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Abstract

We examine the impact of multinational oil companies' (MOCs) corporate social responsibility (CSR) on gender equality for social equity using a combined propensity score matching and logit model. The result indicates a significant relationship between CSR and gender equality for social equity in coastal communities of Nigeria's oil producing region. This implies that CSR of MOCs is a critical factor for promoting equal opportunity, equal access, equal treatment, equal sharing and division of resources. The finding suggest for improved CSR investment of MOCs on empowering the women in coastal communities in taking up alternative livelihoods from conservation and marine resources.

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1. Introduction

While the term equity refers to fairness and justice, equality refers to equal opportunity, equal access, equal treatment, equal sharing and division of resources, keeping everyone at the same level regardless of the tools they already do or don't have access to (Dooley, 2020; Gooden, 2015; Lee, 2021). Social equity recognizes that each person has different circumstances and allocates the exact resources and opportunities needed to reach an equal outcome (Jos, 2016; Johnson and Svara, 2015; Lee, 2019). Social equality means each individual or group of people is given the same resources or opportunities (McCandless and Ronquillo, 2020). In sub-Saharan Africa, women are useful in different ways when it comes to marine resource, but their

access to productive resources and opportunities are very low when compared to that of males (Jeeva, 2017). Finding ways to remove the gender gaps would be good for women and the coastal communities as well (Stacey *et al,* 2019). Seeing to it that both men and women have equal level of operation has both inherent and instrumental implications. Inherently, like men, women have a right to fairness (justice) in all societies. On the other hand, instrumentally, making gender equality a reality would have various economic and social gains for women, their offspring and the larger society (Matthews *et al,* 2012). Not allowing coastal women enjoy the justice they deserve and denying them space to take part in social cum economic development would keep affecting the whole of Africa. As it were, with all the gains in realizing a gender equal society, both sexes are not close to being equal, particularly in sub-Saharan Africa (Cliffe and Akinrotimi, 2015). To give an example, in most of the region's coastal communities, not less than half of the population is female, but the work force is made up of more of males; in a similar way, a substantial fraction of girls and women with great ability do not enjoy the privilege of attending school or gaining other forms of skills; females (women and girls) are less expected to attend school, and when they end up attending, they may not complete secondary level of education like the boys; for the few that complete secondary education, they are not easily employed like the men; this happens more in the formal sector (Francis *et al* 2011; Essein and Inyang, 2017; Tamuno, 2022). For the ones (the females) working in the fishing and farming sector, there access to land, assets, capital, human capital, and other resources of production (African Development Report, 2015).

In the meantime, Nigeria's economy depends a lot on the oil and gas sector. In export revenue, it contributes 95%. It then contributes 80% to 85% of government revenues, and about 32% of gross domestic product (African Development Report, 2015). Nigeria aside being the largest oil producer in Africa is among the largest ten globally. Its recoverable reserves were projected to be 36.2 billion barrels in January 2007 (Francis *et al,* 2011). With all the relative oil wealth of the country, GDP per capita is 2,400 USD. Many are impoverished with about 50% living on less than $1.25 per day (African Development Report, 2015). It is in the Southern part of the country, known as the Niger Delta, that oil and gas reserves are concentrated. This region is noticeable for her deficiency and underdevelopment (NDDC, 2001). Oil extraction which is not a labour but a capital-intensive industry provides little employment. Another challenge faced in the region is the difficult geographical terrain which makes infrastructure more expensive. Then, there is the effect of environmental degradation which is partly the result of extraction of oil on traditional industries such as fishing and other agricultural activities (UNDP, 2006). Oil spillage and gas flaring going on for decades, as well as the fast growing population, has meant these traditional ways of earning a living are either no longer practicable or have experienced massive fall; accordingly, the level of unemployment in the region is higher than the national average (NDDC, 2004).

All the same, the multinational oil companies (MOCs) take part in a plethora of corporate social responsibility (CSR) undertakings in the Niger Delta and other parts of the country. This includes the construction of schools, markets, hospitals and even the provision of pipe borne water etc. (Amaeshi, 2006). With the passing of years, MOCs have found ways to improve on their approach in engaging with the local communities towards delivering these projects. In 2006, they brought into live a new way of working with communities called the Global Memorandum of Understanding (GMoU). It is a vital shift in CSR approach, emphasizing on a clearer and more accountable processes in addition to sustainability, regular communication with the grassroots, and conflict prevention (SPDC, 2013). Under the GMoUs terms, the communities choose areas they need development in, while MOCs make available funding for five years, making sure that the communities have steady and dependable financing as they

carry out the execution of their community development plans (Chevron, 2014). Nevertheless, the rise of GMoU has largely been seen as a plan by MOCs to repel public criticism of their actions in the region as well as being a means of evading government regulation (Frynas, 2009; Asgil, 2012). As an idea, GMoU model has been greatly attacked, and there has been intense debate over its usefulness and practical implications in the region (Niger Delta). While supporters see GMoU model as a way of potentially bolstering an old dynamic in MOCs – community relationships critics view it as an avenue for new functions to be demanded of old institutions (Moise, 2020; Obuah and Keke, 2022; Tamuno, 2022; Mamudu *et al*, 2021; Essein and Inyang, 2017; Eweje, 2006; Amaeshi *et al*, 2006; Asongu *et al*, 2019; Ekhator, 2014; Idemudia, 2014; Renouards and Lado, 2012; Slack, 2012; Lompo and Trani, 2013; Marchant, 2014). This dissimilarity in views invariably sets the context for the GMoU model of MOCs deliberation pitting those in support of conserving an already entrenched MOCs – community relationships against the one's that maintain that MOCs – community relationship in the Niger Delta must embrace changing community values linked to socio-cultural influences.

With this background in mind and apparent gap in the literature, the propositions of this research build on gender discourse on maintainable livelihoods in the coastal communities from the standpoint of CSR. To aid the reduction of pressure on marine conservation and resources, this paper is interested in finding ways of promoting alternative livelihoods that support women's overcoming of the barriers working against their involvement in the wider economy of the region. The positioning of this study is in line with finding out the level of CSR investment that the MOCs have engaged themselves in as it concerns promoting alternative livelihoods, as well as defining the extent to which women earn a living from such investment in the coastal communities. It also looks at how such affects the women's trade. These four areas of emphasis likewise represent four main questions, notably:

i. What is the level of seriousness of MOCs' CSR investment in stimulating alternative livelihood in Nigeria's Niger Delta coastal communities?

ii. What is the level of involvement of the different genders in the GMoU intervention of the MOCs in Nigeria's Niger Delta coastal communities?

iii. Do MOCs' GMoU interventions help coastal women in accessing credit, partaking in paid employment, and beginning a business of their own?

iv. Do MOCs' GMoU interventions actually support coastal women in overcoming obstacles to their involvement in the wider economy of Nigeria's Niger Delta region?

1.1 Study hypothesis

Means of livelihood among women in Nigeria's coastal communities of oil producing region include small handicrafts, rearing of cattle and poultry, homestead gardening, prawn and crab collecting, sewing cum tailoring activities; there are, then, some coastal areas where women are employed in wage labor activities; in addition are other micro scale sources of revenue such as small business, production of betel leaf and nut as well as hawking of various household materials found in coastal area of the region (UNDP, 2006; Obuah and Keke, 2022). Women from the most impoverished families also work in local government area (LGA) office as cleaners and also find the time to engage in varied types of handicrafts like toys from snail, fishing nets, fish cages and goods from bamboo (NDDC, 2001; Tamuno, 2022). As a result of the long problem of oil spillage and gas flaring, women's means of livelihood suffer due to the destruction of crops and livestock – female's main means of livelihood at the household level

in the coastal communities of Niger Delta in Nigeria (NDDC, 2004; Mamudu *et al,* 2021). Nevertheless, despite their notable effort towards the provision of food and income, women seem to be neglected in matters in line with the management of marine resources; likewise, women time and again have little or no say in the management of the budgets of households; this results in less money being spent on health, food, or education than if women held the purse strings; women are hindered from enjoying employment, finance and education, and are more vulnerable to hunger and disease (Francis *et al,* 2011; Essien and Inyang, 2017; Moise, 2020). Hence, we hypothesize that CSR of MOCs has failed to make a remarkable impact on the women's means of support in the coastal communities of Nigeria's Niger Delta region.

The positioning of this research departs from the contemporary African gender inequalities literature, which has focused on, *inter alia,* gender equality for social equity: Africa feminist thought (Amina, 2019); oil, fisheries and coastal communities (Andrew *et al,* 2021); women and environmental justice issues in Nigeria (Ekhator and Obani, 2022); protecting and promoting women's right in Nigeria (Ekhator, 2019); women and access to environmental justice in Nigeria (Ekhator, 2020); implementing the Sustainable Development Goals in Nigeria (Ekahtor, 2021); feminism and environmental justice (Gaard, 2017); Ogoni women's nonviolent resistance (Keys, 2021); gender and environment (MacGregor, 2017); oil conflict, and the dynamics of resource struggle in the Niger Delta (Mai-Bornu, 2019); ocean optimism and resilience (Okafor-Yarwood *et al,* 2022); awareness of climate change by rural women in the Niger Delta region (Onokerhoraye *et al,* 2019); climate change adaptation and resilience building by rural women in the Niger Delta communities (Onokerhorage and Eronmhonsele,2020); and a comparative study of farming and fishing households' livelihood vulnerability in the Niger Delta, Nigeria (Onyenekwe *et al,* 2022).

The subsequent parts of the paper are in the following order: the background, literature and theoretical underpinnings (Section 2); description of the materials and method (Section 3); presentation of the empirical results (Section 4); discussions on the findings, and – as the final section –implications and future research directions (6).

2. Background, literature and theoretical underpinnings
2.1 Women, poverty and inequality nexus
Fishing and farming, as noted in history, are the major means of livelihoods for the people of Niger Delta region of Nigeria (NDDC, 2001).Vast reserves of oil and gas are contained in the region, which are vital in the nation's economy (Asgil, 2012). All the richness of natural resources in the area still leaves it poor, economically underdevelopment and struggling with inequality as well as ruined environment (UNDP, 2006). Historical tensions and increase of armed groups of all sorts (criminal, military and ethno-sectarian) add to numerous conflict dynamics in the region (NDDC, 2004). In line with Idemudia (2014), a foremost group that has been greatly neglected in recent economic progress in the Niger Delta is the women who stay in the coastal communities. Women's involvement in political, economic and social development is being held back by uneven access to resources and opportunities as well as deplorable levels of interpersonal violence. This harms women and children, and worsens the region's economies (Watt, 2004). Their input in coastal communities' development is restricted by their small numbers in the labour force. The selection bias which tilts towards boys means that boys with less inherent ability will still be favoured over girls when it comes to education and employment, resulting in sub-optimal resource distribution between the sexes (Francis *et al,* 2011). However, educated or not, employed in the formal sector or not, coastal women will never stop playing a central role in the welfare of children. Their inability to access resources, therefore, is a problem to Niger Delta as a whole, posing a threat to the future generations.

Bennett (2015), reveals that traditional fisheries development assistance in coastal communities usually consists of enhanced fishing equipment and boat. Yet, aiding the expansion and modernization of local fisheries, can negatively place additional pressure on an often already dwindling resources base (de la Torre-Castro *et al,* 2013). They also increase women's net servicing and fish processing tasks with just a little addition to the income for the household as the time women have for their other work and income-generating activities is reduced too (Hauzer *et al,* 2013). IFAD (2011) stresses that women's sources of revenue in the coastal communities cannot be properly grasped without putting into consideration the gender gap in access to such productive resources as capital, land, assets, human capital, and others. According to Jeeva (2017), the gap in gender when it comes to accessing different types of assets (like land or livestock), affects both women and men's productivity in coastal areas. The ability to have control over and the ownership of assets is a serious element of well-being. Assets just like income can be changed to cash, but they are also multi-dimensional (Lange and Jiddawi, 2009). Whoever has control over these assets within the household is a determining factor in household and personal well-being. Besides, how these assets are assigned within the households has significant implications for a range of results (Mutimukuru-Maravanyika *et al,* 2017). Financial limitations also, are often named as one reason coastal women go for lower levels of involvements. Ram-Bidesi (2015) accentuates that proper financial products that encourages women to borrow, save and insure are essential for consolidating their roles as producers and for broadening the economic openings accessible to them in coastal communities. Again, in societies where the law and ethnic norms make it challenging for women to accrue valuable assets such as land, livestock has time and again emerged as a substitute form of wealth for women. Rleiber *et al* (2014) state that women's right over their livestock, however, are more or less insecure, probably because they often acquire livestock through such casual means as bequest or gifts. Therefore, in line with the view above, we envisage that interventions that would better women's ability to acquire credit, partake in paid employment, and begin their own business could be beneficial in endowing women in coastal communities.

2.2 Women, fair treatment and environmental justice

In the context of this study, we define Environmental Justice as the fair treatment and meaningful involvement of all the people regardless of race, colour, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies (Gaard, 2017; Ekhator and Obani, 2022; Keys, 2021). Fair treatment means no group of people should bear a disproportionate share of negative environmental consequences resulting from industrial, governmental and commercial operations or policies (MacGregor, 2017; Ekhator, 2020; Onokerhoraye and Eronmhonsele, 2020). Meaningful involvement means that people have an opportunity to participate in decisions about activities that may affect their environment and/or health; the public's contribution can influence the regulatory agency's decision; community concerns will be considered in the decision making process; and decision makers will seek out and facilitate the involvement of those potentially affected (Mai-Bornu, 2019; Ekahtor, 2019; Amina, 2019; Andrews *et al,* 2021; Okafor-Yarwood *et al,* 2022; Onyenekwe *et al,* 2022).

Meanwhile, decades of oil exploration in the Niger Delta region have no doubt affected the environment and lives of the people; while oil spills and indiscriminate flaring of gas have equally caused ecological devastation in the region (Onokerhoraye *et al,* 2019). The deterioration of the environment is one of the most visible forms of the negative impact of oil exploration that sets the coastal communities apart from other poor communities in the region;

environmental degradation, a major focus of local discontent, has often brought communities into conflict with the MOCs (Onyenekwe *et al,* 2022). Oil spills, gas flaring, and shoreline flooding and erosion are the main environmental challenges faced by coastal communities in the Niger Delta (Andrews *et al,* 2021). Protecting the natural environment of the coastal communities is closely linked to the protection of the economic wellbeing of the people; destruction of the environment through oil spills and gas flaring has made the poorest coastal communities vulnerable and has had direct deleterious impacts, such as harming traditional livelihoods - farming and fishing (Onokerhoraye *et al,* 2019; Okafor-Yarwood *et al,* 2022).

Women bear the brunt of environmental injustice in coastal communities of the Niger Delta; and the negative consequences of the operations of the MOCs have also impacted negatively on the health of the woman in the region (Ekhator, 2020). In this context, women are more vulnerable to the effect of environmental injustice than men – primarily as they constitute the majority of the coastal's poor and are more dependent for their livelihood on natural resources that are threatened by MOCs' environmental degradation (Onokerhoraye *et al,* 2019). Furthermore, women face social, economic and political barriers that limit their capacity. Women and men in coastal communities are especially vulnerable when they are highly dependent on local natural resources for their livelihood. Those charged with the responsibility to secure water, food and fuel for cooking and heating face the greatest challenges of the region's environmental damages (Onokerhoraye *et al,* 2020).Moreover, when coupled with unequal access to resources and to decision-making processes, limited mobility places women in coastal communities in a position where they are disproportionately affected by environmental injustice (Andrews *et al,* 2021). Nevertheless, women have also been actively involved in redressing the negative effects caused by the operations of MOCs in the region; as the environmental disasters or degradation have impacted negatively on their livelihood - fishing and seaweed farming (Ekahtor, 2021). Notwithstanding that women in Nigeria face state-sanctioned discriminatory practices, and economic and social barriers, they have stood up against the negative activities of the MOCs by protesting those activities and eventually pushing the companies to concede to some of the women's demands; women have relied on dramatic strategies, such as naked protests, to protest the operation of MOCs and environmental damage (Ekahtor and Obani, 2022). Due to oil extraction, employment in fishing and agriculture in the coastal communities of the region has not been offset by the addition of new jobs in the oil industry (Francis *et al,* 2011).

2.3 Theoretical underpinnings
2.3.1 Incorporating African CSR perspective.
Carroll's (1991) CSR Pyramid is possibly the most recognized model of CSR, with its four levels showing the relative importance of legal, economic, ethical and philanthropic tasks in that order. Carroll's CSR Pyramid is both a durable and useful model for the finding and exploring CSR. However, it is not clear whether Carroll is using the Pyramid as a descriptive or normative model. The retrospective and dependence explanations suggest a descriptive bias, while his empirical and simultaneity arguments tend towards the normative. If it is intended as a normative framework, there are many in Africa and elsewhere outside America who would not agree with Carroll's ordered elements as representative of their CSR aspiration (Visser, 2006; Muthuri, 2012; Ekhator, 2014; Frynas, 2009; Amaeshi *et al,* 2006; Marchant, 2014; Asgil, 2012; Lompo and Trani, 2013; Watts, 2004; Slack, 2012; and Renouard and Lado, 2012). For example, the assessment of CSR in Africa was used to test the correctness and significance of Carroll's CSR Pyramid. In line with Visser (2006), if Carroll's basic four-part model is recognized, it is put forward that the relative priorities of CSR in Africa are probably going to vary from the classic American Ordering; and it is, in addition, projected that Carroll's

CSR Pyramid may not be the best model for having a grasp of CSR in general, and particularly in Africa. Muthuri (2012), depending on the extant literature on CSR in Africa, postulated that the CSR issues dominant in Africa include community development, health and HIV/AIDS, poverty reduction, education and training, economic and enterprise development, environment, human rights, sports, corruption and governance, and accountability. Ekhator (2014) propose that benevolent initiatives as CSR by companies are widespread in Nigeria. Consequently, in developing countries, the failure of government in making amenities available for its citizen puts emphasis on the role of multinationals in CSR and philanthropy, which Western countries do not see as CSR (Frynas, 2009). Amaeshi *et al* (2006) have debated that the Nigerian conception of CSR is remarkably dissimilar from the Western version; and that it should be directed towards addressing the distinctiveness of the socio-economic development issues of the country. It should also be informed by the country's cultural and social influences. In fact, it might not even reflect the widely held Western standard and outlooks of CSR. Thus, this study makes use of quantitative methodology but views the result from the African CSR standpoint and liberal feminist theory.

2.3.2 Incorporating gender perspective

Current approaches to study of women and gender in Africa are rooted in African feminist as opposed to global north feminist ethnographies and theories (Mama, 1996; Ampofo *et al*, 2004). African gender studies scholars are conversant with postmodernist discourses on difference, stressing the need to generate systematic evidence around issues that unify and create space for dialogue rather than confrontation and differences (Nzomo, 1998; Lewis, 2002; Ampofo *et al,* 2008). However, this study seeks to use a wider appeal approach of liberal feminist theory as a framework for descriptive analysis of coastal women in Niger Delta communities. The liberal feminist theory as used by Fischer *et al* (1993), stated that the liberal feminist tradition is linked to feminism's earliest days and argue for the inevitability requirement of social reform in giving women the same status and chances as men. The central basis of the liberal theory takes on that men and women are the same and that rationality (not sex) is the ground for individual rights. According to Unger and Crawford (1992), Liberal feminist stresses the actuality of unfair barrier and systematic biases facing women. Some examples are constrained access to education, resources and business experience, which must be abolished. Liberal feminism is an expansion of political views of entitlement, equality, and individual rights. The liberal feminist standpoint has been the ground for many legal changes that have been useful in encouraging greater equality for women (Fischer *et al,* 1993). Liberal feminist theory in the expression of this theory in the context of vesting power on women in coastal communities' postulates that if coastal women had same access to openings available to men, such as having access to credit, undertaking paid employment, and starting their own businesses, they would be as good as men.

2.3.3 Incorporating social equity perspective

According to McCandless and Larson (2018), if we want to live in a world where everyone has the opportunities and resources they need to thrive, where no one is discriminated against, and where everyone's right are protected, we need social equity. Menifield *et al.* (2019) argue that we won't achieve that world by treating everyone the same because not everyone is the same, and trying to achieve equity through equality may seem like it would work, but it ignores both historical and existing operation. Wooldridge and Bilharz (2017) suggest that social equity is a flexible, needs – based process that recognizes inequalities and works towards fairness in every area of society including education, housing, healthcare and more. Hence, this study

adopts quantitative methodology but looks at the outcome from the liberal feminist theory, social equity lens and African CSR perception.

3. Materials and Method

Research into CSR in Niger Delta region of Nigeria is still relatively underdeveloped and tends to be adhoc with a heavy reliance on convenience – based case studies or descriptive accounts (Marchant, 2014). The focus is often on high profile incidence or branded companies and a few selected communities with a general lack of comparable benchmarking data (Asgil, 2012). Hence, there is an urgent need for further research on CSR in communities and sectorial level, as well as on theoretical constructs. Consequently, we adopted the quantitative method in this study, given the rarity of quantitative data on the complexities of CSR impact in the region (Renouard and Lado, 2012). A survey research technique is used in this study, targeted at gaining information from a representative sample of coastal women in the oil producing region of Nigeria. Cross-sectional, it is important, and it explains out cum interprets what exists at present. Figure 1ascertains the constituents' administrative States of the Niger Delta, Nigeria.

Figure 1: Constituent administrative states of the Niger Delta, Nigeria
Source: NDDC, 2004

3.1 Sample size

Using the Fisher (1998) formula as stated in equation, we computed the sample size.

$$n = \frac{z^2 p(1-p)}{d^2} \text{Equation 1}$$

In this equation, *N* is the sample size; *z* is the standard normal deviation for a given level of confidence, for example, 95% confidence =1.96. Also, *d* is margin of error at 0.05 for CI at 95%; *p* is proportion to be estimated. Where the value of p is not known, *p* is always assumed to be 0.5 Thus, the sample is calculated as:

$$n = \frac{1.96^2 (0.5)(1-0.5)}{0.05^2} = 384.$$

We simply rounded this up to 400, and also multiple it by two to further diminish the likely errors in the sample selection. In achieving this, 800 respondents were sampled, and data garnered from them in the cross-sectional data collection.

3.2 Sampling procedure

A multi-stage sampling was engaged, using purposeful and simple unsystematic samplings techniques, we chose the respondents surveyed in this study. In the first stage, we picked two local government areas (LGAs) each from the nine states of the region of Niger Delta. This was a purposive sampling based on the understanding that the LGA has coastal communities and such communities host at least one MOC' facility or is not far from a hosting LGA. In the second stage, we used unsystematic sampling to purposefully pick two coastal communities from each of the chosen LGAs. These communities were picked either because they belong to a cluster development board (CDB) or not. The ones that belonged to such we tagged CDB communities while those that do not belong to such are called non-CDB communities. In the final stage, with the assistance of community leaders, we chose women arbitrarily from the Thirty-Six coastal communities. With this, we picked the 800 respondents, and the sample was spread according to the population of the state (Table 1).

Table 1: Sample size determination table.

States	Population	Population of women	% of Total Population	Sample Per Sate	Treatment	Control
Abia	2,881,380	1,451,082	9%	72	36	36
AkwaIbom	3,902,051	1,918,849	12%	96	48	48
Bayelsa	1,704,515	830,432	6%	48	24	24
Cross River	2,892,988	1,421,021	9%	72	36	36
Delta	4,112,445	2,043,136	13%	104	52	52
Edo	3,233,366	1,599,420	10%	80	40	40
Imo	3,927,563	1,951,092	13%	104	52	52
Ondo	3,460,877	1,715,820	11%	88	44	44
Rivers	5,198,716	2,525,690	17%	136	68	68
Total	31,313,901	15,456,542	100%	800	400	400

Source: NPC, 2006/Authors' computation.

3.3 Data collection

We assembled both primary and secondary data made use of in this work. The primary data was the main put to use while the secondary data was used to support the results from the primary data. In the assemblage of primary data, participatory research technique was used. The participatory technique was utilized because the thoughts of those being studied is essential and the management of such was necessary (Lompo and Trani, 2013). We used this participatory research technique (key and survey informant interview) in collecting CSR impact data mainly as it is related to the coastal communities. We made use of structure questionnaire self-administered to the respondents as an appropriate tool to evaluate qualitative issues by quantitative information. Using this questionnaire, scores were spread out according to the intent of the study. In administering the questionnaire, we made use of local research assistants. These local research assistants were enlisted because of variety of languages and dialects in the study area that have more than fifty ethnic groups.

3.4 Analytical framework

We carried out this study to ascertain the usefulness and potentials of multi-national oil companies' corporate social responsibilities in endowing the coastal women with the ability to access credit, get involved in paid-employment, and begin their own business. We made use of descriptive as well as inferential statistics to realize the objectives of this study. We engaged descriptive statistics in realizing objectives one and two; then, we accomplished the second aim of the study by using the Shell Community Transformation and Development Index (SCOTDI), which denotes an inventive framework that incorporate and embraces a number of international principles into a composite index in a way that is receptive to local context (SPDC, 2013). The innovative framework is utilized in evaluating and ranking the performance of divergent GMoU clusters in the host communities (SPDC, 2018). Objectives three and four were accomplished by using inferential statistics of combined logit model and propensity score matching (PSM).We chose these methods because it was needful for us to control the selectivity and endogeneity problems.

As seen in the chosen sample, for the PSM, we picked women from the CDB communities and they were tagged "treatment" group while those selected from the non-CDB communities were tagged "control" group. With these groups, we appraised the average treatment effect of the MOCs by utilizing propensity score matching approach. According to Rosenbaum (2002), PSM covers the projection of possible treatment for both the "treatment" and the "control" groups I line with the observed covariates. PSM brings together the pre-treatment characteristics of each subject into a single index variable and is then made to match comparable individuals. We chose the control group from a bigger survey and then matched it to the treatment group on the ground of a set of observed characteristics that are not influenced by the treatment. This study takes it that the decision to be treated (although not random) hinges on the variables observed. For Rosenbaum (2002), matching on variable X implies that one can match on probability of X. For this, in measuring the effect of CSR on authorizing coastal women; we identified two groups (the treatment and control). The treatment group is denoted as $R_i = 1$ for respondent woman$_1$, and $R_i = 0$ otherwise (the control group). We then made the treatment groups to be matched to the control group in line with the propensity score (Probability of receiving CSR given observed characteristics).

Therefore:
$$P(X_1) = \text{Prob}(R_2 = 1/X_2)\ (0<P(X_2) < 1) \qquad\qquad \text{Equation 2}$$

Here X1 is a vector of control variables before CSR, if R1's are independent over all 1's as long as given X1 , the outcomes are independent of CSR,. In addition, the results are also

independent of CSR given P(X1), just as they will do if CSR is received arbitrarily. In drawing a conclusion on the effect of CSR on empowering coastal women, we saw the need to evade the biasness of picking observables by matching the probability of the treatment (covariates X); thereby, we defined the propensity scores of Vector X as:

$$P(X) = Pr\ (Z = 1/X),\quad\quad\quad\quad\quad\quad\quad\quad Equation\ 3$$

Where the Z represents the treatment indicator =1, where the respondent has received CSR, and = 0 if not. As a result of the propensity score being a balancing score, the observables X will be discrete same for the control and the treatment as well while the variances are the quality of treatments.

In line with Rosenbaum (2002), we estimated the unbiased impact by adapting four steps. First, we acknowledged that a binary response model predicts the probability of receiving CSR with appropriate observable characteristics. Because of this, pooled the two distinct groups (treatments and Controls) and estimated the logit model of receiving or not receiving CSR due to some socio-economic characteristics variables which include community, household and individual variables. The logit model is represented thus:

$$P(x) = Pr(Z= 1/X) = F(\alpha_1 x_1 \ldots\ldots\ldots + \ldots \alpha_n x_n) = F(x\alpha) = e^{x\alpha}\quad\quad Equation\ 4$$

The worth of the probability of receiving CSR came from the logit regression where we allotted each woman respondent a propensity score. Here, we let go of the control groups with very low propensity score that is outside the range found for treatment. Then, for each treatment, a control with the closest propensity score as measured by absolute difference in score known as 'nearest neighbour' was arrived at. The mean values of the outcome of indicators for the nearest neighbours were calculated. We then assessed the variance between the mean and actual value for treatment as the gain due CSR. The study then estimated the average treatment effect (ATT) as the difference between treatment and control groups based on PSM stated thus:

$$ATT_{PSM} = E_{p(x)}\ \{E(y_1/Z = 1,\ P(x) - E(y_0/Z = 0,\ P(X)\}\quad\quad\quad Equation\ 5$$

Where, $EP(X)$ stands for expectation with respect to the circulation of propensity score in the population. The true ATT shows the mean variance in empowering women.

Three different matching techniques were put to use (nearest neighbor matching –NNM; radius matching – RM; and kernel-based matching - KM); all being non-parametric matching estimator to match the pairs. Subsequently, we checked the matching estimators' quality by standardized variances in observables' means between treatment and control. After matching with X for the covariate X, we represented the difference in sample means for treatment as ($\acute{X_1}$) and matched control as ($\acute{X_0}$). Thus, we put the sub-samples as a percentage of the square root of the average sample variance as: ($\int_1^2 and \int_0^2$.).

To this:

$$|SD = 100 * \frac{(\bar{X}_1 - \bar{X}_0)}{\left(.05 \int_1^2 and \int_0^2 .\right)1/2}$$ Equation 6

We, then, accepted 5% as the remaining bias below after matching, even when there is no apparent threshold of operational or failed matching. We then took as a sign that the balance among the dissimilar observable characteristics between the matched groups is sufficient. Being aware that there is always an issue of hidden bias, we tried adjoining the hidden bias by the bounding approach. This is why we complemented equation 3, to estimate the PS by a vector U which contains all the variables not observed that we captured their effects on the probability of treatment by γ:

$P(x) = Pr(Z = 1/X) = F(X\alpha + U\gamma) = e^{X\alpha U\gamma}$Equation 7

To conclude, we took the sensitivity analysis where we considered the strength of the influence of γ on treatment in order to manage the effect of treatment on potential results. The supposition is that the unobservable variable is a binary variable with values 1 or 0. Thus, the treatment probability of both CDB women and non-CDB women is made to work in line with the bounds on the odds ratio as stated thus:

$$\frac{1}{e\gamma} \leq \frac{P(Xm)(1-P(Xn))}{P(Xn)(1-P(Xm))} \leq e\gamma$$ Equation 8

According to Lompo and Trani (2013), both the CDB women and non-CDB women have similar probability of receiving CSR, as far as they are identical in X, only if$e\square\square\square1$

4. Empirical Results
4.1 Descriptive analysis
Analysis (Table 2) illustrates the description of some of the respondents' economic (occupation, income), social (education), and demographic (age, household size, marital status) characteristics. Evaluating these characteristics is very necessary as it will assist in understanding the socio-economic variances in status of both treatments: those who are receiving direct CSR via the GMoUs, and the control (those who are not). From the examination, we noted that, 28% among the treatment group are in fishing while 42% are from the control. Also trading has 17% of the control group while the treatment group has 25%; in terms of farming, treatment group is 18% while control group is 15%. As discovered, only 8% of the treatment group are in paid employment while the control has 11%. 17% of the treatment groups are engaged in various hand craft but 11% of the controls are involved in them. This suggests that more of the women in treatment group are moving away from the traditional fishery life of the study area. This shift can be linked to authorization received from the MOCs.

In discussing more, the analysis indicates that age of the respondents has little or nothing to do with belonging to the control or treatment group. However, the average age of the women in the treatment group is 34years as that of the control group is 36 years. From the table, it is obvious that the women that have been receiving CSR (treatment) earn more than the ones that have not (control). In figures, while about 31% of the women in treatment group earn between NGN1000 to NGN150,000 annually, 66% of the control earn within the same range. In other

words, only about 34% of the treatment earn above N150,000 in a year while about 69% of the control are receive similar earnings. In addition, while about 12% of the treatment earn above NGN300,000, only 4% earn such in the control. Clearly, there is a big difference between the two groups, yet, irrespective of receiving or not receiving the CSRs via the GMoU intervention, the average annual income of all (both treatment and control groups) is still very poor. Obviously, there is still a high level of destitution in the region. Boele *et al,* (2001) made the conclusion that, in spite of the adoption of a number of CSR mechanism by multinational oil companies in Nigeria, the communities producing the oil have enjoyed a proportionally low amount of gain in comparison to the high social and environmental cost of extractive activities especially in the region's coastal communities.

Table 2. Socio-economic characteristics of the respondents

Variables	Treatment Group			Control Group		
	Freq	%	Cum	Freq	%	Cum
Primary Occupation						
Fishing	112	28	28	169	42	42
Trading	99	25	53	67	17	59
Farming	72	18	71	58	15	74
Paid Employment	32	8	79	25	6	80
Handicraft	67	17	96	42	11	90
Others	18	5	100	39	10	100
	400	**100**		**400**	**100**	
Age of Respondents						
Less than 20 years	15	4	4	24	6	6
21 - 25 years	124	31	35	101	25	31
26 - 30 years	88	22	57	82	21	52
31 - 35 years	59	15	72	70	18	69
35 - 40 years	46	12	83	45	11	81
41 - 45 years	30	8	91	31	8	88
45 - 50 years	22	6	96	28	7	95
Above 50 years	16	4	100	19	5	100
	400	**100**		**400**	**100**	
Level of Education						
None	52	13	13	72	18	18
FSLC	148	37	50	168	42	60
WAEC/WASSCE	117	29	79.25	107	27	87
Degree and above	83	21	100	53	13	100
	400	**100**		**400**	**100**	
Marital Status						
Single	67	17	17	75	19	19
Married	203	51	68	285	71	90
Widow	58	15	82	13	3	93
Divorced/Separated	72	18	100	27	7	100

	400	100		400	100	
Household Size						
1-4 Person	178	45	45	150	38	38
5-9 Person	153	38	83	144	36	74
10-14 Person	57	14	97	76	19	93
15 Person and above	12	3	100	30	8	100
	400	**100**		**400**	**100**	
Annual Income						
1000 - 50,000	18	5	5	86	22	22
51,000 - 100,000	39	10	14	93	23	45
101,000 - 150,000	65	16	31	83	21	66
151,000 - 200,000	61	15	46	64	16	82
201,000 - 250,000	81	20	66	45	11	93
251,000 - 300,000	88	22	88	14	4	96
Above 300,000	48	12	100	15	4	100
	400	**100**		**400**	**100**	

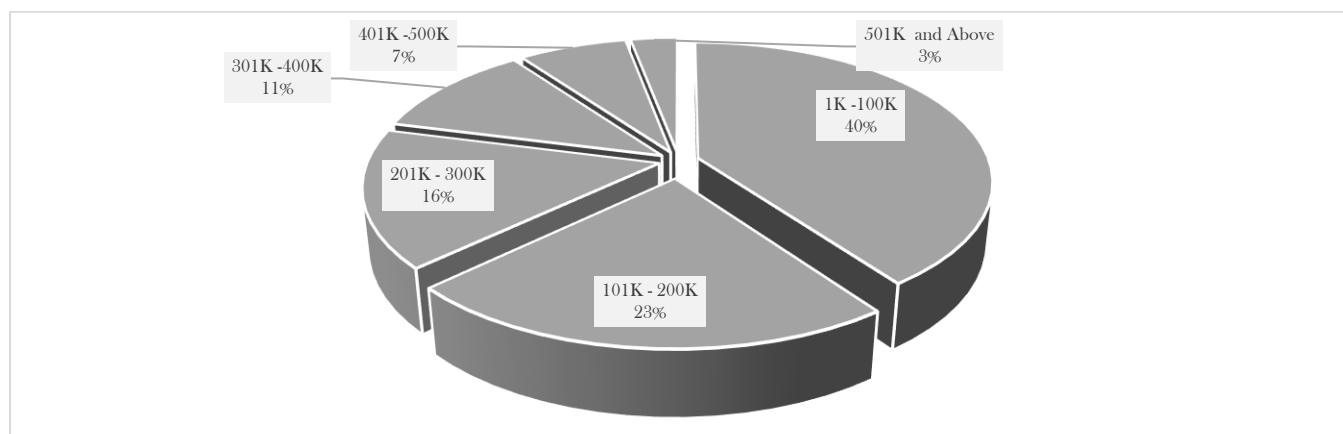**Source:** Authors' compilation based on field survey.

Figure 2. Average value of CSR receipts from the GMoUs by respondents
Source: Authors' computation

The analysis (Figure 2) indicates the level of enablement that the coastal women have received among the treatment group. As shown, about 40% have received CSR aid worth between NGN 1000 to NGN100, 000 (USD 2 to 200), while 23% received between NGN 101,000 to NGN 200,000 (USD 201 to 400) in the region. Also, while about 16% have received between NGN 201,000 to NGN 300,000 (USD 401 to 600), only 11% got between NGN 301,000 to NGN400,000(USD 601 to 800). In continuation, 7% have received between NGN 401,000 to NGN 500,000 (USD 801 to 1000) but only about 3% received above NGN 500,000 (1,000). This reveals that there may be a noteworthy effect of CSR intervention on vesting coastal women with power, but, the intensity is still low. Watt (2004) sees things in the same light regardless of the minimal contributions of CSR to oil producing communities in the Niger Delta, many coastal communities still face different ills including spillage of oil, gas flaring, and violence amongst others.
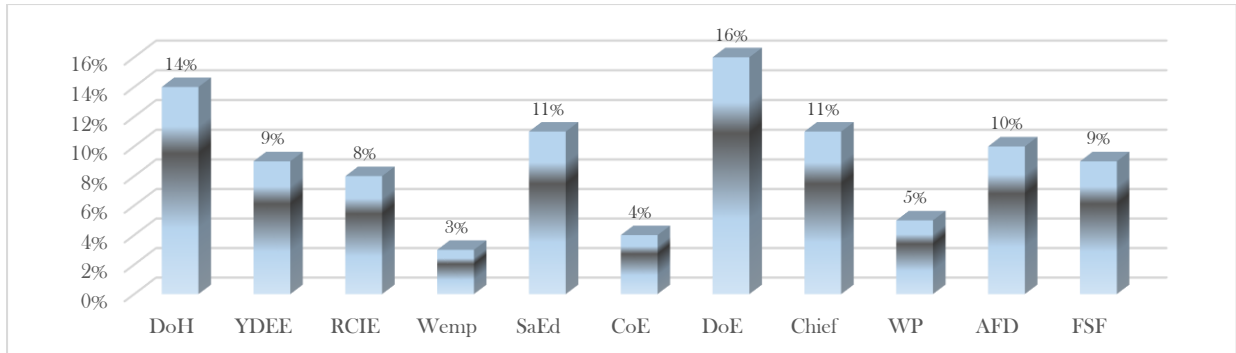
Figure 3. Percentage distribution of CSR intervention of MOCs by sectors in the coastal communities.
Source: Author's compilation based on household survey

Figure 3 reveals that in the CSR interventions of the MOCs utilizing the GMoU in the coastal communities of the region of Niger Delta, development of education in the areas of provision of teachers, training of teachers, bursaries, and provision of instructional materials took about 16% of the total interventions. Healthcare services acquired about 14%. In continuation, agricultural and forestry development got 10%; skill acquisition and enterprise development took 11%; fishing and sea food got 9%; youth employment took 9%, environmental cleaning—4% while road and civil infrastructural development got 8%. Interestingly, chieftaincy affairs received 11% while the empowerment of women received only 3%.

4.2 Level of Gender Participation in the CSR Intervention of the MOCS

In achieving the second objective of the study, the feelings of the coastal women were measured to determine the gender differences in the CSR interventions of the MOCs with the use of the GMoUs. We put to work the SCOTDI, a framework of invention to draw their outlook on the matter. This framework is made up of a number of international principles that are assembled into a compound index in a way that is amenable to local context. The women's outlook were sought for on the issue of control (governance) of the cluster development boards, female involvement in the CDBs, their role in the decision making, the openness in the management of CDBs as well as the GMoUs, steadiness of the CDBs after MOCs' CSR intervention and result of the GMoUs in the Niger Delta region. These views of the coastal women were essential as we cannot evaluate the outlook of others on their behalf.

Figure 4. Gender involvement in CSR interventions in the coastal communities of Niger Delta
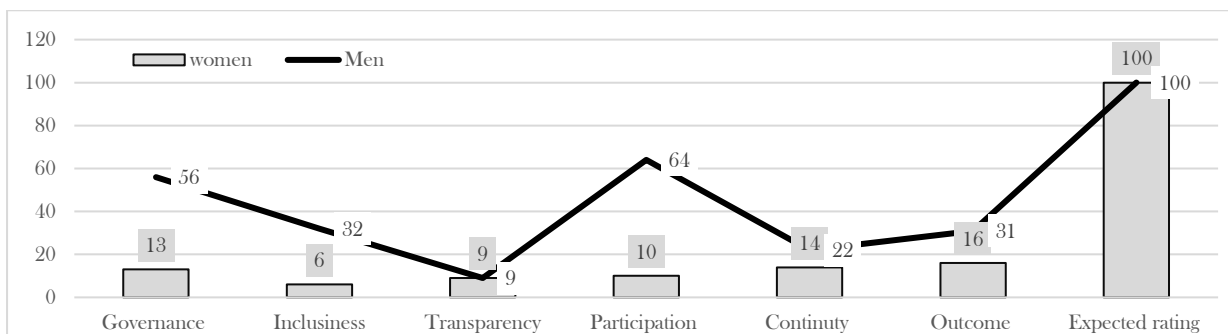
Source: Authors' compilation based on Field Survey.

Analysis (Figure 4) reveals that in placing the six criteria, the coastal community women rated the activities of the GMoUs in supporting women of the coastal communities in Niger Delta region as very poor, while they rated their support for men as high.In governance, it is clear that the women rated their participation 13% while towards men they were rated 56%. In openness of the CDBs in their actions, the women agreed they werein general low for both the men and the women. In inclusiveness, the women believe they are not given the chance their male counterparts are given. The figure clearly reveals that while men took 32% rating in inclusiveness, the women got just 6%. Looking at it from the other side, men's participation in the CSR and the CDBs undertakings is rated as high as 64%, but for the women the rating is as low as 10%. This reveals that the men barely carry the women along in the GMoU programmes. According to the rating of these women, men have an upper hand in receiving empowerment from the MOCs through the use of GMoU under the management of male dominated cluster development boards. Yet further examination reveals that these women are keen on participating in any CSR activities that will better their chances of being able to access credit, undertake paid employment, and commence their own business.

4.3 Willingness to shift away from fishery and sea food related ventures

With regards to both the treatment and control group, we established the willingness of the respondent to move out of their traditional coastal fishing and sea food venture and our findings is presented in Figure 5 below.
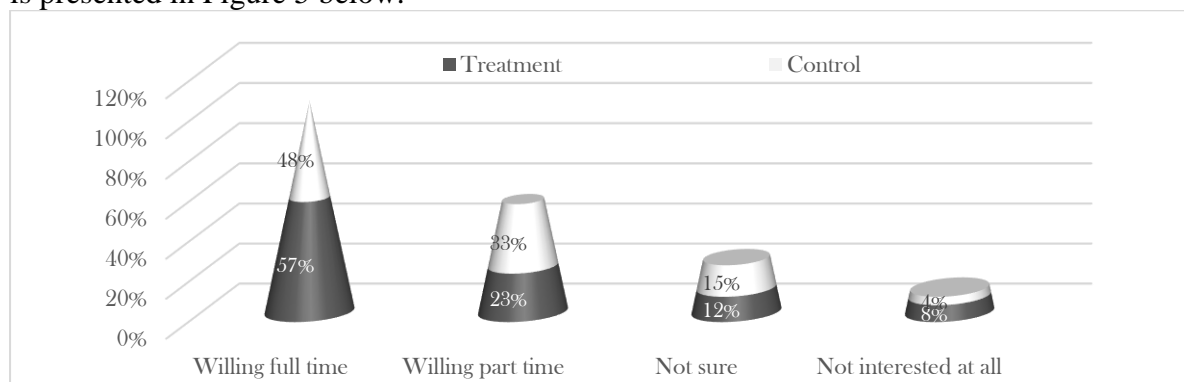

Figure 5. Distribution of the coastal women's willingness to shift away from fishery and sea food related ventures

Analysis (Figure 5) discloses that almost all the women are fed up with taking path in the fishing and sea food collection business which is actually the core traditional enterprises of the study area. As much as48% of the women in the control group are desirous of going into other areas of business to leave fishing full time. About 33% are willing to do same but on a part time basis as they keep expanding their fishery and sea food related businesses. In all, about 81% of the women in the control will gladly accept support in line with the programme the GMoU will bring their way. On the other hand, 80% of the women in the treatment group see things in a similar way. This indicates that on average, over 80% of the women will gladly embrace a more inclusive CSR intervention aimed at the coastal women.

4.4Econometric analysis

Analysis (Table 3) displays the summary of the average variances in the basic scores and independent observable characteristics between treatment group and the control group. In all, the means variance shows that, the score on room for accessing credit, undertaking paid employment, commencing a personal business enterprise, and improving on sources of revenue are to a rational basis high for the treatment group (the CDB communities), but quite low for

the control group (the non-CDB communities). The variances are, 23.31%, 21.81%, 15.91%, and 24.67% respectively. Also, the score on bringing down economic hindrances is low in the treatment and high in the control with a difference of -11.88. They are all significant at five percent significant level. When we take a look at the selected observable characteristics, the study observed differences in Education (1.81), Household Size (-7.45), Primary Occupation (5.86), Age (4.21), Marital Status (19.32), Annual Income (7.13) and the earnings (Income) of other household members (18.22). Ability to access land has positive but not significant difference of (0.28) indicating that there is no much alteration in accessing of land for the treatment as well as the control. Ability to access road and other civic infrastructure has positive and substantial difference of (3.15);Ability to access shelter(3.74); Ability to access portable water (8.71); Ability to access health care (7.11) and Participating in Socio-economic activities (8.21). With this, we have not only achieved the third objective of the study but also the fourth and can confirm that the CSR of MOCs utilizing the GMOUs is making remarkable impact on the coastal women.

Table 3. Comparison of mean score and observable characteristics across Treatment and control groups (N = 800)

Score in Percentage of maximum score	Treat.	Cont.	Diff.
Score on access to credit	44.87	21.56	23.31**
Score on undertaking paid employment	48.09	26.28	21.81**
Score on starting personal business enterprises	41.34	25.43	15.91**
Score on reduction in economic barriers	20.56	32.44	-11.88**
Score on enhancing livelihoods means	51.34	23.67	24.67**
Socio-Economic Characteristics			
Primary Occupation	26.21	20.35	5.86
Age	34.45	30.24	4.21
Marital Status	47.21	27.89	19.32
Education	35.24	33.43	1.81**
Household Size	14.76	20.21	-7.45
Annual Income	26.56	19.43	7.13*
Income of other household members	62.54	44.32	18.22
Household Characteristics			
Access to land	27.43	27.15	0.28**
Access to road and other civic infrastructure	21.78	18.63	3.15**
Access to Shelter	24.86	21.12	3.74**
Access to portable water	24.56	15.85	8.71*
Access to medical care	26.65	19.54	7.11***
Socio-economic activities participation	24.66	16.45	8.21*
Observation	**400**	**400**	

Source: Authors' compilation based on household survey

Table 4. Logit model to predict the probability of receiving CSR conditional on selected observables

Variables	Coefficient	Odd Ratio	Marginal Effect	Std. Error
Constant	7.142	2.482	.00321	.526
Pri_Occ	.521	.532	.0210*	.214
Age	.-013	.133	.0011	.031
Edu	.178	.432	.051**	.019
M_Sta	.043	1.231	.0103	.213
Anu_Inc	.-014	.721	.018	.012
Inc_OHhM	-.234	.412	.022	.042
CDB_Mgt	.002	.238	.101	.028
GMoU Perception	1.213	7.318	.112*	.021
Part_Ben	.819	1.541	.0112**	.021
Observation	800			
Likelihood Ratio - LR test (ρ=0)			χ^2 (1) =1573.321*	
Pseudo R^2	0.34			

*= significant at 1% level; ** = significant at 5% level; and * * * = significant at 10% level
Source: Authors' compilation based on household survey.

The model was applied in equation 3 making use of the characteristics that capture appropriate observable differences of both the treatment and control groups and projected the probability of the coastal women being supported by CSR through the GMoU. Analysis (Table 3) indicates that the marginal effect and standard error as well as the estimated coefficients and the odd ratio conveyed in terms of odds of Z=1. In the single observation, we took note that, GMoU perception, CDBs management system, primary occupation, highest educational level, and gains from participation are factors that positively influence on a coastal woman seeking direct CSR in the GMoU programmes. On the other hand, the age of the respondent, his or her annual income and revenue of other members of the respondent's household have negative influence on the search for CSR.

Table 5. Estimated impacts of CSR activities using the MOCs' GMoU (CG) on women via different matching algorithms

	Access and Knowledge Score in Percentage of Maximum Score		Average Treatment effect on the treated
	Receivers	Non- Receivers	
Nearest neighbour matching	Using single nearest or closest neighbor		
Score on access to credit	44.87	21.56	23.31**
Score on undertaking paid employment	48.09	26.28	21.81**
Score on starting personal business enterprises	41.34	25.43	15.91**
Score on reduction in economic barriers	20.56	32.44	-11.88**
Score on enhancing livelihoods means	51.34	23.67	24.67**
Observations	**400**	**400**	
Radius matching	Using all neighbours within a caliper of 0.01		
Score on access to credit	42.24	21.84	20.4**
Score on undertaking paid employment	41.21	22.25	18.96**
Score on starting personal business enterprises	43.41	34.72	8.69**
Score on reduction in economic barriers	24.51	31.82	-7.31**
Score on enhancing livelihoods means	48.24	32.46	15.78**
Observations	**345**	**372**	
Kernel-based matching	Using a bi-weight kernel function and a smoothing parameter of 0.06		
Score on access to credit	26.52	17.43	9.09**
Score on undertaking paid employment	39.26	26.82	12.44**
Score on starting personal business enterprises	45.62	34.26	11.36**
Score on reduction in economic barriers	14.52	21.32	- 6.80**
Score on enhancing livelihoods means	42.22	34.56	7.66**
	400	400	

*= significant at 1% level; ** = significant at 5% level; and * * * = significant at 10% level
Source: Authors' compilation based on household survey.

In line with the possibility of receiving CSR projected in the model, the effect of CSR of the MOCs using the GMoU on endowing the coastal community women was estimated by the average treatment test (ATT). After carefully endorsing the observations as ordered randomly, there were no large differences in the distribution of propensity scores. The nearest neighbour matching (NNM) was the matching method that produced the highest and most substantial treatment effect. These effects were valued in line with the following categories of result: Ability to access credit, undertake paid employment, commence a personal business enterprise, reduce economic hindrances and improve on means of livelihoods. Table 5shows the NNM assessment of commencing a personal business enterprise by the coastal community women as being about 16%. With this, we progressed to other methods (Radius and Kernel-based matching) as we believed that the nearest neighbour matching method produces relatively poor matches maybe due to poor dissemination of information. Using radius matching algorithm, the projected impact was about 9% and that of Kernel-based matching algorithm produced an average treatment effect of 11%. To this, we concluded that CSR of MOCs have had significant gains in vesting power on the women in the communities (coastal) of the Niger Delta region.

Table 6. Imbalance test results of observable covariates for three different matching algorithms via standardized difference in percent

Covariates X	Standardized differences in % after		
	Nearest neighbour matching	Radius matching	Kernel-based matching
Constant	4.8	33.7	21.4
Pri_Occ	5.7	32.8	25.8
Age	3.6	16.4	11.4
Edu	3.8	18.5	15.7
M_Sta	4.7	36.4	8.3
Anu_Inc	2.1	11.8	14.6
Inc_OHhM	4.1	21.6	16.3
CDB_Mgt	2.7	46.7	19.8
GMoU Perception	4.5	39.8	21.9
Part_Ben	3.7	25.4	17.4
Mean absolute standardized difference	4.2	27.8	16.2
Median absolute standardized difference	4.7	36.4	8.3

Source: Authors' compilation based on household survey.

Analysis (Table 6) discloses the overall balance of all covariates between the CDB communities (treatment) and the non-CDB communities (control) which ratifies the higher quality of NNM. The nearest neighbor matching is reasonably lower than the threshold of 5% while the kernel-based matching and radius in both the mean and the median of the absolute standardized variance after matching is by far higher than threshold of 5%.

Table 7. Sensitivity analysis with Rosenbaum's bounds on probability values

	Upper bounds on the significance level for different values of e^y				
	$e^y = 1$	$e^y = 1.25$	$e^y = 1.5$	$e^y = 1.75$	$e^y = 2$
Nearest neighbor matching	Using single nearest or closest neighbor				
Score on access to credit	0.0001	0.0021	0.0014	0.313	0.234
Score on undertaking paid employment	0.0001	0.0041	0.0213	0.311	0. 421
Score on starting personal business enterprises	0.0001	0.0051	0.0016	0.031	0.023
Score on reduction in economic barriers	0.0001	0.0013	0.0031	0.0512	0.123
Score on enhancing livelihoods means	0.0001	0.0022	0.0412	0.411	0.821
Radius matching	Using all neighbors within a caliper of 0.01				
Score on access to credit	0.0001	0.0042	0.0018	0.082	0.053

Score on undertaking paid employment	0.0002	0.0033	0.0021	0.141	0.071
Score on starting personal business enterprises	0.0002	0.0241	0.1462	0.623	0.062
Score on reduction in economic barriers	0.0001	0.0021	0.0043	0.014	0.0745
Score on enhancing livelihoods means	0.0001	0.0021	0.0315	0.022	0.0312
Kernel-based matching	Using a bi-weight kernel function and a smoothing parameter of 0.06				
Score on access to credit	0.0001	0.00143	0.0017	0.012	0.0123
Score on undertaking paid employment	0.0001	0.00213	0.0020	0.015	0.0322
Score on starting personal business enterprises	0.0001	0.0122	0.124	0.573	0.032
Score on reduction in economic barriers	0.0002	0.0171	0.0243	0.182	0.018
Score on enhancing livelihoods means	0.0001	0.00170	0.0022	0.021	0.0252

Source: Computed from the field data by authors

In the analysis (Table 7), we made it clear that KM generated more robust treatment effect in comparison to NNM and RM in line with estimates to hidden bias in having the room to access credit, undertake paid employment, begin a personal business enterprise, and enjoy better means of survival. For this reason, there is a likelihood that matched pairs may be different by up to 100% in unobservable characteristics, while the effect of CSR of the MOCs making use of the GMoU as monitored by the CDBs on accessing credit, undertaking paid employment, commencing personal business enterprises, and improving on means of livelihood, would still be significant at a level of 5% (*p*-value = 0.053, *p*-value = 0.071, p-value = 0.062, *p*-value 0.0745, and *p*-value 0.0312 respectively). Similar categories of knowledge score are robust to hidden bias up to an influence of $e^y = 2$ at a significance level of 10% in line with the radius matching approach. This result suggests that, the CSR of the MOCs through GMoU interventions are useful in providing alternative livelihood programmes for the coastal women which are away from the traditional fishery and sea food collection business in the region of Niger Delta.

Arguing from a pragmatic perspective of the result of this study, the discoveries suggest that socially established norms of behavior and the roles of women in the coastal communities of Nigeria's Niger Delta region can have intense effects on the type of economic undertakings in which coastal women can participate in, the technologies accessible to them, the people cum agencies they can interact with, the places they can pay visit to, the time they have at their disposal and the level of control they have over their own capital. First, our results are similar to Fischer *et al* (1993) and Unger and Crawford (1992), in that when spouse have comparable goals and precedence, it seems sensible to expect women to have the support of their husbands to gain access to fiscal resources, because spouse that are in agreement are likely to pull their resources together. That is, they are likely to put together their possessions, their finance, their labour and the information available to them in order to produce maximally (basket of goods and services), and likewise consume or invest the profit made according to their shared priority. Second, our finding harmonize in opinion with Sumra and Ahmed (2017) in that economic and gender inequality are interconnected and reinforce each other; as the life of women in coastal communities of the Niger Delta is affected by a myriad of discriminatory traditional and socio-cultural practices that put them at disadvantage in a number of areas compared to men. For example, the majority of the women are employed in casual, low-skilled, low-paid informal jobs. As a result of this disadvantage, women in these coastal communities are more likely to be poor than men, and keep being excluded from food participation in the region's economic, social and political life. The findings also give consent to Svara and Brunet (2020), Wright and Merritt (2020), in that social equity must be informed by local planning history, the equity landscape and the input of diverse stakeholders; as poverty and inequality in this coastal

communities are not due to lack of resources, but to the ill-use, misallocation and misappropriation these resources; at the root there is a culture of corruption and rent-seeking. Third, our findings validate the significance of cultural context in the determination of appropriate CSR priorities and programmes in Niger Delta, Nigeria. In line with Visser (2006), our discoveries stress the need for flexibility in approaches to MOCs' CSR making use of GMoUs in the coastal communities of Nigeria's oil producing region. For instance, in investing power on women in coastal communities, GMoUs should be gender sensitive. They should also help reduce pressure on marine resources by providing the need-based skill development training in various sectors like cutting and sewing, horticulture shrimp and crab production, as well as micro-enterprise training for women. Some green jobs such as making of agricultural byproducts and manufacturing of green manure are activities which can be done at household levels. It will make things easier for women's traditional roles, aside the fact that it requires limited investment.

On the other hand, in contribution and extension, this study shows that moving coastal women into more role of economic enablement will require their being able to assess diverse kinds of resources and capital like seed money, outlets for selling their products, marketing linkages and opportunities for training to enable them engage in other livelihood options that are substitutes to marine resources. As a result, it is suggested that MOCs' CSR should be invigorated to incorporate gender outlook into GMoUs plans of action and other measures so that coastal women will be empowered to engage in alternative means of livelihood other than marine resources. This could be realized via systematic gender analysis, collecting and utilizing sex-disaggregated data, developing practical tool, instituting gender-sensitive benchmarks and indicators to support increased attention to gender standpoints.

5. Concluding Remarks, Caveats, and Future Research Directions

At present, employment opportunities for women in the coastal communities of Nigeria's oil producing region are available in the areas of small handicrafts, sewing and tailoring activities, cattle and poultry rearing, homestead gardening as well as crab and prawn collecting, . In some coastal areas, women engage in wage labor activities. Other micro scale sources of revenue found in the coastal area of the region are betel leaf and nut production, small businesses and hawking of various household materials. Women from the underprivileged households work in local government area (LGA) as office cleaners and find time to engage in various types of handicrafts like making fishing nets, snail-made toys, fish cages and bamboo-made goods. Due to a long time of oil spillage and gas flaring, women's means of living are affected by the damage of crops and livestock, which are the main means of female occupations at the household level in the coastal communities of Niger Delta region of Nigeria. Yet, despite their substantial involvement in providing food and income, women appear to have little input into deliberations and community decisions on how marine resources are run. In the same way, women often have little or no say in the running of household budgets, resulting in less money being spent on food, health, or education than if women held the purse strings. Women seem to be hindered from accessing employment, finance, and education. They are also more likely to suffer from hunger and disease. Thus, we posit that CSR of MOCs has not meaningfully impacted on the women's sources of revenue in the coastal communities of the Niger Delta region of Nigeria. Planning for social equity in these communities means GMoUs recognizing land practices that have a desperate on coastal communities and actively working with women to create better communities for gentrification, environmental justice, community engagement and empowerment.

Against this background and apparent breach in the literature, the standpoint of this research serves as an addition to gender discourse in sustainable livelihoods in the coastal communities from the perspectives of CSR. To help lessen the pressure on marine conservation and resources, this paper seeks to identify ways of promoting other means of livelihoods that help women overcome hindrances to their involvement in the wider economy of the region. The positioning of this study attempts to establish the extent to which CSR investment that the MOCs have made has encouraged alternative means of survival, in addition to determining the level of gain from such investment that mount up to women's occupation in the coastal communities and its effect on their trade. The four areas of focus below similarly represent four main questions, which are:

i. What is the level of seriousness of MOCs' CSR investment in stimulating alternative livelihood in Nigeria's Niger Delta coastal communities?
ii. What is the level of involvement of the different genders in the GMoU intervention of the MOCs in Nigeria's Niger Delta coastal communities?
iii. Do MOCs' GMoU interventions help coastal women in accessing credit, partaking in paid employment, and beginning a business of their own?
iv. Do MOCs' GMoU interventions actually support coastal women in overcoming obstacles to their involvement in the wider economy of Nigeria's Niger Delta region?

Both expressive and inferential statistics were put to work in answering the four research questions. Primary data came from a sample of eight hundred women picked from the coastal communities with the use of multiple sampling techniques. Outcomes from the use of a combined propensity score matching and logit model reveal that though a skimpy part of the CSR intervention are aimed at empowering women, the MOCs' CSR using GMoUs recorded slight but weighty success in authorizing the women in coastal communities in the areas of ability to access credit, undertaking of paid employment, starting their own business enterprises, a reduction in other obstacles to the current employment policies and improving other sustainable livelihood options. The study settles for MOCs' CSR being encouraged to incorporate gender outlook into GMoUs strategies, action plan and other procedures on enabling coastal women to encourage alternative livelihood other than marine resources. This is achievable through carrying out systematic gender examination, collecting and making use of sex-disaggregated data, instituting gender-sensitive benchmarks and indicators as well as developing real tools to back increased responsiveness to gender viewpoints.

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