cycle. Though, this conflict could be reduced beneath certain conditions. Some occupations features by freely allow the concurrent fulfilment of the employee and mother roles, in that way decreasing the mismatch between the two roles. For instance, females employed in farming or at home are mainly capable to coordinate their work and mothering roles. These females are more expected to have many children. For females employed outside their home, especially those employed in the contemporary sector, it is more challenging to concurrently fulfil childrearing and employee roles. These kinds of works are thus favorable to slight family size, owing to larger mismatch between the work and mothering roles. Especially, it is hypothetically presumed that the fertility of salaried worker females is lower than those that of non-salaried worker females.

The study findings showed that contraceptive use was positively and significantly associated with children ever born in South Sudan. This finding is consistent with study by Behrman and Pilar (2020) who found that contemporary contraceptive use was positively associated with fertility in every main globe region. Augmented usage of contemporary contraception might allow females to look for work. On the other hand, work might guide females to accept contemporary contraceptive methods by providing them with the monetary self-sufficiency needed to access contraceptives or the drive to control pregnancy. Contemporary contraceptive use could be an energetic select of females who need to control fertility, but females may too use contemporary contraceptives with restricted wish at the order of partners and medical specialists (Kantorova 2019).

6. CONCLUSIONS AND RECOMMENDATIONS

The core objective of this paper was to identify the impact of female employment on fertility in South Sudan. Specially, to examine the association between female employment and fertility, utilizing descriptive statistics and linear regression. The correlations findings displayed that female employment was negatively and significantly correlated with children ever born. Besides, level of education, age at first birth, contraceptive use were positively and significantly correlated with children ever born.

The linear regression findings also identified that female employment was negatively and significantly associated with children ever born. Actually, females who are engaged in a number of financial activity prolong the space between childbearing; even if they are residing in union. In addition, age at first birth, contraceptive use, and payam of residence were positively and significantly associated with children ever born.

The female employment should be improved, because it was found to be powerfully associated with children ever born. The government should generate programs which increase employment opportunities for females. This may lead to low fertility, particularly amongst the teenagers. Also family planning programs should be made accessible to both employed and unemployed females. Further pointer of employment categories should be used to examine the relationship between fertility and status of females.

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