



Research article

Towards a successful implementation of environmental sanitation policy in Ghana: An assessment of key impeding factors

Emmanuel Tchouchu^{a,*}, Albert Ahenkan^b^a Department of Management, School of Business, University of Cape Coast, Cape Coast, Ghana^b Department of Public Administration and Policy Management, University of Ghana Business School, University of Ghana, Legon, Ghana

ARTICLE INFO

Keywords:

Environmental sanitation
Policy
Implementation
Citizens
Government

ABSTRACT

Environmental sanitation policy implementation is a vital factor that ensures that citizens are kept healthy and productive. The study sought to assess key factors impeding the implementation of environmental sanitation policy in Ghana. Using an explanatory design, a sample of 384 respondents was selected from the population of Accra through a simple random sampling technique. The questionnaire was the main instrument used to collect the data. The Partial Least Square-Structural Equation Modeling (PLS-SEM) technique was used to analyse the hypothesised path models. Based on the results, government approach, community representation, and lack of citizens' commitment were found to be statistically significant. The study also revealed that the government approach partially mediated the relationship between community representation and environmental sanitation policy implementation, and lack of citizens' commitment and environmental sanitation policy implementation. The study has contributed to knowledge in the research endeavour by demonstrating that the implementation of public policy can easily be realised when the government uses the right approach in involving its citizens in policy decision-making and enhance their commitment to policy implementation.

1. Introduction

Globally, governments do so many things in their quest to foster quality life among the citizens. One of the means through which they do that is policy implementation. Governments implement public policy to solve daily societal problems [1]. It is evident that not all things the government does on daily basis have been appropriately planned for and are reflected in its annual budget statement. Examples of such are regulatory activities, such as environmental sanitation regulations, which impose significant costs on individuals, businesses, and governments everywhere [2]. Thus public policy, which designates the behaviour of some policy actors [3], is formulated to ensure that the day-to-day businesses of governments are properly taken care of. Consequently, [4]; and [5] noted that public policy, which could be referred to as whatever governments may choose to do or not to do, is basically concerned with what governments do on a daily basis, why they do it, and what difference it makes. Notwithstanding, policies that have been influenced by the globalised political system such as the Sustainable Development Goals (SDGs) have compelled most countries to enact policies geared towards ensuring development at all societal levels. Environmental sanitation policy implementation (ESPI) is typical of such policies which, when managed properly, affects positively the life of citizens (MLGRD, 2014).

The exponential increase in the human population, which has led to both domestic and industrial waste disposal challenges, has

* Corresponding author.

E-mail addresses: temmanuel@ucc.edu.gh (E. Tchouchu), aahenkan@ug.edu.gh (A. Ahenkan).

made the issue of environmental sanitation taking the centre stage in most academic and political debates in recent times. Generally speaking, ESPI is a key determinant in ensuring that a nation, as well as its citizenry, is kept healthy and productive [6]. opined that effective policy implementation takes place when all members of a society, especially the citizens, are involved in and have influence on decisions related to development activities that will affect them. However [7], contended that most public policies fail simply because central governments usually initiates policy formulation and implementation based on the promises made to the citizens by the ruling political party as stated in its political manifesto. Hence, government and its agencies often plan for implementation of policy without necessarily involving non-institutional actors such as citizens living in the vicinity within which the policy will be implemented. Due to the fact that the government most often engages the elites in the community in policy implementation planning, [8]; and [9] concluded that the management of environmental sanitation policy (ESP) in developing countries is still the concern of a few elites.

In Ghana, successive governments since 1992 have so far enacted and implemented several policies guiding the management of sanitation [10]. Examples of such are the policy interventions of 'at least one-toilet facility per compound' by the Accra Metropolitan Assembly (AMA) in 2009, the 'National Accelerated Toilet Access Programme' in the rural Northern Region, the monthly nationwide clean-up exercises (2012–2016), and recently 'operation clear your frontage', which did not yield the expected result. In analysing why ESP interventions did not succeed as expected [11], identified a formal communication gap between the central government and the citizens in terms of when and how sanitation activities are to be carried out. Consequently, [12–15]; and [16] argued that, to fill the communication gap, citizens should not only be involved in mobilising the necessary resources for the implementation of sanitation programmes, but they should initiate the policy implementation themselves. However, the aforementioned studies did not examine the key factors that may have impeded successful ESPI in Ghana. Therefore this study examines some key factors impeding the effective implementation of environmental sanitation policy in Ghana.

2. Literature review

2.1. Concept of environmental sanitation policy implementation

Unlike policy formulation which stipulates what should be done, policy implementation looks at how policy is realised and is crucial in turning the fortunes of a nation. [17]; and [18] argued that policy implementation enables the government to formally resolve societal problems, thereby improving the lives of the citizens. In Ghana, the 1992 Constitution establishes a kind of top-down and bottom-up approach to policy decision making [19]. So far the government has developed some policy frameworks to guide the implementation of ESP with the hope to ensure the sustainability and maintenance of a clean, safe and pleasant environment in all cities, towns, and villages (MLGRD, 2014). However, [20] contended that due to the international pressure to achieve SDGs, most developing countries have enacted policies with unrealistic goals, which makes their implementation a myth. Notwithstanding [21] outlined three basic reasons leading to policy implementation failure– implementation structure in place, implementation traps, and scope of knowledge about the policy.

2.2. Community representation

The means through which government usually communicates with the citizens in matters of policy implementation cannot be overlooked. In applying the top-down approach (MLGRD, 2012) in policy decision making and ensuring that the policy is implemented efficiently [22,23], suggested that a tiny minority who represents the community should be engaged. These could be opinion leaders, chiefs, or house owners [11]. agreed with the idea as they argued that representation is essential in ensuring that all the various strata in the community take part in policy implementation. However, coming from the participatory model of policymaking perspective [24], noted that involving only representatives in policy decision making inhibits dialogue between government and residents.

[25] shared [24] view as they argued that community representation does not make the outcomes of policy implementation reflect residents' opinion in sanitation policy decision making. Consequently [9,26], noted that engaging just a minority of community leaders to enforce the policy is a potential cause of lack of citizens' participation in policy implementation. The leaders in one way or the other will end up coercing residents to participate in a policy whose planning process they were not part of. This solidifies the claim by the [27] that it is everybody's fundamental right to participate in decisions that affect citizens' lives. We assert and therefore hypothesise that:

H1. Engaging only a community representation impedes successful ESPI.

2.3. Lack of citizens' commitment to clean environment

In establishing the nexus between the residents' behaviour and the sustainability of policy implementation [28], observed that citizens' involvement is imperative in ensuring successful policy implementation. The way people behave towards sanitation laws and activities shows the extent to which they are committed to sanitation policy. Thus in his study on the residents' behaviour in keeping the environment clean [29], argued that one of the most obvious causes of ineffective sanitation is the lack of residents' commitment to ESP implementation. This has translated into low participation of citizens in clean-up exercises and other related activities that aim at ensuring a clean and safe environment for all [12]. have therefore suggested that the government educates the public (citizens) on sanitation issues with the hope to shape their mind-set and induce behaviour change. The abovementioned positions lead to the

following hypothesis:

H2. Lack of citizens' commitment to keeping their environment clean hinders successful ESPI.

2.4. Poor residents' attitude

In a search to identify factors that militate against effective ESPI [12], discovered that community residents often exhibit a kind of lackadaisical behaviour towards sanitation issues, expecting the government alone to fight against insanitation. This is expressed in a poor attitude to waste management by the residents as they dispose waste indiscriminately in/around houses and streets [29]. However argued that it is rather residents' lack of access to environmental sanitation facilities and services that usually impede the effective implementation of the policy. For such a reason [30,31], suggested that to induce citizens to exhibit the right attitude towards ESPI, the government should provide dustbins for each household, allocate a proper refuse dumpsite for the community, and provide tools for clean-up exercises. This will compel residents to keep their environment clean [15], thereby contributing meaningfully to a successful and sustainable ESP. We, therefore, posit the hypothesis below:

H3. Poor residents' attitude in sanitation matters is associated with the failure to implement the environmental sanitation policy.

2.5. Government's approach in policy implementation

Being one of the primary policy actors, the approach that the government uses to ensure the realisation of ESP cannot be overlooked. In Ghana, the PNDC Law 207 of 1988 and LGD Act 2016 (Act 936) (Parliament of Ghana, 2016) advocates a bottom-up approach to policy decision making. However, scholars such as [32,33]; and [34] subscribed to the top-down approach in ensuring effective policy implementation. This is because, in reality, policy initiation often emanates from the ruling political party's manifesto. Typical examples are the "Better Ghana Agenda" by the ruling National Democratic Congress (NDC) from 2009 to 2012 and "Making Accra the cleanest city in Africa" by the ruling New Patriotic Party (NPP) from 2017 to 2020. [9,16]; and [35] observed that the top-down approach enables the government to assign policy responsibility to an agency sympathetic with policy's goals. The agency then prescribes actors to be involved in policy implementation.

However, scholars such as [2,36] critiqued the top-down approach by stating that since it is highly prescriptive, it gives the government the impetus to manipulate the assigned institution in achieving desired goals. In this approach [36], noted that the centrally located actors (government and ministries) in formulating policy statement goals, minimise and ignore quite some policy actors. Thus [2] contended that the top-down approach does not foster all policy actors' involvement in policy implementation. Hence [3] suggested that the policy implementation stage should use the bottom-up approach in a bid to interact with all the street-level bureaucrats. Although the current constitution of the Republic of Ghana (chapters 24 & 240 (2e, 2 d)) makes provision for civic engagement in decision-making [37], pointed out that, due to the use of top-approach in policy implementation, there are discrepancies with the policy structure which has made the mechanism in place not been working as it was intended to. Thus [38], describe the existing structure of policy implementation in Ghana as lopsided and ambiguous. Based on these arguments, we propose the following hypothesis:

H4. Government approach impedes the implementation of ESP.

2.6. The mediating role of government approach

In general, policy implementation involves a series of decisions and activities that ensure that policy is put into action [39,40]. In Ghana, the success of the implementation of ESP depends on the collaborative efforts of all policy actors. Key among these actors are the government and citizens living within the communities [41]. The relationships between these actors are imperative in attaining the sanitation goals set by the ESP. While the citizens are the primary implementers of the policy, the government approach plays a crucial role in motivating the residents. Thus the political will greatly influence the social context in policy implementation [42]. Hence, the presence of authoritative, centrally located personalities, whose directives are carried out down to the local communities is fundamental [43] in ensuring policy implementation.

Looking at the roles played by the various policy actors in public policy decision making [44,45], referred to policy implementation as a network of governance, where various actors (government, residents, and others), organisations, procedures, and techniques, come together to put policy into effect to achieve the policy goals. It is a fact that the process of translating policy into outcomes, practice, or specific programs has long been acknowledged by policy makers, practitioners, and researchers as being tainted with bottlenecks, which can lead to policy failures [46]. Hence to ensure policy implementation success, the various agencies must comply with the directives of the statutes, and be held accountable for reaching policy goals or otherwise [40]. We, therefore, hypothesise that:

H5a. Government approach mediates the relationship between community representation and ESPI.

H5b. Government approach mediates the relationship between lack of citizens' commitment and ESPI.

H5c. Government approach mediates the relationship between poor attitude of residents and ESPI.

2.7. Conceptual framework

After a careful study of the literature review, the following conceptual model is formulated to illustrate the effect of impeding factors on ESP implementation. COR = Community Representation; LCC = Lack of Citizens' Commitment; PRA = Poor Residents' Attitude; GVA = Government's Approach; ESPI = Environmental Sanitation Policy Implementation.

The framework in Fig. 1 depicts the impeding factors- GVA, COR, PRA, and LCC- on ESPI. The mediating factor was GVA. The effect of these variables will be measured to determine whether or not they have been impeding the ESPI.

3. Methodology

This study used an explanatory research design since there was the need to unearth and report on the relationships that exist among various facets of the phenomenon under study [47,48]. The population was residents of Accra, the capital city of Ghana. The quantitative approach was employed in estimating the relationships among the constructs. Exactly, the structural equation modeling (SEM) in Smart PLS 3.3.2 was utilized to answer all the research hypotheses in the study by the calculation of a p-value for each path coefficient. This study used a simple random sampling technique to choose 384 people from the sampling frame of residents of Accra metropolis [49]. This sampling technique guarantees arbitrariness of the determination and ensures the representation of the population. Hence, the strategy met the prerequisite for parametric statistical analysis. The chosen respondents were given self-administered questionnaires to respond at the time of the researchers' visits. The researchers obtained an aggregate of 372 useable and completed questionnaires, representing 96.87% of the response rate.

4. Background of the Accra Metropolitan area

Source [50]:

Accra, the capital of Ghana, is located in the region, which is the wealthiest region in the country. Owing to in-migration and a high population growth rate, however, the region has the highest population density. Since its establishment in 1898, the Accra Metropolitan Area has been the Regional capital for the Greater Accra Region. In addition, it serves as the national capital of Ghana. The City of Accra is bounded to the North by Ga West Municipal, the West by Ga South Municipal, the South by the Gulf of Guinea, and the East by La Dadekotopon Municipal. It covers a total land area of 139.674 Km² and a population of 4.3 million inhabitants. Most houses in the Metropolis are owned by other private individuals, with some evidence of overcrowding in the compound houses and sleeping rooms as most people have only one sleeping room. This situation causes of lot more of environmental sanitation policy issues.

4.1. Measurement of construct

Environmental sanitation policy implementation, government approach, community representation, lack of residents' commitment, and poor residents' attitude were determined by utilizing items adapted from Ref. [31]; and [51] comprising 34 items, which was scaled down to 4, 6, 4 and 5 items respectively. Residents' attitude construct was measured by utilizing items adapted from Ref. [52]; and [31] comprising 12 items, which was scaled down to 4 items.

4.2. Pretest and pilot testing of the instruments

The instruments were adapted to fit this research, and the researchers sent the adapted instruments to experts for face validity,

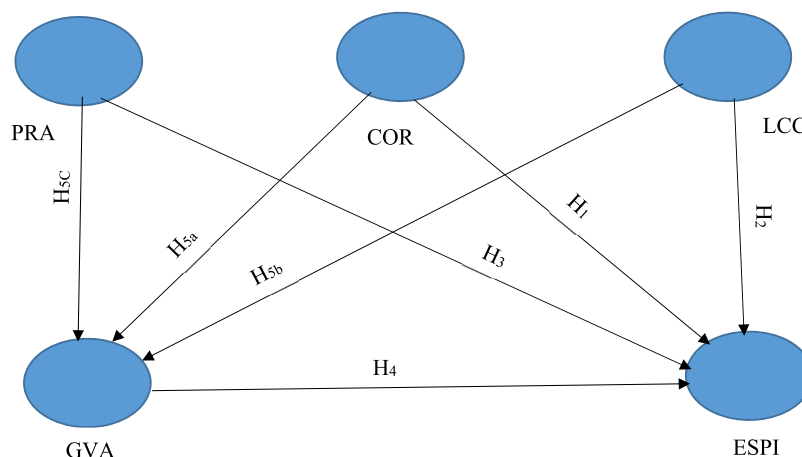


Fig. 1. Conceptual framework.

content validity, and standard validity assessment. The researchers have changed the instrument appropriately, rely upon the comments made by experts. After that, the researchers directed the pilot study where exactly 30 questionnaires were self-administered to the randomly chosen citizens. From that point onward, the analysts led the exploratory factor analysis technique to investigate the usefulness of the items estimating their respective constructs [53,54].

4.3. Data analysis and results

4.3.1. Measurement model assessment

The associations between constructs and the indicator variables are displayed by the measurement model [55]. Assessment of the measurement model led to the removal of indicators which had low (<0.50) factor loadings [56]. The validated indicators were maintained. The first element of the measurement model is VIF. According to Ref. [57]; multicollinearity occurs when two or more independent variables are highly correlated with each other in a structural model and if the VIF value exceeds 5, there is a problem with multicollinearity. The table indicates that the VIF values of the constructs ranged from 1.456 to 2.038, which were lower than the cut-off value of 5. Overall, the present study has no multicollinearity issue. Then the reliability analysis, which comprises composite reliability (CR), and the third is convergent validity. In line with [58]; a required cut-off value for composite reliability of 0.70 was adopted. As a result, all the latent constructs of the model passed the composite reliability test. The measurement of convergent validity is the "Average Variance Extracted" (AVE), which, according to Ref. [58]; has a cut-off standard value of 0.5. Based on this, the constructs could be deemed to have convergent validity. Together with the factor loadings, Table 1 presents results on the reliability and validity of the constructs for the model.

For discriminant validity, the measurement model was assessed based on the cross-loadings of items for the various constructs. Items loaded better on their respective constructs relative to their loadings on other constructs as seen in Table 2.

The Fornell-Larcker criterion [59] was employed for further assessment of discriminant validity. The square root of the AVE (in bold fonts) for all constructs proved greater than their correlations with other individual constructs. Thus, the model attained discriminant validity. Results of the Fornell-Larcker criterion matrix are in Table 3.

4.3.2. Structural model

The relationships also referred to as paths, are displayed by the structural model, between the constructs embodied by the model for a study. The measure of a model's explanatory power (R^2) was used to evaluate the variance explained by the endogenous variables in the model (Shumeli et al., 2016). The R^2 values in the structural model (Fig. 2) show that the environmental sanitation policy implementation (ESPI) has a R^2 value of 0.888, indicating that the entire model accounts for 88.8% of the variance in ESPI. With this result, it can be concluded that 11.2% of the variations in ESPI is accounted for by extraneous variables. Fig. 2 also shows that the government approach has a R^2 of 0.756, implying that COR, PRA, and LCC account for 75.6% of the variance in GVA. Thus 24.4% of the variations in GVA is accounted for by extraneous variables.

In addition to the explanatory power, Q^2 was used to assess the predictive accuracy of the structural model for the constructs. According to Ref. [60]; Q^2 values should be larger than zero for a specific endogenous construct to indicate the predictive accuracy of the structural model for the construct. Specifically, Q^2 values higher than 0, 0.25, and 0.5 show small, medium, and high predictive relevance respectively. The results show Q^2 values of 0.753 for ESPI and 0.579 for GVA. This means that the model met the general requirement that Q^2 should be greater than 0. Consequently, all predictors in the model had a higher predictive relevance on the endogenous variables.

The study examined seven direct paths representing the various formulated hypotheses (Fig. 1). H_1 examines the significance of the relationship between COR and ESPI. H_2 measures the significance of the relationship between LCC and ESPI. H_3 examines the significance of the relationship between PRA and ESPI. H_4 considers the significance of the relationship between GVA and ESPI. H_{5a}

Table 1
VIF and outer loadings.

	VIF	Loadings	CA	CR	AVE	rho_A
COR			0.786	0.902	0.822	0.821
COR1	1.722	0.882				
COR3	1.722	0.930				
ESPI			0.833	0.923	0.857	0.835
ESPI3	2.038	0.930				
ESPI4	2.038	0.921				
GVA			0.725	0.878	0.783	0.750
GVA1	1.479	0.857				
GVA2	1.479	0.911				
LCC			0.769	0.894	0.809	0.818
LCC2	1.638	0.868				
LCC3	1.638	0.930				
PRA			0.718	0.876	0.780	0.719
PRA2	1.456	0.889				
PRA4	1.456	0.877				

Notes: VIF is "variance inflation factor", CA – Cronbach's Alpha, CR – Composite Reliability, AVE – average variance extracted.

Table 2
Cross loadings.

Items	COR	ESP	GVA	LCC	PRA
COR1	0.882	0.681	0.625	0.648	0.819
COR3	0.930	0.901	0.772	0.769	0.702
ESPI3	0.781	0.930	0.857	0.860	0.759
ESPI4	0.860	0.921	0.746	0.764	0.686
GVA1	0.602	0.684	0.857	0.668	0.560
GVA2	0.761	0.838	0.911	0.826	0.722
LCC2	0.567	0.648	0.651	0.868	0.564
LCC3	0.818	0.902	0.857	0.930	0.817
PRA2	0.851	0.710	0.657	0.704	0.889
PRA4	0.607	0.670	0.637	0.682	0.877

Table 3
Fornell-larcker criterion.

	COR	ESP	GVA	LCC	PRA
COR	0.906				
ESPI	0.885	0.926			
GVA	0.778	0.867	0.885		
LCC	0.788	0.879	0.852	0.899	
PRA	0.829	0.782	0.733	0.785	0.883

Note: bold values at the off diagonal represent the square root of AVE.

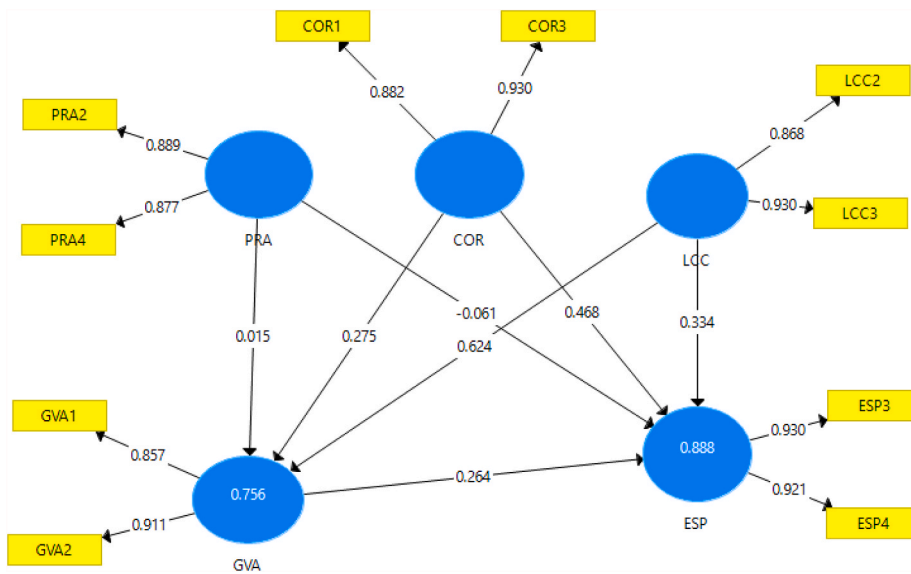


Fig. 2. Structural paths.

assesses the significance of the relationship between COR and GVA. H_{5b} evaluates the significance of the relationship between LCC and GVA. H_{5c} examines the significance of the relationship between PRA and GVA. The results of the structural model in Table 4 suggest that the relationships between poor residents’ attitude and environmental sanitation policy implementation ($\beta = -0.065$; $p < 0.087$), and poor residents’ attitude and government approach ($\beta = 0.015$; $p > 0.775$) are not significant, H₃ and H_{5c} are therefore rejected. Contrariwise the results support a significant relationship between community representation and environmental sanitation policy implementation ($\beta = 0.475$; $p < 0.000$), as a result H₁ is supported. The results also support a significant relationship between lack of citizens’ commitment and environmental sanitation policy implementation ($\beta = 0.333$; $p < 0.000$), as a result H₂ is supported. Additionally, the results establish a significant relationship between government approach and environmental sanitation policy implementation ($\beta = 0.260$; $p < 0.000$), as a result, H₄ is supported. Again the results confirm a significant relationship between community representation and government approach ($\beta = 0.274$; $p < 0.000$), thus H_{5a} is supported. The results further show a significant relationship between lack of citizens’ commitment and government approach ($\beta = 0.624$; $p < 0.000$), thus H_{5b} is supported. The results, therefore, show that all hypothesised direct relationships were statistically significant, except for poor residents’ attitude

Table 4
Path coefficients for Structural Paths (Regression).

	Coefficients	Std. Dev.	T Statistics	P Values	Confidence Interval	
					2.50%	97.50%
COR - > ESPI	0.475	0.040	11.981	0.000	0.472	0.626
COR - > GVA	0.274	0.053	5.167	0.000	0.173	0.385
GVA - > ESPI	0.260	0.044	5.904	0.000	0.176	0.35
LCC - > ESPI	0.333	0.040	8.273	0.000	0.426	0.561
LCC - > GVA	0.624	0.046	13.675	0.000	0.531	0.709
PRA - > ESPI	-0.065	0.038	1.713	0.087	-0.144	0.018
PRA - > GVA	0.015	0.053	0.286	0.775	-0.092	0.116
	R ²	Adjusted R ²	Q ²			
ESPI	0.888	0.887	0.753			
GVA	0.756	0.754	0.579			

and environmental sanitation policy implementation, and poor residents' attitude and government approach.

Fig. 2 shows the structural paths and Tables 4 and 5 summarize the results of the structural model.

4.3.3. Mediation analysis

According to Ref. [61]; a mediation effect of one construct on the other is better established by the use of a significant indirect effect. Hence the procedure proposed by Nitzl et al. (2016) has been adopted to test the mediation effect in PLS-SEM in this study [60]. argued that there are two different types of mediation - full and partial mediation. Full mediation takes place when a direct effect is not significant while an indirect effect is significant. Partial mediation takes place when both the direct and indirect effects are statically significant [62]. However, there are two types of partial mediation – complementary and competitive. According to Ref. [63]; a partial mediation can be complementary when both the direct and indirect effects point in the same direction (+ or -). Competitive mediation occurs when both the direct and indirect effects point to opposite directions [64]. Hypothesis H_{5a} predicted that government approach would mediate the relationship between community representation and environmental sanitation policy implementation. The results from Table 5 suggest that the indirect effect (COR- > GVA- > ESPI) is significant ($\beta = 0.071$; $p > 0.000$), thus H_{5a} is supported. Consequently, there is a mediation effect between community representation and environmental sanitation policy implementation. In addition, H_{5b} predicted that the government approach would mediate the relationship between the lack of citizens' commitment and environmental sanitation policy implementation. The results show that the indirect effect (LCC- > GVA- > ESPI) is statistically significant ($\beta = 0.162$; $p < 0.000$), implying that H_{5b} is supported. Finally, H_{5c} predicted that the government approach would mediate the relationship between poor residents' attitude and environmental sanitation policy implementation. According to the results, the indirect effect (PRA- > GVA- > ESPI) is not statistically significant ($\beta = 0.004$; $p < 0.0781$), which indicates that H_{5c} is not supported. Looking at the results of Table 5, it can be said that the nature of the mediation effect of government approach on the relationship between community representation and environmental sanitation policy implementation on one hand, and the relationship between lack of citizens' commitment and environmental sanitation policy implementation, on the other hand, is a partial complementary mediation [65]. This is because the direct effect for both relationships is significant. The results of the mediation analysis are presented in Table 5.

The summary of the direct and indirect relationships, which represent the hypotheses tested are presented in Table 6.

5. Discussion of results

Previous studies have shown that policy actors have a significant influence on public policy implementation [1,13,15,39,45]. While studies seem to abound in this area of study, a literature gap still exists. Hence this paper assessed key factors impeding the successful implementation of ESP in Ghana. A structured questionnaire was administered to 372 participants. Results revealed that key among the factors impeding the implementation of the environmental sanitation policy in Ghana were the government approach, community representation, and lack of residents' commitment. A further look at the mediation of the government approach on the relationship between lack of citizens' commitment and environmental sanitation policy implementation on one hand, and the relationship between community representation and environmental sanitation policy implementation on the other hand, was considered. The discussion of results is based on five sub-headings.

Table 5
Mediation analysis.

	Direct Effect	T. Stats	P Values	Indirect Effect	T. Stats	P Values
LCC-ESPI	0.162	5.542	0.000	LCC - GVA – ESPI	0.162	5.542
COR-ESPI	0.071	3.927	0.000	COR - GVA – ESPI	0.071	3.927
PRA-ESPI	0.004	0.278	0.781	PRA - GVA – ESPI	0.004	0.278

Table 6
Summary of results.

Direct relationships		Conclusion
COR - > ESPI		Supported
LCC - > ESPI		Supported
PRA - > ESPI		Not supported
GVA - > ESPI		Supported
COR - > GVA		Supported
LCC - > GVA		Supported
PRA - > GVA		Not supported
Mediation	Conclusion	Type of mediation
COR- > GVA- > ESPI	Supported	Partial mediation
LCC- > GVA- > ESPI	Supported	Partial mediation
PRA- > GVA- > ESPI	Not supported	No mediation

5.1. Lack of citizens' commitment, government approach, and ESP implementation

The results in Table 4 show that lack of citizens' commitment has a significant positive relationship with environmental sanitation policy implementation ($\beta = 0.333$; $p = 0.000$). The positive coefficient ($\beta = 0.333$) implies that LCC contributes about 33.3% to unsuccessful ESPI in Ghana. Additionally, it has confirmed that LCC does not enhance GVA ($\beta = 0.624$; $p = 0.000$). This implies that lack of citizens' commitment contributes about 62.4% to the failure of the government approach to ESPI. For such a reason [28] argued that citizens' involvement is imperative in ensuring successful policy implementation. This implies that when the citizens are committed to supporting the efforts of the government in ensuring a clean and healthy environment [41], the implementation of the ESP becomes successful. The predicting result is in line with the argument of [29]; and [12] that the lack of residents' commitment to the implementation of ESP is one of the most obvious causes of insanitation in the country.

5.2. Government approach and ESP implementation

This study also examined the relationship between the government approach and environmental sanitation policy implementation. The results in Table 4 show that there is a statistically significant positive relationship between government approach and ESPI ($\beta = 0.260$; $p = 0.000$). The p-value of 0.000 indicates that the relationship between the government approach and ESP implementation is significant. The positive coefficient ($\beta = 0.260$) implies that the top-down approach used by the government in implementing ESP [32–34] contributes about 26.0% to the ineffective implementation of ESP in Ghana. This concurs with the claim by Refs. [2,36] that the top-down approach gives government and ministries the impetus to manipulate the assigned institution [9,35], minimise and ignore important policy actors in formulating policy statement goals. By so doing, the implementation of enacted policy becomes very difficult. For such a reason, [3]; and [2] opined that the bottom-up approach could be a panacea to make ESPI in Ghana successful. By so doing, all key stakeholders of ESP will be involved, and the success of the implementation of the policy will be guaranteed and sustainable.

5.3. Poor residents' attitude, government approach, and ESP implementation

The study also assessed the relationship between poor residents' attitude and ESPI. The results in Table 4 ($\beta = -0.065$; $p = 0.087$) show that there is no statistically significant relationship between poor residents' attitude and ESPI. The negative coefficient ($\beta = -0.065$) implies that poor residents' attitude towards sanitation issues contributes negatively by only 6.5% to the unsuccessful ESPI in Ghana. This result is contrary to those of [12]; and [29] which suggested that residents often exhibit a kind of lackadaisical behaviour towards sanitation issues, expecting the government alone to fight against insanitation. This claim has been confirmed by the results in Table 4 ($\beta = 0.015$; $p = 0.775$) which further revealed that poor residents' attitude contributes about only 1.5% to the inability of the government approach to help implement ESP successfully. Therefore, it is not very necessary to induce citizens to exhibit some kind of attitude towards ESP issues, the government should rather provide dustbins for each household, allocate a proper refuse dump site, and re-introduce a monthly compulsory nationwide clean-up exercise [30,31] to reinforce successful ESPI.

5.4. Community representation, government approach, and ESP implementation

This study further examined the relationship between community representation and ESP implementation. As in Table 4, the results show that there is statistically significant relationship between community representation and ESP implementation ($\beta = 0.475$; $p = 0.000$). The p-value of 0.000 shows that the relationship between community representation and ESPI is significant. The coefficient ($\beta = 0.475$) indicates that community representation impedes successful ESPI. This is evident as the results in Table 4 ($\beta = 0.274$; $p = 0.000$) further revealed that community representation does not enhance the government approach to ESPI. This disconfirms the finding that a tiny minority, representing the community, such as the opinion leaders, chiefs, or house owners, when rightly engaged can foster successful ESPI [11,22,23]. By contrast, as argued by Refs. [24–26,27]; and [9]; engaging just a minority of community

leaders does not only infringe on individual's right to participation but it does not reflect residents' views or opinion on matters of ESP implementation.

5.4.1. Government approach, community representation, lack of citizens' commitment, poor residents' attitude, and ESP implementation

The study further examined the mediation effect of GVA on the relationship between ESPI and COR, LCC, and PRA. It was found that the government approach partially mediates the relationship between lack of residents' commitment and ESPI ($\beta = 0.162$; $p = 0.000$) on one hand and the relationship between community representation and ESPI ($\beta = 0.071$; $p = 0.000$) on the other hand. This implies that the government approach influences both the representation and commitment of citizens towards ESPI. This concurs with the claim that government and citizens are key partners in ESPI [41,42,44,45]. However, government approach does not mediate the relationship between poor residents' attitude and ESPI ($\beta = 0.004$; $p = 0.781$). This implies that the attitude of citizens does not necessary influence ESPI. It is the approach used by the government that can induce the right attitude in the citizens to support ESP and contribute to its successful implementation.

5.5. Implications for practice

ESPI is essential to ensuring that citizens are healthy and productive. This implies that factors that enhance insanitation in and around the cities in the country must be eradicated. Our study emphasises that, to ensure successful ESPI in the emerging economy, impeding elements such as government top-down approach to policy decision making, community representation in policy process, and lack of commitment from residents must be dealt with in order to improve public policy decision making. Specifically, this study reveals government approach, community representation, and lack of residents' commitment as key impeding factors to successful ESPI. Therefore, to promote ESPI, government should adopt a holistic approach that seeks to involve all citizens and guarantee their commitment to making ESPI a reality. Finally, the government, the elites, traditional leaders, and other residents in the communities should work together to engender success of environmental sanitation policy implementation.

6. Conclusion and suggestions for future research

ESPI in Ghana has been hampered by quite some factors. These include the government approach in policy decision making, community representation, and lack of citizens' commitment to sanitation activities and programmes. The findings of the study revealed that the government approach mediates the relationship between lack of residents' commitment and ESPI as well as the relationship between community representation and ESPI. This implies that the means through which government tackles the issue of insanitation on one hand, and the lack of seriousness of the citizens to clean environment on the other hand are among the main causes of ESPI failure in Ghana. To ensure success in implementing ESP, the government should change its approach to policy decision making, and strengthen its institutions so that they can implement laws against insanitation to the latter. Yet residents should not see the issue of environmental sanitation as a government-driven policy but they should put up the right attitude by ensuring that their vicinities are clean and safe for all. Therefore the study has contributed to knowledge in the research endeavour by demonstrating that the implementation of public policy can easily be realised when the government uses the right approach in involving its citizens in policy decision-making and enhance their commitment to policy implementation.

Despite the contributions of our present study, it is not without limitations. We drew self-reported data from citizens with the use of questionnaires, posing the possibility for some source bias [66]. However, our analysis revealed that same source bias was not an issue in this study. The study was limited to assessing the factors predicting the failure of ESPI. That notwithstanding, future research should consider introducing time lags between the dependent and independent variables or use government ratings for environmental sanitation policy [66]. Additionally, the study was limited to one city. Further investigations on the same subject-matter can be conducted in other cities, and even in various types of local government institutions in Ghana and elsewhere. Additional studies can also be conducted on impeding factors of ESPI between two different countries to compare the effect of the variables on each country.

Author contribution statement

Dr. Emmanuel Tchouchu: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

Prof. Albert Ahenkan: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. Data will be made available on request.

Declaration of interest's statement

The authors declare no competing interests.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2023.e13670>.

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