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Household Social Expenditure in Ghana: Examining the Ex-Post Effects and Vulnerability to Poverty

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Abstract: We estimate the effect of household social expenditure on vulnerability to poverty using the four latest cross-sectional waves of Ghana Living Standard Survey (GLSS) from 1999 to 2017. Using a 3-Stage Least Square and Quantile Regression, our results show a widening consumption ex-post welfare gap between the poorest households and the non-poor households in a per-dollar social expenditure. Further, we estimate the probability of an ex-ante poverty using vulnerability to expected poverty. The results, however, indicate that regardless of poverty status, household vulnerability to poverty increased consistently between 1999 and 2017, and the very poor households showing the severest vulnerability. Hence, it is concluded that social expenditure increases the chances of a poor household falling into chronic poverty a non-poor household into transient poverty in the future.

Keywords: social expenditure; welfare; vulnerability; household; poverty



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1. Introduction

Mankind interact, communicate, and share parts of their lives with others from the immediate to the farthest relations (Sen 1985; Shefrin and Thaler 1988). Such communal sharing often come in the form of social assemblies referred to as social functions, gatherings, events, or simply social ceremonies. Social events, in most circumstances, have brought people together for ceremonies that would rarely happen in one's lifetime and are usually ceremonies for the passage of time. The interest is a shared or a common one. They include funerals, weddings, festivals, parties, and other ceremonies that often bring two or more people together for a shared interest. However, the elaborate nature of consumption in some of these social events cannot be overemphasized.

The Goal 1 of the Sustainable Development Goals (SDGs) of the United Nations (UN) seeks to end poverty in all of its forms with the targets of eradicating extreme poverty and reducing absolute poverty for all people by the year 2030. Despite global efforts, many households are still plunging themselves into poverty, especially in developing countries, as a result of unproductive expenditures in corpse preservation, burial, funeral parties, among others. Eradicating poverty necessarily will mean that households save and make profitable investments to increase wealth and generate inflows in the future. Thus, the Goal 12 of the SDGs seeks to ensure sustainable consumption and consumer behavior that promote the prudent use of resources, cut back on wastes, and promote sustainable lifestyles. The SDG12 is intended to eliminate any form of consumption and production excesses that harm the environment, society, and, by extension, the attainment of any of the other SDGs. It could be argued, therefore, that eradicating extreme poverty would also mean promoting sustainable consumption lifestyles of households during social events.

Statistics show that the global economy is rapidly expanding with increasing population and high expenditures on necessities of life (World Health Organization 2016), as well as on entertainment, goods of ostentation, and luxury (Chen 2014; Chen and Zhang 2012). As some of these soaring expenditures could be said to be justifiable, others, like expenditure on wedding parties, festivals, and funerals, are confounding. In the UK, for instance, in 2014, funeral costs went up seven times faster than living costs (Royal London 2015). By 2017, funeral costs had risen by 70.6 percent whilst wages had increased by only 20 percent over the previous decade (Royal London 2017). Further, the Royal London National Funeral Cost Index 2017, showed an increase in the cost of funerals ahead of inflation. Unfortunately, it is reported that the UK's most vulnerable citizens are those taking on these increased levels of funeral debt (Quarker Social Action 2017). Gradually, "public health funerals" or "paupers' funerals" which are organised by local authorities for deceased persons who neither have relatives nor friends are rising because there is evidence that the cost of funerals now prevents some families from having funeral services for their deceased (Quarker Social Action 2015, 2017).

The situation is also widespread in developing countries. In China, Chen (2014); Chen and Zhang (2012) found that social spending on funerals and festivals militates against early childhood development in rural China. Likewise, Bloch et al. (2004), Rao (2001) showed how elaborate social expenditure perpetuates rural poverty in India. However, the practice is largely indispensable in the lives of the poor. Banerjee and Duflo (2007) indicated that festival expenses took a significant share of the budget for the majority of poor households in developing countries. So, according to the study by Banerjee and Duflo, in Udaipur, about 99 percent of the very poor families expended on weddings, funerals, or religious festivals, and the average household expended about 10 percent of its yearly budget on festivals. In South Africa, 90 percent of families who live on less than 1 dollar a day spent money on festivals. In Pakistan, Indonesia, and Cote d'Ivoire, more than 50 percent did likewise (Banerjee and Duflo 2007). Similarly, South African households could also spend about a year's income to bury a departed member of the family (Shimeles and Woldemichael 2013).

In Ghana, according to Ghana Statistical Service's report on the poverty profile in 2008, about 32 percent of Ghanaians were poor living below 2 dollars a day. However, the average funeral in Ghana then costs between 2000 dollars and 3500 dollars (Butu 2013; Ghana Statistical Service 2008); costing between 1000 and 1750 percent-fold of the poverty line. By 2013, more than 2.2 million Ghanaians (based on 2010 Population and Housing Census (PHC) projections) could not afford to feed themselves with 2900 calories per adult equivalent of food per day, even if they were to spend all their incomes on food (Ghana Statistical Service 2014). History argues that when a person died, part of their properties was sold to organise a funeral party befitting the social status of the deceased. In this regard, people were buried according to the wealth and status left behind. This has since changed for all class of people where now the status of the deceased and that of the living members of the family, other than the source of funds, become the dominant factors in deciding the type of funeral for the deceased member. According to Mazzucato et al. (2006), money and death are inextricably interwoven. Death in Ghana mostly triggers a flow of money and the funeral business flourishes. The elaborate funeral celebrations during which no trouble or expense is spared contrast sharply with the daily struggle for the primary necessities of life. They have become great public events, where families compete for prestige and respect by showing off wealth, and by publicly conforming to norms of solidarity and respect for the dead.

The implications of these social expenditure may not be far-fetched, especially in the context of mass poverty and poor standard of living in developing countries. Non-productive expenditures like these has likelihood of aggravating the disease of poverty and misery among the people. In situations where one could sell off productive lands and plantations just to organise lofty weddings and funerals (Case et al. 2008; De Witte 2003), it is not a surprise but to expect economic hardship in the household. Newly wedded couples

would have to necessarily restart their whole lives as a bountiful amount of life savings would have been expended on their wedding.

Therefore, eradicating extreme poverty and reducing absolute poverty for all people by the year 2030 will mean that any anti-poverty intervention, according to [Chaudhuri \(2003\)](#), must of first importance be necessarily going beyond the catalogue of who is currently poor to an assess households' vulnerability to poverty—who is likely to be poor and how likely are they to be poor than a fixated catalogue of who is currently poor. So, the assessment of future poverty aligned with household social expenditure becomes essential to policy much more than focusing on current poverty levels. Hence, the SDGs will be well achieved if policies are targeted at issues that threaten the vulnerability of both the poor and the non-poor in society, especially in the light of social expenditure which commands high shares of household expenditure and savings.

However, literature is not exhaustive in examining the effect of social spending on household vulnerability to expected poverty. This is important since the full effect of a household's spending on social events may not only be realized in the immediate term but could resonate into periods ahead or perhaps for the rest of lifetime. For instance, a family that sells a farmland or a crop plantation to bury a deceased is likely to suffer poverty in some one or two years to come ([Case et al. 2008](#)). Hence, a research question remains: How does social spending affect the probability of households' vulnerability to poverty? Prior, the study would first analyze the present period (p) effect of social spending and subsequently seek to show how the poor and non-poor households are prone to vulnerability to expected poverty in a future period (p + 1). The study, therefore, hypothesizes that poor households are likely become vulnerable to expected poverty than non-poor households in the future (p + 1), even though both are likely to benefit in the present period (p).

2. Theoretical Tools

2.1. Theory of Need

The most popular theory of needs is by [Maslow \(1943, 1954\)](#) who ranked human needs in order of 'importance' for survival. Although the notion of a need hierarchy has received little support in empirical research ([Michalos 2014](#)), but the assumption that these needs are part of a universal human nature still stands. A major disagreement in literature bothers on the hierarchical nature of human needs which are supposed to be achieved stepwise and in an increasing manner. That is to say that an individual increases welfare as they fulfil lower needs and move unto higher needs. For instance, an individual seeking to meet their needs for food and do not expect to meet needs of belongingness, love or self-esteem. Only when the needs on the lower end of the pyramid are met, will humans look to meet their need for personal fulfilment ([Danielsen 2005](#)). This is however criticized by modern sociologists and economists like Burton, Rosenberg, and Max-Neef. They have argued that Maslow's theory of hierarchical needs implicitly emphasizes higher-level needs as being loftier than lower-level and basic needs such as food, shelter, clothing, and so on. The debate in contemporary literature has help to unravel motives in conflicts and other group actions. Burton's view, for example, was that the needs most salient to an understanding of destructive social conflicts were those for identity, recognition, security, and personal development other than for food and other basic needs ([Rubenstein 2001](#)).

Similarly, in her article post, "Turning Maslow's Hierarchy on Its Head", [Martin \(2016\)](#) argued that, it would be wrong to assume that a hungry person would no way worry about self-esteem. According to Martin, it is not surprising to find the poor in deprived regions who are active on social media even in times of unmet basic needs. It indicates how the poor would want to strive for self-esteem and self-identity among his cohort even when some fundamental needs have not been met. The implication is that individuals' behaviour are likely not to follow the hierarchical order of human needs. This would possibly explain some adverse relative consumption and ostentatious living by those who lack the means to

prosecute them. A possible reason for developing countries spending lavishly on luxury phones, cars, leisure and so forth.

2.2. Status Consumption

In interrogating people's consumption behaviour in a social setting, Duesenberry's (1949) relative consumption becomes very relevant theoretical tool. Duesenberry established that consumers are not so much concerned about their absolute level of consumption as they are with their consumption relative to that of the whole population. That is, the overall level of satisfaction derived from a given level of consumption depends, not only on the consumption level itself, but also on how it compares to the consumption of other members of society. This was similar to what Veblen (1934) had defined as conspicuous consumption. According to Veblen, conspicuous consumption is defined as an ostentatious display of wealth for the purpose of acquiring or maintaining status or prestige. This occurs when the aim of consumption is to demonstrate one's economic position to others (Alvarez-Cuadrado and Long 2011), and move into social groups in order to benefit from social interactions. The common ostentatious displays described by Veblen (1934) are believed to be influenced by materialism, competitiveness and a sense of powerlessness. Some researchers have often used the term interchangeably with status consumption (Corneo and Jeanne 1997; O'cass and McEwen 2004). Thus, relative consumption or conspicuous consumption or status consumption which relates one's consumption to social norms often explains a consumer's pursuit of loftier needs as opposed to lowly needs even in times of lack. For instance, Banerjee and Duflo (2007) reported of a family man who was asked why he had a television and a video deck while the family had no food to eat. The man rather shockingly responded that television was more "important" than food.

3. Methods

The effect of social expenditure on household welfare is presented into two main parts. First, is the usual poverty analysis which computes the effect of an exogenous factor (social expenditure) on an outcome variable (household welfare)? In this study, this was achieved using a three-stage least square (3SLS) estimator and simultaneous quantile regression (Sqreg) approaches. This is explained in a moment. The second part of the study analyses the effect of social expenditure on future poverty levels (vulnerability to expected poverty) of households, adopting the vulnerability approach proposed by Chaudhuri (2003). This approach, too, is explained in detail in succeeding paragraphs after brief discussions on 3SLS and Sqreg.

To begin with, the 3SLS estimator is used to estimating the effect of social expenditure on household welfare due to the potential endogeneity, specifically, bi-causality, between the outcome variable and social expenditure. That is, the likelihood of households with higher welfare incurring higher social expenditure, and higher social expenditure influencing higher household welfare. The stochastic process generating the consumption welfare of a household h is given as

$$W_h = X_h\beta + \varepsilon_h \quad (1)$$

where W_h is household consumption welfare, X_h represents a set of observable household and household head's characteristics (Social expenditure dummy, Age, Square of age, Household size, Square of household size, Sex, Marital status, Education level, Industry, House ownership, Car ownership, and locality); β is a vector of parameters; and ε_h is expected to be a mean-zero, constant disturbance term that captures idiosyncratic factors (shocks) that contribute to different consumption welfare of households that are otherwise observationally equivalent.

However, ε_h in most instances are correlated with the outcome variable, leading to endogeneity challenges. Literature exists in the treatment of such a relationship of the model using a two-stage least square estimator (2SLS). However, unlike a 2-stage least squares approach, a 3-stage least square is more efficient, according to Cameron and Trivedi (2005). In a system of equations where an explanatory variable becomes an outcome

variable in other reduced equation(s), the error terms among the equations are expected to be correlated. 3SLS uses an instrumental-variables approach to produce consistent estimates and generalized least squares (GLS) to account for the correlation structure in the disturbances across the equations (Cameron and Trivedi 2005; Zellner and Theil [1962] 1992).

According to Zellner and Theil ([1962] 1992), three-stage least squares estimates are obtained by estimating a set of nonlinear (or linear) equations with cross-equation constraints imposed, but with a diagonal covariance matrix of the disturbances across equations. This is the constrained two-stage least squares estimator. They further explained that the parameter estimates thus obtained are used to form a consistent estimate of the covariance matrix of the disturbances, which is then used as a weighting matrix when the model is re-estimated to obtain new values of the parameters.

Subsequently, simultaneous quantile regression (Sqreg) was used to estimate the effect of social spending (using predicted values from the 3SLS estimation above) on household welfare at various welfare quantiles. Simultaneous quantile regression is a quantile regression technique that estimates different quantiles concurrently (Cameron and Trivedi 2005; Zellner and Theil [1962] 1992). The reported standard errors are similar to a singular quantile regression but obtain an estimate of the variance-covariance matrix of the error terms (VCE) via bootstrapping, and the VCE includes between-quantile blocks (Koenker and Hallock 2001). Thus, we can test coefficients both within and across equations. Hence, this technique was required to estimate and test the significance of the coefficients of social expenditure between different welfare quantiles. Such would offer the opportunity to determine whether the addition to welfare is the same for all quantiles.

Marginal effects (elasticities) of right-hand-side variables will be computed and compared across the quantiles for all years of the GLSS. Equation (1) is modified by taking the log of household consumption welfare ($\ln W_h$) as the outcome variable and obtain the effects of the right-hand-side variables in elasticities instead of actual currency values. By this, we are able to clearly compare effects across the quantiles and years in percentage terms. Equation (1) is modified as follows:

$$\ln W_h = X_h \beta + \varepsilon_h \quad (2)$$

where $\ln W_h$ is the log of household consumption welfare, X_h represents a set of observable household and household head's characteristics as defined in Equation (1), β is a vector of parameters; and ε_h is a disturbance term. Hence, after regressing the modified quantile equation in Equation (2), the marginal effects will be computed.

On the other hand, vulnerability to expected poverty is estimated following the methods used in the works of Chaudhuri (2003), Dercon (2002), Hoddinott and Quisumbing (2010). Vulnerability is considered as the probability of consuming below an established welfare threshold Z . Thus, the probability that a household at time t would consume below the absolute poverty line. Vulnerability, V , is given as

$$\hat{V} = \hat{P}_t \left(\ln C_{\{h\}} < \ln Z \mid X_{\{h\}} \right) = \Phi \left(\frac{\left\{ \ln Z - X_{\{h\}} \beta \right\}}{\left\{ \hat{\Sigma}_{h\Theta} \right\}} \right) \quad (3)$$

where $\ln C_{\{h\}}$ is the logarithm of the household's consumption expenditure per equivalent scale at time t and Z is the absolute poverty line. The stochastic process generating the consumption of a household h is assumed as

$$\ln C_h = X_h \beta + e_h \quad (4)$$

where $\ln C_h$ is the logarithm of consumption expenditure per equivalent scale, X_h represents a set of observable household and household head's characteristics; β is a vector of parameters; and e_h is a mean-zero, constant disturbance term that captures idiosyncratic factors (shocks) that contribute to different per capita consumption levels for households

that are otherwise observationally equivalent (Chaudhuri 2003). Further, it is also assumed that the variance of e_h is given by

$$\sigma_{\{e,h\}}^2 = X_h \Theta \quad (5)$$

We estimate β and θ using a three-step feasible generalized least squares (FGLS) procedure as in Chaudhuri (2003) and Shimeles and Woldemichael (2013). First, Equation (3) is estimated using an ordinary least squares (OLS) procedure. Then, the estimated residuals from Equation (2) to estimate the following equation using OLS.

$$e_{\{OLS,h\}}^2 = X_{\{h\}}\theta + \eta_{\{h\}} \quad (6)$$

The predictions from Equation (5) are used to transform the Equation (5) as follows:

$$\frac{e_{\{OLS,h\}}^2}{X_h \hat{\theta}_{OLS}} = \left(\frac{X_h}{X_h \hat{\theta}_{OLS}} \right) \theta + \left(\frac{\eta_h}{X_h \hat{\theta}_{OLS}} \right) \quad (7)$$

This transformed equation is estimated using OLS to obtain an asymptotically efficient FGLS estimate, $\hat{\theta}_{FGLS}$ which is consistent with $\sigma_{e,h}^2$ the variance of the idiosyncratic component of household consumption. The estimates:

$$\sigma_{e,h} = \sqrt{X_h \hat{\theta}_{FGLS}} \quad (8)$$

are then used to transform Equation (3) as follows:

$$\frac{\ln C_h}{\hat{\sigma}_{e,h}} = \left(\frac{X_h}{\hat{\sigma}_{e,h}} \right) \beta + \frac{e_h}{\hat{\sigma}_{e,h}} \quad (9)$$

OLS estimation of Equation (7) yields a consistent and asymptotically efficient estimate of β . Using the estimates $\hat{\beta}$ and $\hat{\theta}$ to directly estimate expected log consumption:

$$\hat{E}[\ln C_h | X_h] = X_h \hat{\beta} \quad (10)$$

and the variance of the log consumption is also given as

$$\hat{V}[\ln C_h | X_h] = \sigma_{\{e,h\}}^2 = X_h \hat{\beta} \quad (11)$$

By assuming that consumption is log-normally distributed, it becomes possible to form an estimate of the probability that a household with the characteristics, X_h , will be poor. Letting $\Phi(\cdot)$ denote the cumulative density of the standard normal, we obtain the probability values given by Equation (2). As according to literature (Chaudhuri 2003; Hill and Porter 2017; Hoddinott and Quisumbing 2010; Shimeles and Woldemichael 2013), this study considers a household as vulnerable to poverty if \hat{V}_h is greater than a probability threshold P :

$$\hat{V}_h = \begin{cases} 1, & \text{if } \hat{V}_h > P \\ 0, & \text{if } \hat{V}_h \leq P \end{cases} \quad (12)$$

Further, the study adopts the commonly used threshold of 0.5 for P such that a vulnerable household is one whose probability exceeds 0.5.

Study Country and Data

We chose Ghana, one of the fast-growing economies in sub-Saharan African, for our analysis. The country attained a middle-income status in 2010 and reduced its poverty levels by half, from 56 to 24 percent, between 2000 and 2014, achieving the Millennium Development Goal One (MDG 1) before its 2015 deadline (Ghana Statistical Service 2014). However, many Ghanaians continue to live in extreme poverty. Ghanaians are generally praised as hospitable and with high sense of communal living. Thus, Ghanaians mostly express their sense of togetherness through participation in social events that are sometimes

socially sanctionable for non-participation. However, elaborate nature of funerals and parties in Ghana over half a century has been a major concern in recent literature (De Witte 2003). That is, while a lot of Ghanaians struggle to meet their basic daily calorie intake, cost of funeral parties keeps soaring. For instance, in 2007, the Economist magazine (Bankruptcy and Burials 2007) reported that while about 45 percent of Ghanaians lived below \$1 and 79 percent on less than \$2 a day, yet the average funeral cost was between US\$2000 and US\$3500.

To analyze the effect of social spending on household welfare in Ghana, we used secondary data sourced from Ghana Statistical Service's Living Standard Survey (GLSS 4–7), spanning from 1999 to 2017. The GLSS is Ghana's version of a regular international Living Standard Surveys designed to generate information on the living conditions of people in their respective countries. It collects household and individual information on demographic characteristics, education, health, employment and time use, migration and tourism, housing conditions, household agriculture, access to financial services, asset ownership, and so on (Ghana Statistical Service 2014). The fourth and fifth rounds were conducted in 1998/99 and 2005/06 respectively. The sixth round of the GLSS was conducted between October 2012 and October 2013 and the seventh round was conducted between October 2016 and October 2017. While maintaining the questionnaires used during the fifth round, three new modules were introduced in the sixth round. The seventh round had a nationally representative sample of 15,000 households selected from 1000 enumeration areas, out of which 14,009 households responded to the survey. The sixth round also had a total sample size of 18,000 households selected for the survey, out of which 16,772 were successfully interviewed in 1200 enumeration areas and 71,524 household members captured across the country. The fifth round had 8687 households successfully interviewed in 580 enumeration areas, containing 37,128 household members (Ghana Statistical Service 2008). Lastly, the fourth round covered a nationally representative sample of 5998 households containing 25,855 household members (Asenso-Okyere et al. 2000). The final household sample size used in the study for the fourth, fifth, sixth, and seventh rounds were 5556, 7759, 15,568, and 11,114, respectively.

4. Results and Discussion

4.1. Determinants of Household Welfare—Quantile Regression

Household welfare measured by consumption expenditure per adult equivalent scale (Annim et al. 2012; Asenso-Okyere et al. 2000; Donkoh et al. 2014; Ghana Statistical Service 2014) is influenced by household idiosyncratic characteristics and, sometimes, external variables (Deacon et al. 1992; Diallo and Wodon 2007). Following the works of Browning and Lusardi (1996), Chaudhuri (2003), Coulombe and Wodon (2007), Diallo and Wodon (2007), and Shimeles and Woldemichael (2013), variables such as age, sex, marital status, education, and working status of household head as well as durable assets which serve as a store of wealth were included in the determination of household welfare. One of the most profound ways of analyzing the effect of social expenditure is to estimate arbitrarily to represent categories of households from the bottom percentile to the highest, as shown in Table 1, at different quantiles (10th, 25th, 50th, 75th, and 90th percentiles) of welfare. These quantiles are chosen first, report coefficients of exogenous variables in US dollars (using an exchange rate of C4.25 to US \$1 as at end of 2017), and elasticity effect (marginal effect) for social expenditure only. Elasticity (marginal effects) coefficients for control variables have been omitted for the sake of parsimony, which could be made available to any interested party upon request.

Table 1. Quantile effect of social expenditure on household welfare, 2016/2017.

| Variable | Welfare Quantiles | | | | | | | | | |
|---|-------------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|
| | 10th | | 25th | | 50th | | 75th | | 90th | |
| | Actual (US\$) | Elasticity | Actual (US\$) | Elasticity | Actual (US\$) | Elasticity | Actual (US\$) | Elasticity | Actual (US\$) | Elasticity |
| Social expenditure | 209.93 *** | 0.656 *** | 232.24 *** | 0.632 *** | 273.34 *** | 0.592 *** | 370.00 *** | 0.482 *** | 396.52 *** | 0.381 *** |
| Age | 3.88 * | | 5.83 *** | | 10.93 *** | | 15.27 *** | | 20.25 *** | |
| Square of age | −0.04 * | | −0.06 *** | | −0.11 *** | | −0.14 *** | | −0.18 ** | |
| Household size | −21.16 ** | | −68.75 *** | | −135.55 *** | | −207.15 *** | | −372.71 *** | |
| Square of household size | 0.95 * | | 3.77 *** | | 7.70 *** | | 12.45 *** | | 23.03 *** | |
| Sex of head (Base = Female) | | | | | | | | | | |
| Male | −12.04 | | −14.41 | | −13.87 | | −23.98 | | −21.77 | |
| Marital status of head (Base = Never married) | | | | | | | | | | |
| Married/co-habiting | 24.61 | | −35.01 * | | −81.55 *** | | −113.34 *** | | −103.67 * | |
| Divorced/separated/Widowed | −44.45 ** | | −70.85 ** | | −128.33 *** | | −172.40 *** | | −182.49 ** | |
| Education of head (Base = No education) | | | | | | | | | | |
| Basic | 33.36 ** | | 54.85 *** | | 72.78 *** | | 103.84 *** | | 170.31 *** | |
| Secondary | 79.48 *** | | 133.55 *** | | 176.71 *** | | 277.22 *** | | 425.98 *** | |
| Tertiary/Higher | 205.84 *** | | 335.69 *** | | 572.68 *** | | 1046.02 *** | | 2019.88 *** | |
| Industry of head (Base = Agriculture) | | | | | | | | | | |
| Mining | 50.75 | | 103.01 | | 145.34 * | | 243.46 * | | 298.89 * | |
| Manufacturing | 9.26 | | −2.62 | | 23.52 | | 53.41 * | | 121.22 | |
| Electricity and utilities | −31.11 | | −22.09 | | −28.82 | | 20.96 | | 77.34 | |
| Construction | 32.38 | | 14.30 | | 20.75 | | 51.13 | | 112.19 | |
| Commerce | 50.94 *** | | 52.24 ** | | 71.36 *** | | 146.38 *** | | 213.41 ** | |
| Transportation, storage and communications | 62.75 | | 103.58 *** | | 101.51 ** | | 101.79 | | 233.95 | |
| Financial, insurance and real estate | 100.21 | | 155.81 | | 383.25 *** | | 652.54 ** | | 1197.36 ** | |
| Services: public administration | 51.29 ** | | 57.36 *** | | 114.71 *** | | 223.41 *** | | 297.32 *** | |
| Others | 31.13 | | 6.46 | | −12.70 | | 55.98 | | 1432.66 | |
| Ownership of house (Base = No) | | | | | | | | | | |
| Yes | −30.80 *** | | −30.02 ** | | −18.15 | | −13.14 | | 53.06 | |
| Ownership of car (Base = No) | | | | | | | | | | |
| Yes | 14.51 | | 93.29 * | | 93.29 *** | | 368.59 *** | | 597.18 *** | |
| Locality (Base = GAMA) | | | | | | | | | | |
| Other Urban | −400.78 *** | | −425.01 *** | | −425.01 *** | | −568.61 *** | | −806.61 *** | |
| Rural Coastal | −447.34 *** | | −524.14 *** | | −524.14 *** | | −785.41 *** | | −1132.85 *** | |
| Rural Forest | −459.36 *** | | −517.22 *** | | −517.22 *** | | −733.44 *** | | −1070.49 *** | |
| Rural Savannah | −481.27 *** | | −563.53 *** | | −563.53 *** | | −777.76 *** | | −1079.91 *** | |
| Constant | −866.78 *** | | −735.60 ** | | −735.60 * | | −940.02 * | | −199.20 | |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

To begin with the analysis of results, Table 1 shows a positive relationship between household welfare and social expenditure. Similar results for 2012/2013, 2005/2006, and 1998/1999 and presented in Tables S1–S3, respectively. A household in the 10th percentile that observed an expenditure on social events averagely increases the household welfare by about \$209.90 more than other households in the same percentile that did not incur social expenditure. This is no surprise since social expenditure is also captured as part of the total welfare estimate for each household. Hence, the welfare of households that make social expenditure is, on average, higher than those that did not spend on such social events like funerals, weddings, parties, etc. Further, households in the 25th percentile add \$232.24 to their consumption welfare more than households that did not make expenditure on social events, an increase over the average for the 10th percentile households. Likewise, households in the 50th, 75th, and 90th percentiles increasingly have \$273.34, \$370, and \$396.52, respectively, more than households that did not expend on social events. The increasing amount added to household welfare as over the percentile indicates that as households get richer greater sums of dollars are spent on funerals, weddings, and the like.

An important aspect of this analysis is to consider the trend of the elasticity effect of social expenditure on household welfare. According to Table 2, the elasticity effect on welfare increases horizontally as the welfare also increases from the 10th to the 90th percentiles. That is, addition to welfare is greater among poorer households than richer households. This is because as poor households spend on funerals, weddings, or religious festivals every year, the amounts spent represent a significant proportion of their budget. Therefore, for richer households, social spending would rather represent a smaller proportion of their entire household budget compared with poor ones. For instance, in 2016 the percentage (elasticity) of welfare due to social spending decreased from about 66 percent for the bottom 10% to 38 percent for the top 10%. Similarly, the elasticity effect of social expenditure on welfare for all preceding years to 2016/2017 also increased as welfare percentiles increased. Most importantly, each percentile consistently increased their social expenditure as a proportion of household welfare. Therefore, Table 2 shows that, for example, the 10th percentile of households between 1999 to 2017, increased their social expenditure as a proportion of welfare from about 16 percent to about 66 percent, whereas that of the 25th percentile households increased from 12 percent to 63 percent. The 50th percentile households also increased from 13 percent to 59 percent while social expenditure as a proportion of welfare jumped from 10 percent to 48 percent for households in the 75th percentile; and lastly, that of households in the 90th percentile rose from less than one percent to 38 percent.

Table 2. Elasticity effect of social expenditure on household welfare.

| Year | Elasticity Effect of Social Expenditure on Welfare | | | | |
|-----------|--|-----------|-----------|-----------|-----------|
| | 10th | 25th | 50th | 75th | 90th |
| 2016/2017 | 0.656 *** | 0.632 *** | 0.592 *** | 0.482 *** | 0.381 *** |
| 2012/2013 | 0.646 *** | 0.517 *** | 0.377 *** | 0.392 *** | 0.324 *** |
| 2005/2006 | 0.203 *** | 0.194 *** | 0.194 *** | 0.177 *** | 0.111 *** |
| 1998/1999 | 0.160 *** | 0.124 *** | 0.133 *** | 0.103 *** | 0.09 |

*** $p < 0.001$.

4.2. Vulnerability to Expected Poverty

This section discusses the vulnerability to poverty due to social expenditure. The process followed the works of Chaudhuri (2003) and Shimeles and Woldemichael (2013) using the Full Generalized Least Square process for the consumption expenditure than to the generation of probabilities. It is worthy to restate that in the results that follow, each year, a baseline scenario estimated vulnerability to poverty without social expenditure dummy while the second scenario included the dummy variable for social expenditure. The approach is intended to contrast households' level of vulnerability without a "shock" of social expenditure and the other scenario where social expenditure is captured as a

household shock variable. In this regard, the difference between the scenarios of households' vulnerability estimates gives the rise in vulnerability between a baseline scenario and the aftermath of social expenditure. These household vulnerability estimates are discussed beginning with the latest round of GLSS data, 2016/2017 to the preceding rounds of the survey.

First and foremost, a weighted baseline household vulnerability in 2016/2017 is shown in Table 3 where 62 percent of all households were vulnerable to poverty. This comprised 80 percent of very poor households, 96 percent very poor households, 91 percent poor households, and 51 percent of non-poor households. In this case, there are a lot of households that are prone to poverty even the non-poor is not fully spared.

Table 3. Vulnerability without Social Expenditure, 2016/2017.

| Poverty Status | Vulnerability to Poverty | | | | | | | | |
|----------------|--------------------------|-------|--------|------------|-------|--------|--------|--------|--------|
| | Not Vulnerable | | | Vulnerable | | | Total | | |
| | No. | % | Prob | No. | % | Prob | No. | % | Prob |
| Very poor | 53 | 4.41 | 0.3773 | 1148 | 95.59 | 0.9512 | 1201 | 100.00 | 0.9259 |
| Poor | 144 | 8.87 | 0.3187 | 1480 | 91.13 | 0.9503 | 1624 | 100.00 | 0.8943 |
| Non poor | 4030 | 48.62 | 0.1356 | 4259 | 51.38 | 0.8621 | 8289 | 100.00 | 0.5089 |
| Total | 4227 | 38.03 | 0.1448 | 6887 | 61.97 | 0.8959 | 11,114 | 100.00 | 0.6102 |

No. = Number of observations; Prob. = Probability score.

Comparatively, estimates captured in Table 4 indicate a slight reduction in vulnerability for all categories of households as social expenditure dummy is added to the consumption model. However, the decline in vulnerability is mainly influenced by a decrease in the percentage of vulnerable non-poor households, that is, from 51 percent in Table 3 to 50 percent in Table 4, whereas the very poor and the poor households saw an increase in their vulnerabilities to 97 percent and 92 percent, respectively. The implication could be that the poverty levels of poorer households are likely to be negatively affected in the future as they incur social expenditure compared to those who did not make such social expenditure.

Table 4. Vulnerability with Social Expenditure, 2016/2017.

| Poverty Status | Vulnerability to Poverty | | | | | | | | |
|----------------|--------------------------|-------|--------|------------|-------|--------|--------|--------|--------|
| | Not Vulnerable | | | Vulnerable | | | Total | | |
| | No. | % | Prob | No. | % | Prob | No. | % | Prob |
| Very poor | 39 | 3.25 | 0.3814 | 1162 | 96.75 | 0.9450 | 1201 | 100.00 | 0.9267 |
| Poor | 124 | 7.64 | 0.3206 | 1500 | 92.36 | 0.9352 | 1624 | 100.00 | 0.8883 |
| Non poor | 4133 | 49.86 | 0.1501 | 4156 | 50.14 | 0.8652 | 8289 | 100.00 | 0.5086 |
| Total | 4296 | 38.65 | 0.1571 | 6818 | 61.35 | 0.8942 | 11,114 | 100.00 | 0.6093 |

Next, Table 5 shows the fact that for the total sample of households, 29 percent became vulnerable after observing social expenditure as an exogenous (shock) variable for 2016/2017. This represents a rise in the sample average from 27 percent to 29 percent. Again, there was about a 1 percent increase in the number of vulnerable households for all poverty status or categories. It suggests, therefore, that social expenditure increases slightly the vulnerability to poverty of all, especially the very poor households. By this, one could argue that, although in the ex post analysis, poor households may have had a

more positive effect than the rich households, social expenditure does not seem good for the very poor in future analysis.

This argument is true especially when consumption of social events are often tied to societal norms and relative consumption, poor households that stretch their budgets to meet present expenditure on social events may be counted to have improved their welfare by increasing consumption expenditure but would have to face the dire consequences in the future. So, this finding points out the negative future effect that social expenditure brings on households that are poor but would still want to follow the herd. In the wake of extravagant funerals, festivals, and weddings in developing countries, the ex-ante analysis points to future permanent or transitional poverty for poor households that would venture what is the preserve of the rich.

From Table 5 which contains estimates of vulnerability without social expenditure, a greater number of households (that is, 64.14%; 9939 households), including the non-poor, were vulnerable to poverty compared with others who were not. It could be seen that the very poor and poor households form the majority, as usually known.

Table 5. Vulnerability without Social Expenditure, 2012/2013.

| Poverty Status | Vulnerability to Poverty | | | | | | | | |
|----------------|--------------------------|-------|--------|------------|-------|--------|--------|--------|--------|
| | Not Vulnerable | | | Vulnerable | | | Total | | |
| | No. | % | Prob | No. | % | Prob | No. | % | Prob |
| Very poor | 89 | 5.67 | 0.3497 | 1480 | 94.33 | 0.9237 | 1569 | 100.00 | 0.8813 |
| Poor | 231 | 10.30 | 0.3134 | 2012 | 89.70 | 0.9173 | 2243 | 100.00 | 0.8449 |
| Non poor | 5236 | 44.82 | 0.1574 | 6447 | 55.18 | 0.8704 | 11,683 | 100.00 | 0.5350 |
| Total | 5556 | 35.86 | 0.1683 | 9939 | 64.14 | 0.8881 | 15,495 | 100.00 | 0.6149 |

On the other hand, Table 6 shows the fact that for the total sample of households, 63.81 percent are vulnerable after social expenditure was introduced as an exogenous (shock) variable. This represents a drop in the sample average from 64.14 percent to 63.81 percent which looks good. However, considering the constituents of the sample average, it could be seen that the decline in vulnerability for the entire sample was as a result of a fall in the vulnerability of the non-poor only (that is, 87.04% in Table 5 to 85.90% in Table 6). This means that vulnerability rather increased from 92.37 percent in Table 5 to 92.51 percent in Table 6 for the very poor while for the poor, it rose from 91.73 percent in Table 5 to 91.80 in Table 6. It suggests, therefore, that social expenditure increases slightly the vulnerability to poverty of the very poor by 0.14 percent and the poor by 0.07 percent.

Table 6. Vulnerability with Social Expenditure, 2012/2013.

| Poverty Status | Vulnerability to Poverty | | | | | | | | |
|----------------|--------------------------|-------|--------|------------|-------|--------|--------|--------|--------|
| | Not Vulnerable | | | Vulnerable | | | Total | | |
| | No. | % | Prob | No. | % | Prob | No. | % | Prob |
| Very poor | 78 | 4.97 | 0.3290 | 1491 | 95.03 | 0.9251 | 1569 | 100.00 | 0.8962 |
| Poor | 221 | 9.85 | 0.3024 | 2022 | 90.15 | 0.9180 | 2243 | 100.00 | 0.8568 |
| Non poor | 5309 | 45.44 | 0.1755 | 6374 | 54.56 | 0.8590 | 11,683 | 100.00 | 0.5487 |
| Total | 5608 | 36.19 | 0.1826 | 9887 | 63.81 | 0.8810 | 15,495 | 100.00 | 0.6285 |

In 2005/2006, nonetheless, Table 7 shows no vulnerability without social expenditure. This is because none of the probabilities exceeded 0.5. This does not seek to suggest that

in the said year no household in Ghana was vulnerable, except that data and our model could not show evidence of household vulnerability.

Table 7. Vulnerability without Social Expenditure, 2005/2006.

| Poverty Status | Vulnerability to Poverty | | | | | |
|----------------|--------------------------|--------|--------|-------|--------|--------|
| | Not Vulnerable | | | Total | | |
| | No. | % | Prob | No. | % | Prob |
| Very poor | 1292 | 100.00 | 0.0941 | 1292 | 100.00 | 0.0941 |
| Poor | 639 | 100.00 | 0.0222 | 639 | 100.00 | 0.0222 |
| Non poor | 5821 | 100.00 | 0.0139 | 5821 | 100.00 | 0.0139 |
| Total | 7752 | 100.00 | 0.0280 | 7752 | 100.00 | 0.0280 |

However, in Table 8, results indicate that, once again, vulnerability increases, this time, for all categories of the household. So, while the total sample vulnerability increased by 52.19 percent, the very poor shot up their vulnerability by 52.52 percent while the 50.73 was for the poor and the non-poor recording 51.19 percent vulnerability. It is instructive to note that all manner of households are vulnerable to either permanent poverty in the case of the very poor and the poor or transitory poverty for the non-poor which is likely to nullify the present gains in welfare in the future. The mean vulnerability for all households was 5.2 percent.

Table 8. Vulnerability with Social Expenditure, 2005/2006.

| Poverty Status | Vulnerability to Poverty | | | | | | | | |
|----------------|--------------------------|-------|--------|------------|------|--------|-------|--------|--------|
| | Not Vulnerable | | | Vulnerable | | | Total | | |
| | No. | % | Prob | No. | % | Prob | No. | % | Prob |
| Very poor | 1277 | 98.84 | 0.1341 | 15 | 1.16 | 0.5252 | 1292 | 100.00 | 0.1386 |
| Poor | 637 | 99.69 | 0.0760 | 2 | 0.31 | 0.5073 | 639 | 100.00 | 0.0773 |
| Non poor | 5819 | 99.97 | 0.0298 | 2 | 0.03 | 0.5119 | 5821 | 100.00 | 0.0300 |
| Total | 7733 | 99.75 | 0.0508 | 19 | 0.25 | 0.5219 | 7752 | 100.00 | 0.0520 |

Last but not least is the vulnerability test for 1998/1999. Table 9 presents the vulnerability estimates without social expenditure. It is seen from here that 72.86 percent of the sampled households are vulnerable which is constituted by 78.06 percent vulnerable very poor, 76.81 vulnerable poor, and 65.45 vulnerable non-poor households.

Table 9. Vulnerability without Social Expenditure, 1998/1999.

| Poverty Status | Vulnerability to Poverty | | | | | | | | |
|----------------|--------------------------|-------|--------|------------|-------|--------|-------|--------|--------|
| | Not Vulnerable | | | Vulnerable | | | Total | | |
| | No. | % | Prob | No. | % | Prob | No. | % | Prob |
| Very poor | 271 | 28.35 | 0.4016 | 685 | 71.65 | 0.7806 | 956 | 100.00 | 0.6731 |
| Poor | 227 | 42.51 | 0.3673 | 307 | 57.49 | 0.7681 | 534 | 100.00 | 0.5977 |
| Non poor | 2739 | 80.94 | 0.1782 | 645 | 19.06 | 0.6545 | 3384 | 100.00 | 0.2689 |
| Total | 3237 | 66.41 | 0.2101 | 1637 | 33.59 | 0.7286 | 4874 | 100.00 | 0.3843 |

Table 10 also shows the vulnerability of households to poverty after consuming social events such as weddings, funerals, and festivals. This table indicates that vulnerability

to poverty for the entire sample increased from 38.43 percent to 39.53 percent in Tables 9 and 10, respectively. It is evident here that vulnerability for the non-poor has increased to 28.84 percent while the probabilities for the very poor and poor declined slightly to 66.24 percent 59.41 percent, respectively. However, it could be seen that despite the drop in vulnerability for the very poor compared with Table 9, about 27 more households in that category became vulnerable to poverty.

Table 10. Vulnerability with Social Expenditure, 1998/1999.

| Poverty Status | Vulnerability to Poverty | | | | | | | | |
|----------------|--------------------------|-------|--------|------------|-------|--------|-------|--------|--------|
| | Not Vulnerable | | | Vulnerable | | | Total | | |
| | No. | % | Prob | No. | % | Prob | No. | % | Prob |
| Very poor | 244 | 25.52 | 0.4053 | 712 | 74.48 | 0.7505 | 956 | 100.00 | 0.6624 |
| Poor | 232 | 43.45 | 0.3735 | 302 | 56.55 | 0.7636 | 534 | 100.00 | 0.5941 |
| Non poor | 270 | 80.02 | 0.1985 | 676 | 19.98 | 0.6485 | 3384 | 100.00 | 0.2884 |
| Total | 3184 | 65.33 | 0.2271 | 1690 | 34.67 | 0.7120 | 4874 | 100.00 | 0.3953 |

5. Conclusions

Directly from the quantile regression, it is concluded that very poor households benefit more in terms of welfare than non-poor households and that the difference in the effect of social expenditure widens between the poorest and other households, moving towards higher levels of welfare. On the other hand, vulnerability to poverty estimates has shown that households may suffer permanent or transitory poverty in the future, especially the very poor. By comparison across the years, it is seen that baseline vulnerability to poverty without social expenditure increased from 38.43 percent to 64.14 percent of the sampled population. As a result, vulnerability to poverty including social expenditure also increased from 38.43 percent in 1999 to 63.81 percent in 2017. This is an indication that vulnerability among the populace rose despite Ghana's middle-income status achieved over the same period.

By this, it could be argued that even though in the current poverty analysis, poor households may be seen to have increased their welfare through social expenditure, the practice is not good for the poor in the future poverty analysis. As a result, the notion of social investment through social expenditure may not be entirely true for the poor in these instances, especially without a compensating reciprocation. This argument is true especially when consumption of social events is tied to the societal norms and relative consumption, poor households that outstretch their budget in order to meet present expenditure on social events may be counted to have improved their welfare but would have to face the dire consequences in the future. By this finding, we point out the negative future effect that social expenditure brings on poor households. In the wake of extravagant funerals, festivals, and weddings in developing countries, the ex-ante analysis points to future permanent or transitional poverty for poor and non-poor households, respectively.

To this end, we recommend that the central government, local assemblies, traditional authorities, and other public agencies like the National Commission for Civic Education (NCCE) and NGOs should organise informal educational campaigns against the rising social expenditure and its effect on future poverty just as has been started by Quaker Social Action, Marie Curie, Citizens Advice, among others, in the UK and USA.

Secondly, the Government of Ghana could make additional cash transfers towards poor households to relieve them of the burden of poverty arising out of events like funerals, through its Livelihood Empowerment Against Poverty (LEAP), like the Scottish Government does through its Social Fund Funeral Payment (SFFP). Lastly, the government and local authorities may formulate policies to set guidelines for the indicative costs of organizing and running social events aimed at combating the rising social expenditure at

events like weddings, funerals, and festivals. This is possible since the governments of Tajikistan and India have already gone so far with such policies on wedding celebrations

Supplementary Materials: The following are available online at <https://www.mdpi.com/2076-0760/10/2/40/s1>, Table S1: Quantile effect of social expenditure on household welfare, 2012/2013, Table S2: Quantile effect of social expenditure on household welfare, 2005/2006 and Table S3: Quantile effect of social expenditure on household welfare, 1998/1999.

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