Determinants of Corporate Social Responsibility Spending: A Study of Public Sector Organizations in Tanzania

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Abstract

Corporate social responsibility (CSR) has today become an important phenomenon and most organizations spends substantial amount of funds on CSR activities. However, empirical evidence on what determine the amount spent on CSR activities by public water sector organizations in Tanzania is lacking. Thus, the current study focus on determining factors that influences CSR spending by public water supply and sanitation authorities in Tanzania. Quantitative data were collected from 2015 to 2019, and a Fixed Effect estimation technique with instrument variable was employed in the analysis. The study revealed that; the approved CSR budget size, revenue collection efficiency, financial leverage, and organization size significantly influence CSR spending. The study contributes to the existing CSR literature in the public sector, and provides inputs on policies formulation that aims to enhance CSR investment public sector organizations.

Key words: Corporate social responsibility, spending, public water sector, Tanzania

JEL classification: L21, L25

1. Introduction

Recently, there have been an increasing number of organizations that spend their financial resources on CSR activities (Manisha, 2019; Pandya & Zalavadia, 2020). According to the European Commission (2001), CSR refers to organization voluntarily actions of incorporating

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social and environmental concerns into their operations and in their interactions with stakeholders. The integration of social and environmental concerns has various advantages to the organization such as; to improve organization reputation (Graafland, 2017; Kucharska, 2020; Ruiz & García, 2021), reduce operational costs through recycling of materials (Hariyani et al., 2022), retain and improve working moral of employees (Chiemeke et al., 2018; Kucharska, 2020).

Other studies e.g. Dibin and Karthik (2021), Menezes (2019), Kao et al. (2018), Nair and Battacharyya (2019) argued that CSR should be regarded as an important activity within the organization, just like other activities that are taken to improve performance of the organization. Also, it is argues that other organizations pay attention to CSR activities because the costs associated with non-consideration of CSR in their operation is too high such cost includes; losing reputation, paying fines in case of any environmental destruction, and losing customers (Sprinkle & Maines, 2010). Recognizing the importance of CSR and the associated cost of not paying attention to it, CSR is now increasingly being integrated into both public and private sector organizations (Ates & Büttgen, 2011).

It is important for public sector organizations to spend on CSR activities because they serve the general public and accountable to various groups of stakeholders (Crowther & Seifi, 2020). Therefore, by spending on CSR, organizations may enhance their reputation and relationships with stakeholders (Jain et al., 2021;Ruiz & García, 2021). In Tanzania, spending on CSR activities is more evident in the Water Supply and Sanitation Authorities also here referred to as water Authorities. These Authorities are required by the Water Supply and Sanitation Act, 2019 and the National Water Policy 2002 to take social and environment concerns into their operations to enhance stakeholders engagement (URT, 2002). The extents to which Authorities spend on CSR activities are manifested in their annual budget and financial statements reports. The Authorities spent their funds on CSR in the form of donation to; education, health, community development projects, special needing group in the community and disaster and emergencies.

There are various type of CSR activities from which an organization can decide to spend their funds (Arsic et al., 2017). However, the pressing issue with regards to CSR activities is that the choice of CSR activities and amount spent on each of the selected CSR activities differs among

organizations, even with organizations in the same industry (Musah, 2020). It is also hardly ever that organizations spend on all type of CSR activities at once or spend equal amount of fund to all selected CSR activities. The difference on the amount spent on CSR activities by water Authorities in Tanzania raises the question what factors influences the amount spent on CSR activities?

Unfortunately, studies determining the CSR sending are lacking in Tanzania public water sector organizations. Most of the previous related studies e.g. Mokuolu and Oladele (2018), Oyerinde (2019), Rai and Bansal (2015) and Musah (2020) have determined factors influences CSR spending in the private sector, and conducted outside Tanzania. Departing from previous studies, the current study focus on determining factors influencing the amount spent on CSR activities by public water supply and sanitation authorities in Tanzania. It also takes into account the endogenous relationship between CSR spending and the approved budget for CSR activities which had remained unexplored by previous studies. This study also employed Fixed Effect estimation with Instrumental Variable (FE-IV).

The study contributes to the existing body of literature in various ways. First, the growing CSR literature focuses on private sector leaving behind the public sector. The current study provides the empirical evidence on the determinants of CSR spending by public water supply and sanitation authorities in Tanzania. Second, most of the previous studies on CSR spending did not address the variable approved CSR budget. This may be caused by the fact that most of the previous related studies used annual reports as only source of secondary data where the approved CSR budget is not disclosed. The current study, considered the approved CSR budget and employed FE-IV estimation techniques which address the presence of heterogeneity and endogeneity in the study (Baltagi, 2021). Lastly, the findings from the study provide inputs for the Authorities' management, regulators and policymakers to formulate CSR strategies and policy in the context of public sector organizations.

The reminder of this article is organized as follows; the following section presents literature review and hypotheses formulation. Research methodology is presented in section 3. Section 4 presents results and discussions. Lastly, conclusions and recommendations are presented in section 5.

2. Literature Review and Hypotheses

In determining factor influences CSR spending, the slack resource theory and legitimacy theory were adopted. The slack resource theory is founded on the view that an organization is able to pursuit activities that goes beyond firms' legal requirement or firms' main strategy due to the slack resources owned, which are normally dedicated to predefined activities (Bourgeois, 1981; Onuoha & Nkwor, 2021). In the organization, slack resource may exist at different discretionary levels however the financial slack has the greatest degree of discretion compared to other type of slack resources (Lin et al., 2019). Financial slack may exist in the form of unutilized cash, cash equivalents, and receivables that are not currently committed to any particular use (Onuoha & Nkwor, 2021). Stan et al. (2014) argue that, many of the public sector organizations are faced with inefficiently utilization of financial resources because of the expectation to receive subsidies and other forms of financial incentives from the government. Consequently organization experience soft budget constrain by being bailed out to ensure their survival, which may generate low or no slack resource (Premono & Danarsari, 2022).

Further, the water Authorities in Tanzania have cash inflow in the form of revenue collections form their customers. The efficiency in revenue collection increases the availability of financial resources to the Authority (Namaliya, 2017). Therefore, it is expected that water Authorities with higher revenue collection efficiency are more liquid and likely to spend more on CSR activities because CSR require the use of Authority's financial resources to be undertaken. Therefore, on this basis we hypothesize that;

Hypothesis 1: Revenue collection efficiency positively has positive influence on CSR spending by water Authorities in Tanzania

Moreover, the availability of financial resources enables firms to budget for CSR activities. Approved CSR budget assists in planning and control firm's spending on the following financial year (Chatterjee, 2015). Studies e.g. Rabea et al. (2020) suggest that spending on a particular CSR activity will depend on the general approved budget for CSR. In fact, Ponce et al. (2018) argue that spending on each CSR activity is expected to be higher if the approved budget for CSR is higher. In Tanzania water Authorities, budgeting for CSR activities is done on ad hoc basis. With this in mind, we resonate to the slack resource theory to determine the influence of the approved CSR budget size on CSR spending. Thus, it was hypothesized that:

Hypothesis 2: The approved CSR budget size has positive influence on CSR spending by water Authorities in Tanzania

Also, financial ability of the firm signals the extent to which they can finance their operating activities (Olusola, 2022). Financial ability can be indicated by the financial leverage which is the use of debt to finance their operating activities or acquire additional assets (Harjoto, 2017). Studies e.g. Bobinaite (2015) argue that most organizations uses debts as source of finance compared to preferred capital as such leverage is an important factor in establishing organizations' financial ability. Studies e.g. Asamoah (2019) argues that, organizations that are heavily financed by debts are more likely to spend more economic activities to repay their interests than spending of CSR activities. In examining the relationship between CSR expenditure and leverage, Mokuolu and Oladele (2018) and Musa et al. (2019) found positive relationship while, Olusola (2022) reported a negative relationship. Further, Chauhan (2014), Jahid et al. (2022) concluded no relationship between leverage and CSR spending. Based on this observation, it was hypothesised that:

Hypothesis 3: Leverage has negative influence on CSR spending by water Authorities in Tanzania

Several studies, including Jahid et al.(2022), Mokuolu and Oladele (2018) have found a link between organization size and CSR spending. Mattingly and Olsen (2018) associate ogsize with the availability of financial resources to finance firms' activities arguing that, large-size firms are well-established and have sufficient financial resources to spend on CSR activities compared to small sized firms. As such, small-sized firm tend to spend on CSR activities that legitimize their existence and attract customers to increase cash inflows (Raza et al., 2020). While, large-sized firms likely to focus on large scope of CSR activities that will lead into maintaining their status and reputation (Badulescu et al., 2018; Karyawati et al., 2019). On examining the relationship between organization size and CSR spending, Jahid et al.(2022), Johan (2021), Mokuolu and Oladele (2018) found positive relationship while Yekini (2014) found no relationship. Therefore, we hypothesis that;

Hypothesis 4: Organization size has positive influence on CSR spending by water Authorities in Tanzania

The amount spent on CSR activities can also be influenced by the age of the organization (Musa et al., 2019). In various studies e.g. Amato and Falivena (2019) organization age indicate the extent to which firm has been in existence and its acceptability within the community in which it operates. According to the legitimacy theory, society has expectations from the firms on how they should operate within the boundaries of social norms and conducts to be viewed legitimate (Aguinis & Glavas, 2012). Thus, through interaction with the community firms might establish legitimacy which is very important for survival and existence of any firm (Olateju et al., 2021). For older firms, it is viewed that they have been in existence for a long time thus, they have already established acceptability and legitimacy within the community they operate (Raza et al., 2020). Therefore, older firms are more likely to spend less on CSR activities just to strengthen their reputations, compared to newly established firms that will be seeking to establish legitimacy and viable customer base. Empirical findings on the relationship between CSR spending and organization age provide mixed findings. For instance, Jahid et al.(2022) found that organization age is negatively and significant related to CSR expenditure. While, Musa et al. (2019) found that organization age positively and significant influences CSR expenditure. Thus, we hypothesized that;

Hypothesis 5: Organization age has positive influence on CSR spending by water Authorities in Tanzania

Another possible determinate of CSR spending is gender influence of the managing director. According to Ardito et al. (2021), male and female directors have different career paths, with women having more experience and being more concerned with social issues compared to male. Issa and Fang (2019) argue that females are more social oriented and concern on the needs of other stakeholders than male. Also female and male have different career trajectories, where male are more experienced in large organization with more focus on economic aspect than social aspect of the organization, while female are more into community and service aspect of the organization (Prudêncio et al., 2021). As such organizations with female managing directors are more likely to be more investing in CSR activities (Bernardi & Threadgill, 2011; Prudêncio et al., 2021). Again, Konrad et al. (2008) pointed out that female directors are more likely to be concern on the issue of organization reputation, health and safety issues that may affect the community. Previous studies e.g. Calabrese et al. (2018), Cullinan et al. (2019), Cruz et al. (2019) found positive relationship between gender of the managing director and CSR

investment. While, Lu et al.(2020) found negative relationship between female top managers and CSR investment Hence, we hypothesized that:

Hypothesis 6: A female managing director has a positive influence on CSR spending by water Authorities in Tanzania

Location is another possible determinant of CSR spending, where it is expected that firms located in cities are more visible to the state, media, and interest groups putting them under higher pressure to conform to societal expectations (Xiao et al., 2018). As a result, it may be even more important for them to gain legitimacy through CSR activities for their survivor and existence (Patten, 2019). In Tanzania, water Authorities are locations in either; regional, district or township Authorities (EWURA, 2022). Studies e.g. Zamir and Saeed (2020), and Husted et al.(2016) argues that firms located in major cities engage more on CSR compared to firms allocated in remote areas. Also, Chintrakarn et al.(2017) examine how geographic location affected the level of CSR activities of US public companies, and they discovered that the average level of CSR of the nearby firms had a significant impact on the level of CSR of a given company. It is from this setting, we hypothesise that:

Hypothesis 7: Firms geographical location positively influences the budget size for CSR activities

3. Methodology

3.1 Sample and Data

The sample contained panel data from water supply and sanitation authorities in Tanzania between 2015 and 2019. Initially, we intended to collect information from 120 Authorities. Six water Authorities, on the other hand, were ignored because we could not get the information we needed from them. As a result, 570 observations were made. Further, quantitative information were collected from the water Authorities' annual reports, budget reports and Water Utilities Performance Review Reports. In particular; the total amount spent on CSR activities, leverage, organization age, gender of managing director, and geographical location were collected from the annual reports. From the budget reports the information on the size of CSR budget was obtained. Also, from the Water Utilities Performance Review Reports information on revenue collection efficiency and size of the organization was collected.

3.2 Measures of Variables

Dependent variable: The total amounts spend on CSR activities by the water Authorities is a dependent variable denoted by *CSRSP* was measured by the natural log of the actual total amount spent on CSR activities in a given financial year. The measure has also been applied by Dibin and Karthik (2021), Musah (2020) and Rabea et al. (2020).

Independent variables: The CSR budget size denoted by *CSRB* was measured by the natural log of the total annual budget for CSR activities. A natural log is used in order to normalize lager absolute numbers and hence remove outliers in the data (Hair et al., 2015). We measure the cash flow by revenue collection efficiency (*RCE*) which is the percentage of bills collected during the financial year. This measure have also been used in several studies such as Namaliya (2017). Another independent variable is financial leverage we measured financial leverage by dividing total debt to total assets (Oware & Mallikarjunappa, 2019; Oyewumi et al., 2018). Organization age was measured by the natural log of the total number of years the organization has been in existence. The measure is adopted from the study of Odeh et al. (2020).

Further, the size of organization is denoted by *Ogsize* and measured by number of water connections as shown in Table 1. This measure was also applied by LoStorto (2022) on "Performance Evaluation of Water Services in Italy: A Meta-Frontier Approach Accounting for Regional Heterogeneities". We also considered the influence of the gender of the managing director (*FemaleMD*) on the CSR spending. This variable was measured by a dummy variable whereby 1 was given if the managing director was female and 0 otherwise. Lastly, the variable geographical location (*location*) of the Authority was measured categorically where; 1 for regional WSSAs, 2 for district WSSAs, and 3 for township WSSAs, the measure was also applied by LoStorto (2022).

Table 1: WSSAs Cluster According to Size

Cluster	Description	Number of water connection
1	Large	>20,000
2	Medium	5,000 to 20,0000
3	Small	<5,000

Source: EWURA (2022)

The Instrumental variable: In the current study, the approved CSR budget was an endogenous variable, which means it collate with error term in the model and may cause endogenous problem in our analysis (Baltagi, 2021). Thus we introduced the use of instrumental variables, according to Ullah et al.(2021) identifying valid and purely exogenous instruments in the study is practically difficulty therefore the use of lagged value of the identified endogenous variable as an instrument is preferred in most cases. Therefore, the lag value of *CSRB* was the instrumental variable where the Sargan-Basmann test confirmed the instrument to be valid and not weak.

3.3 Empirical model

Fixed Effect with Instrument Variable (FE-IV) was applied to determine factors influences CSR spending. The use of FE-IV was influenced by the fact that the study uses panel data, where the Breusch-Pagan Lagrange multiplier (LM) test indicated the presence of panel effect. Also the significant results of Hausman test in Table 3 support the use of the Fixed Effect estimation technique. Therefore, the empirical model was specified as follows:

$$\ln(CSRSP) = \alpha + \beta_1 CSRB + \beta_2 RCE + \beta_3 Lev + \beta_4 Ogsize + \beta_5 Ogage + \beta_6 FemaleMD + \beta_7 location + \varepsilon$$

Where; *ln (CSRSP)* presents natural logarithm of the total amount spent on CSR activities; β_i represents coefficients for the independent variables, RCE represent revenue collection efficiency, lev means financial leverage, ogsize represent organization size, ogage represent organization age, represent female managing director, location represent Authority's geographical location and ε means error term.

4. Results and Discussions

This section presents results and discussion on the descriptive analysis and the empirical findings based on the information gathered about the variables in the study.

4.1 Descriptive analysis

From Table 2, CSR spending slightly increased during the period of five years from 2015 to 2019, and on average water Authorities spends TZS 10,360,764 on CSR activities. Also, it was indicates that the amount allocated for CSR activities during the period under this study slightly increased. On average CSR budget was TZS 11,459,000. This implies that, water Authorities

invest in CSR activities. Also, RCE appears to be nearly effective, RCE reflects the effective in revenue collection by water Authorities which on was 86.70 per cent. This percentage is lower than required acceptable boundaries of RCE of 90% - 95% pre-set performance measure by EWURA. The fact that most WSSAs were unable to collect adequate revenue from the sale of water and sanitation service may be the reason why most of the WSSAs have higher leverage ratio. From Table 2, the average leverage ratio was 1.20, indicating that most authorities have more debts than assets. This could have a negative impact on the amount spent on CSR activities. Authorities, in particular, may be tempted to reduce CSR spending in order to finance their debts.

From Table 2, the Authorities involved in this study had an average of 16 years since establishment, with the youngest established Authority having 3 years on 2015. Moreover the study was dominated by small sized water Authorities by 80.35 per cent which means that they have less than 5,000 number of water connections. Followed by medium sized WSSAs by 12.11 per cent which means they have number of water connection between 5,000 to 20,000, and the large sized WSSA means they have number of water connection greater than 20,000 and were the lowest with only 7.54 per cent. The size of the organization could have an impact to the amount spend on CSR as large sized organization are expected to have more financial ability to invest in CSR. Also Table 2 shows that only 18 per cent of the managing directors in WSSAs were female, which implies that majority of managing directors in the Authorities, were male. Lastly, the study involved WSSAs from different locations within Tanzania mainland. In particular 57.02 per cent of water Authorities was from district, 22.80 per cent from regions and 20.18 per cent from township. This indicates that majority of water Authorities were from districts.

Table 2: Descriptive Statistics

CSR spending						
Year	**2015**	**2016**	**2017**	**2018**	**2019**	**Overall**
Mean	8,915,690	10,966,190	10,725,930	11,175,180	10,020,830	10,360,760
Std.Dev.	4,326,333	4,685,041	5,097,998	5,491,938	5,801,260	5,163,315

Max.	42,700,000	44,000,000	46,600,000	49,500,000	45,800,000	49,500,000
Min	6,071,713	6,117,000	5,662,832	5,981,000	4,579,400	4,579,400
Obs.	570	570	570	570	570	570
CSR budget						
Mean	14,700,000	9,436,370	9,995,407	10,800,000	12,363,200	11,459,000
Std.Dev	9,407,068	2,725,254	2,783,796	2,952,780	1,296,545	5343814
Max	55,800,000	15,600,000	17,300,000	17,000,000	11,500,000	55,800,000
Min	5,705,000	4,579,400	5,825,800	5,848,100	4,739,000	4,579,400
Obs.	570	570	570	570	570	570

Variable	**Obs.**	**Mean**	**Std. Dev.**	**Min**	**Max**
RCE	570	0.867	0.234	0.050	1.49
Lev	570	1.20	1.02	0.10	2.01
Ogage	570	16	4.051	3	35

Ogsize	**Frequency**	**Per cent**	**Cum.**
1-Large	43	7.54	7.54
2-Medium	69	12.11	19.65
3-Small	458	80.35	100.00
FemaleMD			
0	467	81.93	81.93
1	103	18.07	100.00
Total	570	100.00	
Location			
1-Region WSSA	130	22.80	22.81
2-District WSSA	325	57.02	79.82

3- Township WSSA	115	20.18	100.00

Source: Researchers' construct (2022)

4.2 Estimated Results on Factors Influences CSR Spending

This section presents findings on the determinants of CSR spending by water Authorities in Tanzania. The results are presented in Table 3 using a stepwise regression to test the stability of the model by considering significant variables with different model specifications (Brooks, 2002).

Table 3: Fixed Effect Instrumental Variable Regression on CSR Spending

Variable	**[1]**	**[2]**	**[3]**
CSRB	0.827	0.827	0.827
	(0.000)***	(0.000)	(0.000)***
RCE	0.036	0.035	0.341
	(0.034)**	(0.039)	(0.045)**
Lev	-0.072	-0.006	-0.007
	(0.074)*	(0.078)	(0.063)*
Ogsize	-0.021	-0.025	-0.022
	(0.001)***	(0.000)	(0.000)***
Ogage	-0.020	-0.017	
	(0.340)	(0.420)	
FemaleMD	0.003		
	(0.640)		
Location	-0.002		
	(0.579)		
Constant	1.329	1.322	1.300
	(0.000)***	(0.000)***	(0.000)
Observation	569	569	569
Number of Authorities	114	114	114
Adj. R-Squire	0.616	0.617	0.618

Breusch-Pagan LM-test	39.98***	39.98***	39.98***
Pesaran's CD test (prob.)	0.221	0.221	0.221
F-statistic test	28.50***	28.50***	26.78***
Hausman test	307.53***	307.53***	307.53***
Durbin-Wu-Hausman test	9.157***	9.157***	9.157***
Sargan-Basmann(Prob.)	2.270	2.271	2.271

Source: Researchers' survey data (2022). Robust standard errors are reported in parentheses.

*p<0.10, **p<0.05 and ***p<0.01

From Table 3, it was revealed that four variables; *CSRB, RCE, Lev, and Ogsize* significantly influence the amount spent on CSR activities as follows; It was found that the approved CSR budget has positive and significant influence on the amount spent of CSR activities. The result implies that, Authorities spend more on CSR activities whenever there is an increase in the approved CSR budget size. This is because, spending on CSR activities require the use of organization financial resources (Julian & Ofori-Dankwa, 2013). Therefore, approved CSR budget guarantee the availability of financial resource to be spent on CSR activities. Further, this result is consistent with the slack resource theory which suggest that, firms invest on social activities because of the of the availability slack resources owned by the firm (Onuoha & Nkwor, 2021). According to Onuoha and Nkwor (2021) availability of financial resource to the firm may create slack resources in terms of cash or cash equivalent which can be easily spent into other than economic activities off the firm. The result is also directly in line with previous results of Baatwah et al. (2022).

Another finding was on revenue collection efficiency (*RCE*). From Table 2, RCE positively and significantly influences the amount spends on CSR activities. This result implies that water Authorities actual CSR spending increases as revenue collections efficiency increases. The finding also suggests that, increases in revenues collection efficiency indicate cash in flow to the organization (Mattingly & Olsen, 2018) that is availability of financial resources to the organization (Julian & Ofori-Dankwa, 2013).Thus, Authorities with higher financial resources have more financial ability to spend on CSR activities. This suggestion agrees with Sun and Gunia (2018) who suggested that firms with enough financial resources consider CSR as a discretionary expense they can afford. Also our finding is consistent with the slack resource

theory which suggest that organizations are able to engage in social activities because of the slack resources they own (Islam et al., 2021).

We also found that, leverage (*lev*) has negative and significantly influence on the amount spent on CSR activities with the coefficient of -0.007. This implies that 1 per cent increase in the Authority' debt financing results into a decrease of 0.7 per cent on the amount spent in CSR activities. Further, the results obtained implies that, water Authorities with higher amount of loans spend less on CSR activities as Authority will prefers to settle their interest obligations than spending on CSR activities. This result confirms to the finding of Olusola (2022), but negate the findings of Mokuolu and Oladele (2018) that leverage has a positive influence on CSR after assessing the determinants of CSR expenditure of quoted firms in Nigeria. The difference on the results may be influenced by different focus area where this study focused on not for profit public organization in the water sector. Also the use of different methodology especially on the use of instrumental variable after confirming that the variable *CSRB* was an endogeneity which allowed us to use Fixed Effect estimation technique with instrumental variable.

Lastly, From Table 3 organization size (*Ogsize)* indicates negative and significant relationship with the amount spent on CSR activities. The result means that as the size of water Authorities increases spend on CSR activities decreases. In addition, since the size of water Authority indicate the number of water connections it has (EWURA, 2022). The small sized Authority spend more on CSR activities to obtain recognition and legitimacy to operate within the community which will attract more customers to increase their cash flow. In fact, large sized Authorities are the ones with number of water connection greater than 20,000. The medium sized water Authorities has number of connection between 5,000 and 20,000, and small sized water Authorities has less than 5,000 number of water connection. It was observed that, the water sector was dominated by the small sized Authority at 80.35per cent. This finding confirms to the conclusion of Jahid et al. (2022), Mokuolu & Oladele (2018), Johan (2021). But different to Udayasankar (2008) the difference in results may be influenced by differences in measurement of organization size where Udayasankar (2008) measured organization size by the natural log of total assets.

4.3 Post Estimation Tests: Determinants of CSR Spending

We applied Breusch-Pagan Lagrange multiplier (LM) test to check the presence of panel effect. The rejection of null hypothesis indicated that Pooled Ordinary Least Squares (OLS) was not an appropriate model to estimate determinates of CSR spending. Thus the Hausman test was performed to enable selection between the Random Effect (RE) and Fixed Effect (FE) estimation. The significant Hausman test results in Table 3 support the use of the Fixed Effect estimation technique. Further, the Durbin and Wu–Hausman test through the use of the 2SLS approach indicated that the *CSRB* was an endogenous variable which necessitated the use of instrumental variables (Semykina & Wooldridge, 2010). Therefore, we applied lagged CSRB as an instrument variable which were confirmed by Sargan-Basmann test result in Table 3 to be valid and not weak.

The normality assumption was checked by skewness and kurtosis, to establish whether to use parametric or non-parametric test in the study (Creswell, 2012). The result in Table 4 indicates that data were normally distributed. Further, the Variance Inflation Factor (VIF) was performed to check the correlation between variables. The findings in Table 4 indicates that there was no multicollinearity problem because VIF was below 10 (Hair et al., 2015). We applied Pesaran test to determine whether the residual are not correlated. Rejecting of the null hypothesis means there was a serial correlation which would result in inefficient estimates and biased standard errors (Wursten, 2018). We corrected for serial correlation by using the first difference method in the analysis (Wu et al., 2017) where the results in Table 3 indicated that the residual were not as correlated.

In the current study, we did not test for stationarity which means time series data whose mean and variance do not change over time (Baltagi, 2021). According to Sarafidis and Wansbeek (2012) stationarity is an issue to consider in long panels that is when number of unit observed are less than time observed (T>N), in our case, we had 114 unit to observe for the period of five years. For this reason stationarity was not tested.

Table 4: Correlation and Normality test

Variable	Observation	VIF	Kurtosis	Skewness
CSRB	570	1.49	0.0000	0.0006
RCE	570	1.02	0.0000	0.0000

Lev	570	1.02	0.0000	0.0000
Ogsize	570	2.39	0.0049	0.0000
Ogage	570	1.39	0.0000	0.0000
FemaleMD	570	1.02	0.0000	0.0000
Location	570	2.01	0.0000	0.0000

Source: Researchers' construct (2022)

5. Conclusions and Recommendations

The current study focused on the determinants of CSR spending by not for profit public sector organizations, specifically water supply and sanitation authorities in Tanzania. The findings reveal that; the approved CSR budget size, revenue collection efficiency, leverage and organization size are significant determinants in explaining CSR spending. Our study did not find any significant relationship on the following variable; organization age, gender of the managing director and Authorities geographical location.

Therefore, the current study recommends that, water Authorities should strengthen their revenue collection efficiency to have enough cash inflows to finance their activities including CSR activities as from the study the RCE was lower than the set target of 90% - 95%. Also, large sized Authorities should increase spending on CSR activities, and Authorities should and Authorities should reduce their debt obligations in order to spend more on CSR activities. Further, the estimated panel data indicate that the model for determine CSR spending was statistically significant. That is the independent variables in the model were relevant to explain the changes in the dependent variable.

Like other studies, the current study has some limitations. First, this study only focused on public water supply and sanitation authorities in Tanzania and employed quantitative research design. Future studies may conduct a comparative study on CSR spending between public sectors in Tanzania, also may focus on cross sectional data and can employ both mixed research design.

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