

Can Female Entrepreneurship Actually Reduce Poverty In Cameroon?

Vukenkeng Andrew Wujung (Ph.D)^{1*}, Seta Wuimgodhabp Almut²

¹Faculty of Economics and Management Sciences, The University of Bamenda, P.O box 39, Bambili, Cameroon

²Higher Teacher Technical Training College, The University of Bamenda, P.O box 39, Bambili, Cameroon

*Corresponding author: Vukenkeng Andrew Wujung | Received: 11.02.2019 | Accepted: 21.02.2019 | Published: 28.02.2019
DOI: [10.21276/sjef.2019.3.2.4](https://doi.org/10.21276/sjef.2019.3.2.4)

Abstract

The paper investigates the effect of female entrepreneurship on poverty in Cameroon. The two stage least squares estimation technique was used to estimate the parameters of both the female and poverty models for the period 1985 to 2016. Findings from data analysis revealed that female unemployment and domestic credit to private sector are key determinants to female entrepreneurship in Cameroon. Also female entrepreneurship was seen as a key factor in reducing poverty at a national level in Cameroon. From a policy perspective, an important conclusion is that for Cameroon to achieve the medium term objectives of poverty reduc

tion as stated in the Poverty Reduction Strategy Paper (PRSP) and eventually to attain the long term vision of emergence by 2035, female entrepreneurship needs to be given more consideration in government's economic policy.

Keywords: Female entrepreneurship, poverty, female self-employment and human development index, Cameroon.

Copyright © 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

Ambepitiya [1] holds that women play a significant role in the economic development of any country given that they contribute and support the economy extensively in different ways by being employed in many different sectors. Many of them are in self-employment which an OECD [2] study considers either as a survival strategy for those who cannot find any other means of earning an income or as evidence of entrepreneurial spirit and a desire to be one's own boss. Women have been shown to be as likely as men to recognize business opportunities around them and that fear of business failure rate among them are equal to or less than those among men. They are found to be in low productivity and low growth sectors such as retail, beauty and food services. In Africa and in Asia, women are found to be in these consumer-oriented sectors. This points to the fact that if women cross to male dominated sectors they can earn more. Ambepitiya [1] shows that women entrepreneurs can be positioned to play an important role in promoting sustainable practices in an economy, and the social system as a whole. Given the positive effect made by women on the economy and development, women entrepreneurship is important to the developing world in promoting sustainable development practices.

Basu [3] holds that in both developed and developing countries women have always been associated with small scale and home-based businesses for supplementing the household income. However, in recent times, many women are consciously giving up jobs for becoming entrepreneurs in formal as well as informal sectors and it is expected that by the year 2018, 9.72 million small, business-related jobs will be created and female entrepreneurs will contribute more than 50% in this job creation. This is an indication that that women are assuming leadership position and creating job opportunities on a large-scale. Also, with more women launching exciting new ventures that are not just limited to small-scale business, it can be said that female entrepreneurship is reshaping the business landscape.

OECD [2] study indicates that in 2011 self-employed women earned between 10 and 60% less than men across all countries, but over the period 2006 to 2011 the gap closed significantly in some, more than 10 percentage points in Belgium, Finland, Greece, Iceland, Luxembourg and the Netherlands. In Denmark, one of the countries where the gap in self-employment earning between women and men is lowest, it nevertheless increased by almost 8 percentage points since 2006.

This notwithstanding, women are considered to be the most affected by poverty on the ground that their access to their own cash labor income remains low in developing regions, particularly in Sub-Saharan Africa [4]. The gap between women and men in access to income is large in both urban and rural areas. This has been due to the fact that women have often had to live with greater social constraints than men do [5]. Legal restrictions on property rights in most developing countries have been a major challenge in the past and are still a significant challenge in today economies [6]. However, it has been argued that increasing the number of women entrepreneurs involved in starting new businesses is critical for a country's long-term economic growth [7]. In addition to their economic and income-generating activities, women assume multi-faceted roles in society, i.e. as breadwinner of families, unpaid family workers, service providers in the communities and mothers/care-takers of the family. In spite of their important contributions to socio-economic development; women suffer from various constraints, which inhibit them from fully realizing their potential for development [8]. This is attributed to the fact that women have limited access to certain resources such as access to credit, land ownership and inheritance, access to education extension services, entrepreneurship skills, access to markets and their minimal participation in decision making process. Several studies have shown that men have access to economic resources such as land ownership and inheritance, access to credit and market facilities and entrepreneurial skills than women [9-11].

The Cameroonian culture, still regards the role of women as being supportive and submissive. But currently, there is a growing recognition that economic development can be meaningfully and significantly promoted if more women are encouraged to become entrepreneurs. Stevenson [12] indicates that countries providing more incentives and support systems specifically designed for women entrepreneurs have higher rate of female entrepreneurship. The failure to adopt such specific support services means lower levels of women entrepreneurship in Cameroon. Against this background this paper analyses the effect of female entrepreneurship on the reduction of poverty in Cameroon.

LITERATURE REVIEW

Conceptual Literature

Poverty is a concept that is not easily defined [13]; it is a personal experience and it is only those who endure poverty, the poor, who can rightfully understand and interpret it. As a consequence, poverty is presented and interpreted in different ways, with different implications as to how to address it [14, 13]. For example, if poverty is perceived as primarily an economic issue, then economic solutions will perhaps inevitably be the focus of development interventions. If poverty is construed as a national issue, then interventions will emerge from a national policy perspective. Moreover, poverty may be categorized in different ways, for example, as income or consumption poverty, or as material poverty. Equally, it may be considered to be capability deprivation [15, 14, 13]. Hence, poverty is evidently a multidimensional concept embracing not only an economic dimension but also a lack of access to education, health care and other social goods, a lack of choice, of self-respect, and of freedom. In short, as United Nations Educational, Scientific and Cultural Organization [UNESCO] summarises, to live in poverty is to be denied "an adequate standard of living and other civil, cultural, economic, political and social rights" [16].

An entrepreneur is someone who starts, owns, manages and sustains a business. Burdus [17] considers an entrepreneur as a person who creates new businesses and takes risk to achieve the objectives which they set out. Equally, Schumpeter [18] considers the entrepreneur as someone who exercises initiative by organizing a venture to take some benefit of an opportunity and as a decision maker, decides what, how and what quantity of goods or services to produce. On the other hand, entrepreneurship is the activity of setting up a business or businesses, taking on financial risk in the hope of profit without eliminating the possibility of losing. Entrepreneurship could also be seen as the process of designing, launching and running a new business, i.e. a start-up company offering a product, process or service. Hisrich [19] considers it as the process of creating something new with value by devoting the necessary time and efforts assuming the accompanying financial, psychic and social risks and receiving the resulting rewards of monetary and personal satisfaction and independence.

Women are motivated by many factors to set up entrepreneurial ventures of their own, most of which are related to economic, social and personal reasons. Moore and Buttner [20] are of the view that, just like men, women launch their businesses to achieve independence, personal development and job freedom. Research in other contexts argues that unlike men who are motivated by the need to invest time and money outside the household, women are motivated principally by the needs of their children and household [21]. Economically, Coughlin and Thomas [22] argue that, one of the most universal motivations for women starting businesses of their own is the need to generate income. They think that, if women had the same opportunities to make money in jobs like men, then the energy behind this motivation would be much less. In many cases, women are the primary breadwinners of households, especially in developing countries where it is common for one man to father numerous children without providing economic support to any of the offspring.

Theoretical Literature

This paper is built on three theoretical orientations-the Vicious Circle of Poverty (VCP), theory of entrepreneurship and economic development, and knowledge spillover theory of entrepreneurship. According to Nurkse [23], it is the vicious circle of poverty which is responsible for backwardness of under developed countries (UDCs). This implies a circular constellation of forces tending to act and react in such a way as to keep a country in the state of poverty. In such state of affairs the process of capital formation remains obstructed and restricted. This theory is based on the notion that lack of capital is the key factor preventing growth and development in UDCs.

The vicious circle of poverty is one of the most widely known theories on the notion that lack of capital is the key factor preventing growth and development. It expresses economic stagnation at very low level of capital output. At the time it was formulated in the early 1950s, the model seemed to be an accurate description of conditions in many countries. Since then, most countries have achieved increases in per capita GNPs and there has been an improvement in vicious cycle models.

The doctrine of vicious circle of poverty in UDCs is an easy explanation of nature. There are so many other reasons of vicious circle in these countries. The experience of Latin American countries has proven that underdeveloped countries can also develop. In addition the doctrine of vicious circle neglects so many important reasons like lack of entrepreneurs, unfavourable political, social and religious climate. Also, the principle of vicious circle neglects other important determinants of economic development.

The theory of entrepreneurship and economic development by Schumpeter stands as the main theory that underlies this research. This theory stresses the need or role of entrepreneur and innovation in the development process. Here, development is considered as a spontaneous and discontinuous change in life that is not forced but arises by its own initiative and appears in the industrial and commercial life. According to Schumpeter (1934), entrepreneurship and innovation includes the introduction of a new product or a new service, the discovery of a new method of production, the opening of a new market, identifying new sources of raw materials or semi-manufactured goods, the carrying out of new organization of any industry like the creation or breaking up of monopoly power.

Schumpeter [24] goes ahead to describe entrepreneurship as a driver of market based system. In other words, an important function of an enterprise is to create something new. That is, if an entrepreneur knows how to create new goods or services or knows a better way to do so, benefits can be reaped through this knowledge. Entrepreneurs value knowledge when they believe it will procure some individual defined benefits. The theory is limited in the fact that it neglects the role of the public sector growth. It however considers entrepreneurship as a major factor in growth. This therefore means entrepreneurship can bring about positive growth and reduce poverty in a household.

According to the knowledge spillover theory of entrepreneurship, entrepreneurs are closely associated with flexibility and knowledge which is an important source of competition in global world economy [25]. In this respect, the role of entrepreneurship in the creation and dissemination of knowledge, which is an essential factor for regional economic growth and competitiveness, is of paramount importance.

However, endogenous growth theory and knowledge production function approach which hold that awareness of the significance of knowledge spillover for economic growth and innovation, and suppose knowledge spillover may emerge automatically, cannot fully explain the issue of dissemination of knowledge in economic growth process [26]. In addition, this theory fails to recognize the difference between economically useful knowledge and new knowledge. As Michelacci [27] and Braunerhjelm *et al.*, [28] argue that if knowledge production or R&D is not economically valuable, they do not contribute to innovation and economic development. To close this gap Audretsch [29], Acs *et al.*, [26], developed the knowledge spillover theory of entrepreneurship (KSTE).

The main argument of the KSTE theory is that entrepreneurs commercialize new knowledge generated by the large firms. According to the knowledge spillover theory of entrepreneurship, the entrepreneur is a conduit of transmitting knowledge spillover and new knowledge means new opportunities for entrepreneurs. Therefore, a lack of entrepreneurship can result in low returns of knowledge and thus less economic growth and high poverty rates [30]. In this respect, the theory suggests two main ideas: firstly, knowledge is one of the most important sources of entrepreneurial opportunities and secondly, the exploitation of such opportunities by entrepreneurs results in the formation of new firms. In addition, Florida [31] emphasized the role of regions equipped with talented people and new ideas as globally competitive centers. According to him, such regions, because of the availability of tolerance, diversity and cultural amenities, produce important solutions about business and become attraction centers for creative people. Thus, the rate of innovative activities, spillover of new knowledge and entrepreneurial activities is high in these regions.

The knowledge spillover theory of entrepreneurship establishes an important bond between entrepreneurship and knowledge. It explicitly suggests that the generation of new knowledge which means new opportunities for

entrepreneurship, is a crucial factor of economic growth. However, it is widely accepted that new knowledge creation is not only a determinant of economic growth, but also the willingness and the ability of innovative entrepreneurs to develop new a process and products based on new knowledge are other important determinants [30]. Also, the spillover of new knowledge, generated through both private and public R&D, stimulates knowledge based entrepreneurs leading to the creation of high-tech companies. To this end, Geroski [32] asserts that the growth and survival of new firms depend on their capacity to exploit new knowledge. In other words, effectively taking advantage of this knowledge is vitally important for economic growth and competitiveness.

Empirical Literature

The effect of female entrepreneurship on household welfare is a controversial issue that has been subjected to a number of empirical studies. Entrepreneurship is one of the instruments used by females to combat poverty in their various households. Fajimi and Omonona [33] examined the impact of women participation in agro-allied small and medium scale enterprises (SMEs) on poverty alleviation in Oyo State, Nigeria. Data were collected using the multistage sampling technique from 119 respondents in the study area made up of 59 participants and 60 non-participants. Data generated were analyzed using descriptive statistics, FGT – weighted poverty measures and Probit regression analysis. Results from the study showed that the non-participants have the highest poverty level (51%), while the participants have poverty level of (17%) and the non-participants contribute greatly to whole group poverty. The estimated probit regression analysis showed that marital status, household size and women status in the family are poverty enhancing while educational status, participation in Small and Medium Enterprises, income and monogamous family type are poverty reducing. Hence, participation in agro-allied Small and Medium Enterprises is antidote to reducing poverty among women. However, neither of the studies identified any government programmes and incentives to encourage women entrepreneurship development.

Schumpeter [18] establishes a relationship between entrepreneurship and unemployment. He found out that there is an inverse relationship between unemployment and entrepreneurship. That is to him, as unemployment increase, the rate of entrepreneurship falls because people are so poor such that they don't even have capital to go in for entrepreneurship. In the same vein, the shopkeeper effect holds that unemployment and entrepreneurship are directly related, that is an increase in unemployment will lead to an increase in entrepreneurship because out of desperation people are bound to get in to entrepreneurship by owning small shops.

Carree *et al.*, [34] found entrepreneurial activities as a factor contributing to economic growth. Therefore to them an increase in entrepreneurship leads to an increase in economic growth and thus a reduction in poverty. Equally Thurik [35] states that the relationship between business ownership rate and economic growth changes over time and also depends on the level of economic development. Ali [36] conducted a survey of the social and economic contribution of Somali women entrepreneurs in Banaadir region. In the survey, it was realized that female entrepreneurial activities permit better education for children and increases living standards hence reduces poverty. Therefore to him female entrepreneurship has a positive relationship with poverty. That is an increase in female entrepreneurship will lead to a reduction in poverty. Equally, Heffernan [37] explains how women entrepreneurs are altering the course and the culture of business today and states that between 1997 and 2004; privately women owned businesses grew at three times the rate of US privately held firms.

Adofu and Ocheja [38] conducted a survey on the impact of entrepreneurship skill acquisition on poverty in Kogi State of Nigeria using beneficiaries of entrepreneurship acquisition skills from six Local Government Areas of the state. The result shows that 65% of the respondents accepted that lack of entrepreneurship skills among youth is responsible for the high rate of poverty in Nigeria. The result also revealed that at least 60% of the people that benefitted from the skill acquisition programme can now afford the basic necessity of life. The study therefore recommended that since most of the people that benefitted from the programme could afford the basic necessity of life, the government should begin to think of the way of developing the programme to the status of poverty eradication programme. While this study recommended involvement of government in poverty eradication in the study area, the study never measured the impact of any government existing programme or incentive on poverty eradication in the state.

Bernarda [39] estimated the effect of female participation on household's consumption in Spain. The study used the tobit model to analysis and interpret results and found out that female participation in labor force increases expenditure on the consumption of most house hold commodities such as health, electricity and education. Equally Syed [40] used an interview to identify the characteristics of women entrepreneurship in Saudi Arabia. His findings show that female entrepreneurial activities increase savings and investment which is necessary for economic and social development. As such as female entrepreneurship increases the level of poverty is likely to fall.

Vukenkeng and Mukete [41] investigated the effect of entrepreneurship on poverty reduction in Cameroon and determined the nature of the causality that exists between them using the vector autoregressive approach. It was found

that entrepreneurship has a significant negative impact on poverty in Cameroon and that there exists a significant bi-directional positive causality between entrepreneurship and poverty reduction. The findings points to the necessity of training and retraining of entrepreneurs as well as organizing entrepreneurship skills acquisition programmes to boost entrepreneurship and to reduce poverty in the country.

The foregoing review of literature indicates that there is wide body of writings on female entrepreneurship, its determinants and its effect on poverty in the world. However, most of these studies, fail to capture the simultaneity between the two variables-poverty affecting female entrepreneurship and female entrepreneurship affecting poverty especially in the context of Cameroon.

METHODOLOGY

This study is centered on two models– the female entrepreneurship model and the poverty model. The dependent variables introduced in the work are female entrepreneurship measured by the percentage of female self-employment and Human Development Index (HDI) as a proxy of poverty. Since female entrepreneurship may affect poverty, the determinants of female entrepreneurship in Cameroon were carefully selected given that they are likely to influence the country’s economy. The models introduced in this study therefore captured independent variables that are relevant to poverty in Cameroon and also on the basis of data availability. However, the choice of the inclusion of the variables in the models was based mostly on empirical, as well as, theoretical considerations. The female entrepreneurship model is specified as follows:

$$FENT = f(HDI, FEDU, FUN, GEX, DCPS, FAID) \dots\dots\dots (1)$$

The function above shows a relationship between female entrepreneurship (FENT), and female education (FEDU), female unemployment rate (FUN), government expenditures (GEX), and domestic credit to the private sector, remittances, (REMI) and foreign aid (FAID).

The above associations between the dependent and the independent variables show that there exists a relationship as such. In transforming (1) into an econometric model, a stochastic error term is introduced. In the econometric sense, the model is specified in its a priori sense as follows:

$$\ln FENT_t = \beta_0 + \beta_1 HDI_t + \beta_2 \ln FEDU_t + \beta_3 \ln FUN_t + \beta_4 \ln GEX_t + \beta_5 \ln DCPS_t + \beta_6 \ln FAID_t + \mu_2 \dots\dots\dots (2)$$

Where $\beta_0, \beta_1, \beta_2 \neq 0$ and $\beta_3, \beta_4, \beta_5 > 0$

The poverty model is written as: $HDI = f(FENT, MENT, GDI, REMI, RGDP) \dots\dots\dots (3)$

This model shows that Human Development Index (HDI), which is used as a proxy for poverty, is a function of female entrepreneurship (FENT), male entrepreneurship (MENT), Gross Fixed Capital Formation as proxy for gross domestic investment (GDI), foreign remittances (REMI) and real Gross Domestic Product (RGDP).

In transforming this model into an econometric model, a stochastic error term is introduced. In the econometric sense, the model is specified in its a priori sense as follows:

$$HDI_t = \alpha_0 + \alpha_1 \ln FENT_t + \alpha_2 \ln MENT_t + \alpha_3 \ln GDI_t + \alpha_4 \ln REMI_t + \alpha_5 \ln RGDP_t + \mu_1 \dots\dots\dots (4)$$

Where $\alpha_0 \neq 0, \alpha_1, \alpha_2, \alpha_3, \alpha_4$ and $\alpha_5 > 0$

The variables in the two models have been selected on the basis of their theoretical and/or empirical evidences.

The a priori $\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ and $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the theoretical expectations of the parameters of the models to be estimated. They show the signs and sizes or directions and magnitudes of the estimated coefficients of the models.

In the female entrepreneurship and the poverty models specified above; $\ln FENT_t$ = log of female entrepreneurship measured by female self-employment, HDI_t = Humand Development Index as a proxy for poverty, $\ln FEDU_t$ = log of female education measured by enrolment in secondary schools, $\ln FUN_t$ = log of female unemployment, $\ln GEX_t$ = log of government expenditures, $\ln DCPS_t$ = log of domestic credit to the private sector, $\ln FAID_t$ = log of foreign aid, $\ln MENT$ = log value of male entrepreneurship measured by male self-employment, $\ln GDI_t$ = log of gross domestic investment measured by gross fixed capital formation, $\ln REMI_t$ = log of foreign remittances, $\ln RGDP_t$ = log of real gross domestic product. μ_1 and μ_2 = Stochastic Elements. These stochastic elements represent all other variables that

would affect the growth of Cameroon's economy and also influence female entrepreneurship which are not captured in the models.

To assess the determinants of female entrepreneurship in Cameroon and its effect on poverty, the 2 stage least square method of analysis was used. The first analysis was centered on the determinants of female entrepreneurship and the second was on the poverty model.

PRESENTATION AND DISCUSSION OF FINDINGS

Descriptive Analysis

Table-1 presents the descriptive statistics of the variables under study.

Table-1: Summary of Descriptive Statistics of Variables

Variables	Obs.	Mean	Std. Dev.	Min	Max
Hdi	32	0.472	0.0593915	0.313	0.532
Fent	32	89.51686	4.555811	83.853	94.951
Fedu	32	29.8704	12.26975	17.04288	57.08926
Fun	32	7.462363	2.234119	3.48	9.675
Dcps	32	13.22991	6.806662	5.938795	26.41866
Faid	32	6.97e+08	3.22e+08	3.33e+08	1.77e+09
Gex	32	1.09e+12	4.27e+11	6.67e+11	2.03e+12
Gdi	32	2.14e+12	8.55e+11	1.04e+12	4.01e+12
Ment	32	71.90644	4.128233	67.174	77.9067
Remi	32	8.77e+07	9.22e+07	7337644	2.83e+08
Rgdp	32	8.99e+12	2.61e+12	5.83e+12	1.51e+13

Source: Authors computation

As noted on the table above all the variables had an equal number of observations of 32 covering the period 1985 to 2016. The mean value of HDI is 0.472 meanwhile its minimum and maximum values are 0.313 and 0.532 respectively. With this, it is observed that the value of the mean is closer to the maximum point than it is to the minimum. The difference between its observed score and its mean is 0.0593915 which is relatively low implying less dispersion in the values. The value of female entrepreneurship recorded a mean value of 89.51686 gotten from a set of data with maximum and minimum values of 94.951 and 83.853 respectively and giving a standard deviation value of 4.555811. In terms of female education, the table above reveals that its maximum value during our study period is 57.08926 while its minimum value is 17.04288. Given the close proximity of its mean value of 29.8704 to its minimum value, it can therefore be said that more of the values of this variable within the study period are below the mean. Moving onto female unemployment, a mean value of 7.462363 indicates that on an average, the level of female unemployment has been high given that this mean value is closer to the maximum (9.675) than to its minimum value. A look at the domestic credit to private sector variable reveals a maximum record of 26.41866 and a minimum value of 5.938795. Having a mean value of 13.22991, this variable is said to have performed poorly over the years since its mean is closer to its minimum value. A further look at the foreign aid row reveals that it has a minimum value of 3.33e+08, a maximum value of 1.77e+09, mean value of 6.97e+08 and a standard deviation of 3.22e+08. The government expenditure variable records a mean value of 1.09e+12, maximum and minimum values of 2.03e+12 and 6.67e+11, while giving a standard deviation of 4.27e+11. A look at the row for gross domestic investment, one notices a high measure of dispersion given by its standard deviation value of 8.55e+11. Its mean, minimum and maximum values are given as 2.14e+12, 1.04e+12 and 4.01e+12 respectively. Away from the above, another variable whose summary of descriptive statistics has been presented above is the male entrepreneurship variable. It has a standard deviation value of 4.128233 while recoding minimum and maximum values of 67.174 and 77.9067 respectively. Given its mean value of 71.90644, one is then free to say that the level of male entrepreneurship within our study period has averagely been low. In terms of remittances, the Cameroonian economy is seen to have recorded an average value of 8.77e+07 within our study period with maximum and minimum values of 2.83e+08 and 7337644 respectively and giving a standard deviation of 9.22e+07. Finally, the real gross domestic product variable with a standard deviation of 2.61e+12, recorded an all-time high value of 1.51e+13, lowest value of 5.83e+12 and a mean value of 8.99e+12.

The Pair wise correlation matrix table is used to presents the correlation analysis of the variables. Here, we determine whether the variables are correlated or not as well as the degree of correlation if there exists any. Given that the study made use of the two stages least square, it is only very right for us to carry out two independent correlation analyses. One correlation analysis for the female entrepreneurship as a dependent variable and the other on poverty as a dependent variable.

Correlation Analysis for the Female Entrepreneurship Model

Table-2: Pair wise Correlation Matrix Table for the Female Entrepreneurship Models

Variables	fent	fedu	fun	dcps	faid	gex
fent	1.0000					
fedu	-0.7143	1.0000				
fun	0.9243	-0.6564	1.0000			
dcps	0.3973	-0.1081	0.2626	1.0000		
faid	-0.2852	-0.0217	-0.3662	-0.2811	1.0000	
gex	-0.8067	0.9578	-0.7934	-0.0368	0.0594	1.0000

Source: Authors Computation

The correlation matrix for the variables as presented on Table-2 above reveals that all the correlation coefficients at the diagonal are unitary as expected. This informs us of the existence of a perfect positive correlation between each variable with itself. It is further observe that the dependent variable (female entrepreneurship) has a negative correlation with female education, foreign aid and government expenditure while exhibiting a positive relationship with female unemployment and domestic credit to private sector. Of all this variables, just female unemployment and government expenditure is noted to have a very strong correlation to female entrepreneurship. In terms of the correlation amongst the independent variables, all the values are satisfactory but for the correlation between female education and government spending which has a very high value indicating a strong relationship between the two independent variables. This creates awareness on the possible existence of multicollinearity amongst them. However, to be certain on this a formal multicollinearity test was carried out.

Correlation Analysis for the Poverty Model

Table-3: Pair Wise Correlation Matrix table for the Poverty Models

Variables	hdi	fent	ment	gdi	remi	rgdp
hdi	1.0000					
fent	-0.6216	1.0000				
ment	-0.6380	0.9006	1.0000			
gdi	0.4728	-0.6393	-0.5318	1.0000		
remi	0.4422	-0.8423	-0.7229	0.8237	1.0000	
rgdp	0.5061	-0.8371	-0.7536	0.9164	0.9561	1.0000

Source: Authors computation

Table-3 above shows that all the correlation coefficients along the diagonal are unitary indicating that each variable has a perfect positive correlation with itself. The table however reveals disturbing results in terms of the correlation between the independent variables. This is because a number of them have strong correlation with others. Here especially we have the correlation between female entrepreneurship and male entrepreneurship, female entrepreneurship and remittances, female entrepreneurship and real gross domestic product, gross domestic investment and remittances, gross domestic investment and real gross domestic product and finally remittances and real gross domestic product. However, this high correlation values may simply be out of a mere coincidence and may not necessarily imply the existence of multicollinearity. However, a test of multicollinearity was carried out so as to if actually it exists or not.

The augmented Dickey Fuller test was used to examine the statistical characteristics of the variables. Here it was found that only foreign aid was stationary at level and so its regression analysis was carried out at level. The other variables exhibited non-stationary characteristics at level. To this end, we carried differencing of the variables for the first time and they attained stationarity at 5% level of significance. Consequently these variables were regressed at first difference.

Empirical Results

In this section, we present and discuss the estimates of the parameters of the female entrepreneurship model and poverty model in Cameroon.

Determinants of Female Entrepreneurship in Cameroon

Table-4: Estimates of Female Entrepreneurship model in Cameroon

Variables	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
D(HDI)	-0.07732	0.0889994	-0.87	0.385	-0.2517515	0.0971196
D(lnFEDU)	0.032639	0.0278868	1.17	0.242	-0.022018	0.0872962
D(lnFUN)	0.0459**	0.0197899	2.32	0.020	0.0071621	0.0847372
D(lnDCPS)	0.0274**	0.0111979	2.44	0.015	0.0054034	0.0492983
lnFAID	-0.0041103	0.0090043	-0.46	0.648	-0.0217584	0.0135377
D(lnGEX)	-0.1140***	0.0403423	-2.83	0.005	-0.1930825	-0.0349436
_cons	7.4994***	1.03788	7.23	0.000	5.465148	9.533564

Source: Authors' computation

Where ***, ** and * stand for 1%, 5% and 10% level of significance respectively

From the table above, the following relationship between the independent variables and our dependent variable can be established. All other explanatory variables of the female entrepreneurship model were found to be insignificant in determining the level of female entrepreneurship in the Cameroonian economy indicating that in the Cameroonian economy, human development index acting as a proxy to poverty, female education and foreign aid are not considered as key determinants in female entrepreneurship.

Similar to the direction of causal-effect relationship noted with the two variables above, female unemployment also plays a positive role towards female entrepreneurship in Cameroon. The value of the coefficient of D (lnFUN) signifies that an increase in the rate of female unemployment in Cameroon will lead to an expansion in rate of female entrepreneurship. It is observed that a 1% rise in female unemployment will lead to a 0.0459% increase in female entrepreneurship. This finding was found to be significant at 5%. This finding is found to be contradictory to Schumpeter [18] who rather noted that higher levels of unemployment will imply limited capital to start up entrepreneurial ventures which will eventually lead to a downturn in entrepreneurial activities. However, our finding conforms with the theory of income choice argument which suggest that increased unemployment may rather encourage individuals towards self-employment activities. The reasoning behind this is that when people (females) lose jobs and unemployment rate is high, they may engage into entrepreneurial activities so as to be able to make a living. That notwithstanding, Cueto *et al.*, [42] explains that, this effect works only in cases when unemployment rates increases significantly, reducing employment opportunities.

Furthermore, results of the regression analysis above show that domestic credit to private sector has a positive effect on female entrepreneurship as its regression coefficient has a positive sign attached to it. To be more specific with our finding, a percentage increase in DCPS will result in a 0.0274% increment in female entrepreneurship. This result meets our expectation and is significant at a 5% level of significance. Cameroon which falls in line the findings of Imai *et al.*, [43]. It is argued that most women especially in developing economies like Cameroon fail to start up entrepreneurial ventures due to inadequate start-up capital. This has consequently restricted their ability in carrying out entrepreneurial activities. In the absence of such start-up capital from personal sources, there therefore have to rely on loans from financial institutions in order to be able to generate the much needed capital for business. However the view of Imai *et al.*, [43] should not be neglected who stressed on the fact that only loans for productive purposes and not loans for consumption can encourage female entrepreneurship.

Contrary to our expectation, Table-4 above reveals that foreign aid has a negative influence on female entrepreneurship. That is increases in the amount of foreign aid receive contract rather than expand female entrepreneurship. The regression coefficient reveals that 1% growth in foreign aid will suppress the level of female entrepreneurship by 0.004%. That notwithstanding, this outcome is confirmed to be insignificant.

It is also observed from the table above that government expenditure exhibits a negative influence on female entrepreneurship implying an increase in government expenditure will reduce the level of female entrepreneurship. This finding contradicts our apriori expectation. From the regression table it is observed that a 1% increase in government expenditure reduces female entrepreneurship by 0.11% and this is found to be significant at a 1% level of significance. A justification to this outcome could be based on the fact that almost no government expenditures are procured through women owned businesses, and the potential business case for government to promote supplier diversity efforts (including from women-owned enterprises) is significant. This finding is further supported by Elizabeth and Andrew [44] who argues that based on an average of the largest 176 economies in the world, government expenditures amount to about 33% of GDP, of which almost none is procured through women-owned enterprises. This has limited women's entrepreneurial potentials since its not been encourage by government expenditure.

The Effect of Female Entrepreneurship on Poverty

Table-5: Estimates of the poverty reduction model in Cameroon

Variables	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
D(lnFENT)	3.41967**	1.351833	-2.53	0.011	-6.069216	-0.770127
D(lnMENT)	0.4131248	0.6448595	0.64	0.522	-0.850777	1.677026
D(lnGDI)	0.1340585	0.0840288	1.60	0.111	-0.030635	0.2987519
D(lnREMI)	-0.08296**	0.0404021	-2.05	0.040	-0.162144	-0.003771
D(lnRGDP)	-0.2085831	0.2137721	-0.98	0.329	-0.627569	0.210402
_cons	17.9523***	6.581981	2.73	0.006	5.051825	30.85271

Source: Author computation

Where ***, ** and * stand for 1%, 5% and 10% level of significance respectively

Our main variable (female entrepreneurship) was seen to have a statistically significant effect on poverty in Cameroon. More specifically, it was noted from the findings that female entrepreneurship is an efficient tool to help curb poverty in the Cameroonian economy. This relationship is supported by the studies of Misango and Ongiti [45], Omonona and Fajimi [46] and Carree *et al.*, [34].

According to Ali [36] female entrepreneurial activities permit better education for children and increases living standards which eventually reduces poverty. In another vein, women entrepreneurs are now considered as important forces in economic growth and development of their nations through their active participation in productive activities which is a central point in poverty alleviation. This finding further goes to strengthen arguments against the vicious cycle of poverty. That is further confirms the assertion that entrepreneurs can always break the vicious cycle of poverty because an entrepreneur is someone who is creative and is also capable of developing new ideas and using such ideas to generate income.

Remittance was also seen to significantly affect female entrepreneurship in Cameroon. In this study it was revealed that remittance exhibits a negative causal-effect relationship on poverty in Cameroon. This implies that the more the amount of remittance into the economy, the higher the level of poverty. This outcome seems very disturbing as it is rather expected that there should be a positive remittance-poverty relationship. The main argument put up in favour of this outcome is the idea of the moral hazard problem. According to this idea, people who receive remittances have an incentive to reduce their own labour, because they know that their relatives working abroad will send them money regularly. The end result is that there is an eventual fall in national output, reducing growth and consequently worsening the poverty situation. The more money remitters send in a bid to reduce economic hardship in the family would only strengthen the recipient's incentives to reduce their productive effort thereby worsening the situation. More so, these remittances are meant mostly for non-productive purposes. In essence they are just not meant for growth but rather as an insurance against family poverty which further encourages its consumption-centered nature.

It was found that male entrepreneurship, gross domestic investment and real gross domestic product had an insignificant effect on poverty. Despite the much interest in male entrepreneurship coupled with the much attention on, it has not been able to solve the problem of poverty in Cameroon. This is probably due to the fact that there exists too much family reliance on the man so much so that most of the proceeds from entrepreneurial activities goes into the family and very little is reinvested to increase the businesses size that eventually makes it a weak tool to alleviate poverty.

CONCLUSION AND POLICY IMPLICATIONS

This study set out to identify the determinants of female entrepreneurship and its effect on poverty in Cameroon. Data for the study was collected from the World Development Indicators [47] and some from UNDP Human Development within a 31years period that is 1980-2014. It was observed that female education does not significantly influence female entrepreneurship in Cameroon. This is attributed to the low female education participation. However, it should be noted that recently there has been an upsurge in the rate of female education participation but clearly enough this is inadequate. It is important that several measures be taken to improve upon female education. Measures such as provision of scholarships to academically highly performant women will go a long way to first ensure they attain higher levels of education and also encourage other women to come into the academic field. In addition, entrepreneurial skills should be imparted on women so as to better equip them.

Given that domestic credit to private sector was seen as a significant determinant of female entrepreneurship, it is important that more measures should be taken towards providing credit to females who wish to start-up or expand upon their entrepreneurial ventures. The opening of specialized financial institutions to cater for loans for women entrepreneurs most especially would go a long way in accomplishing this objective.

Meanwhile, government procurement should not be gender biased but based on the quality of products. However, if there is to be any bias in government expenditure it should rather be in favour of women given that their role

in poverty alleviation is more than that of male entrepreneurs. It is equally imperative for development planners, policy makers and development agencies at national level to recognize the social and economic importance of female entrepreneurship. At the community level, customs and traditions which oppress and deny women access to economic resources should be abolished.

REFERENCES

1. Ambepitiya, K. R. (2016). The Role of Women Entrepreneurs in Establishing Sustainable Development in Developing Nations. *World Review of Business Research*, 6(1), 161-178.
2. OECD. (2019). Self-employment rate (indicator). (Accessed on 15 February 2019).
3. Roy, P. (2014). Analyzing Female Entrepreneurship in a Global Context-The Challenges and the Road Ahead. *International Journal of Information and Management Sciences*, 1(5), 332-336.
4. United Nations. (2015). The World's Women 2015: Trends and Statistics. New York.
5. Quisumbing, A. R., & Pandolfelli, L. (2010). Promising approaches to address the needs of poor female farmers: Resources, constraints, and interventions. *World development*, 38(4), 581-592.
6. Fonjong, L., Fombe, L., & Sama-Lang, I. (2013). The paradox of gender discrimination in land ownership and women's contribution to poverty reduction in Anglophone Cameroon. *GeoJournal*, 78(3), 575-589.
7. Global Entrepreneurship Monitor (GEM). (2000). Women's Entrepreneurship Report.
8. UNIDO, A. (2003). Path out of Poverty: Developing rural and women entrepreneurship.
9. Koda, B., & Mukangara, F. (1997). Beyond Inequalities: Women in Tanzania Tanzania Gender Networking Programme and SARDC- WIDSAA, TGNP/SARDC, Dar es Salaam. 60.
10. University of Dar es Salaam Entrepreneurship Center. (2002). Women Entrepreneurs in Tanzania, 49.
11. Tanzania Gender Networking Programme. (2004). Structural Adjustment and Gender Empowerment or Disempowerment, Symposium report, TGNP, Dar es Salaam.
12. Stevenson, L. (2004). Explaining female and male entrepreneurship across 29 countries.
13. Misturelli, F., & Heffernan, C. (2008). What is poverty? A diachronic exploration of the discourse on poverty from the 1970s to the 2000s. *The European Journal of Development Research*, 20(4), 666-684.
14. Chambers, R. (2006). What is poverty? Who asks? Who answers? In D. Ehrenpreis (Ed), *Poverty in Focus*, (pp. 7-9). Brasilia: UNDP International poverty centre.
15. Lok-Dessallien, R. (2000). Review of Poverty Concepts Indicators, Poverty Reduction Series. New York: UNDP.
16. United Nations. (2001). Poverty and the International Covenant on Economic, Social and Cultural Rights. UN Committee on Economic, Social and Cultural rights, E/C.12/2001/10. New York: United Nations.
17. Burdus, N. (2010). The entrepreneurial process and economic success in a constrained environment. *Journal of Business Venturing*, 17, 431-465.
18. Schumpeter, J. A. (1947). The Creative Response in Economic History. *Journal of Economic History*, Vol 7:149-159.
19. Hisrich, J. (2005). The entrepreneurial process and economic success in a constrained environment. *Journal of Business Venturing*, 17, 431-465.
20. Moore, D. P., & Buttner, E. H. (1997). Women entrepreneurs: Moving beyond the glass ceiling. Sage Publications, Inc.
21. Rawlands, P. (1995). Start-up capital: "does gender matter?". *Small business economics*, 16(4), 329-346.
22. Stevenson, L. A. (1986). Against all odds: The entrepreneurship of women. *Journal of small business management*, 24(4), 31-35.
23. Nurkse, R. (1971). The theory of development and the idea of balanced growth. In *Developing the Underdeveloped Countries* (pp. 115-128). Palgrave Macmillan, London.
24. Schumpeter, J. A. (1934). *The theory of Economic Development*. London. Transaction Publisher.
25. Sanyang, S. E., & Huang, W. C. (2010). Entrepreneurship and economic development: The EMPRETEC showcase. *International Entrepreneurship and Management Journal*, 6(3), 317-329.
26. Acs, Z. J., Braunerhjelm, P., Audretsch, D. B., & Carlsson, B. (2009). The knowledge spillover theory of entrepreneurship. *Small business economics*, 32(1), 15-30.
27. Michelacci. (2002). The Entrepreneurial Decision: Dissatisfaction or Opportunity, *Journal of Small Business Management*, 3, 26-28.
28. Braunerhjelm, M., Langowitz, N., Elam, A., & Dean, M., (2010). Do women entrepreneurs require different training? Cranfield School of Management. Bedford, United.
29. Audretsch, D. B. (1995). *Innovation and industry evolution*. Cambridge: MIT Press.
30. Audretsch, D. B., & Lehmann, E. E. (2005). Does the knowledge spillover theory of entrepreneurship hold for regions? *Research Policy*, 34(8), 1191-1202.
31. Florida, R. L. (2004). *The rise of the creative class*. Revised paperback edition. New York: Basic Books.
32. Geroski, P. A. (1995). What do we know about entry?. *International Journal of Industrial Organization*, 13(4), 421-440.

33. Fajimi, F. O., & Omonona, B. T. (2010). Women participation in agro-allied small and medium scale enterprise and its impact on poverty alleviation in Oyo State Nigeria. *Journal of American Science*, 6(12), 771-780.
34. Carree, M., Van Stel, A., Thurik, R., & Wennekers, S. (2007). The relationship between economic development and business ownership revisited. *Entrepreneurship & regional development*, 19(3), 281-291.
35. Thurik, M. (2008). Linking entrepreneurship and economic growth. *Small business economics*, 13(1), 28-54.
36. Ali, Y. S. (2013). Why Research on Women Entrepreneurs needs new direction. *Entrepreneurship Theory and Practise*, 30(5), 594-620.
37. Heffernan, M. (2007). How she does it: how women entrepreneurs are changing the rules of business success, New York: Viking.
38. Ilemona, A., Akoji, O., & Matthew, A. (2013). Alleviating poverty through the use of entrepreneurship skill acquisition in Kogi State, Nigeria. *Aceh International Journal of Social Science*, 2(1), 14-23.
39. Bernarda, Z. (2010). An Insight Into The "Constraints" Faced By Women Entrepreneurs In A War-Torn Area: Case Study Of The Northeast Of Sri Lanka. *Journal of Asia Entrepreneurship and Sustainability*, 2, 61-74.
40. Syed, Z. (2011). Financial Dependence and Growth. *American Economic Review*, 17(88), 560-585.
41. Vukenkeng, A. W., & Mukete, E. M. (2014). Entrepreneurship and poverty reduction in Cameroon: A Vector Autoregressive approach. *Archives of Business Research*, 2(5), 1-11.
42. Cueto, B., Mayor, M., & Suárez, P. (2015). Entrepreneurship and unemployment in Spain: a regional analysis. *Applied Economics Letters*, 22(15), 1230-1235.
43. Imai, E., McClelland, E., Swail, J., Bell, J., & Ibbotson, P. (2006). The effects of education on business ownership: A longitudinal study of women. *Entrepreneurship Theory & Practice*, 18(1), 42-52.
44. Vázquez, E. A., & Sherman, A. J. (2013). *Buying for Impact: How to Buy from Women and Change Our World*. Advantage.
45. Misango, S. B., & Ongiti, O. K. (2013). Do women entrepreneurs play a role in reducing poverty? A case in Kenya. *International Review of Management and Business Research*, 2(1), 87.
46. Omonona, B. T., & Fajimi, F. O. (2011). Households willingness to pay for improved water supply services in Ibadan Metropolis of Oyo State, Nigeria. *New York Science Journal*, 4(4), 72-76.
47. World Development Indicators (WDI). (2017). Data Bank. Accessed from: http://www.worldbank.org/data/onlinedatabases/online_databases.html. [Last retrieved on 2018 Jan 12].