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Women-owned businesses and household welfare

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Abstract

Purpose – Contrary to the gender gap in favour of men in entrepreneurial activity elsewhere, in Ghana more women own businesses. This paper aims to examine the correlates between women's business ownership and household welfare in Ghana and the socio-economic factors that affect business size.

Design/methodology/approach – The paper uses a nationally representative survey data and ordinary least squares and IV regression methods.

Findings – The findings reveal that more businesses are owned by women and their business ownership is associated with improved welfare for the household, yet still there exists size gap in favour of men. The implication is that potentials exist for poverty reduction and economic growth if policy invests in the size of women businesses. Also, while unpaid work limits entrepreneurial activity for women, older children help to reduce the time constraint.

Originality/value – The study uses individual-level business ownership data on a developing country (Ghana) to examine the link between women entrepreneurship and household welfare. This is new in the literature, when individual level data is readily not available in developing countries.

Keywords Ghana, Women's entrepreneurship, Business assets, Household welfare, Women-owned businesses

Paper type Research paper

1. Introduction

The empowerment of women is an important component in the pursuit of economic and social development, especially at the household level. It is central to achieving the United Nations millennium development goals. Resources in the hands of women improve the welfare of household members in many respects (Elo, 1992; Hobcraft, 1993). According to the UNDP: "By enhancing women's control over decision-making in the household, gender equality translates into better prospects and greater well-being of children, reducing poverty of future generations". Women's participation in decision-making is enhanced by agency (World Bank, 2014). It is a common knowledge that women face higher barriers to entry in the formal labour market. As a result, some resort to self-employment (Taniguchi, 2002) and entrepreneurship as a "way out" of unemployment and, often, out of poverty, especially in developing countries.

Even though entrepreneurship has been largely ignored or treated in a highly simplified way in endogenous growth theory, it is now widely recognized that entrepreneurial talent is important for economic growth, innovation and job creation (Audretsch *et al.*, 2006; Baumol and Strom, 2007). Studies on gender differences in entrepreneurship reveal consistently that the rates of women's entrepreneurship are lower than that of men across the world. For instance, data collected on 43 countries



in 2008 by the Global Entrepreneurship Monitor (GEM) (Allen *et al.*, 2008) show that in all the countries, the rates of women's entrepreneurship are lower than men's; men are 75 per cent more likely than women to be active entrepreneurs in middle income nations; 33 per cent more likely in high-income countries, and 41 per cent more likely in low-income countries.

Even though women are less likely than men to be firm owners, the percentage of women entrepreneurs is higher in low-income countries, and in countries where women face large barriers to formal employment (Pines *et al.*, 2010). In contrast to the global trend, several studies find that in Ghana more women than men own businesses. The 2010 round of the GEM survey (Kelley *et al.*, 2011), which included Ghana for the first time, shows that among all the countries surveyed, Ghana is the only country where the rate of women's entrepreneurship is higher than men's (see Figure A1 in the appendix). A similar pattern is revealed by Oduro *et al.* (2011) and the Ghana Statistical Service (GLSS 5 and 6). Almost a decade later, the structure remains largely the same. The Mastercard Index of Women Entrepreneurs (MIWE, 2018) report places Ghanaian women in the top spot in women's business ownership, where the report mentions that entrepreneurship is most necessity-driven.

The Ghanaian economy is mainly informal. This sector is made up of micro, small- and medium-scale enterprises and makes up 80 per cent of the total economy (Clara Osei-Boateng and Edward Ampratwum, 2011). According to World Bank estimates cited by Dovi (2012), most businesses in Ghana, which account for 70 per cent of employment in the country, fall within the categories of "micro", small and medium enterprises. As most of these businesses are owned by women, women businesses tend to be small. Policy makers continue to seek avenues and opportunities to empower women and ensure growth in general. An important tool that can be leveraged in the developing world, such as Ghana is entrepreneurship, a common phenomenon among women. de Bruin *et al.* (2006, p. 585) observe that female entrepreneurship is "vastly understudied". By examining women's role in the contemporary business environment and how it relates to issues of social equity, a new avenue would be revealed to tackle issues of women empowerment, employment, poverty reduction and the bigger development agenda. This study therefore aims primarily to analyse the relationship between women business ownership and welfare of the household. Hence, the aim of this paper is to find the link between women's business ownership and household welfare. The study also looks at the determinants of business size. Thus, the paper contributes to the literature by offering the association between women's ownership of business and household welfare, and an additional gendered empirical analysis of the correlates of firm size.

2. Prior research

The impact of asset ownership, and control, on welfare and poverty levels has been established by available research (Dewilde and Raeymaeckers, 2008; Doling and Ronald, 2010; Fofack and Zeufak, 1999; Glewwe, 1991; Kemeny, 1981; Ritakallio, 2003). Control and ownership of assets create pathways out of poverty and into improved standards of living. Literature on the effect of women's business ownership on the welfare of the household is nevertheless limited.

Some earlier research into welfare impact of women-owned businesses examined subjective well-being measures (Abonge, 2012; Misango and Ongiti, 2013; Ojo and Wurani, 2013). These studies are largely qualitative. Misango and Ongiti (2013) find that business ownership among *Maasai* women in Kenya improves households' well-being. Well-being in their study is defined as women earning enough to provide for food, shelter and pay for their

children's schooling. This study also finds that the entrepreneurial activities of these women contribute to the larger economy through the promotion of tourism, the generation of employment and through export trade. Similar results are found for business women in Cameroon where [Abonge \(2012\)](#) observes that these women are, in a number of cases, the principal earners and sometimes the sole providers of the household, for both female-headed households and couple-headed households. In the case of couple-headed households, the situation is attributed to lack of employment for their spouses.

In the aforementioned studies from Kenya and Cameroon, the women entrepreneurs are reported to have invested significantly in the educational needs of their children, and food and health needs of the family as a whole. In a number of the households investigated the females are the head (*de facto* and *de jure*). Abonge observes that while women's enterprises provide a safety net for household survival and a springboard for women's economic participation, these women entrepreneurs remain trapped in traditional, low return activities.

No study on Ghana has found a link between women-owned business and household welfare. The most related literature is an exploratory and descriptive analysis of non-farm activities (including non-farm businesses) by [Canagarajah and Newman \(2000\)](#) in which they find nonfarm activities to be very important to welfare of female-headed households. Using data from the Ghana Living Standards Surveys from 1987/1988 and 1991/1992 (GLSS1 and GLSS3), they discovered that poverty among female-headed households is significantly lower and falls more rapidly over time in those households participating in nonfarm activities, both self-employment and wage employment. A limitation to this study is that, the gender analysis is done at the household level, and the women-ownership of business is not singled out because of data restrictions.

Despite the welfare-improving features seen from empirical studies, the literature studies establish that women's businesses tend to be smaller. Generally, the key socio-economic factors identified with entrepreneurial activity include education and work experience; parental occupation, ethnicity/race ([Aidis et al., 2007](#); [Delmar and Davidsson, 2000](#); [McManus, 2001](#)) and other demographic and personality characteristics. The evidence on the relationship between gender and size of business is mixed, depending on the measure of size[1]. A growing body of evidence shows that female-owned enterprises are smaller – in terms of sales, assets and employment – than male-owned enterprises ([Amin, 2010](#); [Coleman, 2007](#); [Loscocco and Robinson, 1991](#); [Robb, 2002](#); [Watson, 2002](#)). [Amin \(2010\)](#) finds that female-owned informal or unregistered businesses are smaller in terms of sales revenue and number of employees than male-owned ones in six developing countries in Africa including Burkina Faso, Cameroons, Cape Verde, Cote d'Ivoire, Madagascar and Mauritius. [Sabarwal and Terrell \(2008\)](#) find that female entrepreneurs have significantly smaller scale of operations (as measured by sales revenues) in 26 Eastern and Central Europe countries, even though they generate the same amount of profit per unit of revenue as men. And also, women's returns to scale are significantly larger than that of the male counterparts. They argue that this implies that women's businesses would gain more from increasing scale.

Several factors impede women's entrepreneurial activities and business size, and generally labour force participation. Unpaid work, and care work in particular, hinder female participation in the labour market ([Behrman and Wolfe, 1984](#)). Norms often dictate that women be the primary caregivers to children, the sick and the elderly. They also have the primary responsibility for preparation of meals, and household chores. While this may create an incentive for self-employment, it may also undermine the success of their business operations ([Jennings and McDougald, 2007](#)), thereby limiting the size of the business. While self-employment provides time flexibility, the amount of time spent on the unpaid economy

such as caring for children is found to negatively affect the success (measured by spells) of self-employment (Williams, 2004). As a coping strategy for the time constraint, women depend on support from husbands, partners, relatives and older children (Brush *et al.*, 2009; Jennings and McDougald, 2007).

This study bridges the gap in the literature by employing a nationally representative individual level data on asset ownership, which provides a unique opportunity for gender analysis. This helps fill the gap in the gender-business-welfare literature, by making it possible to attempt to establish the role of woman's business ownership. The results of this paper show that the larger the woman's business the better the welfare of the household. However, even though higher percentage of women own business than men, yet their businesses are smaller, and are usually micro in size. The implication is that potentials exist to improve welfare of many poor households, towards a national goal of poverty reduction and economic growth if government policy invests in the size of women businesses.

The remainder of the paper is organised as follows. First, we present the theoretical underpinning of the study and the empirical models, while discussing the data, its characteristics and the econometric issues. Finally, we discuss the findings and drawn some conclusions.

3. Methodology

3.1 The data

The data used are obtained from the Gender Asset Gap Project, a sex-disaggregated asset ownership household survey in 2010[2] by a team of researchers based in the Department of Economics, University of Ghana (Oduro *et al.*, 2011). It is a nation-wide study carried out in all the ten administrative regions of the country, with 2,170 households surveyed[3]. In addition to asset data, demographic and consumption data were collected. The current study therefore uses the sample of adults (18 years and above) in the household with or without asset ownership (including business assets). This results in a sample of individual 4,189 respondents. Thus, the business ownership analysis has 4,189 observations in total, while household level analysis has 2,170 observations in total. However, the actual analysis may result in fewer sample if some variables are not observed for some households.

There is no commonly accepted definition of entrepreneurship. This study adopts the GEM project's definition which states that entrepreneurship refers to "any attempt at a new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by individuals, or established businesses"(Reynolds *et al.*, 1999). In the context of the survey, respondents were asked to list any form of business they have and how it was established. It includes all types of businesses owned by someone in the household, individually or in partnership with others. The responses range from micro enterprises, to very large firms. The businesses listed include trading activities, food processing, artisans and craft-works, among others. The respondents were asked to give both the sale value of the business (if it were to be sold today) and to estimate the value of the business assets owned. Both measures are used in the current study. Ownership may be measured in different ways; reported ownership and ownership by documentation. This study uses reported ownership because the incidence of ownership by documentation is very minimal.

The current paper contributes to the literature by using individual ownership sex-disaggregated data. In gender-disaggregated studies of asset ownership, there are ownership concerns regarding women's assets, especially assets acquired within marriage. The assets may be considered joint property and therefore may not be easily assignable to husband or wife, depending on customary institutions and the marital regime (Quisumbing

and Maluccio, 2000). Some studies attempting to disaggregate the data by sex make use of the sex of the household head (Canagarajah and Newman, 2000). These analyses are likely to have noise because some women may own the asset but are not the household head and so the asset is assigned to the spouse.

For instance, using data collected at the household level, Doss (2006) used sex-disaggregation of household asset data, but with difficulty. As a result, some 40 per cent of households with no assets that can be disaggregated by gender are left out in the analysis. Furthermore, the business ownership variable might have been disaggregated with error. In the GLSS survey, the respondents were asked “which household member is responsible for the business and knows most about its operation”. The study assumes that the person who is reported as being responsible for the business and knowing the most about its operation is the owner of the business. However, there are cases in the Ghanaian context, or African context in general, where the business may be owned by the man but operated by the wife or an older child. Similarly, a woman may own a large share of a business managed by the husband. In these cases, the method of assigning ownership status introduces bias into the analysis. The current study avoids all these biases, as result of the unique data set. We therefore are able to link, directly, the business ownership and household welfare.

3.2 Theoretical framework

The theoretical underpinning of the study can be linked to utility maximization theory in economics. In a standard economic theory, a household is assumed to maximize utility (e.g. household welfare) subject to budget constraints. The utility function is a function of goods and services consumed, and the goods and services consumed is a function of the characteristics of the household. The utility function (from any advance microeconomics textbook) may be given as:

$$u^i = u^i(x_p^i, x_h, q_p^i; D) \tag{1}$$

where:

- u is utility;
- x_p^i is a private purchased consumption good;
- x_h is a public purchased consumption good;
- q_p^i is a private non-market consumption good; and
- D is a vector of demographic variables.

With standard assumptions, utility is assumed to increase with the amount of “goods” consumed. As a result, utility is an increasing function of consumption expenditure. However, utility is unobservable empirically; instead expenditure is used to measure the welfare because it is observable and a good indicator of welfare. The expenditure function for each household is stated as:

$$X^h = e^h(p; U; H; C; A) \tag{2}$$

where:

- X^h is the household expenditure;
- P is the price index faced by the household;
- H is a vector of household and individual characteristics of household member;
- C is vector of community characteristics of the location of the household which are extra-household environmental parameters; and
- A is ownership of assets.

Metric measure of welfare (the outcome variable) includes income and consumption expenditure. Income may be considered a better proxy measure for living standards because it measures the opportunities for consumption open to a family rather than consumption itself. In developing countries, such as Ghana, data on income are problematic due to large informal sector and variations in income due to seasonality in agricultural production and other economic activities. Theory and evidence show that in a single period model, there is no distinction between the two measures; all income is consumed. Consumption is not closely tied to short-term fluctuations in income, and it is smoother and less-variable than income (Deaton and Zaidi, 2002). Besides, there is a long tradition of successful and well-validated consumption surveys in Ghana (e.g. various rounds of GLSS).

The covariates of household welfare are based on various structural relationships that affect welfare (Glewwe, 1991; Jakobsen, 2011). Following Glewwe (1991), a simplifying restriction is made on the functional form of the expenditure function so that the household and other characteristic variables can be put into a distinct function which serves as a multiplicative factor with respect to the rest of the expenditure function.

3.3 The empirical models

We examine two types of empirical models, welfare and business size models. The aforementioned theoretical model is estimated using the standard household welfare model (Appleton, 1996; Dassanayake *et al.*, 2015) as follows:

$$Y_i = \alpha_0 + \alpha_i H + \beta_i W + \delta_i A + \gamma_i C + \sigma_i R + \varepsilon \quad (3)$$

where Y_i , the dependent variable, is the log of real household expenditure per adult equivalent. The explanatory variables comprise H , a set of household characteristics; R is a set of regional dummies; A represents ownership of assets excluding business assets; C is a set of community variables; W represents the log the size of business owned by women in the household; and ε is the error term.

For the dependent variable, the study uses money metric utility measure of welfare, recommended by Deaton and Zaidi (2002), instead of welfare ratio measure (poor or non-poor), to account for idiosyncrasies across households. It is obtained from the consumption module of the questionnaire, which was structured similar to the consumption module of the Ghana Living Standards Survey instrument. The total consumption expenditure is the sum of total household expenditure on food (comprising purchases and home produced items); and non-food items including expenditure on education, clothing and others (Deaton and Zaidi, 2002). Own produced goods are valued at farm gate prices. Imputed values are constructed for rental values of owner-occupied homes and user cost of consumer durable goods. In determining the total expenditure for each household, regional variations in prices are taken into account and adjustments are made for the differences in cost of living, to arrive at real total expenditure across all the regions.

To account for differences in household size and composition, household expenditure per adult equivalent is computed, as the welfare measure. Deaton and Zaidi (2002) recommend that the differing needs of the various members of a household based on their age, sex and other such demographic characteristics be considered in welfare comparisons. This study therefore deflated real total household expenditure by adult equivalent scale^[4] determined by recommended dietary intakes adopted by Ghana Statistical Service in the computations of welfare indices.

The variables of interest are the size women's business and women's share in total household assets, excluding business assets. Some businesses may be of higher value and

thus promote escape from poverty, other households or individuals may take on some micro businesses only for household survival.

Control variables include household characteristics; regional dummy variables; value of physical assets owned by the household; and community characteristics. The household characteristics include female composition of household members 18 years and above and dependency ratio. These are measures to account for the differences in household members' "potential" to provide income, and ultimately raise welfare, for the household (Glewwe, 1991). Other household characteristics include the highest educational level of the household which measures human capital; whether the household is couple-headed to measure factors such as income pooling; and whether the household is located in a rural sector. Household physical and financial assets contribute directly and indirectly to the welfare of the household. Total value of assets (less business assets) is also modelled. The asset values are logged to generate elasticities.

The second model is the business size model. The paper examines (as a lead-in to the link between women-owned businesses and household welfare), the socio-economic covariates of business size. The size of businesses, measured in terms of the value of its assets, is modelled on a number of covariates including characteristics of the business, household and individual characteristics of the owner (Amin, 2010; Loscocco and Robinson, 1991; Sabarwal and Terrell, 2008; Watson, 2002), in a model as follows:

$$\log Bval = \alpha_0 + \alpha_i F + \beta_i X + \sigma_i H + \delta_i \quad (4)$$

where $\log Bval$ is natural logarithm of business value; F is dummy which equals to 1 if a woman owns at least 50 per cent of the business, and 0 if otherwise. Control variables, X , is a vector of characteristics of the business (such as location, sector, source of finance, age, registered or not, type— partnership or sole proprietorship); H is a vector of household characteristics of the owner. The H includes individual characteristics of the owner in a second model of only sole proprietorships. Individual-specific characteristics include age, marital status, education and wage employment.

Evidence shows that labour market outcomes, especially for women, depend on their social reproduction responsibilities which are largely unpaid for. To assess the effect of the unpaid economy on size of the business, household level variables modelled include number of children under five in the household (und_5), dummies for fetching of water and firewood; if the household's source of water is outside of the house, out_water variable is equal to 1, 0 if otherwise. Similarly, the dummy, $fuel_col$ equals to 1 if the household collects firewood for cooking, and 0 if otherwise.

In the African context, older children, especially females, are involved in the unpaid economy of the household and sometimes in the household business. Metcalf *et al.* (1996), as cited in Dhaliwal (1998), found that the family is seen by the self-employed as a source of good labour. Older children may serve as a helping hand to allow time for a woman to expand her business. Thus, we model the number of older children beyond age-five in the household.

Other household characteristics modelled include household size ($hsize$), a dummy for whether or not the household is couple-headed, female composition of the household ($femcomp$), highest educational level of the household (where $maxsec$ represents a dummy if secondary education is the maximum educational level of the household, while $maxter$ is a dummy which equals 1 if the household has a member with tertiary education, etc.). The economic status of the household is modelled as the log of expenditure per adult equivalent ($lnexp$).

A common challenge for the establishment and size of business is access to finance (Jamali, 2009; Minniti, 2009). Asset ownership can solve the problem of finance in a number of ways. Ownership of financial assets such as cash in bank accounts provides a ready finance for business establishment. Other assets may either serve as collateral for acquiring credit or may be liquidated to finance a business. The study, therefore, modelled dummy variables for ownership of land (owned land could be liquidated to finance the business) and other real estates.

We estimate two business size models: a model for all businesses, including jointly owned; and a model for only sole proprietorships. The latter model, as stated earlier, is aimed at additionally testing for individual owner characteristics.

3.4 Econometric issues and post-estimation analysis

In any given regression analysis, there are standards that need to be followed to ensure that the estimates are robust and credible. In the current analyses, the most likely problems to affect the credibility of the results are sample selection, multicollinearity and endogeneity, possibly leading to spurious regression. We therefore test and correct for these econometric issues. Statistical test of multicollinearity (see Table AII in the appendix for the result of the test) shows that the explanatory variables are not highly correlated. The residuals are all normally distributed, thereby making the use of standard F and t distributions appropriate for inferences.

The business size model may suffer from selection bias, as the sample is only sample of business owners. There could be factors shared by business owners which set them apart from non-business owners, making the sample not random. The business size is only observed if an individual chooses to own a business. Hence, we used Heckman sample selection method of estimation. The factors that affect the choice to own business may include personality, socio-economic and environmental factors. The data only provide socio-economic and environmental factors, and there is no evidence[5] to support selection bias in the data. This implies that being a business owner is largely random. Hence, we proceeded with estimation using linear regression method.

Another econometric issue is endogeneity problems. Just as business asset may affect the standard of living of the household, the ownership and size of business can also be affected by the level of household income, through availability of finance. Hence, there is reverse causality where business size variable may not be strictly exogenous, thereby violating the assumptions of linear regression method. The business-size variable may be correlated with the disturbance term in the welfare model. This will result in biased and inconsistent estimates of the effect of women business ownership and household welfare. To deal with this problem, instrumental variable method can be used. In an instrumental variable estimation, we determine a third variable which is correlated with business size (i.e. instrument relevancy) but uncorrelated with disturbance term (i.e. exclusion restriction). The choice of appropriate instrument is an arduous task and depends largely on the creativity of analysts (Deaton, 2010). Any instrument to be chosen needs to make economic sense and also satisfy the conditions of a valid instrument. The validation involves ensuring that the instrument is highly correlated with the endogenous variable, in this case business size; and also ensuring that an exclusion restriction is met, where the instrument is not correlated with the error term of the main model. This ensures that the only way the instrument affects the dependent variable is through the independent variable. The chosen instruments here include a dummy for business registration (*rgsted*), the business age (*bus_age*), the type of ownership (sole proprietorship or partnership), location of business (mobile business or located at home or outside the home). These variables one way or the

other are all indicators of the size of a business but may not be correlated with household expenditure.

The IV estimation is a two-staged least-squares model. At the first stage, the reduced form, business size is regressed on the instruments and other variables. In the second stage regression, predicted values of the first stage dependent variable (business size hat) are used instead of the actual values (Deaton, 2010). Therefore, expenditure per adult equivalent is regressed on predicted values of size women-owned business and other covariates. This helps filter out the error that correlates with the second stage dependent variable, household expenditure. Checking for instrument validity shows that business-age and location-of-operation variables are valid instruments for the size of the business. These variables are strong predictors of business size: the age is positively correlated with the size of the business and businesses located somewhere, other than the home, are larger while mobile businesses are smaller. Furthermore, the exclusion restriction is also met; these variables do not directly predict household welfare. Thus, the instruments are not correlated with the error term in the welfare model, fulfilling exogeneity assumption of the classical linear model.

4. Findings

4.1 Descriptive statistics

The descriptive statistics shows (shown in Table I) that 47 per cent of households own businesses, out of which 38 per cent have women owners. On the average, women own 72[6] per cent of business assets pointing to the fact that most of the businesses are owned by women.

However, on the average, women businesses are only worth 820 Ghana cedis, while men-owned businesses are worth approximately twice (1,543 Ghana cedis) as much. In the case of total household assets, women own approximately half in the sample.

Other descriptive characteristics include: 51 per cent of the respondents are women; 46 per cent of households are headed by a couple; and primary education is the maximum level of education for 62 per cent of the households. The average household size is 3.6; under-five year olds are on average 0.44 of total members; and on average there are 1.3 older children in each household.

4.2 Women-owned business and household welfare

The main findings of the paper are presented in Table II. Business owned by women is associated with increased welfare of the household. Households where at least one woman owns business, welfare (measured by total expenditure per adult equivalent) is higher than other households.

The findings show that a 10 per cent increase in the size of businesses owned by women increases expenditure per adult equivalent by 0.16 per cent; a welfare improving effect. This effect is strengthened after we account for endogeneity. This finding corroborates the evidence in the literature of the positive association between household enterprises and household welfare (Lanjouw, 2001; Ruben and Van Den Berg, 2001). The effect on food expenditure is also positive and statistically significant. The implication is that, there is a huge untapped potential to improve welfare and encourage economic growth if women-owned businesses are expanded.

An even more interesting result is that women's share in total household assets and her ownership of other household assets are associated with much higher welfare improvements. The results show that a 100 per cent increase in the share of women in the total household asset (excluding business asset) increases total household expenditure per adult equivalent by 26 per cent and food expenditure by 35 per cent. Similarly, a 1 per cent increase in the size of other assets (excluding business) is associated with 0.15 per cent increase in household expenditure per adult equivalent, and food expenditure by 0.1

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Variable	Description	Mean	Std. Dev.	Min	Max
<i>Welfare measures</i>					
Expcapita	Real Total expenditure per adult equivalent	460.66	556.30	1.36	14323.27
Fdcapita	total real food expenditure per adult equivalent	248.79	217.11	1.02	2802.54
<i>Expenditure Quintiles</i>					
qnt1	Highest 20%	0.25	0.43	0	1
qnt2		0.23	0.42	0	1
qnt3		0.20	0.40	0	1
qnt4		0.18	0.38	0	1
qnt5	Lowest 20%	0.15	0.36	0	1
<i>Assets</i>					
hh_bizdum	Dummy, equal 1 if the HH owns a business	0.47	0.50	0	1
Wbiz	Dummy, =1 if a woman owns a share of business	0.38	0.49	0	1
Wsh_bus	Women's share of total business	0.72	0.42	0	1
sz_wbiz	Value of women-owned businesses	820.23	7503.26	0	226500
sz_mbiz	Value of men-owned businesses	1543.16	20195.06	0	604000
t_ast	Value of total household assets	15033.35	53076.96	0	1065160
Wsh_asst	women's share of total assets	0.53	0.41	0	1
<i>Household Characteristics</i>					
hhsize	Household size	3.60	2.63	1	19
sexcomp	Female composition of household	0.51	0.32	0	1
und_5	Number children under five years	0.44	0.76	0	6
Older_child	Older children between 5 and 17 years	1.30	1.55	0	9
dratio	Dependency ratio	0.92	0.95	0	9
out_water	Dummy, =1 if the source of drinking water is outside the dwelling	0.75	0.43	0	1
fuel_col	Dummy, =1 if household uses firewood for cooking	0.56	0.50	0	1
<i>Household Headship</i>					
couplehd	Dummy, =1 if the household is headed by a couple	0.46	0.50	0	1
F_unptnd	Dummy, =1 if the household is headed by a single female	0.33	0.47	0	1
M_unptnd	Dummy, =1 if the household is headed by a single male	0.20	0.40	0	1
<i>Household Education</i>					
maxprim	Dummy, =1 if the maximum education is primary	0.62	0.48	0	1
maxsec	Dummy, =1 if the maximum education is secondary	0.18	0.38	0	1
maxter	Dummy, =1 if the maximum education is tertiary	0.08	0.26	0	1
<i>Location</i>					
rural	Dummy, =1 if household is located in a rural area	0.63	0.48	0	1

(continued)

Table I.
Summary of
Variables

Table I.

Variable	Description	Mean	Std. Dev.	Min	Max
<i>Regions</i>					
west	Western region	0.10	0.30	0	1
cent	Central region	0.10	0.30	0	1
acc	Greater Accra region	0.12	0.32	0	1
volt	Volta region	0.10	0.30	0	1
east	Eastern region	0.12	0.32	0	1
ash	Ashanti region	0.16	0.37	0	1
bron	Brong Ahafo region	0.12	0.32	0	1
north	Northern region	0.10	0.31	0	1
upeast	Upper East region	0.05	0.22	0	1
upwest	Upper West region	0.04	0.18	0	1

per cent. This implies that, her increasing size and share of total assets (not only business assets), is associated with much higher welfare level for the household.

These results hold potential for effective poverty reduction policies and policies for economic growth. If women-owned businesses are welfare improving and large numbers of women own businesses, then policies to expand their businesses would lead to pro-poor growth of the economy. Hence, we encourage more policies to eliminate barriers to successful business operation by women. Evidence in the literature shows that a number of constraints bedevil small businesses. According to [Dovi \(2012\)](#), about 80 per cent of women-owned businesses in Ghana are stuck at the “micro” level. These businesses are unable to expand because they lack properly coordinated support, cheap and long-term credit, access to new technologies, managerial skills. They are also confronted with low capacity and cultural barriers such as the traditional roles of women. Never-ending household chores and traditional responsibilities often restrict and discourage female involvement in activities outside of the home, ([Mumuni et al., 2013](#)). [Boohene \(2009\)](#) attributes poorer performance levels of female owner-managers of small retail shops in the Accra Metropolitan area of Ghana to weaker business skills on the part of women business owners. However, other factors are associated with household welfare.

The results of control variables indicate that the relationship with household size is negative, confirming the evidence in the literature ([Deaton and Paxson, 1998](#); [Teal, 2006](#)). The welfare of the household is 13 per cent less when the size of the household increases by additional one person. Higher female composition of the household is associated with 41 per cent higher expenditure per adult equivalent. Couple-headed households have 1.7 per cent higher welfare than single-headed households, but this result is not statistically significant. Higher dependency ratio is associated with lower welfare outcomes. A unit increase in dependency ratio reduces total expenditure per adult equivalent by 7.2 per cent and food expenditure by 4 per cent. The highest level of educational attainment of the household is positively associated with household welfare. Compared to households with no member with any formal education, households where the highest form of formal education is secondary education have 11 per cent higher level of welfare, and if the highest form of formal education is tertiary, household welfare is 58 per cent higher. Rural households have 35 per cent lower expenditure per adult equivalent compared to urban households.

4.3 Gender and size of business

The results of the business size models (in [Table III](#)) corroborate the findings in the literature ([Robb, 2002](#); [Watson, 2002](#)), that women tend to have smaller-sized businesses

Variable	Full Model	Sole Proprietorship
f_owned	-0.652*** (0.11)	-0.673*** (0.12)
bus_age	0.010* (0.01)	0.011* (0.01)
partnshp	0.398* (0.22)	
rgsted	0.832*** (0.16)	0.892*** (0.17)
<i>Finance (Ref:Gift/Inheritance)</i>		
credit	0.271 (0.25)	0.320 (0.26)
Household savings	-0.207 (0.15)	-0.107 (0.16)
<i>Location (Ref:home)</i>		
Outside home	0.267** (0.11)	0.219* (0.11)
Mobile	-0.232* (0.12)	-0.327*** (0.12)
<i>Sector (Ref:Agric)</i>		
mining	0.422 (0.81)	0.316 (0.80)
manufact/processing	-0.406 (0.31)	-0.426 (0.32)
Trade	-0.305 (0.31)	-0.340 (0.32)
social/personal services	-0.161 (0.32)	-0.063 (0.34)
<i>Household characteristics</i>		
hhsiz	-0.072* (0.04)	-0.094** (0.04)
und_5	0.102 (0.08)	0.114 (0.08)
Older_child	0.136** (0.06)	0.169*** (0.06)
out_water	-0.037 (0.12)	-0.051 (0.12)
fuel_col	-0.561*** (0.13)	-0.500*** (0.14)
lnexpp	0.377*** (0.08)	0.361*** (0.09)
<i>Asset Quintile</i>		
w_qntile=2	0.639*** (0.16)	0.673*** (0.16)
w_qntile=3	0.902*** (0.16)	0.865*** (0.17)
w_qntile=4	1.385*** (0.16)	1.334*** (0.18)
w_qntile=5	1.694*** (0.18)	1.738*** (0.20)
Rural	0.088 (0.13)	0.192 (0.13)
<i>Region dummies</i>		
West	0.075 (0.23)	0.183 (0.23)
Cent	0.071 (0.21)	0.172 (0.22)
Volt	-0.425** (0.20)	-0.392* (0.21)
East	-0.312* (0.18)	-0.198 (0.19)
Ash	-0.058 (0.18)	0.090 (0.19)
Bron	-0.127 (0.20)	-0.009 (0.20)
North	-0.174 (0.23)	0.161 (0.24)
Upeast	0.245 (0.27)	0.300 (0.27)
Upwest	0.328 (0.33)	0.604* (0.34)
Own agric land		0.180 (0.12)
Own other real estate		-0.106 (0.11)
Lnage		-0.077 (0.19)
Lnedu		0.154*** (0.05)
Partnered		-0.025 (0.12)
Wagempl		-0.242 (0.22)
wagempl_yrs		-0.001 (0.01)
Constant	3.409*** (0.68)	3.315*** (1.03)
R ²	0.342	0.365
Adjusted R ²	0.322	0.340
F	16.852	14.473
Observations	1070	997

Notes: Standard errors in parentheses; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table II.
Covariates of
Business Size

Table III.
Covariates of
Household welfare

Variable	OLS Estimates		IV Estimates	
	Total Expenditure	Food Expenditure	Total Expenditure IV	Food Expenditure IV
w_bsz	0.016*** (0.005)	0.005 (0.004)	0.031*** (0.005)	0.013*** (0.005)
Wsh_asst	0.257*** (0.058)	0.351*** (0.052)	0.280*** (0.056)	0.353*** (0.050)
asst_nobiz	0.153*** (0.008)	0.100*** (0.007)	0.150*** (0.008)	0.098*** (0.007)
hhsize	-0.134*** (0.006)	-0.113*** (0.006)	-0.130*** (0.006)	-0.112*** (0.006)
Female composition of hh	0.407*** (0.073)	0.452*** (0.065)	0.411*** (0.072)	0.454*** (0.064)
couplehd	0.007 (0.047)	-0.006 (0.042)	0.002 (0.046)	-0.012 (0.041)
dratio	-0.072*** (0.016)	-0.038*** (0.014)	-0.073*** (0.016)	-0.039*** (0.014)
maxprim	-0.030 (0.048)	-0.120*** (0.042)	-0.039 (0.048)	-0.126*** (0.042)
maxsec	0.102* (0.058)	-0.050 (0.051)	0.095* (0.057)	-0.056 (0.051)
maxter	0.577*** (0.070)	0.174*** (0.062)	0.583*** (0.070)	0.174*** (0.062)
Rural	-0.346*** (0.030)	-0.190*** (0.027)	-0.331*** (0.030)	-0.181*** (0.027)
Constant	4.864*** (0.110)	4.597*** (0.098)	4.827*** (0.109)	4.589*** (0.096)
R ²	0.488	0.445	0.493	0.447
F	179.657	147.524	183.363	148.602
Observations	2088	2033	2088	2033

Notes: Standard errors in parentheses; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

compared to men. Thus, even though the above finds show that more women own businesses than men, and their business ownership is associated with improved household welfare, their businesses are often of smaller size than that of their male counterparts. If a woman owns at least half of the business (business assets), the size is 65 per cent smaller than if it is owned by a man. Yet still, if the business is a sole proprietorship the size is 67 per cent smaller than if owned by a man. A possible reason found in the literature (Carter and Allen, 1997) is that women tend to have fewer resources for establishing businesses, which in turn generate lower earnings, leading to this vicious cycle of small sized. Sometimes, women informal entrepreneurs are predominantly necessity-driven (Adom and Williams, 2012; MIWE, 2018); to help provide for their families because of very low incomes. These women start mostly micro businesses because their families are in low income brackets and are barely surviving. Such businesses tend to have low capital, and the women do not have much business skills to grow the business. Yet, the welfare model above shows that the size of their business corresponds with a higher welfare outcome. The implication is that potentials exist for poverty reduction and economic growth if policy makers invest in the size of women-owned businesses.

According to World Bank estimates cited by Dovi, (2012), most businesses in Ghana, which account for 70 per cent of employment in the country, fall within the categories of “micro”, small and medium enterprises. Micro businesses are largely avenues to survive economically rather than to thrive. Thus, even though women-owned businesses are welfare-improving, they are limited by size. The findings of the current study support the earlier findings in the literature (Adom and Williams, 2012; Minniti, 2009) that women entrepreneurial activities are necessity-driven; that is, to ensure the survival of the household.

Entrepreneurs from poorer households, as expected, tend to own smaller businesses; and are trapped in vicious cycle of poverty because they do not earn enough to lift themselves out of poverty (Clara Osei-Boateng and Edward Ampratwum, 2011). In a study on a similar[7] economy as Ghana's, Aspaas (1998) reveals that compared to women from male-headed households in Kenya, women who head households have fewer resources for establishing

businesses; and these women are almost completely dependent on their businesses for meeting the household's needs. Meanwhile, because of the small resource base, they generate lower earnings.

Some business characteristics are also associated with size. Additional one year of age is associated with 10 per cent bigger in size of the business, while jointly owned businesses are about 40 per cent larger than sole proprietorship. Registered businesses (a measure of being formal business) tend to be 83 per cent larger than those that are not registered. Those businesses that are located away from the place-of-dwelling are about 27 per cent larger compared to those located in the residence of the owners, while mobile businesses are 23 per cent smaller. The other business characteristics, controlled for in the model, are not statistically significant.

Household characteristics such as household size and use of firewood for cooking are associated with smaller business sizes. These could be interpreted in different ways: use of firewood and larger household size may serve as another measure of low household income. The results therefore emphasize the role of poverty or lack of capital for the size of business. An increase in the size of the household by one more person is associated with a 7 per cent reduction in the business size. Household size may, however, have two opposing effects on women-owned business size: larger household size may provide labour support for the woman's business but if the children are young it may hinder her activities.

An additional number of older children in the household is associated with a 14 per cent increase in the size of the business owned by a member of the household. If the household uses firewood for cooking, it limits the time available for business activities (and other activities), especially in the case of women, as she spends some of her time collecting firewood. Women from households that use firewood for cooking have 56 per cent smaller business size. These results indicate that the higher the size of the unpaid economy of the household, the lower the size of her business. It suggests a negative effect of house work and care activities on entrepreneurial activities, particularly for women.

The economic status of the household is positively associated with the size of business owned by members. Meanwhile, businesses located in the Volta and Eastern regions are of lower sizes compared with businesses in the capital city. Owners' individual characteristics, considered for individually owned businesses, indicate that one extra year of education increases the size of the business by 0.3 per cent. Other individual characteristics modelled are not statistically significant.

In conclusion, women businesses are empirically proven to be drastically smaller than that of men, even though women own more businesses and their businesses are associated with improved household welfare. Other covariates associated with the size of the business are characteristics of the business such as the age, partnerships, registration and being located outside of the residence of the owner, which are positively associated with business size; while mobile businesses are generally smaller compared to those located in the dwelling of the owner. Economic status of the household measured by the asset quintile (less business assets) indicates that wealthier households own larger businesses expectedly.

5. Conclusion

Various surveys show that there are more male business owners and entrepreneurs in most countries, but in the Ghanaian economy, there are more women business owners and entrepreneurs (at least as at the time data were collected). This paper therefore examines the relationship between women-owned businesses and household welfare, with the aim of advising policy on the most productive asset held by women, and the implications for poverty alleviation, economic empowerment and general economic development. As a lead-

in to the welfare analysis, the paper also examined the socio-economic covariates of business size (measured in terms of the assets).

In addition to a multivariate classical estimation model, instrumental variable estimation strategy is employed to address concerns of endogeneity of the business-size variable (measured by value of assets). The instruments used include age-of-the business, location and the type of business. We checked for exclusion restriction and instrument relevancy and confirmed that the instruments are valid.

Evidence from this study shows that women's business ownership and operation tends to be associated with increased household welfare. More so, the larger the size of her business and the larger her share in the total household physical assets, the better the welfare outcomes for the household. This provides evidence to encourage policy to be targeted at women-owned businesses to affect not only women's welfare but also the welfare of the entire household.

Meanwhile, [Sabarwal and Terrell \(2008\)](#) show that even though women-owned businesses are smaller they generate the same profit per unit compared to men-owned business. This shows that, a policy to expand the size of women's businesses will not only improve welfare levels but also lead to economic growth. A policy geared towards expanding women-owned businesses would go a long way to improve the economic welfare situation of the members of the household. Better still, policy to increase the share of women in the ownership of the household asset, when assets increase, would garner even higher welfare outcome for the household.

In the absence of appropriate social welfare benefits and social safety nets (e.g. unemployment benefit), informal activities (micro businesses) have become survival strategies for many Ghanaian households. While the goal in other countries is to encourage women participation in entrepreneurial activities, policy in Ghana should be concerned with expanding the scale of their business activities towards achieving better welfare for the household. This study has shown that the misinformed perception that women's entrepreneurial activities do not contribute to economic development ([Dzisi, 2008](#)) is unfounded, and that there are rather great opportunities for governments at all levels to tap into the underutilized potential of women to improve the economic welfare of the population. [Minniti \(2009\)](#) finds that women in poorer countries tend to be more self-confident about their abilities (skills and knowledge) to become entrepreneurs and less afraid of failure compared to women in middle- and high-income countries. Government of Ghana can tap into this confidence and build on their skills to achieve higher household welfare, towards poverty alleviation. There is the need to eliminate obstacles against successful ownership and operation of women-owned businesses and implement expansion drive policies.

Some financing strategies adopted by most of these entrepreneurs include credit facilities provided by family members, friends or informal money lenders. Evidence from research in a rural town in Ghana ([Palmer, 2007](#)) indicates that a significant percentage of enterprises (farm/nonfarm) cross-finance each other – particularly at the start-up phase. There has also been proliferation of microfinance companies to meet the capital needs of these businesses. However, these come with very exorbitant interest rates. [Martey et al. \(2013\)](#) pointed out that high cost of borrowing is the most important constraint faced by the small-scale entrepreneurs. Some efforts are being made by the Ghana Government through the creation of the venture capital trust fund and microfinance programmes (MASLOC[8]) to invest in small- and medium-scale enterprises. Research into the impact of these policies and programmes is needed to ascertain the extent of the impact made towards alleviating financial barriers.

Policy programmes should be adopted that help improve women's entrepreneurial skills and financial access and alleviate the effect of the unpaid economy. Such programmes could help achieve expansion and growth of women's businesses towards the achievement of economic empowerment, poverty reduction, job creation, innovation and ultimately economic development. This is necessary in light of Adom and Williams (2012) finding that women who initially entered informal entrepreneurship out of necessity over time become more opportunity-driven entrepreneurs.

Notes

1. Business size is measured in a number of ways including sales revenue, number of employees, capital used or size of assets and market share.
2. Even though the data may seem outdated, the phenomenon has not changed. The structure of the Ghanaian economy, in terms of sex-disaggregated business asset ownership, remains largely the same. This can be seen in a Mastercard Index of Women Entrepreneurs (MIWE 2018) report. Nevertheless, there is no newer data available to the authors for this level of analysis.
3. Enumeration areas were selected based on the region's share of the total population. In each enumeration area, 15 households were randomly sampled.
4. The estimates of adult equivalent scale are based on the recommended dietary intakes, as shown in Table AI in the appendix, used by Ghana Statistical Service.
5. Results are available (with the author) upon request.
6. We created a variable called share of business to account for joint ownership.
7. Fox and Sohnesen (2012) find similarities among household enterprises in developing economies.
8. Microfinance and small loans centre.

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Appendix

Businesses
and household
welfare

Category	Age (years)	Average energy allowance per day (kcal)	Equivalence scale
Infants	0-0.5	650	0.22
	0.5-1.0	850	0.29
Children	1-3	1300	0.45
	4-6	1800	0.62
	7-10	2000	0.69
Males	11-14	2500	0.86
	15-18	3000	1.03
	19-25	2900	1.00
	25-50	2900	1.00
	51+	2300	0.79
Females	11-14	2200	0.76
	15-18	2200	0.76
	19-25	2200	0.76
	25-50	2200	0.76
	51+	1900	0.66

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Sources: Recommended Dietary Allowances, 10th edition, (Washington D.C.: National Academy Press, 1989) in GSS (2007)

Table AI.
Recommended
energy intakes

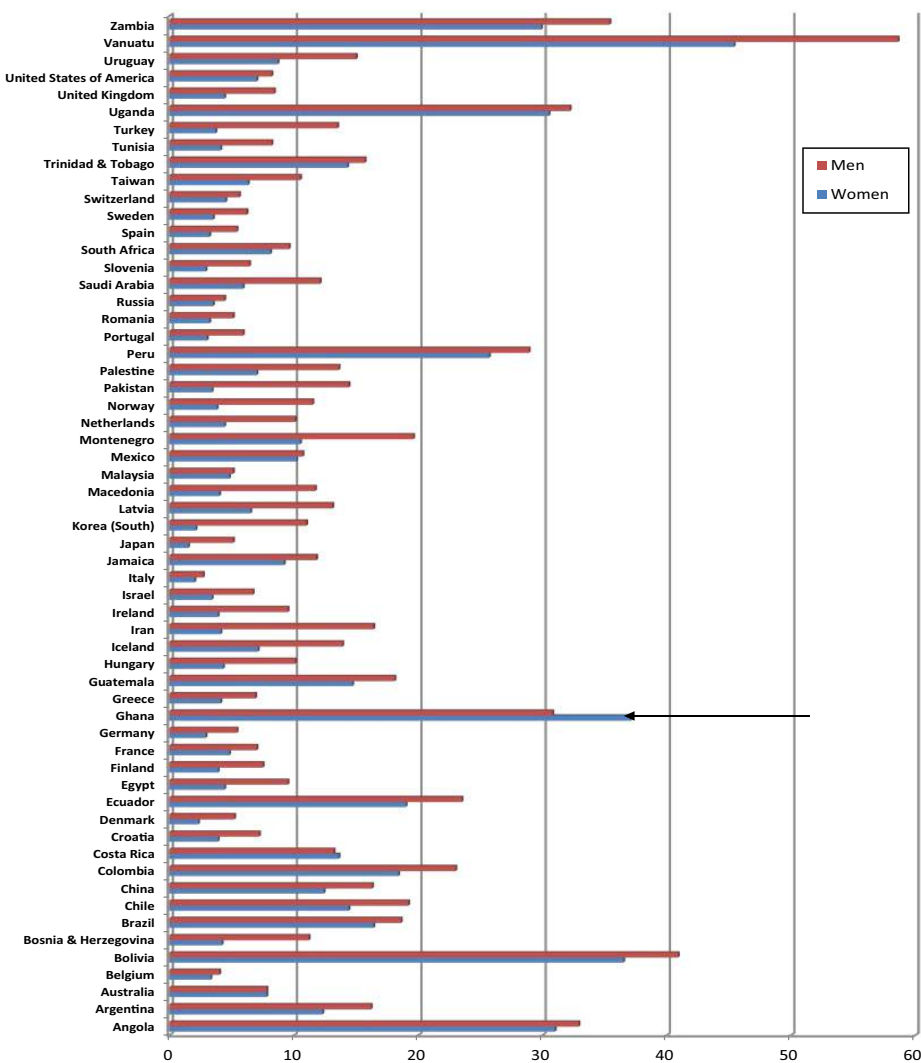
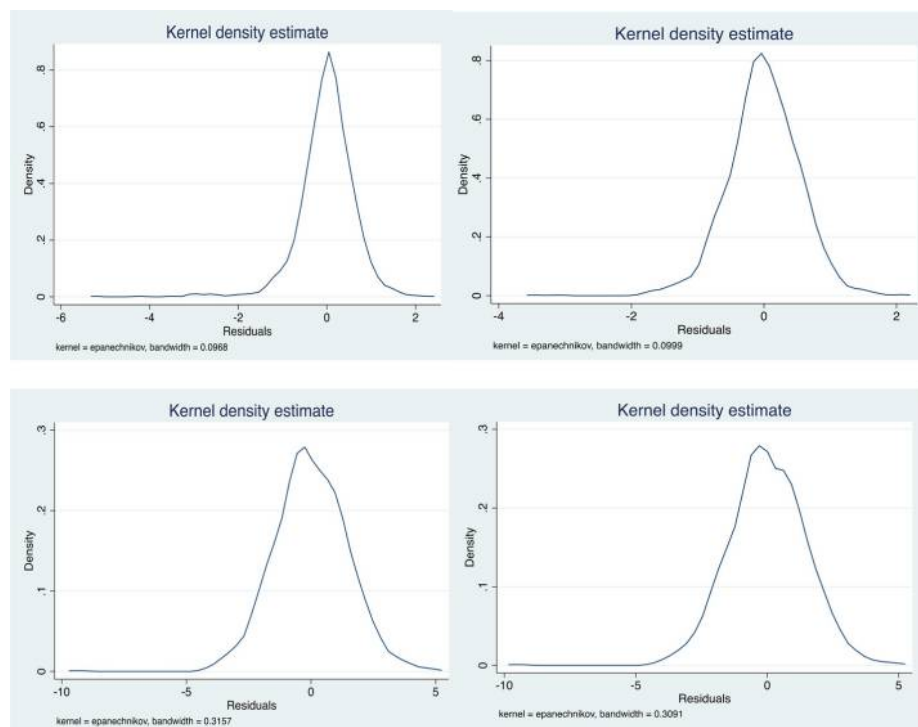


Figure A1.
Gender gap in
entrepreneurship in
some selected
countries (2010)

Source: 2010 GEM survey (Kelley *et al.* 2011)

Table AII.
Collinearity
diagnostics

Variable	VIF	VIF	SQRT Tolerance	R-squared
sz_wbz	1.22	1.10	0.8228	0.1772
Wsh_asst	3.00	1.73	0.3337	0.6663
asst_nobiz	1.40	1.18	0.7128	0.2872
hhsize	1.69	1.30	0.5934	0.4066
sexcomp	1.69	1.30	0.5933	0.4067
couplehd	2.79	1.67	0.3588	0.6412
dratio	1.28	1.13	0.7796	0.2204
maxprim	2.58	1.61	0.3875	0.6125
maxsec	2.44	1.56	0.4103	0.5897
maxter	1.74	1.32	0.5748	0.4252
rural	1.15	1.07	0.8713	0.1287

Note: Mean VIF 1.91**Figure A2.**
Distribution of the
residuals

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