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Gender and Natural Resources Management in Nigeria: The Role of Corporate Social Responsibility in the Oil Host Communities

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Abstract

This paper critically examines the multinational oil companies' (MOCs) corporate social responsibility (CSR) initiatives in Nigeria. Its special focus is to investigate the impact of the global memorandum of understanding (GMOU) on addressing inequalities and empowering women for sustainable ecosystem management in the Niger Delta region of Nigeria. The paper adopts a survey research technique, aimed at gathering information from a representative sample of the population, as it is essentially cross-sectional, describing and interpreting the current situation. A total of 768 women respondents were sampled across the rural areas of the Niger Delta region. Results from the use of logistic regression model indicate that despite women's unique and important responsibilities in the use and management of natural resources, women are typically less involved in the formal governance processes, resulting in their interests, goals, knowledge and capabilities being both under-represented and under-utilized. It also shows that the MOCs' CSR using GMOU model has recorded significant success in addressing gender inequalities and enhancing the capacity of the rural women in natural resources and ecosystem management. The finding suggests that if the MOCs' CSR targeted at addressing gender issue is increased by one unit, the odd ratio is almost 13 times as high. This implies that addressing gender –related barriers and challenges and championing equitable natural resource governance leads to better livelihoods outcomes. It concludes that business has an obligation to help in solving problems of public concern.

Keywords: Gender, natural resource management, corporate social responsibility, multinational oil companies, sub-Saharan Africa

1. Introduction

Natural resource management concerns itself with the norms, institutions and processes that regulate how power and duties over natural resources are exercised, decisions are taken and people – comprising women, men, youths, indigenous peoples and local communities – play a part in the controlling of and gaining from natural resources (African Development Report, 2015). Natural resources make available a range of goods and services – food, fresh water, fuel, medicines, fisheries, and air cum water regulation – that sustain life on earth (Springer and Boe, 2016). The indigent in the rural areas in evolving countries remain the most directly in need of natural resources for their food and occupational security. Subsistence farmers, hunters cum gatherers, fishers and agricultural wage manual workers depend on the handiness of operational land, plant and animal species as well as water for their survival (FAO, 2014). Hence, the agricultural means of support for impecunious rural women and men rely on the condition of natural resources, particularly means of support of people living on delicate lands (World Bank, 2007). Within the last 50 years of the nation Nigeria, ecosystems have changed more swiftly than in any comparable period of time in human history. This is mainly because of the need to meet fast growing demands for food, water, fuel, and timber. A strategy to alleviate climate change and lessen fossil fuel reliance emphasizes the need for higher use of bio-energy from crops, which is expected to strain land, water, and species diversity the more (African Competitive Report, 2017). In the region of Niger Delta in Nigeria, where oil is mostly extracted, these changes have resulted in the degradation of natural resources, which aggravates penury for some groups of people, particularly communities dwelling in marginal environment (NDDC, 2004). Making better natural resource control practices and shielding the environment of this oil producing region could necessitate bringing down impoverishment and realizing means of support cum food security among rural women and men (UNDP, 2006).

In the meantime, Nigeria's economy rests heavily on the oil and gas sector, which provides 95% of export revenues, 80 to 85% of the government returns, and about 32% of gross domestic product (GDP). Nigeria, as it were, is the largest oil producer in Africa and falls within the top ten worldwide. Her recoverable reserves were evaluated at 36.2 billion barrels in January 2007; yet, with all the country's relative oil wealth, GDP per capita is 2, 400 USD, and indigence is widespread – about half of the population cannot afford up to \$1.25 per day (African Economic Outlook, 2017, 2023). Oil and gas reserves are located in the Southern part of the country, known as Niger Delta. This region is marked by lack of basic amenities and is highly underdevelopment. Oil extraction being a capital rather than labour intensive industry, therefore, make available little employment (Francis *et al*, 2011). The region is made more badly off by the difficult geographical terrain that results in high cost of infrastructure. Then, there are the effects of environmental degradation on traditional industries such as fishing and agriculture which are linkable to oil extraction – gas flaring, oil spillage and such (Uduji *et al*, 2021). To further worsen the situation, the region is also widely seen as one of the most climate

susceptible regions among others (Eweje, 2006). Nonetheless, the multinational oil companies (MOCs) partake in a plethora of corporate social responsibility (CSR) activities in the region and other parts of the country. Every year, MOCs invest in social projects and programmes in communities chiefly in the Niger Delta region. The earliest of investments were in agricultural development programmes before the seventies which over the years grew to include small businesses, education, healthcare, roads cum civil infrastructure as well as water projects which the host communities gained from (Asgil, 2012). As time passed by, MOCs enhanced how they engaged with local communities to handle these projects. In 2006, MOCs introduced a fresh way of operating with communities called the Global Memorandum of Understanding (GMOU). The GMOUs represent an essential shift in CSR approach, putting more emphasis on being open and more accountable, frequently communicating with the grassroots, being sustainable and finding ways to prevent conflicts (SPDC, 2013). Under the terms of the GMOUs, the communities make choices of the kinds of development they want while MOCs provide secure financing for such for five years. In fact, they see to it that the communities have steady and reliable finances as they carry out their community development plan (SPDC, 2018). The GMOUs were signed between clusters of communities, MOCs and State governments, thus, bringing about a unique public-private model to encourage economic and social firmness in the Niger Delta (Chevron, 2014). The GMOU process made to be guiding principles of corporation (partnership), openness, accountability, sustainability assurance, peace promoting, and project checking (monitoring) cum assessment. Through the GMOUs, the communities end up becoming in charge and are accountable for how to utilize the fund provided by the MOCs in seeing to the implementation of the selected projects. MOCs, however, still stay involved by being a part of the local committees and boards that review cum approve projects. They, in addition, make available annual project funding (Chevron, 2017). GMOUs have become very popular with communities, with greater ownership leading to better projects, sustainability and improved trust (Uduji and Okolo-Obasi, 2023). As at date, it provides a better organized community interface and grievance/dispute resolution mechanism (Okolo-Obasi *et al*, 2021). It also ensures high levels of transparency, inclusiveness and accountability in managing development funds (Uduji *et al*, 2023). This public-private partnership line of carrying out community engagements consist of participatory development processes that assist in resolving conflicts, and addressing community needs.

However, the coming of GMOU model has mostly been seen as a tactic of MOCs to deflect public criticism of their flaws, and a means for avading government regulation (Akpan, 2006; Edoho, 2008; Aaron, 2012). As a concept, GMOU has been greatly criticized, and there is now stern debate over its usefulness and practical implications. While supporters see GMOU as a vehicle for potentially bolstering an old dynamic in MOC - Community relationships, detractors see it as a platform for new tasks to be called for from old institutions. This variance in

perceptions invariably sets the background for the new CSR model debate, pitting those in support of its already entrenched MOC – Communities relationship, against those who insist that it adapts to shifting community values (Idemudia, 2014; Ekhatior, 2014; Slack, 2012). For example, to Akpan (2006), CSR initiatives of MOCs have failed to assist community development and in some instances is even responsible for inter and intra community conflicts. In contrast, Ite (2007) believe that the CSR initiatives of MOCs have actually encouraged community development in the region looking at the extent of governmental failure; and that MOCs have persisted in bettering their CSR strategies so as to improve on their response to the needs of their host communities. Yet, Lompo and Trani (2013) recently added some nuance to the debate as they proposed that the CSR initiatives of MOCs have made a contribution in accessing basic capabilities like shelter, electricity and water, but have also worked against human development. Similarly, Renouard and Lado (2012) noted that the CSR activities of MOCs have somewhat helped in enhancing the material comfort of some of the people living close to oil production sites, but to the detriment and deterioration of inequalities or relational capabilities in these communities. According to Uduji *et al* (2022), making a positive contribution to the society of Niger Delta is essence of MOCs' GMoU – and not just as a marginal afterthought, but as a way of doing business in the region which is in line with CSR 2.0(Visser, 2010). The new CSR model is not about bailing out the Titanic with a two spoon (CSR 1.0) but turning the whole ship around. GMoU is about designing and adopting an inherently sustainable and responsible business model, supported by a reformed financial and economic system that make creating a better region the easiest, most natural and rewarding thing to do (Uduji and Okolo-Obasi, 2022c).

Ensuing from the preceding opposing perceptions of the CSR initiatives in the Niger Delta, and how MOCs can take steps to improve effectiveness of their approach to social impact and gender equity; and bring in the voices of women and girls to ground the GMoU policy and programmes in real-life experience in the region; this is often more challenging than it seems, as social norms have prevented women from participating in GMoUs and advocating for their perspective Uduji *et al* (2020a). This paper is a plus to gender discourse in the natural resource control and comprehensive growth literature from the CSR standpoint, by looking at the empirical facts in four areas in the literature that have been given much attention. The paper seeks to make certain the level of CSR investments that the MOCs have made in the areas of natural resource control (management) as well as finding out the level of gain from such investment that amass for the rural women and its influence on their trade. These four areas of focus equally stand for four main questions which includes:

- i. What is the strength of MOCs' investment in the controlling (management) of resource in the Niger Delta region of Nigeria?

- ii. To what extent are the genders involved in the GMoU activities of the MOCs in the host communities?
- iii. Do MOCs' GMoU activities generate positive changes on rural women in sustainable incomes modules of framework which includes assets, markets, information cum organization, risk cum vulnerability, as well as policies cum institutions in the Niger Delta of Nigeria?
- iv. What are the gains from gender – receptive actions in the controlling (management) of natural resource in the Niger Delta region of Nigeria?

1.1 Study hypothesis

In the Niger Delta region of Nigeria, the new CSR model of MOCs have some portion of their GMoUs portfolio dedicated to financial literature for women in oil host communities; these investments focus on issues ranging from household finances to entrepreneurial business skills to salary negotiations (Uduji *et al*, 2023). This type of education and capacity building is important. But if a woman cannot take out a loan without her husband's approval, managing household finances remains out of reach; if social norms dictate that a woman cannot work outside the home or travel alone to other communities, she cannot use the business skills she's develop to engage in the workforce; as there is a limit to how effective individual – level interventions can be. Nevertheless, women and men have divergent tasks and responsibilities, awareness and influence in the Niger Delta when it comes to governing natural resources (PIND, 2011). In most circumstances, women and men have different levels of access and control over these resources. The various values and priorities connected to natural resources between women and men go with discrete and vital benefits for survival and for the ecosystems. In their roles as users and controllers of natural resources, women are clearly relevant in making available food, water and fuel for their communities and families (households). They motivate invention and demonstrate helpful solutions, for example, using knowledge in formal and informal resource control processes. But even with their unique needs, aptitude and assistance in natural resource control (management), rural women in Niger Delta are time and again excluded or disenfranchised in the times for deciding over inputs, utilization and control of resources (NDDC, 2001). Thus, we put forward the following:

- CSR of MOCs using GMoU has failed in contributing to the basic gender issues in the natural resource control (management) in the region of Niger Delta in Nigeria.
- CSR of MOCs using GMoU has not been able to address the problem of inequalities and has failed to empower women for sustainable ecosystem management in the region of Niger Delta in Nigeria.

Previous studies have shown leading companies and their partners going beyond programmes that target individual women or girls and considering the relationships and systematic factors that influence women's ability to thrive and succeed (Uduji *et al*, 2020b, 2020c). CSR programmes that strive to create gender equity must be thoughtfully and intentionally developed to consider complex social, economic, cultural, and political nuances, such as household decision-making dynamics, gender roles, and access to resources (Okolo-Obasi *et al*, 2021; Uduji *et al*, 2019). In line with the aforementioned, the main purpose of this research is to ascertain the level of CSR investments of MOCs in natural resource control (management), and how such intervention influences the livelihood of rural women in host communities.

At the beginning of twenty-first century, some trend of widely discussed phenomena of corporate social responsibility had already drifted across the gender issues, taking into account several discourses of CSR: philanthropy, accountability, and stakeholder relations (Uduji and Okolo-Obasi, 2022a). The diverse points for discussions concerned with gender and CSR were addressed to further debate on philanthropy and CSR (Okolo-Obasi *et al*, 2021). However, philanthropic view mostly emphasizes much deeper understanding of CSR, as business agrees to participate in charitable activities even though this is perceived as a net cost and this impetus may come from a more altruistic or ethical sensitiveness to do some good for society (Idemudia, 2014). This is a major condition for taking into account philanthropy as part of CSR; stating the fact that CSR is not just philanthropy, as it was commonly understood for a long period of time in wide society (Ekhatior, 2014). However, this paper adds to inequality debate in natural resource control (management) and inclusive growth literature from the outlook of CSR. The study uses a quantitative method and applies survey research technique. The ground of operation of this research departs from modern-day natural resource control (management) literature, which has focused on, *inter alia*: gender equity in Senegal's forest governance history (Bandiaky-Badji, 2011); the challenges of hunger and building resilience to achieve food nutrition and security (IFPRI, 2013); gender equality in agriculture and the benefits for sub-Saharan Africa (Adamon, and Adeleke, 2016); the role of women in environmental conservation (Aditya, 2016); gender discrimination in land ownership and the alleviation of women's poverty in Nigeria (Ajala, 2017); gender dimensions of the right to food (Rae, 2006); conservation and natural resource management (Robyn *et al*, 2021); women's participation and the gender perspective in sustainable forestry in Cambodia (Nhem and Lee, 2019), and the need to adopt non-policy measures in aid of the implementation of sex discrimination laws in Nigeria (Okongwu, 2020).

The subsequent parts of the paper are organized as follows: Section 2 looks at the literature and theoretical underpinnings. Section 3 describes the methods and material. Section 4 presents the results and corresponding discussion. Finally, Section 5 concludes with policy implications.

2. Literature and theoretical underpinnings

2.1 Key gender issues in natural resource management

The landscape of scientific debate and actual evidence, gathered by scholars and research institution through recent empirical investigations, tends to suggest enough scientific evidence for stating gender as an emerging trend in CSR research and there are particular reasons for stating that (Uduji and Okolo-Obasi, 2022b). For instance, the subsequent gender issues are key in natural resource control (management) interventions. To begin with, rural women and men have varied roles, tasks, and awareness in controlling natural resources. For example, environmental degradation worsens women's ability to spare time for labour - intensive family (household) tasks, such as having to trek longer distances for the gathering of fuel wood and fetching water. Then, reductions in agricultural production and family food security create additional health challenges linked to their growing work-load (Fonjong, 2008). Although both rural women and men are important in natural resources control (management), women's utilization, preservation and awareness of resources play a key role in shaping local biodiversity. Besides, dreadful conditions of natural resources can alter gender responsibilities and associations in families and communities (FAO, 2011). The second issue is that gender variances exist in rights and access to natural resources, including land, water, animal and trees. For example, in most of the societies, women usually have fewer ownership rights. They frequently have de factor or land-use rights in comparison to men's de jure or ownership rights. Their (women's) use rights are normally mediated by their relationships with men (Adedayo *et al*, 2010). Women who are household heads are placed at a disadvantaged position in terms of ability to access land, water, and other available natural resources. An obvious point is that gendered relations and duties in terms of natural resources are vigorous and subject to change (IFPRI, 2007). The third issue is that access to new technology, information and training connected to natural resource control remains extremely gendered, with most of the related inventiveness directed at men. For example, in spite of several efforts to mainstream gender, many governments, non-governmental (NGOs), and development organizations see these struggles as being particularly tough in the agricultural and natural resource; and until gender is successfully mainstreamed, women's groups, establishments, and network can surge women's access to awareness, information, and technical know-how (Agarwal, 2010). For the fourth issue, the dreadful conditions of natural resource base can cause new forms of cooperation, conflict, or controversy between men and women or various ethnic groups. For example, when natural resources is in short supply to support the survival of the population, drastic measures such as migration among men and women occur; men's out-migration creates the room for women to take men's traditional positions (roles and duties). This heightens their work load, but also leaves them without equal or direct access to monetary, social, and technological resources (Vibert, 2016). The fifth issue is that women are still not a

part of those who take decisions on climate change and natural resource-related processes at all levels. Therefore, it is time to go further than merely recognizing the value women (as well as men) provide in corporate governance of decision-making or philanthropy. The twenty-first century calls for taking down the glass ceiling, close the gender gap and realize those thoughtful benefits of gender equality to the private and public sectors in much broader than that of socially responsible decision-making and philanthropic sense of CSR (Uduji *et al*, 2019). For example, equal involvement in making decisions concerning the community remains a complex and difficult goal to achieve, particularly in the contexts of very unequal gender cum class relations. Community-level involvement in doing things often leaves women's voices and interests unrecognized. Even when women participate in meetings or events, they may feel restricted from airing their opinions, and their necessities may not be considered worth attending to (Alvarez and Lovera, 2016). As a result, this study would hypothesize that enhancing gender resource control practices and guarding the environment would have need of reducing impoverishment and realizing means of support and food security among rural women and men.

2.2 Gender in sustainable livelihoods framework

The study makes use of a gender sustainable livelihood (SL) framework, in that needs of means of survival of men and that of women are not always the same, due to variances in roles, duties and resources (WEP, 2009). The effect of interventions in different livelihood will also be different as it concerns gender. For example, a technology to bring down the work load of men, may end up increasing the work load of women, or vice versa. Women and men are also likely to be different in their aptitude, authority or handiness to take part in livelihoods analysis or interventions; as a result, care must be taken to overcome such obstacles (IFAD, 2012). This structure conceptualizes the following features as essential in the livelihood schemes of the rural poor: risk and vulnerability, policies and institution, assets, markets as well as information and organizations (World Bank, 2009). The structure (framework) adopts a people – centered method that mainly focuses on agricultural livelihoods of rural women cum men and the natural resources controlling strategies they adopt. The SL framework also necessitates the holistic approach that incorporates economic, technical, and scientific aspects with social and human dimensions. This research work applies the SL framework to natural resources control (management) to highlight the main gender concerns in programmes cum projects, and aspects of the structure (framework) that will be useful in discussions of the results as suitable. However, debates on gender and socially responsible decision-making seems to suffer from quite simplified view on CSR paradigm, despite the ambitions for a more precise measure of sustained commitment to social responsibilities. The SL framework taken into account as measurable evidence for CSR seem to be rather notional and might mistakenly led to nonexistent relation between gender issues and actual facets of CSR. Hence,

empowering both scientific and empirical evidence in this facet might greatly benefit the study.

2.3 African perspective of CSR

There is a prevailing argument that CSR in emerging countries is most directly shaped by the socio-economic environment in which firms function and the expansion precedence this creates. According to Frynas (2009), charitable initiatives as CSR are widespread in evolving countries; thus, in such countries, the inability of government action in making amenities available for its citizens heightens the roles of multinationals in CSR and philanthropy, which under normal circumstances is not seen as CSR in Western nations. Muthuri, (2012), banking on the extant literature on CSR in Africa, postulated that the CSR concerns rampant in Africa include economic and enterprise development, health and HIV/AIDS, environment, poverty reduction, community development, education and training, sports, human rights, corruption as well as governance and accountability. Notwithstanding that Carroll's (1991) CSR pyramid is perhaps the most recognized model of CSR, with its four levels demonstrating the relative prominence of economic, legal, ethical and philanthropic duties respectively, the exploration of CSR in Africa (Visser, 2006) was used to question its correctness and significance. According to Visser (2006), if Carroll's basic four-part model is believed, it suggests that the relative precedence of CSR in Africa are in the offing to vary from the classic, American ordering. However, it is also projected that Carroll's CSR pyramid may not actually be the best model for having a grasp of CSR in general, and particularly CSR in Africa. Amaeshi *et al* (2006) have argued that CSR in Nigeria is explicitly directed at addressing the socio-economic development problems of the country, including education, reduction in poverty, provision of health-care, and infrastructure development. This, they maintain, stands in glaring contrast to many Western CSR precedence such as green marketing, concerns over climate change, consumer protection, fair trade, or investments that are socially responsible. However, mapping gender in the facets of CSR with appropriate argumentation, based on above discussed perspectives, approaches, and models of CSR, is quite challenging because of several reasons. First, there are still quite a few investigations with regard to gender and CSR in general; second, those already implemented investigations do not address any of the above discussed approaches and/ or models; and finally, only perspectives towards CSR, presented in ongoing gender-CSR research and related debate might be addressed as a conceptual basis for setting gender issues in appropriate facet of CSR. Therefore, gender issues in the facets of CSR are further discussed in relations to those most relevant perspectives of CSR by considering further contributions and limitations with regard to research of gender issues in CSR. Thus, this research work adopts quantitative methodology but sees the result from the African CSR viewpoint.

3. Methods and material

Carrying out quantitative research into CSR in Niger Delta region of Nigeria is still relatively infantile and is apt to be adhoc with a heavy dependence on expediency – based case studies or descriptive accounts (Uduji and Okolo-Obasi, 2022a). The focus is more or less on high profile incidents or trademarked companies, with a general lack of computable benchmarking data (Uduji and Okolo-Obasi, 2022b). Hence, there is a crucial need for more quantitative approach to research on CSR of multinationals, as well as on theoretical constructs (PIND2, 011; Lompo and Trani, 2013; Ekhatior, 2014; Idemudia, 2014; Uduji et al, 2023). These varied streams of empirical research should inform more theoretical work on CSR notions, structures, or models that are more related to evolving countries. What is obvious from this study, thus, is that CSR in Niger Delta region of Nigeria is a rich and enthralling area of enquiry, which is gaining grounds in CSR theory and practice. And since it is intensely under-researched, this study adopts a quantitative methodology as an addition given the scantiness of quantitative work in the region.

This also denotes a wonderful opportunity for bettering our knowledge and grasp of CSR. The survey research method was put to use with a view to gathering cross-sectional information from an illustrative sample of the population. It is in actual fact cross-sectional defining and interpreting what is in existence in the region. Figure 1 shows the integral administrative States of the region of Niger Delta in Nigeria.



Figure 1: Constituent administrative states of the Niger Delta, Nigeria

Source: NDDC, 2004

3.1 Sample size

To decide the number of women to be surveyed, we calculated the sample size by making use of Fisher formula. The formula is mathematically stated thus:

$$\varphi = \frac{\delta^2 \gamma (1 - \gamma)}{\lambda^2}$$

Where, φ represents the sample size; while, δ represents the standard normal deviation for a given level of confidence, (95% confidence = 1.96), γ stands for the proportion to be projected. This proportion most times where the value of γ is not in certainty known is always presumed to be $\gamma = 0.5$ and λ = margin of error at 0.05 for CI at 95%.

We, thus, calculated the sample size put to use in this study as follows:

$$\varphi = \frac{1.96^2 (0.51)(1-0.51)}{0.05^2} = \varphi = \frac{0.96001584}{0.0025} = 384.$$

Because, we are attentive to both the treatment and control, we multiplied the sample size by 2 to reduce the probable sample collection errors. Hence, the total sample size put to use in the study was 768 rural women respondents. These women were selected based on the 2016 estimated population by the national population commission. (See Table 1)

3.2 Sampling procedure

We made use of a multi-staged sampling method in this study to select the respondents for the cross-sectional survey used in gathering primary data. In the first stage, we used purposive sampling method to select two local government areas (LGAs) from each of the nine states in the region of Niger Delta. The purpose of selecting the LGA was based on the numbers of MOC facilities that the community is hosting. This simply means that the communities with higher number of MOC facilities have higher chances of being selected. In the second stage, from the selected LGAs, we also used the same purposive sampling to select two communities each on the same purpose of hosting MOC facilities. Also in this second stage, in selecting the communities we ensured that we selected one community that belongs to a cluster development board (CDB) and also one that does not. From the communities that belong to a CDB we selected what we called the CDB women (the treatment group) and from the communities not belonging to any CDB, we selected the non-CDB women (the control group). In the third stage, from these selected communities, we employed the help of community gate keepers to randomly select 768 women respondents based on the population of each state as represented in Table 1.

Also, three of the community gate keepers were randomly selected as key informants from each of the communities for key informant interview.

Table 1. Sample size determination table

States	Population	Population of women	% of Total Population	Sample Per State	Treatment	Control
Rivers	7,303,924	3,725,001	17%	131	65	65
Bayelsa	2,277,961	1,161,760	6%	46	23	23
<u>Akwabom</u>	5,482,177	2,795,910	12%	92	46	46
Cross River	3,866,269	1,971,797	9%	69	35	35
Delta	5,663,362	2,888,315	13%	100	50	50
Edo	4,235,595	2,160,153	10%	77	38	38
Ondo	4,671,695	2,382,564	11%	84	42	42
Imo	5,408,756	2,758,466	13%	100	50	50
Abia	3,727,347	1,900,947	9%	69	35	35
Total	42,637,086	21,744,914	100%	768	384	384

Source: NPC, 2017/Authors' computation

3.3 Data collection

Both primary and secondary data were collected for the study. We collected the primary data for the study using participatory appraisal (PA) procedure. While the quantitative primary data were collected with written structured questionnaire (SQ), the quantitative data were collected using structured interview guide for key informant interviews (KIs) administered to the selected key informants and community group leaders. While 768 questionnaires were administered, a total of 108 KIs were also conducted across the communities to create the data analyzed in the study.

We adopted the procedure because the viewpoints of the people being studied is of utmost importance in this study. These instruments of data collection were directly put to use on the respondents by the researchers with the assistance of local research assistants. The local assistants were appointed because of the languages and dialects barriers that the assistants helped the researchers to handle. Besides, the environment of the research area is rough, precarious and unsafe, hence, the need for a local guides and guards which were available in the assistants.

The secondary data used for the study were obtained from a desk review. We reviewed the available documents of the community leaders, publications of the MOCs as well as past scholarly publications.

3.4 Analytical framework

To examine the data collected for the study, we first prudently cleaned and corrected the data before coding them into Stata 16. The data was thoroughly analyzed using descriptive and inferential statistics to respond to the research questions and test the postulations. The descriptive statistics shows the frequency, mean, average etc. The tallies and the results were obtainable in figures, charts and tables. Objective 1 and 2 were accomplished with the

descriptive statistics while objective 3 and 4 were realized using inferential statistic on the basis of a logit model of receipt and non-receipt of MOCs' CSR making use of GMoUs. The logit model was projected as functions of chosen socio-economic variables. To evaluate this logit model, we adapted with modification Uduji and Okolo-obasi (2022a) in stating that for binominal response variables, the logistic link is the natural logarithm of the odds ratios which is thus mathematically stated:

$$\text{Log} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots \beta_n X_n \quad (1)$$

We appraised the effect of MOCs' CSR investments utilizing GMOU on sustainable means of support (livelihood) component of framework in Nigeria as follows:

$$\text{Logit (SCF)} = \beta_0 + \beta_1 \text{Gmou} + \beta_2 C_{1, \dots, n} + \beta_3 M + \mu \quad (2)$$

Where:

SCF = stand for the dependent variable which include assets, information and organization, risk and susceptibility, markets as well as policies and institutions.

GMOU stands for the MOCs' CSR making use of GMOU, C = other socio economic variables (Age, household size, job, revenue, etc.), M stands for other moderating variables and μ is stochastic error term.

*In this model, the main parameter of concern is β_1 in terms of sign and importance.

3.5 SCOTDI

The MOCs vigorously involved in the Niger Delta still face the problem of how to measure the success or failure of their CSR activities either as it relates to its effect on community improvement or its bearing on corporate-community relations. In resolving this matter, MOCs in 2013 brought into usage the Shell Community Transformation and Development Index (SCOTDI). It is an advanced structure that puts together and acclimatizes a number of international principles into a fused index to be responsive to local context (SPDC, 2013). The structure (framework) is utilized here to access and rank the outcome of the disparate GMoUs clusters in the communities covered by MOCs.

4. Results and Discussion

4.1 Descriptive Analysis

To examine the data created from the study, we started with explanation of some of the respondents' social (education), economic (job, family income) and demographic (age, marital status, family size) features. We considered these features very significant because it aids our appreciation (grasp) of the variances in the socio-economic and demographic status of the CDB women in comparison to their matching part in the non-CDB communities.

Table 2. Socio-economic characteristics of women in the Niger Delta region.

Variables	Treatment Group			Control Group		
	Freq	%	Cum	Freq	%	Cum
Age of Respondents						
Less than 21 years	6	2	2	14	4	4
21 - 30 years	159	41	43	117	30	49
31 - 40 years	131	34	77	154	40	74
41 - 50 years	71	18	96	83	22	96
Above 50 years	17	4	100	16	4	100
	384	100		384	100	
Level of Education						
None	19	5	5	47	12	12
FSLC	183	48	53	182	47	60
WAEC/WASSCE	134	35	88	127	33	93
Degree and above	48	13	100	28	7	100
	384	100		384	100	
Marital Status						
Single	62	16	16	70	18	18
Married	238	62	78	250	65	83
Widow	37	10	88	33	9	92
Divorced/Separated	47	12	100	31	8	100
	384	100		384	100	
Household Size						
1-4 Person	235	61	61	206	54	54
5-9 Person	94	24	86	114	30	83
10-14 Person	47	12	98	52	14	97
15 Person and above	8	2	100	12	3	100
	384	100		384	100	
Primary Occupation						
Fishing	65	17	17	61	16	16
Trading	74	19	36	86	22	38
Farming	146	38	74	162	42	80
Paid Employment	38	10	84	28	7	88
Handicraft	43	11	95	32	8	96
Others	18	5	100	15	4	100

	384	100		384	100	
Annual Income						
1000 - 50,000	8	2	2	42	11	11
51,000 - 100,000	45	12	14	85	22	33
101,000 - 150,000	104	27	41	115	30	63
151,000 - 200,000	83	22	63	67	17	80
201,000 - 250,000	76	20	82	43	11	92
251,000 - 300,000	46	12	94	26	7	98
Above 300,000	22	6	100	6	2	100
	384	100		384	100	
Value of receipts Through CSR						
1000 - 50,000	12	3	3			
51,000 - 100,000	33	9	12			
101,000 - 150,000	59	15	27			
151,000 - 200,000	70	18	45			
201,000 - 250,000	75	20	65			
251,000 - 300,000	101	26	91			
Above 300,000	34	9	100			
	384	100		-		

Source: Computed from the field data by authors

Analysis (Table 2) indicates that in the treatment group the average age of the respondent is about 32 years while 38 is that of control. In terms of the level of education, just about 12% of the control group are complete illiterates while such is about 5% in the treatment. It also shows that while 95% of the respondent in the treatment are at least moderately literates, about 88% of the control group are as well, showing that basic education is not a serious issue in the region among women. Looking at jobs and employment status, while about 10% of the women in the treatment group are working for others, either government or private sectors, only 7% of the same category exist in the control group. Further examination of this reveals that the treatment group has about 17% into fishing, 19% engaged in trading, 38% trying their hands in farming, plus about 11% who are engaged in one handicraft or the other. In the control group, an approximate of 16% are into fishing, 22% engage in trading, 42% are into farming, while 8% are engaged in one handicraft or the other. Just about 4% are involved in others. This reveals that because the women in the treatment had more access to finance, a large percentage of women moved into their own handicraft business. However, the employment status of the respondent is as good as the same. Importantly, both the treatment and control groups still operate in penury as many still live under the poverty line. Regardless of getting or not getting CSR, the average yearly revenue of both groups is still very low (poor). In the treatment group, the average income is ₦200, 000 (about \$400) yearly; that of the control is ₦90,000 (about \$180) yearly revealing that there is high level of impecuniousness. This finding sees things in a similar way with Adamon and Adeleke (2016) in that many women partake in labour markets

as wage workers and farmers or as processors and traders in line with the agricultural value chain, but much of what they do is informal or unpaid for and, thus, goes unrecorded. However, suitable financial products that allow women to save, borrow, and insure are essential for consolidation of their roles as producers and for broadening the economic openings accessible to them in the Niger Delta region.

4.2 The intensity of MOCs' investment in Niger Delta region

In accomplishing the first objective of this study, we first placed our focus on the six major multinational companies and likened their areas of CSR activities.

Table 3. Percentage rating of MOCs' CSR in empowering women for natural resources management.

Activities	Total E&P	Exxon Mobil	Chevron	Shell	Agip	Others	Average : Field Survey	Average : Data from MOCs	Diff.
Provision of subsidized Farming/Fishing inputs for women	27%	28%	26%	24%	27%	28%	26.60%	27.80%	-1.20%
Skill acquisition and business training	18%	21%	17%	18%	17%	19%	18.30%	19.70%	-1.40%
Advocacy visits to relevant stakeholder	5%	4%	7%	8%	6%	5%	5.80%	7.60%	-1.80%
Policy dialogues to strengthening the right and voice of women	7%	6%	9%	6%	9%	10%	7.80%	8.90%	-1.10%
Provision of short loans targeting only women	17%	15%	15%	17%	16%	13%	15.50%	17.90%	-2.40%
Provision of seed grant for women entrepreneurs	15%	16%	14%	13%	15%	14%	14.50%	19.20%	-4.70%
Sponsoring of women corporative groups	11%	10%	12%	14%	10%	11%	11.30%	10.30%	1.00%

Source: Authors' compilation based on field survey.

Analysis (Table 3) shows the percentage circulation of CSR intervention of MOCs in rural women enablement in natural resources control (management). The interventions made by the main MOCs are in the areas of making available seed grant for women entrepreneurs, provision of short loans aimed at women, setting up of subsidized agricultural inputs for women, advocacy visits to significant stakeholder, policy dialogues aimed at consolidation of the right and voice of women, skill procurement and business training, as well as funding of women corporative associations.

The outcome of our examination shows that provision of agricultural input subsidy by the MOCs accounts for 26.60% of CSR intervention to endow the women. Advocacy visits to significant stakeholder took only about 7.60%, skill procurement and business training about 18.30%, and policy dialogue to fortify the right and voice of women (8.90%). Others are setting up of short/soft loans targeting women about 18%, provision of seed grant for women about 19%, and funding the formation of women corporative association accounting for 11%. This indicates that, though CSR investment in women enablement by the MOCs may still be low, they (the MOCs) are making thoughtful and significant efforts to see that the intervention is evenly spread across the essential areas. This, to a great extent, will help in seeing that women are empowered to fully partake in natural resources control and other socio - economic activities. If the MOCs and the CDBs will upsurge intervention directed at empowering of rural women towards natural resources control (management) by 1%, the effect will be sensed in so many areas. This conclusion gives consent to Aditya (2016) in that women and men have unique duties and awareness concerning the usage of natural resources, its collection and control (management) that hold different essential influences towards understanding and sustaining livelihoods, including for nourishment and revenue.

4.3 Comparing the average value of direct CSR receipts from the MOCs by women and men

Here we looked at the CSR that comes direct to individual recipients like scholarship received, personal training (in skill acquisition or the like) direct grant or loan, input subsidy and the likes. These are valued in Nigeria naira (NGN). Analysis (Figure 2) makes a comparison of what the CDB women have received (as per the primary data) with what their male counterparts have also received (as per secondary data). The result reveals that only about 3% of the women have been given above ₦500,000 (\$1,000) while about 16% of men are in a similar situation. On the other hand, about 40% of the women got CSR worth between ₦1000 to ₦100,000 (\$2 to 200), while only 9% of the men are within that range. Also, when about 23% of the women have been given between ₦101,000 to ₦200,000 (\$201 to 400), only 12% of the men got same.

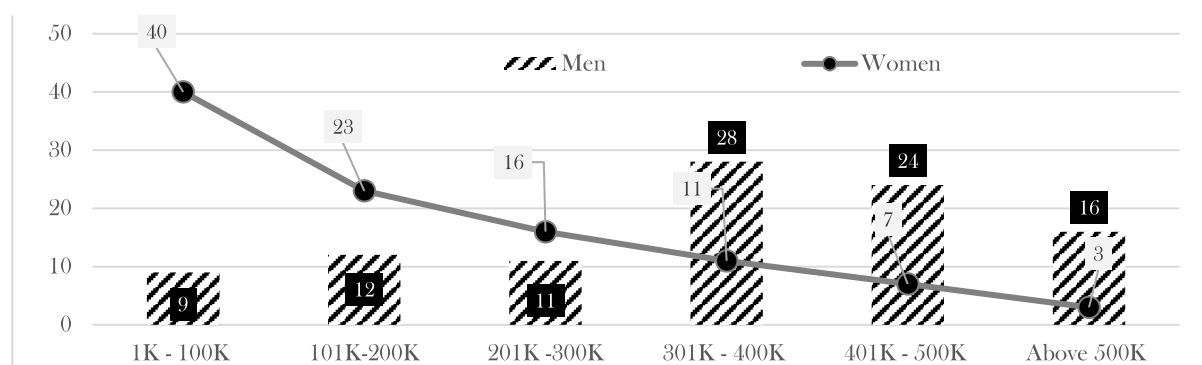


Figure 2. Average value of CSR receipts from the GMoUs by respondents

Source: Authors' compilation based on field survey.

In continuation, while about 16% of the women got between ₦201,000 to ₦300,000 (\$401 to \$600), only about 11% of the men received same amount. As 11% of the women got between ₦301,000 to ₦400,00 (\$601 to \$800), about 28% of the men received same amount. Also, while about 7% of the women were given between ₦401,000 to ₦500,00 (\$801 to \$1000) about 24% of the men were treated the same way. This reveals that while there is a notable receipt of direct CSR by women, they still trail behind the men; however, granting more access to the women particularly in the area of social capital formation, will go a long way in preventing structural barriers fighting the socio-economic enablement of women in the region mainly in the area of agricultural yield. This finding is in agreement with Ajala (2017) in that women face social, economic, cultural, and legal obstacles that influence equitable natural resource control, meaning their unique assistance to management solutions are at risk of being lost.

4.3 Distribution of CSR interventions of MOCs using GMoU by nature of gender empowerment

Analysis (Figure 3) reveals the nature of enablement interventions enjoyed by gender in treatment group. Scholarship accounted for 37% of the empowerment activities and the women acquired 12% while the remaining 25% went to men. For direct employment, accounting for 22%, men got 14%, while women enjoyed 8%. Also, for about 26% of the empowerment that went to skill procurement and training, men got 18% with women getting 8%. For about 13% of the empowerment that went to skill procurement and training, men got 18% with women getting 8%. For about 13% of the empowerment that went to skill procurement and training, men got 18% with women getting 8%.

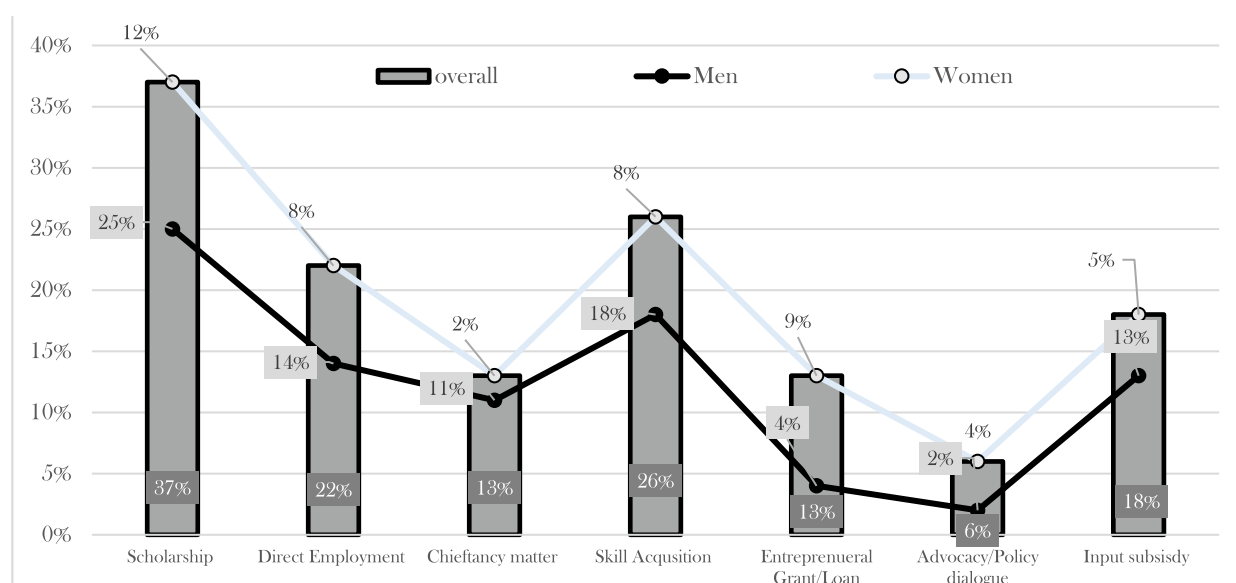


Figure 3. Distribution of CSR interventions of MOCs by nature of empowerment received by gender

Source: Authors' compilation based on field survey.

About 13% of the enablement went to chieftancy, out of this, men got 11% while women enjoyed only 2%. Others are development of entrepreneurial soft loan and grant which accounted for another 13% with men getting 9% and women (4%). Input subsidy enjoyed 18%

with women getting 5% and men gaining as much as 13%. It is only in advocacy and policy dialogue that the women received higher than men: about 4% of the CSR intervention out of the total 6% went to them, with men getting only 2%. The implication of this is that important efforts are being made, and any increase in the areas noted above will go a long way in bettering women's active involvement in socio-economic activities of the region. This result flows with Bandiaky-Badji (2011) in that addressing gender-connected obstacles and problems as well as supporting equitable natural resource control are to be supported to better livelihood outcome. For agriculture, if women were allowed to enjoy the same productive resources as men, they could upturn yields on their farms, which could better total agricultural yield in the region.

4.4 Level of gender participation in the CSR intervention of the MOCs

To realize objective one of this study and establish the level of gender involvement in the MOCs' GMoU cluster development board (CDBs) in the host communities, we evaluated the rural women's emotion using the SCOTDI, a structure of invention that draws the opinions of those considered. The opinions of these women were sought for on the following issue: women's involvement in control of the cluster development boards; inclusiveness in the making of decision; transparency in the control of the CDBs; stability of the CDBs after MOCs' CSR intervention, and the result of the GMoUs in the region. We saw the outlooks of these women as being essential because we cannot examine or easily accept the views of the companies or even the men for the women.

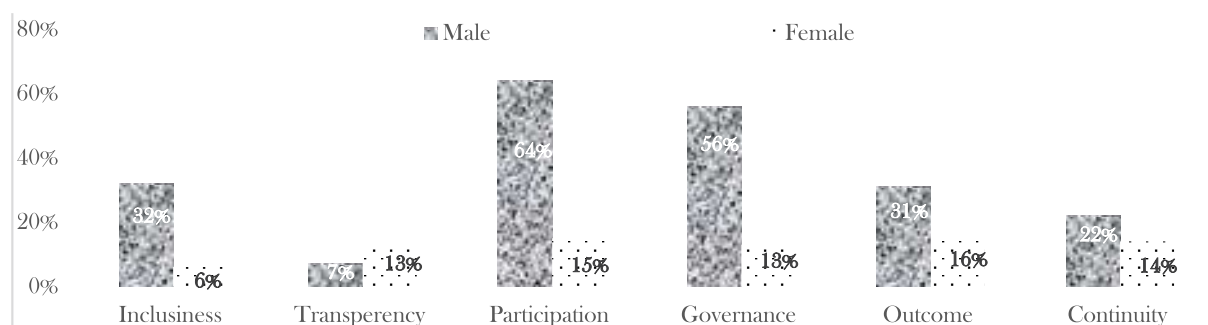


Figure 4 Gender involvement in CSR interventions in the Niger Delta region

Source: Authors' compilation based on field survey.

Using the SCOTDI structure examination (Figure 4), we comprehensively noted the rating of the women of rural host communities of their participation in the CDBs. The women rated the CSR interventions of MOCs in Niger Delta region as being positive; however, comparing their involvement with that of men was rated by them as being very low. In line with the six principle x-rayed, the outcome indicates that in the CDBs openness with regards to their activities, they (women) rated themselves 13% out of 100% while they rated men (7%). This implies that transparency (openness) is generally low in the CDB control, but the few women who participated

in the CDB are more transparent than the men. For governance, the women also scored themselves (13%) with the men being scored (56%) showing almost total dominance of men in the administration of affairs of the CDB. To this, it will not be a surprise if the men always stick to taking gender insensitive decisions. As concerning inclusiveness in the CDB and the action of the GMoUs, the women scored themselves (6%) believing that they are not fully considered like their male counterpart whom they scored (32%). The rating in inclusiveness is also shows that few individuals have always ruled the CDBs and even while 94% of the women are not included, over 68% of men were also clearly excluded. To this, the involvement of women in the CSR activities is rated 15% by them while they rated men (64%). All in all, it is obvious that men barely carry the women along in the GMoU programmes. Still in line with the women's rating, men are generally highly rated in being endowed by the MOCs through the use of GMoU which is controlled by male dominated CDB. However, the examination still indicates that most women are passionate about taking part in CDB and by extension the CSR activities of the MOCs as the effect it has created has shown. Indeed, the aptitude to boost social capital formation that will in turn grant access to credit, market information, input and ultimately discouraging the structural obstacles are imbedded in the CSR activities. This result flows with Nhem and Lee (2019) in that gender equality and women's involvement in decision-making as well as natural resource control (governance) benefits maintenance goals and results in more effective outcomes. These gains are also apparent at the community level by involving both women and men as well as incorporating their unique duties and awareness (knowledge) of natural resources.

4.5 Econometric analysis

We evaluated the average variances in the basic propensity scores of the independent observable features between the treatment group and control. In all, the variance in means shows that the score on the side of the treatment and scores on the side of the control significantly vary at 5% significant level.

Table 4. Comparison of mean score and observable characteristics between treatment and control (N = 768)

Score in Percentage of maximum score	Recipients	Non Recipients	Difference
Score on assets	36.25	30.48	5.77**
Score on markets	33.57	18.34	15.23 **
Score on information and organization	22.62	17.87	4.75**
Score on risk and vulnerability	29.37	14.18	15.19**
Score policies and institutions	39.32	27.28	11.04 **
Scores on reducing natural resource harvesting	31.31	24.43	6.88**
Score on access to agro input	30.65	22.82	7.83 **
Score on responsive actions	32.72	19.31	13.41**
Observation	365	365	

Source: Authors' compilation based on field survey

To actualize the aim of finding out if the CSR of the MOCs initiate positive changes on rural women in sustainable livelihoods component of framework - information and organization, risk and vulnerability, assets, markets, as well as policies and institutions – in the Niger Delta of Nigeria, we projected a propensity score matching of the treatment and control groups. Firstly, we brought together the average variances in the basic scores and independent observable features between the treatment group and the control group. In all, the variances in means shows that the score on resources (assets), on markets, on (awareness) information and organization, on risk and susceptibility, on policies and institutions, on lessening the harvesting of natural resource, on ability to access agro input and on responsive actions are all significant at 5% significant level. The average variance is about 6%, 15%, 5%, 15%, 11%, 7%, 8% and 13% respectively. This insinuates that the MOCs' CSR is actually making influence among the treatment as every indicator variable of success measured indicates a positive variance between the treatment and the control.

4.6 Effects of MOCs' CSR investment using GMOU on gender equity in sustainable livelihoods

Analysis of (Table 5) reveals that the CSR investment of the MOCs has significantly influenced rural women's sustainable livelihoods constituents. The result shows that the MOCs have made reasonable investment in backing up affordable assets to women, improvement of accessible market, making available information and organization, handling risk and susceptibilities, decreasing the rate of harvesting natural resources and others in the region of Niger Delta. We carried out a logistic regression examination to predict the effect of the CSR of MOCs making use of GMOU on key gender concerns in natural resources control using the variables in equation beneath as the predictors.

Table 5: Projected effects of MOCs' CSR intervention using GMOU on key gender issue of natural resources management Niger Delta region

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
		Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Step 1(a)	MS	.034	.114	.291	1	.588	1.930	.713	1.212
	Edu	.045	.021	.652	1	.419	1.017	.977	1.059
	HHcom	.251	.312	.033	1	.856	.562	.435	1.459
	PriOcc	.342	.212	.033	1	.856	.962	.635	1.459
	AY	.068	.135	.715	1	.398	.908	.727	1.135
	BuEXP	.175	.115	.171	1	.679	.954	.761	1.194
	Age	.164	.009	3.205	1	.073	.983	.966	1.002
	HHSIZE	.352	.021	.492	1	.483	.986	.947	1.026
	CSR	.415	.061	7.723	1	.003	10.241	2.152	1.443
	Constant	6.326	.567	1.140	1	.064	3.331		

a Variable(s) entered on step 1: *PriOcc, MS, Age, Edu, AY, HHCom, Ychild, CSR, HHSize, EXP*.¹

Source: Computed from the field data by authors.

$$\text{Logit (GESL)} = 6.326 + 0.03\text{Ms} + .415\text{CSR} + .136\text{Age} + .342\text{PriOcc} + .352\text{HHSize} + .045\text{Edu} + .068\text{AY} + .175\text{BuExp}$$

Having conducted a test of the full model in contrast to a constant only model, it was statistically significant. This shows that the predictors as a set reliably differentiated between the "Yes" and "No" effect of CSR (chi square = 64.313, $p < .000$ with $df = 8$). Nagelkerke's R^2 of .816 revealed a strong connection between prediction and grouping. Prediction success overall was 92%. (93% used for "Yes" and 90% for the "No"). The Z- value for CSR is 7.723, with a related p-value of .0032. Based on the set 5% significant level, the study resolved that the CSR of MOCs utilizing GMoU has made notable contribution to the main gender concerns in the natural resource control in Nigeria's Niger Delta region. Also, the EXP (B) value of the Predictor – CSR is 10.241, this means that if the MOCs increase their CSR activities directed at key gender problems in natural resources control (management) in the Niger Delta by one unit, equal to 1USD, the odds ratio is almost 10.2 times as large. Consequently, the rural women are 10 times more in the offing to be enabled to be active in the control (management) of natural resources.

4.7 Effects of MOCs' CSR investment using GMoU on addressing inequalities and empowering women for sustainable ecosystem management

Analysis (Table 6) indicates the projected effects of MOCs' CSR interventions utilizing GMoU on resolving inequalities and vesting power on women for sustainable ecosystem control (management) in the Niger Delta. This finding endorses that through various encouragements and policy dialogues, the MOCs' CSR using GMoUs have made notable impact on addressing inequalities and vesting women with power for sustainable ecosystem control (management). The result of a logistic regression examination conducted to envisage the effect of CSR of MOCs activities using GMoU on mainstreaming gender in sustainable ecosystem control in Niger Delta using the variables in equation above as predictor's shows as follows:

$$\text{Logit (SEM)} = 3.681 + 5.213\text{CSR} + .062\text{Age} + .209\text{PriOcc} + .322\text{HHSize} + .075\text{Edu} + .622\text{AY} + .319\text{HHcom} + .342\text{BuExp} + .031\text{MS}$$

¹ PriOcc = Primary Occupation, MS = Marital Status, Age = Age of Respondent, Edu = Educational level of Respondents, AY = Annual income of respondents, HHCom = Per capita income of other household members, CSR = Corporate Social Responsibility of the multinational oil companies using global memorandum of understanding, HHSize, = Household size of the respondents, BuEXP = Business experience of respondents.

Table 6: Projected effects of MOCs' CSR investment using GMOU on deterring structural barriers hindering women's participation in socio-economic groups in the Niger Delta region

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
		Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Step 1(a)	AY	.622	.114	.715	1	.398	.908	.727	1.135
	HHcom	.319	.312	.033	1	.456	.562	.435	1.459
	MS	.031	.135	.291	1	.038	1.930	.713	1.212
	Edu	.075	.021	.652	1	.419	1.017	.977	1.059
	HHSIZE	.322	.021	.492	1	.483	.986	.947	1.026
	BuExp	.342	.124	1.895	1	.029	1.810	.635	1.033
	Age	.062	.009	0.205	1	.073	.983	.966	1.002
	PriOcc	.522	.212	.033	1	.856	.962	.635	1.459
	CSR	5.213	.061	8.214	1	.003	12.66	1.045	1.443
	Constant	3.681	.667	2.410	1	.164	4.314		

a Variable(s) entered on step 1: *PriOcc*, *MS*, *Age*, *Edu*, *AY*, *HHCom*, *CSR*, *HHSIZE*, *BuEXP*.

Source: Computed from the field data by authors.

An assessment of the full model against a constant only model was statistically significant, revealing that the predictors as a set reliably differentiated between the "Yes" and "No" effect of CSR (chi square = 52.311, $p < .000$ with $df = 8$). Nagelkerke's R^2 of .852 showed a strong relationship between prediction and grouping. Prediction success overall was 94%. (93% goes for "Yes" and 91% for the "No"). The Z- value in place of CSR is 8.214, with an associated p-value of .021. Based on the set 5% significant level, the work came to the conclusion that CSRs of the MOCs under GMOU has made a significant impact on addressing inequalities and empowering women for sustainable ecosystem management in Nigeria's Niger Delta region. Also, the EXP (B) value of the Predictor – GMOU is 12.66. This implies that if the MOCs raise their CSR intervention aimed at addressing inequalities and endowing women for sustainable ecosystem control (management) by one unit, the odds ratio is as good as 13 times larger and, therefore, rural women are 12 times more in the offing to be pulled out of inequalities and their capacity to manage the ecosystem is improved upon.

In summation, the findings of this study correspond with Stloutal *et al* (2013) in that sustaining natural resources and biodiversity better the maintenance of the unique preferences, priorities and awareness of both women and men, which can be vital in coping with food unavailability and adapting to weather cum climate variation.

The results also consent to Robyn *et al* (2021) in that due to their unique duties in controlling natural resources, women and men face varied risks carrying out tasks, especially when their access is interrupted. Women often hold the primary duty for water and fuel gathering (collection) to meet the family (household) needs. These challenging responsibilities put them at risk of harm, animal attacks and physical cum sexual violence. Besides, the time they spend,

along with the risk before them, worsen with changing obtainability and scarcity of natural resources. However, these results suggest that the relative priorities of MOCs' CSR activities in the Niger Delta should vary from the classic, American ordering, as projected by Carroll (1991). Placing value on a cultural context in deciding on the suitable CSR priorities and programmes, as suggested by Visser (2006), is essential in the context of the rural Niger Delta. It is also important to be flexible, as suggested by Amaeshi *et al* (2006), in addressing the distinctiveness of the socio-economic problems in the region, which requires balancing the differences in gender in natural resource control (management). Muthuri (2012) also assented in that it is vital for CSR interventions in Africa to revolve around the reduction of poverty and sustainable ecosystem control (management). But in addition and contribution, we will state that CSR intervention can achieve gender equality in natural resource control (management) in the Niger Delta. MOCs' CSR can play a vital role in achieving gender equality when investments in resolving inequalities and endowing women with power for sustainable ecosystem control (management) is designed for the convolutions of real life. Recognizing the web of problems within families, communities and at the policy level that shapes a woman's experience is essential in carrying out effective CSR program. It is our argument that the private sector, generally, is fit to address some of the social, cultural, logistical, economic and legal obstacles that encourage equitable natural resource control in the Niger Delta. MOCs, in specific, are well placed for resolving gender-related obstacles and challenges as well as advocating for equitable natural resource control (governance) that would lead to better living conditions in the region. Hence, taking on gender equality in natural resource control should be ranked highly in CSR practices in the Niger Delta because it will help towards enhancing the environment for engaging in business activities in the region.

5. Conclusion and policy implications

In the Niger Delta, when it comes to controlling natural resources, women and men hold dissimilar roles and duties, knowledge and influence (PIND, 2011). In most cases, women and men have different levels of access and control over these resources. The various values and priorities related to natural resources between women and men generate discrete and vital gains for means of living and ecosystems. In their responsibilities as users and managers of natural resources, women are greatly important in making available food, water and fuel for their communities and families (households). They drive innovation and bring into function cooperative solutions, for example, using facts in both formal and informal processes of resource management. But despite their distinctive needs, aptitude and assistances in natural resource management, rural women in Niger Delta are often not considered or disenfranchised when it comes to deciding on inputs, usage and control of resources (NDDC, 2001). Thus, we posit as follows:

- CSR of MOCs using GMoU has failed in contributing to the basic gender issues in the natural resource control (management) in the region of Niger Delta in Nigeria.
- CSR of MOCs using GMoU has not been able to address the problem of inequalities and has failed to empower women for sustainable ecosystem management in the region of Niger Delta in Nigeria.

Hence, we set out to evaluate the effect of MOCs' CSR on addressing inequalities and facilitating women for sustainable ecosystem control in the Niger Delta region of Nigeria. Women respondents totaling 768 were sampled across the rural areas of the Niger Delta region. Findings from the use of logistic regression model show that despite women's exceptional and vital responsibilities in the use and control of natural resources, they are typically less included in the formal governance processes, resulting in their concerns, goals, awareness and capabilities not being both well represented or effectively utilized. The outcomes also indicate that the MOCs' CSR using GMoU model has recorded notable success in addressing gender inequalities and improving the aptitude of the rural women in controlling of natural resources and ecosystem. The result proposes that if the CSR aimed at resolving gender issue is increased by one unit, the odd ratio is almost 13 times as high.

Our research suggests that CSR can play an important role in advancing gender equity when it is designed for the complexities of real life. Acknowledging the web of challenges within families, communities, and at the policy level that shape a woman's experience is critical to implementing effective CSR programming. These power dynamics are complex and challenging navigate in the Niger Delta region of Nigeria, but improving gender equity will improve outcomes for all. In terms of implications for practice, it is apparent from the findings that addressing gender-related obstacles and problems as well as advocating for equitable

natural resource governance leads to better livelihood results. Gender equality and women's involvement in decision-making as well as management of natural resource aid conservation goals and leads to more effective result. These gains are also apparent at the community level by involving both women and men in addition to incorporating their unique duties and awareness of natural resources.

The implications for policy largely surround that sustainable management of natural resources requires the involvement of many different stakeholders. Taking into account the different roles and responsibilities of men and women is critical to the sustainable management of natural resources as well as the success of GMoU policies and programmes. Cluster development boards of MOCs need to aware that natural resource management programmes may affect women and men differently due to their cultural rights, roles and responsibilities. Awareness of this is essential if CDBs of GMoUs are to promote sustainable development and effective conservation and to ensure that natural resources in the Niger Delta region of Nigeria are managed appropriately. At the same time, the unique roles men and women play in their communities leads to different bodies of knowledge about environment around them. Due to their roles of gathering resources like wood, water and forest products, not to mention subsistence agriculture, women have a unique understanding of the natural resources around them. However, if women are not specifically included to input into the design of policies and programmes, this knowledge can be lost increasing women's participation in decision-making will ensure gross success and sustainability of GMoU projects while properly safeguarding natural resources and enhancing the shared benefits of their careful use in the region.

However, the core caveat of the study is that it is restricted to the scope of rural areas in the Niger Delta. Hence, the results cannot be widespread to other African countries with the same policy issues. As a result of this weakness, reproducing the analysis in other countries is valuable in order to ascertain whether the established nexuses survive empirical scrutiny in diverse rural contexts of Africa.

Disclosure statement

No potential conflict of interest was reported by the authors.

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