PARTICIPATION OF WOMEN IN THE BLUE ECONOMYAND THEIR SUSTAINABLE ECONOMIC DEVELOPMENT

by

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DECLARATION

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I, Cynthia Kumadeka, hereby declare that this research project is my own work except as indicated in the references and acknowledgements attached. It is submitted in partial fulfilment of the requirements for the degree of PhD in Management Studies (Finance). I further declare that I submitted the dissertation to an originality checking software and that it falls within the accepted requirements for originality. This work, or any part of it, has not been submitted by myself for examination at Unisa for another qualification or at any other higher education institution.

Signed: 

Date: 10 AUGUST 2022

DEDICATION

I dedicate this thesis to my mother, Josepha Gbordzoe name, for instilling the value of education in me. It is a legacy that I leave for my children, Dela Mawusi, Makafui Kumadeka, Kekeli Kumadeka and Sesime Kumadeka, which they can choose to challenge if they so wish.

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ABSTRACT

This study sought to investigate women's participation in the blue economy and its effect on their long-term economic development. The study assessed the challenges faced by the few women participating in the blue economy, as well as considered ways to overcome these challenges. Specifically, this research examined possible reasons why women are under-represented in the blue economy despite the seemingly many opportunities in the sector. Data was collected from various blue economy participants drawn from government departments, private sector organisations and institutions in South Africa, using an online web-based survey. Factor analysis with Promax as the rotation method, Principal Axis Factoring as the extraction method as well as Multiple Linear Regression were used to analyse the data. The findings of the study revealed that women in the blue economy potentially have both general and economic prospects, and that women's contributions to the blue economy's fisheries sector are undervalued. Similarly, women's functions in the fisheries sector are overlooked, particularly in the oil and gas, as well as transportation sectors. Changing social, cultural and religious norms could eliminate women's segregation in the blue economy, thus empowering them to participate in leadership positions. The introduction of an effective policy framework would emphasise knowledge and information sharing about the blue economy industry and its opportunities for women, thereby facilitating their sustainable economic empowerment and development.

Key terms: Blue Economy, Sustainability, Sustainable Development, Economic Development, Economic Growth, Economic Empowerment, Participation, Women.

IQOQA

Lolu cwaningo kuzanywa ngalo ukuhlola ukubamba iqhaza kwabesifazane kwezomnotho eziphathelene nokulondolozwa kwamanzi kanye nomthelela wazo ekuthuthukiseni umnotho esikhathini eside. Ucwaningo luhlolisise izinselelo abesifazane abambalwa ababhekana nazo kwezomnotho eziphathelene nokulondolozwa kwamanzi, kanye nezindlela ezicatshangwayo zokunqoba lezi zinselelo. Maqondana nalokhu, lolu cwaningo luhlolisise izizathu ezingaba khona zokuthi kungani abesifazane bengamelelekile ngokwanele kwezomnotho eziphathelene nokulondolozwa kwamanzi naphezu kwamathuba amaningi abonakalayo kulo mkhakha. Kwaqoqwa imininingo kubabambiqhaza abahlukahlukene kwezomnotho eziphathelene nokulondolozwa kwamanzi abathathwa eminyangweni kahulumeni, ezinhlanganweni zemikhakha ezimele nasezikhungweni zaseNingizimu Afrika, kusetshenziswa inhlolovo eyenziwa nge-intanethi. Kwasetshenziswa indlela yokucubungula ngokuqhathanisa nokuqondanisa imininingo (i-Promax Factor Analysis), indlela yokuhlukanisa obekuqondene kubekwe ngendlela ehlukile (i-Principal Axis Factoring) njengendlela yokuhlukanisa kanye nendlela yokubheka ubudlelwano phakathi kwemininingo (i-Multiple Linear Regression) ukuhlaziya imininingo. Okutholakale ocwaningweni kwembula ukuthi abesifazane kwezomnotho eziphathelene nokulondolozwa kwamanzi kungenzeka babe namathuba kwezomnotho, nokuthi igalelo labesifazane emkhakheni wezokudoba kwezomnotho eziphathelene nokulondolozwa kwamanzi lithathwa njengelingabalulekile. Ngokufanayo, imisebenzi yabesifazane emkhakheni wokudoba ayinakwa, ikakhulukazi emkhakheni kawoyela negesi, kanye nasemikhakheni yezokuthutha. Ukushintsha kwezinkambiso zomphakathi, amasiko nezenkolo kungaqeda ukubandlululwa kwabesifazane kwezomnotho eziphathelene nokulondolozwa kwamanzi, ngaleyo ndlela kubanike amandla okubamba iqhaza ezikhundleni zobuholi. Ukwethulwa kohlaka lwezinqubomgomo olusebenzayo kuzogcizelela ulwazi nokwabelana ngemininingwane mayelana nomkhakha wezomnotho eziphathelene nokulondolozwa kwamanzi namathuba azo kwabesifazane, ngaleyo ndlela kusize ekunikeni amandla nasekuthuthukisweni kwabo kwezomnotho okusimeme.

Amagama asemqoka: Ezomnotho Eziphathelene Nokulondolozwa Kwamanzi, Ukusimama, Ukuthuthukiswa Okusimeme, Ukuthuthukiswa Komnotho, Ukukhula Komnotho, Ukunikwa Amandla Kwezomnotho, Ukubamba Iqhaza, Abesifazane.

ISISHWANKATHELO

Olu phando luphande ukuthatha inxaxheba kwabasetyhini kuqoqosho lweemveliso zaselwandle olwaziwa ngokuba yi-*blue economy* kunye nefuthe elithe labakho kuphuhliso lwabo loqoqosho lwexesha elide. Uphando luhlolisise imingeni iqaqobana labasetyhini elingabathathinxaxheba elijongene nayo kuqoqosho lweemveliso zaselwandle, kwakunye neendlela eziqwalaselweyo zokoyisa le mingeni. Ngokukodwa, olu phando luphonononge izizathu ezinokubakho zokuba kutheni abasetyhini bemelwe ngokungephi kuqoqosho lweemveliso zaselwandle, nangona amathuba ebonakala emaninzi kweli candelo. Idatha iqokelelwe kubathathinxaxheba abahlukahlukileyo boqoqosho lweemveliso zaselwandle abaqokelelwe kumasebe karhulumente, amaqumrhu namaziko ecandelo labucala eMzantsi Afrika, kusetyenziswa uphando olusekelwe kwiwebhu yeintanethi. Ukuhlalutya idatha, kusetyenziswe indlela esetyenziselwa ukuhlalutya idatha enkulu eyaziwa ngokuba yi-*Factor analysis with Promax*, indlela yokutsala idatha eyaziwa ngokuba yi-*Principal Axis Factoring,* kwakunye nendlela yeenkcukachamanani eyaziwa ngokuba yi-*Multiple Linear Regression.* Iziphumo zophando zibonise ukuba abasetyhini abakuqoqosho lweemveliso zaselwandle banokuba nawo amathuba jikelele kunye nawezoqoqosho, kwaye igalelo labasetyhini kwicandelo lokuloba kuqoqosho lweemveliso zaselwandle lijongelwa phantsi. Ngokufanayo, imisebenzi yabasetyhini kwicandelo lokuloba ayihoywa, ingakumbi kumacandelo eoyile negesi, nawezothutho. Ukutshintsha imimiselo yezentlalo, yezenkcubeko kunye nezenkolo kunokuphelisa ucalulo lwabasetyhini kuqoqosho lweemveliso zaselwandle, ngaloo ndlela kuya kubaxhobisa ukuba bakwazi ukuthatha inxaxheba kwizikhundla zokukhokela. Ukuveliswa kwesikhokhelo somgaqonkqubo esisebenzayo kuya kugxininisa ulwazi nokwabelana ngalo kushishino loqoqosho lweemveliso zaselwandle kunye namathuba olu shishino kwabasetyhini. Ngaloo ndlela kuza kube kuququzelelwa ukuxhotyiswa nophuhliso oluzinzileyo lwabasetyhini kwezoqoqosho.

Amagama angundoqo: Uqoqosho lweemveliso zaselwandle, Ukuzinza, Uphuhliso oluZinzileyo, Uphuhliso lwezoQoqosho, Ukukhula koQoqosho, Ukuxhotyiswa ngezoQoqosho, Ukuthatha inxaxheba, Abasetyhini.

LIST OF ABBREVIATIONS

ACFTA	African Continental Free Trade Agreement
AFD	Agence Francaise de Development
AKATM	Advance in Knowledge Acquisition Transfer and Management
ADB	Asian Development Bank
AU	African Union
AUA	African Union Agenda
AUC	African Union Commission
BE	Blue Economy
CEO	Chief Executive Officer
CIEDR	Center for Interaction Data Estimation and Research
CIRP	Center for Injury Research and Policy
CISP	Comitato Internazionale Per lo Sviluppo Dei Popoli (International Committee for the Development of People)
CO^2	Carbon Dioxide
COSME	Competitive of Enterprise and Small and Medium size Enterprise
CSO	Civil Society Organisation
DBER	Discipline-Based Education Research
DC	District Council
DC	District of Columbia
EC	European Commission
ECA	Educational Credential Assessments
EEZ	Exclusive Economic Zone
EPRS	European Parliamentary Research Services
EIB	European Investment Bank
EU	European Union
ESMO	European Society for Medical Oncology
E-NGO	Environmental Non-governmental Organisation
FAO	Food and Agricultural Organisation
F&D	Finance and Development
FICCI	Federation of Indian Chambers of Commerce and Industry
FICC-KAS	Federations of Indian Chambers of Commerce and Industry-Konrad-Adenauer-Stiftung
FHI	Family Health International
FLOPEC	Flota Petrolera Ecuatoriana
GDP	Gross Domestic Product
GEDI	Global Entrepreneurship and Development Institutes
GEG	Global Environmental Governance
GERA	Global Entrepreneurship Research Association
GRB	Gender Response Budgeting
GRI	Global Reporting Initiative
GVA	Gross Value Added
HR	Human Resources
HRA	Health Research Authority
IBM	International Business Management

IAF	Impact Advisory and Finance
IDS	Institutes of Development Studies
ICALT	International Conference on Advance Logistics and Transport
IEEE	Institute of Electrical and Electronics Engineers
IMF	International Monetary Fund
IMO	International Maritime Organisation
IOC	Inter-governmental Oceanographic Commission
IOP	Institutes of Physics Publishing
IORA	Indian Ocean Rim Association
IPCC	Inter-governmental Panel on Climate Change
IPS	Interpress Services (News Agency)
ILO	International Labour Organisation
IPPR	Institute for Public Policy Research
ITEC	Indian Technical Economic Cooperation
ITF	International Transport Workers Federation
KAS	Konrad Adenauer Stiftung
KMO	Kaiser-Meyer-Olkin
LLS	Leadership and Life Skills
MMR	Mixed Method Research
MOOC	Massive Open Online Course
NW	National WISTA
OBF	Observer Research Foundation
OECD	Organisation for Economic Co-operation and Development
OECD-DAC	Organisation for Economic Co-operation and Development-Development Assistance Committee
OHCHR	Office of the High Commissioner for Human Rights
OP	Operation Phakisa
QDA	Qualitative Documentary Analysis
SABBEX	South African Association of Ship Repairers and Builders
SADC	Southern African Development Community
SADC	Southern African Development Corporation
SAIMI	South Africa International Maritime Institutes
SAMIC	South African Maritime Industry Conference
SBEC	Sustainable Blue Economy Conference
SCWGE	Social Council on Women's and Girls Empowerment
SDGs	Sustainable Development Goals
SEK	Swedish Krona
SIDS	Small Island Development States
SISR	Southern African Development Communities Industrialisation Strategy and Road Map
SMEs	Small and Medium size Enterprises
SPSS	Statistical Package for Social Sciences
SRHR	Sexual and Reproductive Health and Rights
UK	United Kingdom
UN	United Nations
UNCA	United Nations Commissions for Africa

UNCSA	United Nations Security Council Association
UNCSD	United Nations Conference on Sustainable Development
UNCSD	United Nations Commission on Sustainable Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Developmental Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNESA	United Nations Economic Social Affairs
UNESC	United Nations Economic and Social Council
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNESA	United Nations Economic Social Affairs
UNFPA	United Nations Development Assistance Framework
UNGA	United Nations General Assembly
UNOC	United Nations Ocean Conference
US	United States
USA	United States of America
USAID	United States Agency for International Development
UNSD	United Nations Sustainable Development
USDN	Urban Sustainability Directors Network
WB	World Bank
WHO	World Health Organisation
WIMA	Women in Maritime Industry
WIMAFRICA	African Women in Maritime Industry
WMU	World Maritime University
WOMESA	Women in Maritime in Eastern and Southern Africa
WISTA	Women's International Shipping and Trading Association
NGO	Non-Governmental Organisation
WCED	World Commission on Environmental Development
WEE	Women Economic Empowerment
WWF	World Wildlife Foundation

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CHAPTER 1
INTRODUCTION

Chapter 1 examines the background to the study, problem statement and research gap, aim of the study, research objectives, research question, research hypothesis, contribution to the knowledge and delimitations of the study.

1.1. Background to the Study

In the decades ahead, the blue economy will become the main contributor to many countries' global gross domestic product (GDP). In this context, the blue economy can be viewed as a sector aiming at promoting economic growth, social inclusion and enhancing livelihoods, yet at the same time seeking to ensure the environmental sustainability of the oceans and seas (World Bank & United Nations, 2017:1). Gordon, Sekyere, Maluleka and Zikhali (2019:10) identified important blue economy domains such as fishery, renewable ocean energy, shipping ports and transport, underwater hydrogen as well as seabed mining, marine biotechnology, coastal tourism as well as research and development.

The significance of the blue economy is its transition from the ocean economy to a cleaner and healthier method of managing the oceans and underwater life for the benefit of the ecosystem. While the progressive blue economy offers substantial economic benefits for coming generations, it preserves, protects and retains a range of productive & resilient ecosystems (Credit Suisse Impact Advisory & Finance (IAF) Department, 2020:13). The blue economy's economic growth is thus heavily dependent upon its key sectors. The key segments of the blue economy are increasingly playing essential roles in the economy of many countries.

Recently, some blue economy areas have been under the spotlight to make women fully equitable in the industry (Gordon et al., 2019:60). As a result, women's participation would not only contribute significantly to the industry's survival and prosperity, but also allow them to use their full potential and leadership in all areas of the industry's economic growth expansion. It is thus a veritable platform to advance sustainable economic growth for women (Gordon et al., 2019:11). Attaining this status will also be compatible with the United Nations Sustainable Development Goals (SDGs). SDG 5 is aimed at ensuring women's equality and sustainable economic empowerment. SDG 8 encourages sustainable, equitable work for all men and women and SDG 14 uses marine and aquatic services for national economic growth. Attention must be given to the fact that the blue economy is also a crucial engine for economic growth. According to the Federation of India Chambers of Commerce and Industry

(FICCI, 2019:17), the world perception strongly requests a more positive society and long-term economic growth. Therefore, taking care of the health of the ocean would always be an essential priority to the blue economy (FICCI, 2019:17).

According to Duma (2017:1), only 2.2% of women are engaged in the blue economy globally and 98% of men are engaged in the blue economy globally, showing that it is currently a male-dominated industry lacking women's expertise and abilities. This lack of diversity and inclusion would cause problems for the blue economy sectors soon (Ondimu, Chemoiwo, Kemboi & Njaaga, 2018:1). Even though there exists enormous potential and opportunities for women in the blue economy, it is still a very male-dominated sector. Women's integration and involvement remain slow compared to other industries.

While women make up about 50% of the global population, the blue economy remains overwhelmingly male-dominated industry with only 1% of women as seafarers and only 4% occupying decision-making positions (Ondimu et al., 2018:1). This is a sobering reality when the industry alone offers an annual turnover of around US$3 to $6 trillion and 260 million jobs in the fishing and aquaculture sector alone (Bohler-Muller, Steyn-Kotze, Zikhali & Sekyere, 2019:2). The blue economy presents an opportunity to shift the current thinking that women's positions are solely associated with household activities. Gordon et al. (2019:78) decry the fact that women mainly perform domestic tasks and child care, a situation which suggests limitations on women's participation in various sectors of the economy. Most gender and socio-religious norms place men as the 'heads' of households and women in subservient roles. The blue economy is a critical area of interest for the upliftment of women out of this situation.

The global community is stepping up its investment to unlock the full capacity of the blue economy to stimulate economic development and job creation (Ondimu et al., 2018:3). Improving the health of the oceans to sustain their habitats in many countries and regions remains a priority (Ondimu et al., 2018:3). The blue economy is reported to have contributed £13.750 billion to the Europe's GDP and generated 222 million jobs in 2017 (EU Blue Economy Report, 2019:18). In Africa, the blue economy has been renamed the 'New Frontier of the African Renaissance'. This is because of its enormous potential for a continent two-thirds of whose countries have coastlines and where 90% of trade is sea-borne and, furthermore, whose lakes hold the world's biggest percentage of freshwater surface (Wheeler, 2018:1). Africa's future trade

amounts to trillions of dollars and promises to combine substantial economic growth with conservation of the environment if correctly managed. The blue economy is a critical part of industrialisation in the African Union's Agenda 2063. In addition, it offers a chance to attain the post-2015 development goals of women's participation in employment and leadership positions (Bohler-Muller, 2015:1).

If we believe that sustainable development is the way to promote economic equality for women, we need to be able to include women's full participation and involve all stakeholders including policymakers and business leaders in supporting women's economic growth (Gordon et al., 2019:17). According to McGrath and Whitty (2017:728), stakeholders can be identified as people who have an interest in projects or specific areas of ownership and can engage as knowledge and support for the affected by projects. The researcher describes the blue economy's stakeholders as people, groups or organisations (such as world leaders, policy makers, politicians, governments and decision-makers) contributing to any economic activity generated by the blue economy. Stakeholders have an enormous role to play if we are to build a blue economy and their decisions will make or break the SDGs goals (Howard, 2018:2). Breathing life into economic development opportunities at sea cannot happen without bringing women into the blue economy (Bohler-Muller et al., 2019:4).

This study therefore seeks to establish the rights of women in the growth of the blue economy to narrow the huge gap between men and women. The study also aims to emphasise how women's involvement in the blue economy can contribute to sustainable economic empowerment for women and their families as well as the national economic prosperity. This study is partly inspired by the United Nations' SDG 5 whose objective is to ensure equal opportunities for women worldwide (United Nations, 2015:20). It will also draw on SDGs 8 and 14. The former envisages development for all by the encouragement and sustenance of inclusive and meaningful work for women (United Nations, 2019:11) while the latter promotes fair use of all marine resources to achieve sustainable economic development (United Nations, 2018:4).

1.2. Problem Statement and Research Gap

The blue economy is a male-dominated industry even though women are working collaboratively with men to find their voice in the industry (Wheeler, 2018:1). Despite the attempts of many countries to increase the participation of women in this economy, these efforts are not really impacting the industry. The few women employed in the

sector still face many challenges such as exclusion from making decisions and implementing local marine management policies (Roche, Schluter & Ferse, 2018:160). Women in the industry cannot hold high-level positions (MacNeil & Ghosh, 2017:33). From navy to fisheries management, women's maritime positions are usually lower than those of their male counterparts (Burroughs, Egorova, Sadic & Soeth, 2018:2).

Another area of concern relates to the little attention paid to women in the workforce who suffer from insufficient access to funds, lack of facilities, lack of skills and training (United Nations Economic Commission for Africa (UNECA, 2016:33). Burroughs et al. (2018:4) argue that women are unable to advance their careers have problems accessing markets and suffer from exclusion from fisheries' management and policies. In addition, women's contribution to the global fisheries economy remains largely ignored as fishing is often narrowly described as fishing at sea by men in vessels using special gears (Harper, Grubb, Stiles & Sumaila, 2017:91).

While the maritime industry has taken steps to close the current gender gap, women's integration into the marine sector has been slow due to many barriers including historical stereotyping and prejudice against women pursuing jobs in the industry (Gordon et al., 2019:33). Most of the women seafarers work in non-technical roles on passenger ships and there are very few female shipmasters and chief engineers (Gordon et al., 2019:33). Problems such as women's health, safety and well-being receive very little attention in the industry, and activities concerning women's empowerment remain scarcely evident (Gordon et al., 2019:33). Gordon et al. (2019:33) posit that there is limited research on the experiences of women in the seaport and shipping sub-sectors. They also note that the high risk of sexual harassment and rape for women who are often without protection at sea.

Efforts by global organisations such as the United Nations, to level the job playing field between men and women have so far not yielded the desired results due, perhaps to inaccurate knowledge on the marine industry. This sometimes leads to misinformed management actions. Therefore, to promote women economic inclusion and gender equity in the blue economy, women's work in the industries must be recognised (Burroughs et al., 2018:4).

According to Kotze, Bohler-Muller, Cosser, Maluleke, Gordon, Sekyere and Zikhali (2018:39), sustainable female economic empowerment is affected by diverse economic, socio-cultural, religious, educational and health factors. These can have significant impact on women's strengths and functions in society. The economic

empowerment of women can be done by translating women's empowerment principles into actionable programmes and projects that address social, cultural, financial, education and health issues that impede women's empowerment in the blue economy (Kotze et al., 2019;19).

An improved blue economy would entail equality to ensure correction and improvement of institutional and organisational programmes as well as policies to promote and encourage equal participation in different sectors. Only then can access and equity be preserved for males and females alike (Tabernero, 2018:3). In the blue world, women's problems cannot be tackled without sustainability. According to the Organisation for Economic Co-operation and Development (OECD, 2016:3), unlocking the full potential of seas and oceans would take responsible and sustainable action on various fronts as is highlighted in SDG 14.

Based on the foregoing arguments, there is the need to highlight the massive gap in the blue economy sector with the limited number of women participating in the industries. It is an area of concern due to the numerous obstacles presented by men, regulations and societal perceptions of how the industry should operate, that women are unable to break into this male-dominated industry and their participation rate in the sector remains low. There is a dire need to demonstrate that the blue economy can be used as a platform to empower women economically, as there are still plenty of opportunities for women to tap into the sector. Women need to be aware of the opportunities in the blue economy that are available to them, to strengthen the industry and take advantage of these opportunities.

The problem statement therefore, can be regarded as: a global concern regarding the level of participation of women in the blue economy, which has witnessed suitably qualified and able women relegated and discriminated against, within this lucrative blue economy sector; much to the detriment of discouraging other emerging women from pursuing careers in this industry.

1.3. Aim of the Study

The research aims to determine the diminished role of women's development in the growth of the blue economy and to bridge the gap between highly male-dominated roles and the low-level participation of women in the blue economy. The study also seeks to highlight how women's involvement in the blue economy can contribute to sustainable economic development.

1.4. Research Objectives

1) To assess the opportunities that are available for women to be key participants in the blue economy;
2) To analyse the challenges faced by women in the blue economy, and propose strategies to overcome these challenges;
3) To determine how women's engagement in the blue economy can contribute to their sustainable economic empowerment and growth;
4) To conceptualise a framework which policy-makers can adopt for the sustainable economic empowerment and growth of women in the blue economy.

1.5. Research Questions

1) What opportunities are available for women to be key participants in the blue economy?
2) What challenges are faced by women in the blue economy, and what strategies can assist them to overcome these?
3) How will the participation of women in the blue economy lead to their sustainable economic empowerment and economic development?
4) What conceptual framework can be adopted by policy-makers to enable sustainable economic growth for women in the blue economy?

1.6. Research Hypotheses

The below hypotheses are stated to guide this research insofar as identifying key aspects that are likely to contribute to the conceptual framework to be developed as per research objective 4.

Hypothesis statement 1

H0: There is NO significant relationship between Autonomy and Job Opportunities.

H1: There is a significant relationship between Autonomy and Job Opportunities.

Hypothesis statement 2

H0: There is NO significant association between Autonomy and Business Opportunities.

H1: There is a significant association between Autonomy and Business Opportunities.

Hypothesis statement 3

H0: There is NO significant association between Autonomy and Social Justice Strategies and Societal Norms.

H1: There is a significant association between Autonomy and Social Justice Strategies and Societal Norms.

Hypothesis statement 4
H0: There is NO significant relationship between Free from Domination and Transport Challenges.
H1: There is a significant relationship between Free from Domination and Transport Challenges.

Hypothesis statement 5
H0: There is NO significant relationship between Free from Domination and Tourism Challenges.
H1: There is a significant relationship between Free from Domination and Tourism Challenges.

Hypothesis statement 6
H0: There is NO significant association between Contribution to Business Income and Transport Challenges.
H1: There is a significant association between Contribution to Business Income and Transport Challenges.

Hypothesis statement 7
H0: There is NO significant relationship between Contribution to Business Income and GOf2 Job Opportunities.
H1: There is a significant relationship between Contribution to Business Income and GOf2 Job Opportunities.

Hypothesis statement 8
H0: There is NO significant relationship between Exposure to Information and Job Opportunities.
H1: There is a significant relationship between Exposure to Information and Job Opportunities.

Hypothesis statement 9
H0: There is NO significant association between Exposure to Information and Transport Challenges.
H1: There is a significant association between Exposure to Information and Transport Challenges.

Hypothesis statement 10

H0: There is NO significant relationship between Emerging Skills and Economic Opportunities.

H1: There is a significant relationship between Emerging Skills and Economic Opportunities.

Hypothesis statement 11

H0: There is NO significant relationship between Emerging Skills and Job Opportunities.

H1: There is a significant relationship between Emerging Skills and Job Opportunities.

Hypothesis statement 12

H0: There is NO significant relationship between Emerging Skills and Transport Challenges.

H1: There is a significant relationship between Emerging Skills and Transport Challenges.

Hypothesis statement 13

H0: There is NO significant relationship between Improve Quality of Life and Transport Challenges.

H1: There is a significant relationship between Improve Quality of Life and Transport Challenges.

Hypothesis statement 14

H0: There is NO significant relationship between Improve Quality of Life and Job Opportunities.

H1: There is a significant relationship between Improve Quality of Life and Job Opportunities.

Hypothesis statement 15

H0: There is NO significant relationship between Effective Policy and Oil Gas Challenges.

H1: There is a significant relationship between Effective Policy and Oil Gas Challenges.

Hypothesis statement 16

H0: There is NO significant relationship between Effective Policy and Job Opportunities.

H1: There is a significant relationship between Effective Policy and Job Opportunities.

1.7. Contribution to Knowledge

The contribution to knowledge from this study is multi-faceted. The study will add to the academic literature on the important concept of sustainable development goals focusing on the role of women in the blue economy. Due to the lack of gender equality in the blue economy, there is evidence that women's participation in the fisheries and aquaculture is limited by strong cultural norms, rigid social traditions and even unjust laws in some cases (Kotze et al., 2018:24). There is a dearth of documented evidence on whether involving women in higher-level roles within the marine industry would result in benefits to the women themselves and to the economy. This study examines initiatives and efforts of women in the blue economy, advocating for women to be equal partners with their male counterparts, in line with the UN's SDGs.

The study will also serve to evidence in advocacy for the greater involvement of women in the blue economy since these are the groups that are most vulnerable when there is a shortage of jobs. According to Otobe (2017:16), it is not surprising that women face tremendous occupational disadvantages with a high risk of falling into poverty in the world of work. In addition, women are even more impacted by rising levels of unemployment, more unstable and vulnerable jobs, smaller incomes and also a higher incidence of informal work (Otobe, 2017:9). However, women remain at a higher rate of vulnerable jobs (Otobe, 2017:9). Therefore, the promotion and inclusion of women in the blue economy would contribute to job creation, poverty reduction and hunger, because when women are uplifted, the whole family benefits.

The research emphasises understanding and exchange of knowledge about the prospects for women in the blue economy. The study will further raise awareness to the lack of funding for women entrepreneurs in the marine sectors, and the various opportunities the blue economy must bring to governments in most countries participating in the blue economy. Through its proposed conceptual framework, this study will lead to the formulation of favourable policies to recognise and promote women's engagement in the blue economy. The study anticipates that the framework will encourage governments and other similar bodies to encourage the introduction of new or revised policies to advocate for women's inclusion in the blue economy of countries such as Seychelles and South Africa, as well as support women through their various blue economy initiatives and programmes such as the Blue Bond programmes of Seychelles and the Operation Phakisa programme of South Africa.

Overall, the findings of this study will enlighten stakeholders ranging from academia to governments and the private sector about the extent to which SDG 5 addresses the empowerment of women and girls. The study will also highlight SDG 8 in establishing decent work and economic development by supporting and maintaining inclusive, sustainable economic growth and providing sufficient job opportunities for all. In addition, SDG 14 is included in the study, to address the conservation and sustainable use of the oceans, seas, and marine resources for the expansion of the blue economy.

1.8. Limitations of the Study

The study aims to define the role and participation of women in the blue economy to bridge the gender gap. Although the target population was primarily comprised of women since they are the main subject of this research, some male participants were included in the study to provide an objective viewpoint on the study as deemed appropriate. The study is thus limited to the fact that it is only focusing on women. The study is also limited to South Africa only as it was identified as one of the model countries that has access to the oceans and a thriving blue economy. Furthermore, as the researcher is based in South Africa, focusing only on this country will enable an in-depth case study approach to be used that will produce recommendations that could be considered by other developing countries in Africa.

1.9. Chapter Breakdown

This chapter discussed the background to the study, the problem statement and research gap, the aim of the study, research objectives, research questions, research hypothesis as well as the contribution to the knowledge and delimitations of the study.

Chapter 2: Literature Review

The chapter outlines the conceptual overview of the blue economy, definitions of key concepts and the historical background of the blue economy. The theoretical framework of women's participation in the blue economy and their sustainable economic development and the empirical evidence of women participation in the blue economy will also be discussed.

Chapter 3: Importance of the Blue Economy Projects, the Sustainable Development Goals and Women

This chapter presents an overview of the blue economy projects and initiatives in the blue economy, countries leading and championing the blue economy and importance of the blue economy. It will also discuss funding of blue economy developments, the

sustainable development goals, caring for life underwater and the importance of women in the blue economy.

Chapter 4: Research Methodology
This chapter discusses the research approach, research design, target population, sampling and sample size and research instrument: online survey questionnaire. It will explore the pilot study, data collection, reliability and validity, data analysis. Limitations of the study and ethical considerations conclude the chapter.

Chapter 5: Presentation of Findings from Data Analysis
This chapter will present the biographical information of the participants, response rate, analysis of data using descriptive statistics and reliability of the study with regard to Cronbach's Alpha. The chapter will also explore factor descriptive, pre-diagnostic test, multi-collinearity diagnostics, homoscedasticity tests, regression analysis and regression test.

Chapter 6: Discussions, Findings Conclusions and Recommendations
This chapter will present the proposed conceptual framework for participation of women in the blue economy, discussions of the key findings' conclusions and recommendation of the study.

1.10. Chapter Conclusion

This chapter provided an overview of the study, including the background to the study, problem statement and research gaps, aim of the research, research objectives, research questions, contribution to the knowledge, delimitations and the outline of the chapter. The study's foundation was laid through the problem statement and the contributions to the knowledge. The next chapter presents the relevant literature review.

CHAPTER 2
LITERATURE REVIEW

2.1. Introduction

The previous chapter describes the background to the study, the problem statement and research gap as well as aim of the study, research objectives, research questions, research hypothesis, contributions to scholarly knowledge and delimitations. This chapter presents a conceptual overview of the blue economy, the definitions of the key concept, the historical background of the blue economy, theoretical framework of women's participation in the blue economy and their sustainable economic development and the empirical evidence of women participation in the blue economy.

2.2. Conceptual Overview of the Blue Economy

The notion of the blue economy, according to Spamer (2015:60), is based on the view that the oceans represent "productive spaces" where spatial planning integrates many elements such as conversation, sustainable use of oil and mineral riches extraction, bioprospecting, renewable energy production and marine transportation. The blue economy concept was originally known as the ocean economy, in which the ocean sectors' economic activities were evolving at a faster rate without regard for the ocean's wellbeing and the hazards to the ecosystem. That was when the term 'blue economy' came about. The blue economy's idea emerged as a result of the rise of "conventional" ocean business activities that led to excess use, over-exploitation and degradation of coastal assets such as coastal ecosystems (Lemura, 2020:4).

As a result of these adverse repercussions, communities need a new approach that encourages ethical firms to generate social and economic benefits of the blue economy, while also safeguarding and restoring the ocean's natural resources (Lemura, 2020:4). According to Patil, Virdin, Diez, Roberts and Singh (2016:6), this issue has emerged as a new idea and platform for action to mitigate the risks that shift from the existing economic development to a "blue economy" with "blue growth". The new blue economy concept has resulted in an increasing number of individuals earning a living from the ocean but in ways that maintain its richness and environmental sustainability (Patil et al., 2016:6).

Spamer (2015:60) also argues that the concept of the blue economy can relate to other concepts such as biodiversity, food security, climate change and carbon budgets, marine and coastal tourism, pollution and marine debris. Similarly, the term blue economy can also, relates to good governance and international co-operation, biotechnology, submarine mining and marine sphere (Spamer, 2015:60). The blue

economy is a comparatively modern way of defining ocean economic development which emerged first in numerous small Island States, especially developing nations like Seychelles and Indonesia (Conathan & Moore, 2015:1). Even though the concept of the blue economy has been used in a range of contexts, it is used in the study to refer to a set of ocean economic sectors and policies together that decide if the utilisation of oceanic resources is sustainable (World Bank & United Nations, 2017:vi).

2.2.1. Proposed conceptual framework for participation of women in the blue economy explanations

The suggested conceptual framework of women's involvement in the blue economy and their sustainable economic development in Figure 2.1. overleaf focuses on two (2) variables: the independent variable is the women's participation in the blue economy (cause), while effective policy and sustainable economic development (effect) are one of the dependent variables. The conceptual framework illustrates how women's participation in the blue economy (cause), leads to their sustainable economic development (effect) when implementing an effective policy. The framework revealed that implementing a good policy could attract more women to participate in the blue economy and it will resultantly lead to their sustainable economic development and growth in the blue economy.

Reva and Kumalo (2020:3) highlighted that woman make up only 2% of the world's seafarer workforce. According to the conceptual framework, the blue economy offers enormous potential for women, such as general opportunities, which include jobs, business as well as economic opportunities. However, most women are uninformed about these opportunities due to a lack of knowledge and information, awareness and education. According to United Nations Economic Commission for Africa (UNECA, 2020:20), women appear to have limited knowledge of the blue economy, therefore, a mechanism should be established to encourage women to exploit ocean resources and related services for an increased job and business opportunities, which can lead to poverty eradication and economic growth for women.

Women must be encouraged to partake in decision-making roles, leadership roles, skills roles, economic opportunities and entrepreneurial opportunities presented to them if they are to be empowered by the blue economy. A cornerstone of this comprehensive approach is equal access to educational and training possibilities as well as current and emerging work and business prospects for women (UNECA, 2016:35). It is further acknowledged by UNECA (2016:35) that achieving the full benefits of the blue economy will be enhanced by women's economic empowerment

in the sector to enable them to fully participate and contribute to the growth and development of the blue economy. The few women who work in the blue economy encounter a variety of obstacles. Challenges such as female perspectives are rarely considered when developing, implementing and evaluating blue economy programs and policies (Reva & Kumalo, 2020:2).

However, there is a general lack of awareness among the public regarding possibilities for women in the blue economy sectors because of the lack of knowledge about the sea and its prospects (Reva & Kumalo, 2020:9). Furthermore, women's attitudes and job choices in the blue economy industries are influenced by this low level of awareness (Reva & Kumalo, 2020:9). Gender differences in job and income are undeniably a major problem that undermines the equality of women in the blue economy (Reahanah, Shaleh, Fui-Fui & Musstafa, 2020:2). To close the gap, education and skills are necessary to encourage women's participation in the blue economy. There ought to be a blue economy in which women are ready to express their strengths and decide, without being constrained and imposed by men (Reahanah et al., 2020:6). According to a recent study based on a poll of men’s and women’s attitudes, male co-workers on ships show negative prejudice about women’s abilities and skills (Reva & Kumalo, 2020:10). This caused women on the crew to feel lonely and unaccepted and many believe that their promotion opportunities are limited (Reva & Kumalo, 2020:10). These challenges can be solved by employing strategies to alleviate them, such as general strategies, societal norms and social justice strategies, as described mostly in the conceptual frameworks.

These issues can also be addressed by providing positive encouragement for more women to participate in the blue economy. More needs to happen to highlight the responsibilities and contributions of women already working in the field as essential players, especially as the blue economy gains momentum internationally as a vital socio-economic sector (Reva & Kumalo, 2020:9). In addition, a suggestion made by some participants attending workshops in South Africa was that changes in school curricula are needed to introduce and promote jobs in the blue economy (Reva & Kumalo, 2020:10). Reva and Kumalo (2020:10) believed that, if all these strategies overcome the challenges, it will make the blue economy sector more sustainable for women.

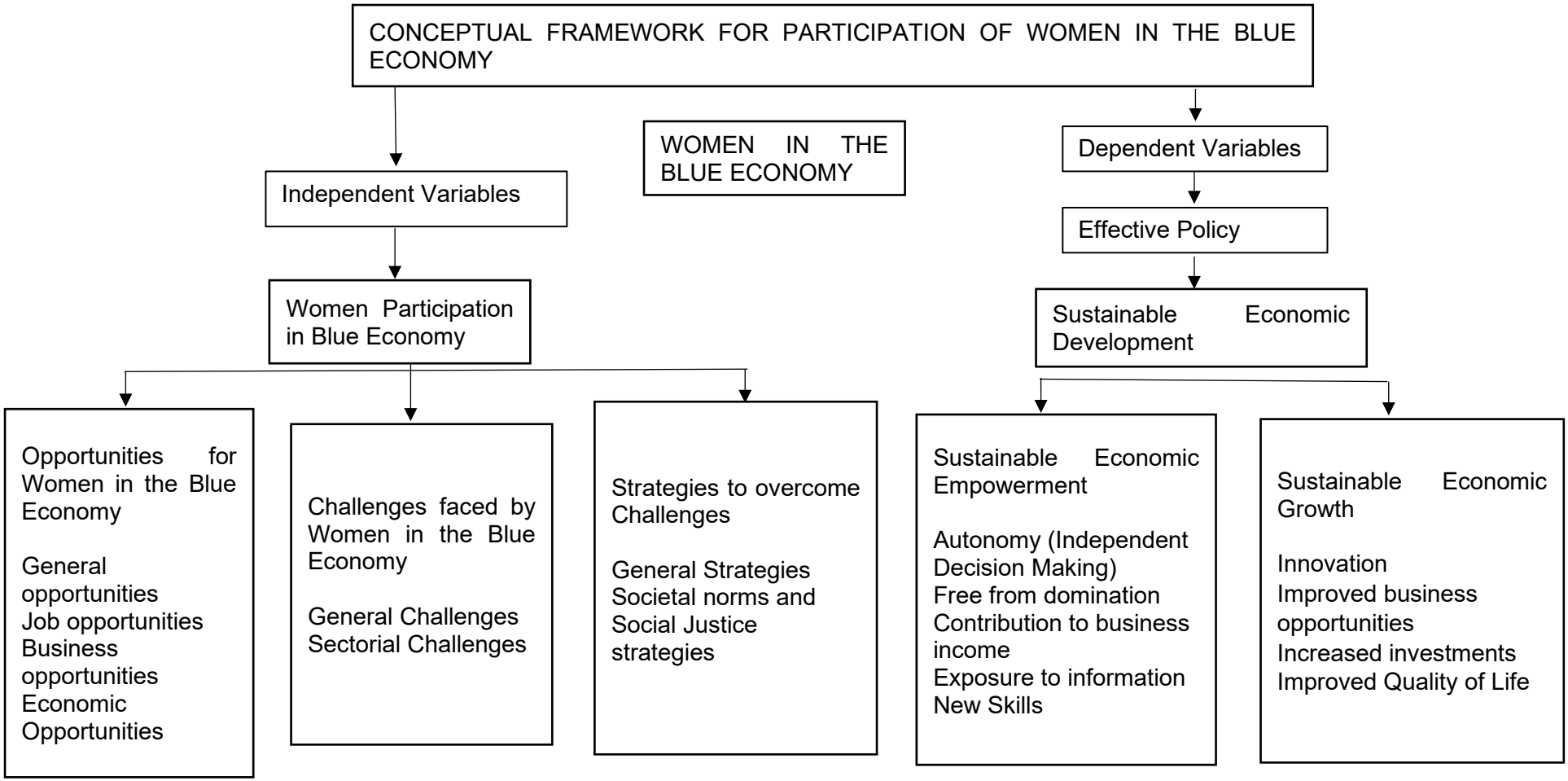


Figure 2.1: The proposed conceptual framework of participation of women in the blue economy

Source: Author's own conceptualisation

2.3 Definitions of Key Concepts

2.3.1. The blue economy

The blue economy is a unique idea that has evolved recently. The term refers to the environmental sustainability of ocean-related economic activities, notwithstanding the lack of a generally agreed-upon definition (Lemura, 2020:4). While there are multiple definitions of the blue economy, the various definitions are broad and hence there is no universally accepted description of the blue economy. As a result, Schutter and Hicks (2019:427) agree that insights into how criticism is received by policymakers have been lacking. As a result, the blue economy ideology aims to foster economic growth, social inclusion, the maintenance and improvement of livelihood while also guaranteeing the ocean's and coastal areas' natural survival (Inter-governmental Oceanographic Commission (IOC) United Nations Educational, Scientific and Cultural Organisation (UNESCO), 2021:1)

Similarly, the blue economy is defined by the European Commission (2018:5) as "economic operations associated with the oceans, seas and coast, which encompasses a broad range of interconnected development and growing businesses". The European Union Blue Economy Report (2019:6) describes it as "all economic operations associated to the oceans, seas and shore", which encompasses a diverse range of interconnected established and growing industries. The blue economy, as described by the World Bank, is the responsible use of the coastal resources for economic growth, improved living standards and jobs while conserving the health of oceans' ecosystems (World Bank & United Nations, 2017:6).

However, the World Bank's definition is a broad term that encompasses multiple facets of ocean stability, from sustainable fishing to ecosystem health and pollution mitigation (Lee, Noh & Khim, 2020:1). Most significantly, the World Bank defines the blue economy as "the effective use of marine resources for human economic developments, while enhancing living standards and employment as well as maintaining ocean ecological balance" (World Bank & United Nations, 2017:6). The United Nations defines it as an ocean economy that aspires to "increase human well-being and social fairness, while greatly reducing environmental risks and ecological hazards on planet earth (United Nations, 2014:2).

According to the European Union (2019:6) blue economy report, the blue economy refers to all economic operations relating to the oceans, seas and coast that cover a broad variety of interlinked developed and emerging industries. Similarly, the

European Commission (2018:5) defines it as economic operations related to oceans, seas and coasts and it includes a variety of developed and emerging industries. However, at the 2018 Sustainable Blue Economy Conference, the blue economy was said to comprise the sustainable conservation of the oceans, seas, lakes, rivers and other water resources in accordance with SDG 14. The European Commission (2021:vi) states that the blue economy encompasses all marine-related activities.

Therefore, through the development of integrated practices, society can derive benefits from the blue economy, while also preserving its long-term regenerative capacity and withstanding such activities (2021:2). The blue economy, on the other hand, is intimately linked to other similar complementary concepts such as the green economy, which enhances human well-being and social fairness, while reducing environmental risks and scarcities (World Wildlife Foundation [WWF], 2018:7). It also encompasses circular economy ideas, such as optimising recycling and reusing materials (WWF, 2018:7). Nevertheless, there appears to be no consensus on how the blue economy will accomplish the intended triple bottom line of economic development, environmental sustainability and social equality (Schutter & Hicks, 2019:427).

The most significant definition of the blue economy for this study is that provided by the 2018 Sustainable Blue Economy Conference which relates it to the sustainable conservation of the oceans, seas, lakes, rivers and other water resources, in line compliance with the conditions of SDG 14. The SDGs are the major factor in this study. Schutter and Hicks' (2019:427) definition of the blue economy in terms of the triple bottom line is very relevant to the study which is devoted to exploring how the triple bottom line approach can be accomplished through the blue economy. In this regard, the study defines the blue economy as the sustainable use of the ocean and marine resources to explore opportunities that are beneficial to all stakeholders, including youth, men and women inclusively. The researcher is drawing our attention to the blue economy in relation to women and argues that the blue economy has implications for women.

2.3.2. Sustainable blue economy

According to Lemura (2020: 4), "a sustainable blue economy occurs when economic activities are in balance with the ocean eco-systems' long-term capacity to support these activities, while being adaptive and healthy". According to the WWF (2018:7), a sustainable blue economy is "'the 'blue' component of any economy that is entirely

dependent on lakes and seas". However, it was determined at the Sustainable Blue Economy Conference (2018:3), that the sustainable blue economy includes the responsible use and management of oceans, seas, lakes, rivers and other natural resources.

To understand the blue economy concept, we also need to understand the sustainability concept as they both go hand in hand. The formation of the blue economy can be traced back to the sustainable concept (Tijan, Jovic & Hadzic, 2021:241). In light of this, the researcher defines a sustainable blue economy as the long-term use of the ocean to discover opportunities that benefit all stakeholders, including women. In this study, the sustainable blue economy, according to Warren (2021:1), entails restoring, protecting and maintaining the ecosystem's diversity, productivity, resilience and core function's intrinsic value based on clean technology, renewable energy and circular measures to ensure economic and social sustainability over time. All the above-mentioned blue economy concepts provide social and economic advantages to future generations by ensuring food security, poverty eradication, livelihood, income, employment, health and safety and equitable distribution of resources, while maintaining just political stability.

2.3.3. Definitions of sustainability, sustainable development and sustainable economic development and growth

2.3.3.1. Sustainability

The term 'sustainability' is commonly used to refer to a wide range of units of analysis, including societies, technologies, corporations, buildings and industrial processes (Sheehy & Farneti, 2021:8). Sustainability can also refer to the long-term preservation of the ecological equilibrium of the environment (FICCI, 2019:102). Sustainability is a broad term that signifies different things to different people (International Economic Development Council, 2017:2). Within the blue economy, the concept of sustainability continues to be fundamental. It has evolved far beyond specific components and expanded to capture the entire commodity life span originating from the oceans, seas and lakes (FICCI, 2019:102). Sustainability can be regarded as a long-term goal, according to Janouskova, Hak Necas and Moldan (2019:3).

Big and small businesses, however, have described sustainability as they see fit (Parafiniuk & Smith, 2019:1). Sustainability can also be regarded as the ability to contribute to the betterment of the allocation of highly desired components (Harrington, 2016:2). Jenkins (2009:380) defined sustainability as the ability to maintain some entity outcome and the ability to carry out activities that do not deplete the resources

upon which capacity is based (Klarin, 2018:69). This is a broad definition of sustainability that can be applied to any human activity (Klarin, 2018:69). Sheehy and Farneti (2021:7) see sustainability as a social and global environmental movement that is based on how one defines a worldwide ecological movement.

Sustainability has also been used in various contexts to describe resources, which means that sustainability in the sector presents the ability of the sector to maintain a constant supply of required resources (Janouskova et al., 2019). Likewise, pension scheme sustainability or fiscal policy sustainability, refers to the willingness of governments to ensure that these programmes work in the long run (Janouskova et al., 2019). No hard and quick line defines the limits of sustainability as a notion (Conathan & Moore, 2015:9). For instance, perhaps technological advancements should be counted as part of the blue economy to reduce pollution from shipping industries. (Conathan & Moore, 2015:9).

The researcher is in support of Conathan and Moore's (2015:9) example presented, which encourages technological advancement to be part of the blue economy. The reason for the support of this argument is that bluest economy job opportunities available for women are technologically inclined. The researcher acknowledges that there is a lack of scientific studies investigating how digital technology in the maritime sector might help achieve the aims of the blue economy. This gap could be filled through extensive literature studies on the technological aspects of the blue economy. Better knowledge could be provided on how the applications of digital technology in the maritime sector might help achieve the aims of the blue economy (Tijan et al., 2021:241).

According to the International Economic Development Council (2017:2), even the natural world is concerned with biodiversity. Furthermore, for at least the next few years to come, sustainability will be embraced by all large organisations (Parafiniuk & Smith, 2019:1). Sustainability can also relate to the SDGs under focus in this study. SDGs 5, 8 and 14 are the fundamental principles upon which this study is based. Therefore, there is a correlation between the blue economy and the United Nations Sustainable Development Goals. The present study thus seeks to unearth empirical evidence that the sustainability of the blue economy can lead to sustainable economic development, making the inclusion of women more attractive to the job and the business sector.

2.3.3.2. Sustainable development

Sustainable development is the only universally acknowledged global development concept (Janouskova et al., 2019:1). The most recent United Nations gathering at the Rio+20 Conference in 2012, endorsed it by establishing the Sustainable Development Goals (SDGs) as well as more detailed action plans (Janouskova et al., 2019:1) In general, sustainable development can be defined as a continual process of addressing the demands of current and future generations (Lavrinenko, Ignatjeva, Ohotina, Rybalkin & Lazdans, 2019:1114). Sustainable development is the multiple procedure and approaches to achieving sustainability (Janouskova et al., 2019:3).

The economic element of sustainable development, on the other hand, is the practice of monitoring a specific portfolio of assets, to conserve and enhance people's prospects (Lavrinenko et al., 2019:1114). Sustainability is related to sustainable development. In comparison, the terms sustainability and sustainable development are interchangeably used to refer to an ethically motivated socially constructed idea, relating to a kind of population and global lifestyle that does not jeopardise our future and, therefore, does not affect future generations' prospects (Janouskova et al., 2019:3). Sustainability is viewed as a long-term objective, whereas sustainable development refers to the various processes and pathways that lead to the economic prosperity and environmental quality goals of sustainable development (Janouskova et al., 2019:1). Sustainability is also known as inter-generational equity which means that natural resources and assets do not belong to one generation but must be managed and kept in trust for all future generations.

2.3.3.3 Definitions of sustainable economic development and sustainable economic growth

2.3.3.3.1 Sustainable economic development

Sustainable economic development can be defined as an investment in industry, social, constructed and ecological ecosystems that generate growing stability for all, now and in the long term. (International Economic Development Council, 2017:2). Likewise, sustainability is fundamental to the concept of sustainable economic development. Therefore, the approach to sustainability is holistic to nature and naturally applied to production, distribution, consumption and disposal of goods. Sustainable economic development aims to address the enormous problem of plastic pollution and provide an effective and reliable business model in the blue economy for waste management (FICCI, 2019:102). The researcher defines economic development in respect to women as development that can uplift and empower women.

2.3.3.3.2 Sustainable economic growth

Sustainable economic growth is linked to the improvement of the production and utilisation of economic resources which does not have a serious impact on the environment and human health. Sustainable economic growth on a global scale is unlikely to achieve long-term, complete disconnection, separate from environmental factors and its effects and as a result, societies need to reconsider what growth and progress mean and how they relate to achieving sustainability (Kovacic, Strand, Funtowicz, & Benini, 2021:2). Sustainable economic growth is an absolute reduction of environmental factors and impacts that is necessary for the fundamental transitions of the economy, to a unique version of the economy (Kovacic et al., 2021:6). According to the United Nations Sustainable Development Goals (2021:1), sustainable economic growth is an inclusive economy that propels progress, creates decent jobs for all and improves the living standard for all. With reference to women, the researcher defines sustainable economic growth as an economy that will accommodate and empower women in the blue economy.

2.3.4. Definition of women

Women have demonstrated their worth as leaders and activists around the world, fighting for a more equitable and inclusive world. Unfortunately, women still do not enjoy equitable distribution of decision-making roles (United Nations Women Annual Report, 2018:10). Following an exhaustive study prompted by equality activists, Oxford University Press has changed its dictionaries' definitions of the word 'woman'. The Oxford Dictionaries' definitions have been modified to recognised that a woman might be "a person's wife, girlfriend and a female lover," (Walawalkar, 2020:1). In general, women can be defined as an adult female human being (Webster, 2021). Defining what womanhood means to all women is impossible. Hughes and Mastantuono, (2020:1) define women as being outspoken, articulate, determined, unafraid to be oneself, standing up for wrongdoing in society and demanding equal justice for all.

2.3.5. Definition of women economic empowerment

Empowerment can be thought of as a social practice, a strategic plan and a personal change (Murombo, 2019:29). Murombo (2019:29) acknowledged that empowerment can be regarded as a social process that involves providing people with opportunities, resources and support to help them improve their lives. As a result, empowerment can be defined as a process that cultivates people's power so that they can make critical decisions to better their lives. Women's economic empowerment is about the

empowerment of women through access to capital and markets, increasing women's labour-force participation, increasing equitable right to leadership positions at all levels of decision making and supporting women's education, training and skill development as well as their access to a changing labour market (Lesteri, 2022). According to the Organisation for Economic Corporations and Development, this is a step towards achieving gender equality and fostering integrated thriving societies. The Co-operation and Development - Development Assistance Committee (2016:1). For the purposes of this study, this implies that women's economic empowerment can be defined as women taking full advantage of the blue economy's opportunities and participating in it.

2.3.6. Participation

Participation does not always imply taking part in decision-making (Kantsperger, Thees & Eckert, 2019:4). It can refer to extremely fundamental forms of engagement such as remaining knowledgeable about developments. Quick and Bryson (2016:4) argue that, when the process goes well, the potential benefits of participation are realised. Therefore, participation is simply signalling to decision-makers that one is mindful of such operations and is concerned about the outcomes (Kantsperger et al., 2019:4).

2.4. Historical Background of the Blue Economy

The blue economy idea dates back to the 1950s (Attri & Bohler-Muller, 2018:15). As countries around the world grappled with the dual patterns of rapid growth in the ocean economy and change in the underlying ecosystems, the idea of the blue economy emerged in 2012 (Patil, Virdin, Colgan, Hussain, Failler & Vegh, 2018:vi). Evidence reveals that the theories of the blue economy are drawn from the Rio+20 United Nations Conference on Sustainable Development (UNCSD). In 2012, the Rio R10+20 United Nations Conference on Sustainable Development emerged to increase awareness of the oceans and seas of the world and the need for more detailed, co-operation and implementation on the blue economy (Attri & Bohler-Muller, 2018:15). However, blue economy activism has flown from coastal to highland countries and in general, it is accepted that oceans play a major role in human advancement (Attri & Bohler-Muller, 2018:15). Most theorists have argued that the idea of the blue economy has become increasingly popular since the 21st century (McGlade et al., 2012:10). Other scholars argue that the blue economy is a modern philosophy published by Gunter Pauli, a concept focused on the application of processes and concepts of nature for the advancement of humanity. Scholars have challenged the idea of the

green economy and asked whether it relates to the attempt to foster a sustainable climate and a sustainable future of the ecosystem (Attri & Bohler-Muller, 2018:15). It has been concluded that the blue economy fundamentally advances the concept of the green economy (Attri & Bohler-Muller, 2018:15).

The Norwegian Prime Minister, Gro Harlem Brundtland describes the concept of sustainable development as a new guiding principle of the United Nations. Burroughs, Egorova, Sadic and Soeth (2018:4) argue that women have difficulty accessing markets and suffer from exclusion in fisheries' management and policies. In 1987, the World Commission on Environment and Development tried to address the problem of contradictions between economic and social development objectives by formulating the concept of sustainable economic development (Harris, 2003:1). Since it was established in 1987 by the World Commission for Climate and Environmental Sustainability, sustainable economic development has become a widely recognised objective for environmental, economic and climate policies (Mulder & Van den Bergh, 2001:111). The past decades have shown worldwide developing interest in sustainable economic development (Mulder & Van den Bergh, 2001:110). While the idea of sustainable economic development emerged in many cultures around the world, Von Carlowitz (2013 [1713]) posits that the conceptualised sustainable economic development in the seventeenth century started in Europe (Enders & Remig, 2015:2). A prevailing understanding of sustainable economic development goes back to Hartwick (1977) who illustrated that a constant level of natural resources in economic capital can lead to a continuous level of limited consumption (Mulder & Van den Bergh, 2001:113). In neoclassical growth theory, sustainable development equates to sustainable growth (Mulder & Van den Bergh, 2001:113).

As a holistic and global approach to sustainability, the idea of sustainable economic development has been debated for over twenty years and attempts have been made to achieve it by concrete actions by the UN through the SDGs. Sustainable economic development is viewed as a possible economic development that is consistent with the stable long-term quality of the environment (Mulder & Van den Bergh, 2001:110). According to Harris (2003:1), sustainable economic development must be capable of constantly producing products and services, maintaining manageable levels of government and foreign debt, and preventing significant sectoral imbalances that are harmful to industrial and agricultural development. Harris (2003:2) also outlines that sustainable economic development requires the need to preserve the various types of capital such as manufactured, natural, human and social capital that make economic

development possible. From the neoclassical point of view, sustainable economic development can be described as capital accumulation of well-being over time (Harris, 2003:2).

Sustainable economic development is viewed as a possible economic development that is consistent with the stable long-term quality of the environment (Mulder & Van den Bergh, 2001:110). Nonetheless, there are still major controversies about the precise meaning of its goal orientation and execution of its objectives. Also, many new developments around the world today are unsustainable as the ecosystem is losing its rich soil, contributing to climate change on a greater scale. A disparity is rising within and between generations and poverty is being overcome. (Enders & Remig, 2014:1). However, these challenges are intertwined and require a concerted effort to create sustainable lifestyles and sustainable growth patterns (Enders & Remig, 2014:1). Therefore, sustainable economic development is prosperity that tackles the current demands without affecting future generations' ability to fulfil their existing needs (World Commission on Environmental Development (WCED), 1987:43).

In the late 1990s and early 2000s, a new school of thought on gender inequality explored the notion of world politics through developmental and gender perspectives (Meyer, Boli, Thomas & Ramirez, 1997). Gender disparity is a natural part of life in most parts of the world especially in developing countries (Cuberes & Teignire, 2014:1). Also, most family workers are women in most developing countries and their labour efforts are always non-remunerated (Cuberes & Teignire 2014 1). In most sectors of economies, women inequality leads to less economic empowerment. According to (Cuberes & Teignire, 2014:5), as women are excluded from management roles, workers' wages and human capital expenditure decrease. Lucas's (1978) model predicts that gender differences in access to managerial positions contribute to a decrease in managers' average talent, which decreases aggregate productivity, while gender gaps and participation in the labour force leads to a reduction in per capita income. However, dynamic models such as the Galor and Weil 1996 model, prove that gender wage differences are intrinsic to economic growth, resulting in gender disparity in labour force participation.

The theory of world politics suggests that the Global Cultural Scripts urges nation's states to follow gender-egalitarian practices (Ramirez, 1997:144). The 2006 World Bank Action Plans recognised that gains in women's economic empowerment opportunities fall far behind in women's skills (World Bank, 2006:2). This is

unsustainable because increasing labour-force participation and income is connected with lower poverty rates and faster growth. Thus, women, men, children and society as a whole will benefit from economic empowerment (World Bank, 2006:2). Furthermore, the lack of economic empowerment of women has a host of negative impacts including less favourable children's education and health outcomes and a faster spread of HIV/AIDS (World Bank, 2006:2).

The development discourse has progressed dramatically since the First Development Decade of the United Nations in the 1960s which stressed economic growth and the "trickle-down" approach as the key to poverty reduction (Parpart, Connelly & Barriteau, 2000:1). The failure and the dissatisfaction of the 'trickle-down' approach paved the way for implementing the strategy and fundamentals needs, which centred on increasing inclusion and benefits of the disadvantaged in the development process. This also leads to acknowledging the needs and importance of women in society (Parpart et al., 2000:1).

The interests of women were first introduced to the development agenda in the 1970s (Parpart et al., 2000:1). The national and international forums and feminists addressed the problems of women inequality (Parpart et al., 2000:1). Following these events, women were encouraged to analyse their condition and act to change their marginalised roles (Parpart et al., 2000:1). According to Kim, Lee & Shin (2016:1), the role of women in economic growth has been a common subject in academic and policy debate. This has resulted in a dramatic increase in women's labour participation in the majority of industrialised and developing countries over the last half-century (Kim et al., 2016:1). Stotsky (2006) argues that the relative lack of opportunities for women in developing nations inhibits economic growth, while at the same time, economic growth leads to improvement in their disadvantaged conditions.

In many developing countries, the disparity in the labour markets affects the capacity of women to participate in these economies. In rapidly ageing economies, mitigating the impact on women's opportunities in the labour force will lead to wider economic growth by creating opportunities for women (Elborg-Woytek, Newiak, Kochher, Fabrizio, Kpodar, Wingender, Clements & Schwartz, 2013:4). According to Kim et al. (2016:1), the main reason for the gender gap in labour force participation is the way women divide their time in doing their chores and work. There is also an indication that women tend to do most of the housework at all income levels, and spend less time on business work. Kim et al. (2016:1). As a result, women are likely to be active with more

in-house chores than in paid employment in most developed countries (Berniell & Sanchez - Paramo, 2011:2). Parpart et al. (2000:1) acknowledged that one of the notable developments in the debate has been the move to recognise gender equality as a key element of growth. Seguino (2000:1212) on the other hand, suggests that gender inequality decreases the incomes of women and has a negative impact on development.

2.5. Theoretical Framework of Women's Participation in the Blue Economy and their Sustainable Economic Development

The conditions of women's economic empowerment in the blue economy are not superior to the state of women's economic empowerment globally (Kotze et al., 2019:42). The present study is guided by the theory of economic development, economic growth, participation, empowerment, sustainability and sustainable economic development of women. The six variables (economic development, economic growth, participation, empowerment, sustainability and economic empowerment) are examined to develop theoretical frameworks about how women's engagement in the blue economy can lead to their economic development (Kotze et al., 2019). The researcher can use the six frameworks to adapt the conceptual perspective to the analysis of women's participation in the blue economy and their sustainable economic development. The six frameworks were chosen by the researcher because they can influence and play a vital role in how women's engagement in the blue economy will affect their long-term economic viability. The six theories are interdependent, meaning that the sustainable use of resources will lead to available resources in the blue economy to preserve life underwater to enable women participate in the blue economy. The participation of women in the blue economy leads to their economic development and growth in the blue economy sphere, which will in turn lead to economic empowerment within the sector. The United Nations (2020:46) have declared that women’s empowerment through economic development projects funded by governments will contribute to actions that will increase their administrative, management and purchasing capacity in the blue economy and economic growth.

2.5.1. Economic development theory

Classical 19th century theories on economic development posit that natural order governs pricing, rent and economic affairs (Nafziger, 2006:124). The classical economic stagnation theory argues that a competitive economy promotes public interest by allowing government institutions to supply money, capital accumulation,

output wages and labour division based on market size (Nafziger, 2006:124). This argument has produced new development theories from different schools of thought. Some of the new theories emerging are the new economic narrative that emerges in the 21st century and believed that a new understanding of the relationship between economic development, human well-being, reduction in disparities and environmental sustainability can be used to inform economic policymaking (OECD, 2019:5). Economic development is becoming more prominent in international policy (Dowie, de Haan, Laslo & Granthan, 2021: 1). The world has realised that a developing country's economy is now critical to alleviating poverty and improving the health and quality of life of coming generations to achieve the United Nations Sustainable Development Goals (Dowie et al., 2021:1).

There are various schools of thought regarding economic development theory. Marxism theory argues for historical logic, which looks at where society has been, where it is going, and how it is changing with its economic situation. As a result, the transition from feudalism to capitalism to socialism is dependent on changes in the ruling and suffering groups' relationships with one another (Nafziger, 2006:126). Although Marxist theories of economic development have been widely criticised, despite this, Marxism continues to be a rallying point for unhappy people (Nafziger, 2006:126). Rostow's stages of economic growth theory (Nafziger:128) opposes the Marxism theory and argues that the leading industries sector encourages growth through linkages which create favourable conditions for economies to take off. A political, social and institutional framework is needed to take advantage of the modern expansion in entrepreneurship, retained earnings banks and capital markets as well as foreign investment (Nafziger, 2006:126).

The neoclassical viewpoint, which moves from the concepts and techniques of marginalism, construes the principles underlying economic theory as the foundation of labour market economics (Brozova, 2015:51). The neoclassical theory also assumes that, individuals maximise their output and have a flexible wage, which cleans the market and leads to market equilibrium by utilising supply and demand factors (Brozova, 2015:52). Therefore, the persistence of unemployment prompted the development of new ideologies (Brozova, 2015:52). As the blue economy also needs governments and stakeholders' interventions with an effective policy to make it more inclusive for women to participate in the sector, this approach can be similar to the neo-classical approach. As fewer women participate in the blue economy, the sector's unequal economic development will remain unequal. Inequality makes economies

more unstable and statistics show that more unequal economies have a shorter period of growth (OECD, 2019:7). Dowie et al. (2021:3) argued that women's economic development has been shown to increase the income and personal well-being of women.

2.5.2. Economic growth theory

Economic growth theory, which dates back to the 17th century in Britain, provides an opportunity to test the potential of the new growth theory (Nelson & Wright, 1992). However, a substantial study theory developed over the last twenty years has resulted in a significant changed in British growth in the 18th and 19th centuries (Crafts, 1993:2). According to the new growth theory, investment in a broad sense comprises human and physical capital that drives growth processes (Crafts, 1993:2). Nelson and Wright (1992), throughout the 19th century, productivity advances were based on trial-and-error methods with a lot of tacit knowledge rather than a knowledge base that intend to prohibit multinational spill over effects in a world with fewer intra-industry trade.

The classical and neoclassical theories examine economic growth in terms of the most efficient allocation of limited effective resources to support optimal growth production and a range of goods and services (Coccia, 2019:1). It is, henceforth, believed that economic growth can be regarded as the increase in productivity level as evaluated by the growth domestic product (GDP) (Basics, 2021:1). Traditionally, Gross Domestic Product (GDP) has been used to measure economic growth (IGI) Global, 2021:1). Productivity is defined as the desire of the state to produce goods from its resources. When comparing one period to the next, economic growth is defined as an increase in an economy's capacity to produce goods and services (Institute for Geotactical Intelligence (IGI) Global, 2021:1). Economic growth that is not accompanied by an increase in women's work and education is less likely to increase women’s bargaining position and household well-being (Kabeer, 2021:14). However, a competitive economy that effectively partakes in regional and international value chains grows more quickly and sustainably (National Treasury, 2012:12).

Economic growth can also be regarded as inclusive in the blue economy when it includes women's participation. With this in mind, the study's focus is on inclusive growth for all to participate in the blue economy. Inclusive growth can be defined as a growing economy in which the economic gains are equally distributed. Alternatively stated, economic growth should be accompanied by a decrease in inequality (National

Treasury, 2012:11). Additionally, economic growth is inclusive when it provides equal opportunities for all segments of the population to make a living (Kabeer, 2021:12). To achieve this inclusivity in the blue economy, women need to be included to partake in all sectors of the blue economy. Evidence suggests that equality can boost inclusive economic growth for women (Kabeer, 2021:12). According to the United Nations (2020: viii), achieving the objectives of the 2030 Agenda for Sustainable Development will require a vibrant and inclusive global economy, especially for women.

According to Grantham, Dowie and Haan (2021:78), there are a variety of ways in which economic growth can promote women's economic empowerment, i.e., economic growth can boost labour demand, and increase the workforce in the blue economy. This will be determined by the labour intensity of growth and whether there are jobs and opportunities in the sectors which are addressed by the research. Conversely, higher incomes for men as a result of growth in the sectors may force some women to leave unsatisfactory jobs (Grantham et al, 2021:78). As highlighted by the research, women are often subjected to low-paid jobs in the blue economy. This is believed to create unequal and unjust balance in the blue economy for women. Moreover, the International Monetary Fund (2018:1) argues that women and men do not have equal access to economic opportunities as men and if they do, not receive the same acknowledgement, wages and benefits as men.

Secondly, Grantham et al. (2021:78) argue that economic growth has the potential to promote structural change which has implications for women's economic empowerment. This implies that the impact will be determined by the institutional change path. If growth is based on expanding capital-intensive resource exploitation, women's economic empowerment opportunities are likely to be limited compared to the growth that encourages job opportunities for women in the blue economy sectors. Thirdly, growth has the potential to alleviate both micro-and macro-economic financial constraints (Grantham et al., 2021:78). On a micro-level, it could enhance access to key domestic facilities, reducing women's time-consuming on fruitless activities. It can also generate revenue at the macro-level that can be used to increase health and education spending for women in the blue economy sectors, thereby closing the gaps for women in these areas (Grantham et al., 2021:78).

Economic growth and environmental sustainability have deeper trade-offs (OECD, 2019:8). It is possible to reduce environmental damage while increasing output by changing what is produced by the economy and how it is produced. Therefore, it is

now more important than ever to address areas of economic growth and production where socio-economic inequality prevails (United Nations, 2019:51). The impact of the Covid-19 pandemic has been severe for everyone including women. The world economic growth has been severely affected by the Covid-19 pandemic (Industrial Development Coperation (IDC), 2021:3). The worldwide pandemic has also triggered a global economic downturn (African Development Bank, 2021: iv).

2.5.3. Participatory theory

The word participation is not new (Buchy, Ross & Practor, 2000). The root of participation theory is a source of contention (Claridge, 2004:1). Although there exist different approaches to participation, Storey (1999:307) views it as a symbol that shifts from the top-down approach which dominates early development efforts toward a locally responsive approach. Lane (1995) challenges Storey's 1999 approach and argued that the popularity of the top-down approach to development was due to pervasive modernisation philosophies.

Midgley, Hall, Hardiman and Narine (1986:3) argue that participation is influenced by community development and the contribution of social work and community activism. Moreover, Buchy et al. (2000) acknowledge that the knowledge of participation comes from two (2) sources mainly political science and development theory. Lane (1995) has a different view, claiming that theories of development substantially influence involvement, making it diversified and complex as a result of different theoretical positions. The researcher can relate to Lane 1995's views that the theory of development substantially influences participation. Therefore, women's participation in the blue economy can be influenced by the theory of development. The researcher strongly agreed that if women are developed, well equipped and exposed to all opportunities in the blue economy, they will take advantage and participate in all the sectorial opportunities exposed to them. There is thus a need to strengthen public awareness campaigns to raise consciousness among women about the available opportunities in the blue economy sectors.

The UN's SDG 5 provides for increased and meaningful participation of women in political decision-making (Morna, Tolmay & Makaya, 2021:5). However, adherence to the "leave no one behind" principle suggests that states should invest in capacity-building programmes and education to ensure that women are well-equipped with the necessary skills to participate in every aspect of the economy (Morna et al., 2021:5). Furthermore, Quick and Benson (2016:4) argue that one of the most contentious

aspects of participation is its legitimacy, which is typically measured in terms of the appropriateness of the participation. Cahill and Dadvand, (2018:252) emphasised that participation generates social good, which may not be beneficial. It may repeat a power structure that may have a new categorising, segregating, and stigmatising discourse.

There are therefore three factors which influence participation. According to Kramer and Gorter (2021:1), participation is linked to family ecology, women empowerment and well-being, and mental health. Theory and evidence suggest that positive short-term participation experiences lead to better long-term participation outcomes. To achieve a better long-term participation outcome for women in the blue economy, a quick short-term measure needs to be put in place by the state to encourage women's engagement in the blue economy. There is also a need for both immediate and long-term participation to be prioritised to address the challenges faced by women in the blue economy (Kramer & Gorter, 2021:1). Others have identified project teams and fit skills as an example of participation-focused interventions. The blue economy stakeholders can use these tools to encourage women to participate in the blue economy sectors. Muller and Kotze (2019:2) argued that women's participation in the blue economy is a transition process that will give women access and control over their resources and markets, enhance their decision-making and contribute to their abilities to maximise their accomplishment. This will lead to their long-term economic viability. As women's views, experiences, insights, preferences, expectations and values will be centred, not just by their involvement, but also by their effective participation (Morna et al., 2021:35).

2.5.3.1 Inclusive participation

SDG 5 calls for full and effective participation of women in political, economic and public life as well as equitable opportunities for leadership at all levels of decision-making (United Nations Secretary-General High-Level Panel on Women Economic Empowerment, 2016:13). For this to be achieved, more women need to be encouraged to participate in the blue economy. Leaving no one behind crucially implies that women can assertively develop the grounds for the inclusion and support for young women in the blue economy, as well as support for men at various levels of participation (Morna et al., 2021:5). The terms inclusion and exclusion are widely used to define the ethnic, racial, gender, and socio-economic diversity of most participants in the participation process (Quick & Bryson, 2016:4).

Inclusive participation is where women have an equal chance to participate in all forms of political decision-making without major impediment, without concern and with complete freedom and support (Morna et al., 2021:5). Morna et al. (2021:5) identify this type of inclusive participation as political participation. Concerning political participation, politics is more than just power structures and who controls them. It is also about how that power is used and what happens as a result. Women who do not participate in decision-making are normally treated as non-citizens and their inferior status is reinforced by policy outcomes (Morna et al., 2021:17). Regardless of politics, the study encourages women to have a strong voice in decision-making positions whether on a board of directors, managers of companies, occupying executive positions or as business owners.

The equity arguments posit that, in ratio to their numbers as a unique group in society, women have a right to participate in decision-making. The true representation of all interest groups in society is the point of democracy. This principle is violated when women are under-represented in the blue economy, therefore, women have a right to equal participation in both political and decision-making of the blue economy (Morna et al., 2021:18). The efficacy school of thought holds that women's lack of representation in politics violates the principle of democracy of proper representation as evidenced by various Inter-Parliamentary Union (IPU) agreements and international obligations (Morna et al., 2021:18). Regarding the blue economy, women's lack of representation in the sectors will violate the principle of inclusive participation set by the United Nations Sustainable Development Goals 5.

Another form of inclusive participation identified by Plavcova, Nadvornik, and Bultasova (2018:2) is social inclusion participation. Social inclusion is a process of enhancing opportunities, resources availability, voice and respect for rights of people who are disadvantaged in society because of their age, sex, disability, race, ethnicity, origin, religion, economic and other status (Plavcova et al., 2018:2). Social inclusion is also related to challenges faced by women in the blue economy sectors, particularly in the fisheries sector where most women face discriminated from their male counterparts. According to the United Nations Report of the Secretary-General (2017:8), equality for women and their empowerment will necessitate more concerted efforts including a legislative framework to combat deeply rooted participatory discriminatory practices, which are often the result of patriarchal attitudes and related norms towards women.

Promoting social inclusion necessitates removing barriers such as certain laws, policies and institutions to participate as well as tackling discriminatory attitudes and behaviour towards women (Plavcova et al., 2018:2). With regards to women's participation in the blue economy, it means removing certain barriers such as religious norms, societal and social justice norms, laws and policies which are major barriers that prevent women from participating in certain sectors of the blue economy. This would require authorities and civil societies to build capacity to develop long-term social protection systems and services that ensure inclusion, dignity, human rights and that the needs of vulnerable people especially women are met with a focus on resources, voices and respect for rights for women in the blue economy (Plavcova et al., 2018:5). Out of the (4) four arguments presented for inclusive participation, social inclusion is the most suitable challenges that women are being faced in the sectors of the blue economy. Therefore, there is a correlation between inclusive participation and social inclusion.

2.5.4. Empowerment theory

The early empowerment theories that evolved in the United States are based on the prioritisation of the views of oppressed people who do not having a voice to express themselves, to be heard, attain authority and overcome being dominated (Wise, 2005). The theory of empowerment has numerous origins, however, Freudian psychology theology, the Black Power movement, and Gandhism theories are all sources if inspirations of empowerment theory (Simon 1994; Cornwall & Brock 2005). Among the origins, Brazilian theorist Freire (1974), first proposed consciousness empowerment theory which allows oppressed people to proceed from knowledge to action. Furthermore, feminist and radical movement discourses in the 1980s proposed broad concepts for a new approach to women gaining support and this method was known as the empowerment method (Moser, 1989). In the 1980s, feminist movements from the Global South received little support from governments, bilateral and multilateral agencies (Parpart, 2002). The first United Nations Conference was held in Cairo in 1994 to give the empowerment concept international recognition and it focused on women's empowerment and women's rights issues (Calves, 2009:VI-VII). The United Nations Conference held in Beijing in 1995 was a platform for action to represent the agenda for women’s empowerment (United Nations, 1995).

Empowerment is viewed as one of the three pillars of the struggle against poverty (Wong, 2003). According to World Bank (2001:39), empowerment entails strengthening impoverished people’s ability to influence governmental institutions that

affect their lives through boosting their participation in political processes and local decision-making. Empowerment can further be viewed as a tool to liberate women from poverty. The World Bank (2001:112) also believes that voicelessness and powerlessness are essential aspects of poverty, therefore, fighting poverty cannot be separated from the empowerment of the poor people.

In women's development theory, empowerment is a way of defining, challenging and removing obstacles in the life of women so that they will be able to shape their life (Dandona, 2015:35). Concerning the research, women's lack of empowerment with resources and facilities such as education, knowledge and training facilities is highlighted as the reasons for lack of participation in the blue economy's sectors. While the empowerment process may not only develop their skills and let them have access to economic resources, it will also enhance their quality of life, self-respect and status of function in the blue economy (Dandona, 2015:35).

In people's theory, empowering people is about the people, their status, needs and capabilities, all of which must be considered (Tohver, de Bruin & Taal, 2019:12). There is an argument that people who are empowered have more control over their lives and can act on issues that are important to them (Tohver et al., 2019:12). Therefore, if the blue economy is important to women, they need to act by taking advantage of the opportunities that it offers. Empowerment theory can be explained using the underlying elements of AMO (Ability, Motivation, Opportunity) Model Framework, which represents people's Ability, their Motivation and Opportunities, as indicated in Figure 2.2 (overleaf). The AMO diagram signifies the three (3) components that influence people's empowerment. These are all the factors influencing the behaviour of empowered people (Tohver et al., 2019:15).

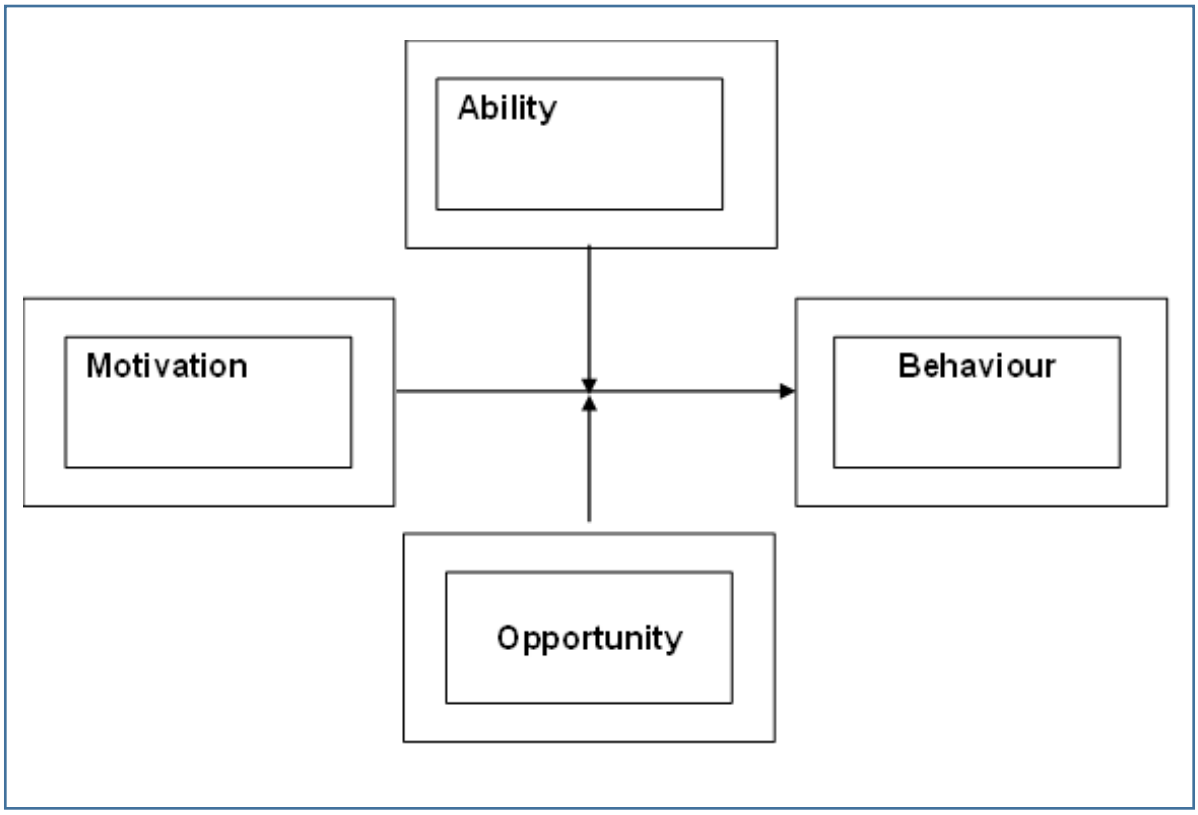


Figure 2.2: The AMO framework: A model that represents the three (3) elements of AMO: Ability, Motivation and Opportunities

Source: Tohver, de Bruin and Taal (2019).

According to the AMO Model Framework, ability refers to the extent to which people possess the required knowledge and skills to achieve a specific outcome. The study outlines the ability of women to participate in the blue economy. In contrast, lack of ability implies that the knowledge structures required to perform more complex operations do not exist (Tohver et al., 2019:15). This implies that if women are not allowed to participate in the blue economy, they will not be able to occupy managerial and director positions in the sectors, which has more complex roles for women. Therefore, women's economic empowerment thus necessitates a greater understanding of constraints that women face in various socio-economic circumstances and what can be done to alleviate them (Kabeer, 2021:41).

Motivation refers to people's desire to gain and maintain control over their actions (Tohver et al., 2019:15). Motivation also encompasses a person's willingness, interest and desire to participate (Tohver et al., 2019:15). In relation to this research, women will be motivated to participate in the blue economy if they are aware of various opportunities existing in the sectors. Women can be motivated by gaining basic life skills as a result of education, training and lifelong learning, which would increase their self-empowerment and ability to maximise their employment opportunities in the blue economy (Kabeer, 2021:41).

Opportunity represents the degree to which a condition is favourable to achieving the desired outcome (Tohver et al., 2019:15). As far as the research is concerned, if all conditions are favourable to educate women through various awareness creation methods about the blue economy sectors, it will lead to a favourable desired outcome of an increase in women participation in the blue economy. It also concerns the accessibility and availability of solutions, as well as people's participation in the processes. The outcome of this research will determine if women are being presented with the opportunity to participate in the blue economy, which will lead to their sustainable economic development.

Empowerment theory can also be viewed in the context of women economic empowerment. Women's economic empowerment is critical for growth because of its direct effect of workforce size on output and its effect on productivity (IMF, 2018:5). Therefore, empowerment of women in the blue economy will lead to an increase in the industry's productivity. Women's economic empowerment is also critical to achieving the 2030 agenda for Sustainable Development Goals of inclusive growth that leaves no one behind (UN Secretary-General's High-level Panel on Women's Economic Empowerment: 2016:140). This led to the argument on inclusive participation, which is the critical aspect of this research. Therefore, increasing women's participation in the blue economy will lead to inclusive participation and attainment of the 2030 agenda for Sustainable Development:

> "Women's economic empowerment around the world is a global imperative. Despite significant progress in promoting equality, impediments to women's economic empowerment and full participation in the economic activity must be addressed urgently". (Ban Ki-Moon, quoted in UN Women, 2016:1)

According to the UN Secretary-General's High-level Panel on Women's Economic Empowerment (2016:13), the economic empowerment of women is not only the "right thing" to do, but it also honours the world's human rights obligations. It is also the "wise move" to do for business, development and economic growth. Large and persistent economic gender disparity has enormous financial and societal implications (UN Secretary-General's High-level Panel on Women's Economic Empowerment, 2016:13).

2.5.5. Sustainability theory

In the world we live in today, discussing the environment means talking about sustainability (Djalali & Vollaard, 2008:5). Although the theory of sustainability initially originates in Germany in the 18th century, (Djalali & Vollaard, 2008:5) administer that

sustainability is relatively a new terminology. The term was developed in the early 1970s and then officially endorsed by the world community in the United Nations Report “Our Common Future” in 1987 (Djalali & Vollaard, 2008:5). Sustainability has become important to the public and has captivated the attention of most academics and professionals (Correia, 2019:29). It is heavily focused on retaining and trying to improve highly desirable aspects of the environmental conditions, including the environmental natural resources. Moreover, sustainability can hardly be considered without the ecological aspects. Ecological sustainability has not only become a vital framework for thinking about social-cultural and economic sustainability, but it has also become a topic of controversy in the sustainable development princuple (Klarin, 2018:70). One aspect of ecological sustainability in this research is caring for life underwater, which focuses on the unsustainable use of resources and life underwater. According to Sheehy and Farneti (2021:7), the two (2) major focus areas of sustainability are the ability of the natural environment to maintain human life and the impacts of human industrial activity on the natural environment.

The Eco-feminist theory of sustainability posits that there is a link between women’s oppression and environmental deterioration (Djalali & Vollaard, 2008:28). The researcher interprets oppression as frustration. Moreover, if women are oppressed, they tend to become powerless and frustrated therefore less productive in their daily activities. Such activities can be linked to caring for their environment and these can be ignored. These frustrations can be related to how sexism, nature’s dominance and other issues connect.

The triple bottom line of sustainability can also be used to evaluate sustainability theory. As illustrated in the research, the triple bottom line of sustainability is people, planet and profit, and the three pillars of sustainability also affirm the triple bottom line of sustainability of planet, people and profit. Figure 2.3 below depicts the three pillars of sustainability, which are the environment, the economy and the society we live in. The most accepted model for describing sustainability is the triple bottom line approach, which includes economy, society and the environment (Correia, 2019:31). The triple bottom line approach to sustainability is a more acceptable model of sustainability, however, Lawson and Beckmann (2010:179) argued that the triple bottom line model emphasises the importance of “whatever is conducted in a business system being compatible with the wider society and environment. Regarding the research, the researcher outlines the triple bottom line of sustainability as people, planet, and profit and argued that women have a very important role to play in these

triple bottom lines. Women form part of the people on the planet and deserve to make a profit to survive.

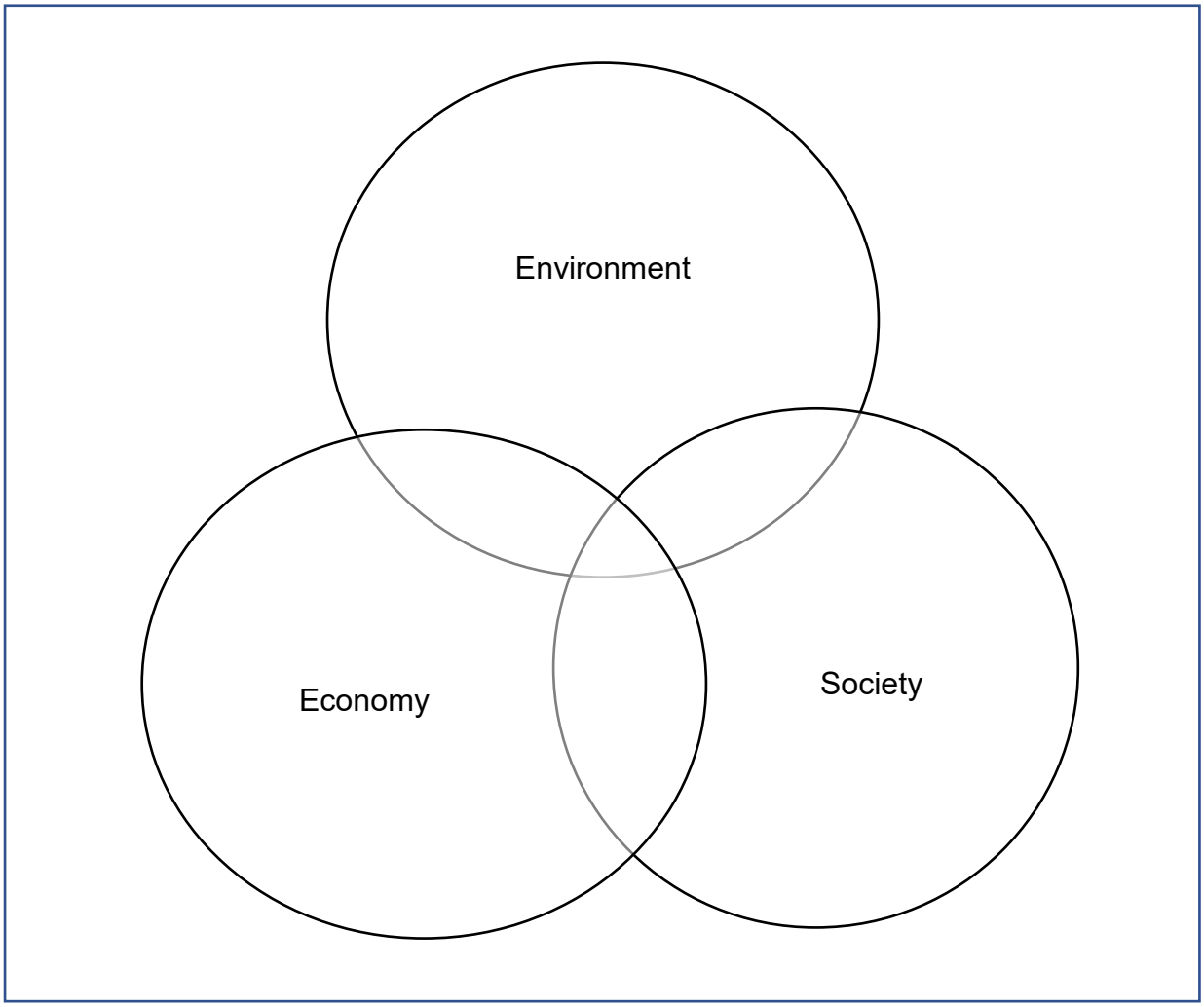


Figure *2.3*: Three pillars of sustainability

Source: Puvis, Mao and Robinson (2019:682)

2.5.5.1. Sustainable theory in relation to the sustainable development goals

Sustainability can be examined in terms of the SDGs which is a very critical point for this study. This indicates that the SDGs are very critical in achieving the United Nations Sustainable Development Goals, which include caring for life underwater, inclusive participation for women as well as decent work for women in the blue economy. This study focuses on SDGs 5, 8 and 14.

SDG 5 aims to promote gender equality and empowerment of all women and girls (United Nations, 2021:5). Women's economic empowerment and their equal participation in the blue economy are critical to achieving SDG 5. According to the UN (2021:36), more women than men are leaving the workforce to care for children due to the Covid-19 pandemic. This shows that when situations become difficult to manage, women are the ones who suffer the most in society.

SDG 8 seeks long-term, inclusive and sustainable economic growth as well as full and decent work for all people (United Nations, 2019:39). The persistent income gap between men and women serves as a powerful reminder of inequality that exists in most labour sectors as well as the blue economy (United Nations, 2019:39). The focus of SDG 14 is life below water. It highlights that ocean, seas and marine resources should be conserved and used sustainably for its long-term development (United Nations, 2021:54). The blue economy, including women's participation, depends on the sustainable use of the ocean and seas. Therefore, the ocean's long-term profitability requires renewed efforts to protect important ecological areas of planet earth (United Nations 2021:4). The University of Alberta (2021:3) asserts that it is impossible to list all the reasons why many people, groups and communities are working towards sustainability goals and caring for life underwater. However, for most people, sustainability is still the kind of future we want to leave for future generations, indefinitely.

2.5.6. Sustainable economic theory

It is widely assumed that attempts to enhance a sustainable economy will result in significant economic advantages such as cost savings for businesses and improved competitiveness, stimulation of developments, technological industrial opportunities and macroeconomic benefits such as increased output and employment (Ekins, Domennech, Drummond, Bleischwitz, Hughes & Lotti, 2019:55). A sustainable economy refers to a production system that meets current consumption levels without adversely affecting future needs (Basiago, 1999:150). The United Nations (2019:51) viewed sustainable economy as a means of advancing human potential sustainably for the economic prospect of future generations. Indeed, some aspects of today's production organisation may have environmentally and socially devastating and endangering results, pushing the world irreparably beyond certain meltdowns and endangering the well-being of future generations (United Nations, 2019:51).

In the past, conventional developmental science has guided economic sustainability through growth, development and productivity. Its defining characteristics have been stretched to the level of market resource allocation, strained levels of growth and consumption (Basiago, 1999:150). The assumption behind the stretch is that, natural resources are limitless with the belief that economic growth will ‘trickle down' to the poor (Basiago, 1999:150). In this regard, the term "blue economy" as described by the research, refers to the safeguarding and sustainable use of natural resources for the benefit of future generations. Therefore, a sustainable blue economy is an economy

that promotes economic growth, social inclusion and livelihood opportunities while also helping to ensure the natural capital of the ocean's sustainable development (European Union, 2021:16).

Traditionally, economists have emphasised the market's ability to distribute resources efficiently (Basiago, 1999:150). The economist also believed that, as the economy grew, the capacity to replace natural resources is depleted during the manufacturing process (Cooper & Vargas 2004). Mensa (2019:8) argued that natural resources are not infinite and, in addition, not all of them can be renewed. (Basiago, 1996, 199; Du & Kang, 2016) on the other hand, argued that natural resources have been strained as the market economy has grown in size, urging a rethink of the traditional economics. In the blue economy, the European Union (EU, 2021:13) emphasises that ocean-based goods and services are vulnerable to human economic activities through direct exploitations of natural resources such as coastal spaces for population growth, fishing, and aquaculture. However, many scholars have questioned the feasibility of uncontrolled growth and consumption as a result of this argument (Mensa, 2019:8). These concerns are highlighted by the research which demonstrates that caring for life underwater and the sustainable use of earth resources in terms of the planet, people and profit are critical to the survival of the blue economy.

2.6. Empirical Evidence of Women Participation in the Blue Economy

Empirical research is based on observations and the measurement of occurrences and therefore knowledge is derived from the actual experience rather than the assumption of the research (Eastern New Mexico University [ENMU] Golden Library, 2022).

The empirical study outlines the independent variables of opportunities for women in the blue economy, the challenges women face and strategies to overcome these challenges and to achieve sustainable economic development. While there is a massive opportunity for women to participate in the blue economy, these opportunities have received little attention, as most women are still unaware of them. According to Bohler-Muller et al. (2019:5), male domination must be addressed to ensure equal female participation in the blue economy, in order to eradicate discrimination, social issues such as unfair working conditions, low wages and non-recognition of care work. Although there are huge opportunities presented by the study for women such as general opportunities including jobs, businesses, and economic opportunities, most women are unaware of these opportunities. Therefore, a massive awareness creation

initiative needs to be launched by the various blue economy stakeholders. As established by Kotze et al. (2019:68), a national awareness campaign could be launched to encourage women's participation in the blue economy, using traditional and social media. This campaign needs to address women's equality challenges and normalise women's participation in the workplace of the blue economy. Both men and women should be targeted in the context, as well as states and communities (Reva & Kumalo, 2020:11).

2.6.1. Economic growth

Evidence from the International Monetary Fund's Report (2021:169) shows that the Covid-19 crisis has compounded inequalities within countries around the globe with women and those with lower levels of income in economies, being disproportionately affected. However, there is an argument by Kabeer (2021:40) that greater equality of women's labour participation contributes to more inclusive economic growth (Kabeer, 2021:40). By contrast, Andrews, Montesquiou, Sanchez, Dutta, Heisey, Clay and Chaudhary (2021:22), indicate that the soaring levels of inequality in many countries threaten to repress inclusive economic growth and limit opportunities for women to escape from poverty.

Growth is inclusive when it provides opportunities for all sectors of the population to make a living (Kabeer, 2021:12). According to this research, inclusive economic growth can be linked to opportunities for women to participate in the blue economy. These opportunities include general opportunities, job opportunities and business and economic opportunities, which can lead to sustainable economic growth for women. Heintz (2018:2) reiterates social norms and inequality, such as the division of labour among paid and unpaid activities, women's labour force participation and labour market exclusion, which are all influenced by inclusive growth. Dowie et al. (2021:83), on the other hand, argued that inclusive economic growth has no observable effect on women's employment. It is rather that women's employment is strongly influenced by the type of economic growth and the structural changes that accompany it. Kan and Klasen (2021:91) noted that inequality can be seen as a tool to strengthen inclusive economic growth for women. Therefore, women's participation in the blue economy can promote equality which can lead to inclusive economic growth.

Kan and Klasen (2021:77) also posit that women's economic empowerment can boost inclusive economic growth in a variety of ways, including increasing human capital in the economy, reducing inequality to attracting the best talent, developing a competitive

advantage in all the economic sectors and encouraging investments and social well-being of the sectors. This argument applies to the blue economy, where the research addresses the issues regarding women's economic empowerment in the blue economy sectors. Therefore, empowering through education and awareness creation can lead to the women-to-women economic empowerment in the blue economy sectors.

Kan and Klasen (2021:78) have also emphasised that there are several ways in which inclusive economic growth can help women's economic empowerment. Firstly, inclusive economic growth can boost the labour demand, which can help women join workforces. Therefore, inclusive economic growth in the blue economy can encourage labour demand in the various sectors of the blue economy which will, resultantly, encourage women to participate in these sectors. Secondly, economic growth has the potential to promote a rapid structure for women's economic empowerment. However, if inclusive growth is based on increasing investment opportunities for women, women's economic empowerment opportunities are likely to increase and growth will encourage women labour participation in the blue economy sectors (Kan & Klasen, 2021:78). Thirdly, growth has the potential to alleviate budget constraints. This can lead to improved domestic activity for women, such as an increase in health and education, which are also the focus areas that need to be improved in the blue economy.

2.6.2. Participation

Substantial evidence suggests that women's participation in processes improves their outcomes. Therefore, women's participation and representation in decision-making ensure the state's policy direction reflects the experiences and needs of women population (United Nation's Women, 2018:2). Evidence also suggests that women continue to be under-represented at all levels of decision-making. This is the resolution of the United Nations General Assembly on women's participation. Women continue to be largely marginalised from participating in every aspect of decision-making. This is often the result of discriminatory laws, practices, attitudes, gender and stereotypes, low levels of education, lack of access to health care, and the disproportionate effect of poverty on women (United Nations Women, 2018:2). According to the United Nations Women Facts and Figures, (2021:1), women still lack representation at all levels of decision-making around the world, including in the blue economy. In the same vein, women make up 23.5% of all national parliamentarians, but currently, merely about 20 countries in the world have a female head of state. The International Labour

Organisation (ILO, 2020:1) highlighted that, disparities between men and women remain in a variety of areas, including participation in the labour force, pay for equal-value work, and representation of women in high-paying jobs and managerial positions and the distribution of unpaid care work. While women still lack effective participation in major sectors and activities, such as those that are still lacking women's representation in leadership and parliament (United Nation's Women, 2018:2).

So far, this study has identified challenges faced by women participating in the blue economy such as the lack of knowledge about jobs and business opportunities in the blue economy, exclusion of women from decision-making and lack of women participation in higher-level positions. Furthermore, the research found that, women are paid lower than men, there is less attention paid to women in the workforces, there is a lack of funding and facilities for women in the business sectors of the ocean economy. There are also, unstable and insecure jobs for women in the sectors, there are higher informal work for women causing them to risk falling into poverty. Women also face sectorial challenges in the blue economy such as challenges in the fisheries sector, challenges in the tourism sectors, in oil and gas sectors and the challenges faced by women in all other sectors of the blue economy, as indicated by the research and the conceptual frameworks. There is evidence that women's blue economy's participation is prevented by many factors such as traditional and cultural norms, as well as socio-economic factors and the challenges faced by women in the sectors (Mlambo & Kapingura, 2019:2) Therefore, the active participation of women on an equal footing with men at all levels of decision-making and political involvement as well as their views and experiences in decision-making processes are critical for achieving the United Nations Sustainable Development Goals (Mlambo & Kapingura, 2019:1). In this way, the research indicates that the blue economy sectors still lack effective women participation. Participation in the blue economy would lead to the sustainable economic development of women.

According to Eikeset, Mazzarella, Davíðsdottir, Klinger, Levin et al. (2018:178), improvement of the blue economy such as increased women participation can therefore have a positive impact on the economic growth of many countries, leading to women economic empowerment. Encouraging women's economic empowerment within the blue economy sectors required the deconstruction of conventional gender roles (Kotze et al., 2019:61). Also, changing attitudes towards women and developing campaigns that highlight the value of women in the blue economy, as well as the positive contribution of women to sustainable economic growth are the key steps to

promoting productivity in the blue economy (Kotze et al., 2019:61). The theory of evidence suggests that, a positive short-term participation experiences will lead to a better long-term participatory outcome (Kramer & Gorter, 2021:1). As a result, the immediate and long-term participation of women in the blue economy need to be initiated for the benefit of women.

2.6.3. Empowerment

Women empowerment in the blue economy will lead to their sustainable economic empowerment, which will also address the UN's SDGs of this study and the triple bottom line of poverty, unemployment and gender inequality. Women's economic empowerment is defined as the capability for women to succeed and advance economically, as well as their ability to make economic decisions that can improve their overall well-being and social status (Calder, Richard & Kalsi, 2020:10).

Evidence shows that incorporating women into the blue economy's analysis and prioritisation can result in rapid improvements in women's economic empowerment and equality in the blue economy (Livingstone, Jenkins & Cardinal, 2021:3). As the research demonstrates, sustainable economic empowerment of women in the blue economy will require women to have autonomy, free from domination, contribution to business income, exposure to information and new skills. Kan and Klasen (2021:77) report that education, autonomy, household decision-making power and equality in social norms are the most common influence on women's economic empowerment. Some scholars also believe that there is a link between equality and empowerment. Manuere and Phiri (2018:58) also discovered a strong link between equality and empowerment. According to Sibanda and Tsoka (2020:66), women's inclusion in the blue economy is widely acknowledged as having the potential to boost the monetary and economic success in the lives of women (Sibanda & Tsoka, 2020:66).

The public needs to be mindful of the current circumstances affecting women in the blue economy. There is an argument by Manuere and Phiri (2018:58) that society has a way of rewarding gender with power, to the extent that gender with no power is punished. Therefore, stakeholders need to work together to address various challenges facing women in the blue economy. Policymakers need to create flexible policies to enable women to break the barriers of the male-dominated blue economy industry.

2.6.4. Sustainability

Evidence suggests that promoting sustainability has economic benefits that are beneficial to our environment and human well-being (Pham, Do, Doan, Nguyen & Pham, 2021:16). In recent years, promoting the blue economy activities has placed heavy emphasis on sustainability (European Union, 2021:13). However, if these are to be truly sustainable economic activities, social and environmental factors must be taken into consideration (European Union, 2021:13).

This study seeks to fill a knowledge gap by focusing on three aspects that have been highlighted as having an impact on sustainability such as caring for life underwater, the triple bottom line approach to sustainability and SDGs 5, 8 and 14 respectively. Regarding caring for life underwater and the SDG14, the European Union (2021:13) states that ocean-based goods and services are vulnerable to human economic activities through direct exploitation of natural resources, such as coastal spaces for urbanisation and overfishing. Therefore, habitats and ecosystems must be protected, as these economic activities depend heavily on the availability of these natural resources. Furthermore, the triple bottom line approach to sustainability, which considers people, planet and profits, has changed the way people think about sustainability aspects of our environments, businesses and organisational practices (Slaper & Hall, 2011:8).

This study pays attention to SDGs 5 and 8 with regard to women's participation in the blue economy. SDG 5 aims to ensure gender equality and the empowerment of all women and girls (United Nations, 2019:32). There is a dire need for women to be empowered and participate in the blue economy. The United Nations (2018:8) observed that women’s empowerment usually requires addressing structural problems facing women, such as unfair social norms and attitudes towards women, as well as the development of progressive structures that can promote equality for women. United Nations Women Facts and Figures (2021:1) argue that when women work, their economic empowerment increases productivity, diversifies the economy and improves income equality among other improvement outcomes. The research, therefore, indicates that there are jobs as well as business and economic opportunities in the blue economy open to women to explore and take advantage of.

SDG 8 promotes long-term inclusive and sustainable economic growth, as well as full and productive employment and decent work for all people, including women (United Nations, 2021:42). As indicated by the researcher, most women working in the various

sectors of the blue economy are being treated unfairly. This is creating an imbalance in the different sectors of the blue economy and leaving a huge gap in the sectors. Livingstone et al. (2021:3) demonstrate that acknowledging women's barriers and opportunities to their economic empowerment, as well as making sure that women's access to control over decent work and capital assets can improve their sustainability outcomes.

2.6.5. Sustainable economics

Begum, Alam, Filho, Awang and Ghani (2021:11) examined how the Covid-19 pandemic affected economic sustainability by restoring ecosystems. They found that the pandemic led to a growing socio-economic shock around the world, leaving millions of people to fall into extreme poverty as a result of high unemployment (3). The pandemic also had severe impact on the blue economy, leading to the closures of many sectors. This literature review highlights the impact of the pandemic on the blue economy's established sectors such as the marine living resources, marine non-living resources, marine renewable energy, port activities, shipbuilding and repair and the maritime sectors. According to the United Nations Conference on Trade and Development (UNCTAD, 2020:2), the pandemic has a significant impact on the sectors of the blue economy such as travel, tourism, maritime transport, fisheries and seafood production. Also, the pandemic has impacted emerging sectors such as the blue-bio economy, ocean energy, desalination, maritime defence, cables, research and education and maritime observation. However, the effects on the blue economic sectors are uneven, as the level of restraint and the measures imposed vary by the impacted country in terms of activity and timing by the impacted country (UNCTAD, 2020:2).

According to the World Bank Group Flagship Report (2021: xv), successful policies will be needed to allow capital, labour, skills and innovation to migrate to new objectives in order to establish a stronger post-Covid-19 sustainable economy while safeguarding the environment and the most vulnerable. Therefore, the long-term management of the blue economy is critical for achieving more equitable sustainable economic development routes that are consistent with the 2030 Agenda for Sustainable Development Goals, particularly SDG 14 (UNCTAD, 2020:2).

2.7. Chapter Conclusion

This chapter has presented a review of relevant literature relating to the study incorporating a conceptual overview of the blue economy, a proposed conceptual

framework for the participation of women in the blue economy, definitions of key concepts, theoretical frameworks of women's participation in the blue economy and their sustainable economic development. The chapter also outlines various theoretical models of the study as well as empirical evidence from various studies and policies. The chapter to follow presents a broader perspective of the status quo in the blue economy.

CHAPTER 3: IMPORTANCE OF THE BLUE ECONOMY PROJECTS, THE SUSTAINABLE DEVELOPMENT GOALS AND WOMEN

3.1. Introduction

This chapter considers scholarly literature on the overview of the blue economy projects and initiatives in the blue economy. In the same vein, countries leading and championing the blue economy, the importance of the blue economy, funding of the blue economy developments, the sustainable development goals, caring for life under water and the importance of women in the blue economy are also part of the content of this chapter.

3.2. Overview of the Blue Economy

The blue economy is now regarded as an environmentally friendly method of preserving the ocean for future generations. Through research, the blue economy aims to foster on economic development, sustainable productivity and consumption; at the same time social inclusion and conservation, enhancing livelihoods while maintaining ocean and coastal areas' environmental protection are also contained in the fostering (Kennedy, Kemboi & Njaaga, 2018:9). According to the EU Blue Economy Report (2020:2), the blue economy includes all sectorial and multi-sectorial ocean, seas and coastal economies, marine-based projects such as fishing and aquaculture, marine minerals, marine renewable energies, desalination, maritime transport and coastal tourism. The blue economy includes marine-related operations using marine resources and manufacturing ocean-based products and services such as seafood production, biotechnology, shipbuilding and repair, port operation, technology, equipment and digital services (The EU Blue Economy Report, 2020:2). However, some forecasts indicate that the ocean-based output in several sectors would surpass the corresponding land-based productivity in terms of both value and job creation by 2030 (FICCI, 2019). Such opportunities would only emerge if the oceans remain clean, and this awareness will lead to the creation of a new paradigm shift called the blue economy (FICCI, 2019). In this case, caring for life underwater is of the utmost significance for all human beings. Ultimately, encouraging ocean literacy and how ocean health impacts all life on earth is one of the UN guidelines for achieving the SDG 14 life below water (Credit Suisse Impact Advisory & Finance (IAF) Department, 2020:16). Considering that the sustainable blue economy is closely linked to the achievement of SDG 14, life underwater is crucial to realise the advocates of a sustainable blue economy globally. Attention needs to be on sustainability thinking as the front and centre of any ventures and investment relevant to the blue economy (Credit Suisse Impact Advisory & Finance Department, 2020:18).

A sustainable blue economy thus enables society to benefit from the seas and coastal regions while maintaining the ocean's long-term potential to restore and maintain these activities by introducing sustainable practices (EU Blue Economy Report, 2020:2). This indicates that human actions must be handled to ensure ocean sustainability and where economic growth is projected to recognise and maintain the value of the ocean over time (EU Blue Economy Report, 2020:2). One of the primary concerns of the blue economy is the lack of women's representation in the industry. This can be viewed as challenges that would hinder women's social and economic growth and can have a detrimental effect on sustainable economic development for women which would lead to economic implications for their livelihoods (Chen, De Bruyne & Bollempalli, 2020:13).

Women's engagement in the blue economy would create economic benefits for most women and contribute to their sustainable economic empowerment which represents one of the studies dependent variables.

This would add great value to women's development and increase their capacity for financial prosperity (Gordon et al., 2019:58). There are many opportunities that women can strategically mobilise across the blue economy with high potentials, yet, these opportunities are untapped by women (Indian Ocean Rim Association (IORA) Interviewee, 2019:3). The study by Gordon et al. (2019:58) suggests that, essential sectors such as tourism have great potential for women as there is evidence that one (1) out of ten (10) jobs will be in the tourism industry. These opportunities reflect the vast growth potential of the industry. Women, therefore, need to take advantage of the prospects in these sectors. Alternatively, women could erode into high-tech IT jobs as the sectors do not involve doing fieldwork (Gordon et al., 2019:58).

Apart from the job market, creativity and entrepreneurship are essential aspects of the blue economy for women to explore (FICCI, 2019:107). Small to medium enterprises (SMEs), entrepreneurs and start-ups serve as catalysts in the blue economy sector but are limited by lack of funds, making it more difficult for women to mobilise the required finance to turn their ideas into action (FICCI, 2019:107). Furthermore, large projects funded by EU research initiatives are also dedicated to assisting small and medium-size enterprises (SMSEs), yielded a pipeline of 500 projects in the various blue economy sectors (EU Blue Economy Report, 2020:11). In addition, the European Commission (EU) and the European Investment Fund (EIF) agreed to establish the Blue Investment Framework for SMSEs in the blue economy's business sectors.

These Blue Investment Framework includes investments projects such as investment readiness, coaching and grants of £22 million for business owners in the blue economy (EU Blue Economy Report, 2020:11).

3.3. Projects and Initiatives in the Blue Economy

The blue economy is a growing sector and as such, has caught the attention of many investors. The sector is emerging and reaping benefits from new initiatives and great projects. Also, foreign investors around the globe are increasingly becoming accustomed to the concept of blue economy and are expressing interest in investment opportunities offered by the oceans, seas and coastal marine products and services (FICCI, 2019:107). Importantly, substantial attention is received from the public-private partnership (PPP) for the development of the blue economy (FICCI, 2019:107). Early initiatives were implemented when the World Bank Group paved the way by encouraging investments in sustainable projects by launching the first-ever Green Bonds in 2008 which raised US$13 billion for institutional and retail investors through some 150 green bonds in 20 currencies (FICCI, 2019:107). This strategy provided the basis for the new Green Bond Market with 91 projects and a total of US$15.4 billion in investments for renewable energy, water conservation and climate change mitigation projects (FICCI, 2019:108). In addition, the 2018 International Monetary Fund (IMF) and World Bank (WB) Annual Meetings, the Clean Oceans Initiatives coordinated by European Investment Bank (EIB) together with German Development Bank and Agence Francaise de Development (AFD), have committed to lending of £2 billion in credit to the public and private sectors from2018 to 2023 (EU Blue Economy Report, 2020:13). These Clean Ocean Initiatives aimed at reducing pollution in the oceans with specific emphasis on plastics waste in the sea (EU Blue Economy Report, 2020:13).

The promotion of such programmes in the field of waterways will enhance waste management of plastics and other waste in ports and harbours. The extension and enhancement of wastewater collection and treatment will keep plastics pollution from wetlands and urban storm-control system to assist and prevent waste and contaminants from reaching waterways during the rainfall and flooding period (EU Blue Economy Report, 2020:13). Similarly, Kenya has also launched a bankable blue economy programme in agriculture and fisheries, renewable energy, maritime transport and trade, tourism, water supply and environmental protection in order to accelerate the implementation of the UN 2030 Agenda. Sustainable Development Goals could assist in harnessing the development of the blue economy in order to

create employment, and combat poverty and hunger for women in developing countries (Kennedy et al., 2018:9).

However, the current outbreak of COVID-19 has affected every sector, project and economy across the globe (EU Blue Economy Report, 2020:22). Table 1 below reflects an evaluation of the effects of economic crises on the European Union's sectors and its road to recovery. These evaluations will also apply to every blue economy sector in the world as all countries in the world are experiencing similar challenges of the Covid-19 impact on their economies. The pandemic has profoundly impacted areas such as coastal tourism and the journey to recovery will take very long. In contrast to the coastal tourism sector, marine living resources and shipbuilding and repair sectors have been affected, but not as extremely as the coastal tourism sector.

Table 3.1: Preliminary assessment of the impact of the COVID-19 economic crisis on the blue economy

SECTOR	SIZE	INITIAL IMPACT	RECOVERY PATH
ESTABLISHED SECTOR			
Marine Living Resources	Medium	Strong	Lagged
Marine Non-Living Resources	Small	Medium	Prompt
Marine Renewable Energy	Nascent	Strong	Prompt
Port Activities	Medium	Strong	Prompt
Shipbuilding and Repair	Small	Medium	Lagged
Maritime Transport	Medium	Strong	Prompt
EMERGING SECTORS			
Blue Bio-Economy	Small	Strong	Prompt
Ocean Energy	Nascent	Small	Prompt
Desalination	Nascent	Small	Prompt
Maritime Defense	Small	Small	Prompt
Cables	Nascent	Small	Prompt
Research And Education	Nascent	Small	Prompt
Maritime Observation	Nascent	Small	Prompt
Coastal Tourism	Very Large	Strong	Very Large

Source: Author's own conceptualisation adapted from European Union Blue Economy (2020:22)

3.3.1 The blue economy economic activities for women

The blue economy economic activities are contributing immensely to job creation and the growth of many economies around the globe. There are huge economic activities generated by the blue economy. The UNECA (2020:6) strive to attest that there are two (2) types of ocean-based economic activities in the blue economy. These are traditional and emerging sector economic activities. The traditional sector's economic activities include fisheries, seafood processing, shipping, ports, shipbuilding and

repair, marine manufacturing & construction, dredging and maritime coastal tourism. The emergent sector economic activities are deep-water oil & gas exploration and drilling, offshore wind energy, ocean renewable energy, marine and seabed mining, maritime safety & surveillance, marine biotechnology, high-tech marine products and services. The blue economy also has a diverse economic sector that comprises aquatic regions such as lakes, rivers and subsurface waters as well as oceans, seas and their adjacent shores. As a result, the blue economy offers a wide range of opportunities, such as water activities that is providing qualified people with resources and access to ocean equipment and replacement parts production, as well as value addition to the blue economy products (UECA, 2020: vii). The sea's annual economic value is also estimated to be $2.5 trillion (Holmyard, 2018:1).

Similarly, if the blue economy industries are promoted, it can foster sustainable growth, reduce poverty and promote sustainable economic development (UNECA, 2020:6). Table 2 below shows the huge economic activities in the many sectors of the blue economy that can attract women to participate in the sector. Thus, there is a potential to facilitate and accelerate growth and development for women in the sector. In contrast to the coastal tourism sector, marine living resources and shipbuilding and repair sectors have been affected, but not as extreme as the coastal tourism sector.

Table 3.2: Summary of economic activities and opportunities in different sectors of the blue economy

Sector	Business activities and opportunities
Shipping	Shipbuilding and repairing, ship ownership and operation, shipping agents and brokers, ship management, port and terminal management, dredging, ship suppliers, ship equipment manufacturing, cargo handling and storage, stevedores, freight forwarders, professional maritime training, financial institutions, maritime layers and marine insurance. Opportunities are available in the sectors: Jobs, poverty eradication, production, investments, entrepreneurship and growth of SMMEs.
Fisheries and Aquaculture	Capture fishery, aquaculture, seafood processing, cold rooms, storage, packaging, transport and logistics Opportunities are available in the sectors: Jobs, the well-being of society, source of income, source of protein and food security and research.
Marine and Coastal tourism	Sea angling from boats and the shore, sailing, boating, water skiing, water surfing, sea kayaking, scuba diving, swimming, bird watching in

Sector	Business activities and opportunities
	coastal areas, whale/dolphin watching and visiting coastal nature reserves. Opportunities available in the sector: Jobs, global business, source of foreign exchange, source of income for local entrepreneurs in transport and accommodation services, food and beverage, cultural and handicraft production and research.
Offshore oil and gas	Exploration and exploitation, oil rigs, offshore supply vessels, underwater welding, production and refining, pipelines, oil and gas distribution. Opportunities available in the sector: Jobs, skills development, scientific research, innovation and development, technology and skills transfer, petrochemical and other industries, development and marketing services and research.
Renewable energy	Offshore wind energy production, wave energy production, tidal energy production, thermal and biomass sources. Opportunities available in this sector: Jobs, access to energy for productive and consumptive uses, socioeconomic development, climate change adaptation and mitigation and research.
Deep-Sea Mining	Exploration of rare-earth metals, polymetallic nodules, cobalt-rich ferromanganese crusts and polymetallic sulphide. Opportunities available in this sector: Jobs, economic development, new technological discoveries, information and communications technology, hardware manufacturing and renewable energy technologies and research.
Biotechnology and Bioprospecting	Research and development, chemicals, enzymes and cosmetics industries, seaweed harvesting and products and marine-derived bio-products. Opportunities available in the sector: Jobs, commercial values and development of advanced pharmaceuticals, new products and processes, research and innovation.

Source: United Nations Economic Commissions for Africa (2020:13)

3.4. Countries leading and championing the blue economy

Although the blue economy is a relatively new concept, most countries are embracing it and making extra efforts to reap its full economic benefits. In Europe, Germany has the largest blue economy followed by the United Kingdom, France, Malta and Cyprus (EC, 2019:18). The blue economy employs about four (4) million people in Europe (EC, 2019:18). Emphasis is placed on the fact that most countries have welcomed the

idea with their distinctive innovation and creativity to unlock the economic potential of the industry. Countries like China, the United States of America, Canada, Australia, New Zealand, and several African countries, including Seychelles and South Africa, are playing leading roles based on their economic success and dynamic global sustainable approach to the blue economy.

3.4.1. China

The growth of the blue economy growth in China is one of the unique models that can be adopted by other countries around the world based on their focus on economic development. According to and Lee (2018:1), official statistics from the Chinese government indicate that China's total maritime economy production value grew from RMD1067.7 billion in 2002 to RMD7761.0 billion in 2017, leading to 10% of China's total GDP. In addition to the growth of China's Maritime industry, China's blue economy was predicted to be dominated by the tertiary sector performance, particularly in the coastal tourism and transportation industries, as coastal tourism grew from RMD147.8 billion in 2002 to RMB1463.6 billion in 2017 (To & Lee, 2018:1).

3.4.2. The United States

As one of the most significant contributors to GDP, the US blue economy is an inspiration to the world, based on its sustainable economic growth strategy. According to the FICCI-KAS Report on the Blue Economy (FICCI, 2019:38), the US has 30 coastal states with a population of over 107 million people and contributes nearly US$13 trillion (83% of the US GDP) to the US GDP. According to the report of the National Ocean Economics study, in 2010, the American ocean economy generated over 2.7 million jobs and added over $258.0 billion to the US GDP (Conathan & Moore, 2015:8). In the same vein, shore-adjacent counties alone have created 48.8 million jobs and in 2012, added US$6.6 trillion to the US GDP (Conathan & Moore, 2015:8).

3.4.3. Canada

Canada is part of a market called the world's newest ocean discoveries to find new resources and riches in the oceans (Atkisson, Arnborm, Tesar and Christensen, 2018:21). The ocean sector is still to be exploited. According to there is a particular appeal to the Arctic blue economy since none of its resources have been explored (Atkisson et al., 2018:21). It is predicted that up to US$1 trillion could be invested in the Arctic in the coming decades (Atkisson et al., 2018:4). There is further evidence that, for their economic development, many Arctic industries rely on shipping and coastal infrastructure (Atkisson et al., 2018:6).

3.4.4. Australia

Australia has the world's third-largest maritime authority; therefore, the blue economy is critical to Australia's GDP (National Marine Science Committee, 2017:1). According to Nash and Herscovitch (2018:7), Australia is a maritime nation with natural outflows into the sea, and the waters around the world will be the hub of intense maritime activity for centuries to come. At the same time, the Pacific Ocean has had a critical influence on Australia's blue economy, and there is no question that the oceans have been an essential part of economic growth and development in Australia (Nash & Herscovitch, 2018:7). Australia's blue economy comprises products and services that make up the conceptual total of the blue economy and are developing rapidly and constantly evolving (National Marine Science Committee, 2017:2). On a broader scale, the blue economy can encapsulate the economies involving the use of living resources, non-living resources, ocean-related trade and trade advantages, and the role of ocean sustainability in the nation's economic stability and prosperity (National Marine Science Committee, 2017:2).

3.4.5. New Zealand

According to the 2016 New Zealand statistics survey, the marine industry contributed NDZ $4.0 billion, about 1.9% of GDP to the national economy of New Zealand with oil and gas, shipping & fisheries, as well as aquaculture which contributed to predominantly to the Country's GDP (Daya-Winterbottom, 2017:6). Other sectors which contribute to the marine economy also include marine construction, marine tourism and recreation and research and education (Daya-Winterbottom, 2017:6). In New Zealand, the blue economy is expanding further south where the colour of the markets turns green, while the colour of the commercial interest of New Zealand's economy reaches the continent of Antarctica (Nash & Herscovitch, 2018:47). New Zealand has the fifth largest Exclusive Economic Zone (EEZ) in the world, while its oceanic assets teeming with wealth that is under pressure and competition, yet offer tremendous opportunities (Nash & Herscovitch, 2018:46). The blue economy of New Zealand currently funds the National Antarctic programmes contributing up to NZ$432m and creating 7000 jobs for the economy of the New Zealand population (Nash & Herscovitch, 2018:47).

3.4.6. Seychelles

The blue economy of Seychelles is an excellent model for all nations to follow. According to the Seychelles President, Danny Faure, the blue economy contributes significantly to the country's economic activities. According to Faure (2019:4), the blue

economy is Seychelles' next frontier as it signifies new growth for the country, meaning an inclusive growth that can profit all the people of Seychelles. However, Intelvision Seychelles Chairman, Mr Valabhj acknowledged that Seychelles is a land of opportunities, such that if you cannot succeed in Seychelles, you cannot make it anywhere in the world. Schutter and Hicks (2019:425) agreed that, Seychelles has a one-of-a-kind-location in Africa to promote the blue economy due to its remote location in the Indian Ocean, its political history and its pioneering role in Africa.

What makes the Seychelles blue economy so unique is that it allows every sector in the country to produce an entire ocean-protecting economy (Faure, Meriton, Edmond & Francis, 2020:3). The blue economy influences all other sectors including fisheries, forestry, renewable and tidal energy, pharmaceutical, petroleum and gas, which is a progressive front in the Seychelles region (Faure et al., 2020:3). Recently, the Seychelles economy has grown as a result of the blue economy efforts. Given the fact that the economic development and economic growth of Seychelles are projected to expand by 3.3% in 2019 and 2020, its service sector is recognised for being the critical driver of growth (Faure et al., 2020:5). Also, the tourism sector has increased to 8.7% growth, which is one (1) of the most significant contributors to the GDP in the region. Foreign investment in Seychelles reached $35 million in the first quarter of 2018, the highest since 2016 (Faure et al., 2020:5).

According to Afrexim Bank (2020:24), measures are being put in place to support Seychelles' plans to incorporate the blue economy principle as a basis for promoting an integrated strategy to foster sustainable economic development policies. The Seychelles government has embraced the blue economy as a vehicle for achieving a long-term economic growth for the ocean-based economy (Afrexim Bank, 2020:24). This results in Seychelles' impressive international success in leadership, climate change, oceans and the blue economy through its co-operation and commitment to an active role in the global ocean environment (Afrexim Bank, 2020:24).

One of Seychelles' most creative approaches that have led to its success is the Blue Bond, which is unique and has excellent potentials to grow the blue economy. Vice-President of Seychelles, Meriton (2020:6) acknowledged that the Blue Bond has been one of the world's leading innovative financial instruments, raising over $15 million from international investors and demonstrating the potential for the country's potential to harness capital markets for financing the blue economy. The Vice-President also points out that mobilising private equity is a significant achievement that other African

nations should emulate, which will allow them to preserve their marine environment while reforming and transforming their economies (Faure et al., 2020:14).

3.4.7. South Africa

South Africa handles the blue economy through its participation in the Southern African Development Community (SADC) (Rustomjee, 2018:61). According to Van Wyk (2015:153), The development of South Africa's blue economy has taken on a new form, as alluded to by Van Wyk In 2014, the South African government established Operation Phakisa (which means 'hurry up' in Sesotho) in order to develop the country's blue economy to showcase and maximise South Africa's Ocean economic potential. However, with the 2014 introduction of Operation Phakisa by the former South African president Jacob Zuma, it was estimated that the South Africa's blue economy had the potential to contribute up to R177.0 billion to the country's GDP and create over 1 million jobs by 2033 (Findlay, 2018:5). Operation Phakisa is thus a policy framework that seeks to address the South African economic opportunities by solely focusing on maximising the socio-economic benefits of South Africa's extensive coastal territories (Van Wyk, 2015:153). Therefore, this will improve the structure of planning and execution of various marine-based projects in the ocean sector in South Africa (Spamer, 2015:59).

3.5. Importance of the Blue Economy

The magnitude of the blue economy is vast, since its growth is important to global trade, investment, innovation, maritime industry, expansion, and demographic shifts towards coastal zones, climate change and rising naval rates (Walsh, 2019:1). Also, the blue economy drives every aspect of national and global governance, economic growth, security and sustainability of environmental and international co-operation (Wenhai, Cusack, Baker, Tao, Mingbao et al., 2019:3). In the 2019 FICCI-KAS Report, the German Ambassador to India, H.E. Mr Walter J. Lindner, stated that blue economy initiatives have the potential to be the driving force behind transformative and creative industrial policies, such as energy transition and maritime digital transformation. Notwithstanding that, the blue economy in 2030 could outperform the overall rate of global economic development in terms of value-adding and job creation (FICCI, 2019:102). Also, non-living resource mineral mining is one of the biggest investors in the European Union (EU) blue economy, having spent more than £12.5 billion in 2017 (FICCI, 2019:102). Furthermore, the key developed blue economy sectors such as coastal tourism, marine living services, marine mineral extraction oil and gas, ports and warehousing and water projects, shipbuilding and repairs and maritime transport

are contributing enormously to the EU economy. Additionally, in terms of job creation and Gross Value added (GVA) earnings, the EU offers one of the world's largest blue economy sector's (FICCI, 2019:102).

There are other emerging sectors within the blue economy such as wind energy and biotechnology that have expanded rapidly in recent years (EU Blue Economy Report, 2019:20). Emerging industries include offshore wind, ocean energy, blue bio-economy, sea minerals, desalination and maritime defence (EU Blue Economy Report, 2019:62).

Table 3 overleaf presents the six (6) established sectors and sub-sectors of the blue economy. Each sub-sector is divided further into three (3) sub-sectors, with a total number of twenty-five (25) subsectors of the blue economy. The coastal tourism sector has been identified as the blue economy's key economic hub because, it outperforms other sectors in terms of revenue, investment and jobs creation (EU Blue Economy Report, 2019:27). The coastal tourism sector comprises various economic activities and ocean-related activities and consists of beach-based tourism and beach tourism activities (EU Blue Economy Report, 2019:27). Also, it comprises activities for fun such as swimming, sunbathing, coastal walks, and wildlife observation. Water-based and maritime tourism includes activities such as sailing cruising and scuba diving activities. (EU Blue Economy Report, 2019:27). The marine living resources sector comprises activities based on ocean food such as fishing, aquaculture and food processing and distribution. The marine non-living resources field consists of the marine mining of oil and gas minerals. The port sector consists of the storage and development of water projects, while the shipbuilding and repair sector consists of the development of ships floating structures and construction of boat mechanics as well as equipment from the construction, repair and maintenance of ships vessels. The marine transport sector is composed of sea and coastal passenger water transport, inland passenger water transport, water transport equipment rental and leasing.

Table 3.3: Established sectors and sub-sectors of the blue economy

SECTOR	SUB-SECTOR
Coastal Tourism	• Accommodation • Transport • Other expenditure
Maritime Living resources **Extraction and commercialization of maritime living resources**	• Capture fisheries • Aquaculture Sector • Processing and distribution
Maritime Non-Living Resources **Maritime Extraction of Minerals, Oil and Gas**	• Extraction of crude petroleum • Extraction of Natural gas • Extraction of maritime aggregates • Support activities for petroleum and Natural Gas extraction • Support activities for other mining
Port Activities **Ports, warehousing and construction of water projects**	• Warehousing and storage • Cargo handling • Construction of water projects • Service activities incidental to water transportation
Shipbuilding and repair	• Building of ship and floating structures • Building of pleasure and sporting boats • Marine machinery • Marine equipment • Repair and maintenance of ships and boats
Maritime transport	• Sea and coastal passenger water transport • Sea and coastal freight water transport • Inland passenger water transport • Inland freight water transport • Renting and leasing of water transport equipment

Source: EU Blue Economy Report (2019:26)

The blue economy provides various wealth creation avenues. According to the EU Blue Economic Report (2019:10), these include emerging areas of the economy and economic value, based on natural capital and non-market goods and services. The blue economy is interconnected with many other activities in the economy, and it impacts further than only that sector. As a result, the blue economy will give the economic development and coastal communities significant sources of economic

growth. The blue economy includes a wide range of economic activities related to the long-term development of ocean resources and assets in the oceans, associated with river, water bodies and coastal regions while ensuring equitable participation, creativity and innovations (FICCI, 2019:20).

The blue economy is also relevant because it has a direct influence on the modern geo-economics discourse and the imperative of the efficiency of oceanic and other water resources, the SDGs, and the challenge of ensuring maritime protection against traditional and non-traditional ocean threats (FICCI, 2019:20). The study views the blue economy as the transition of the ocean economy to a much healthier approach to treating the ocean and marine life underwater which will lead to a prosperous blue economy. The FICCI-KAS Report (FICCI, 2019:24) alluded that the blue economy is slightly distinguishable from the "ocean economy" in terms of complexity and focus as it is a newer and a more contemporary concept common with the Small Island Development States (SIDS), as well as international organisations, media, experts and governments in an increasing number of countries. This new approach sought to turn the conventional ocean economy into ecosystem-driven ocean resources harvesting for better marine environment conservation (FICCI, 2019:17).

Thus, a sustainable blue economy is based on unlocking the full economic potential of the oceans, seas, lakes, rivers and other water resources (Sustainable Blue Economy, 2018:6). This will require commitment and the active participation of all citizens, while preserving the resources for present and future generations and the ecosystem resilience (Sustainable Blue Economy, 2018:6). A sustainable blue economy also allows society to derive benefits from the oceans and coastal regions (EU Blue Economy Report, 2019:10). Countries and other stakeholders should work together to promote a sustainable blue economy by creating awareness and mobilising more action at various international discussion forums (Sustainable Blue Economy, 2018:6). These forums include: the 2020 United Nations Ocean Conference (UNOC) and the United Nations General Assembly (UNGA) (Sustainable Blue Economy, 2018:6).

Sustainable development goals applicable to this study are consistent with SDG 5, SDG 8, and SDG 14. Central to this approach, and in the context of people-orientated sustainability, Attri and Bohler-Muller (2018:20) have highlighted the fact that equity and inclusiveness are critical to the SDGs to ensure long-term sustainability. This could happen through granting fishing quotas or licenses, oil and mineral extraction as

well as bio-prospecting agreements to explore new benefits from the ocean surroundings. Another way is through the fostering of national equality gender equity by enabling decent job-related growth. The economic benefits of the blue economy cannot be fully realised without women's participation, protection of the ocean's sustainable development, and understanding of the value of coastal and marine resources (Caribbean Development Bank, 2018:29).

Figure 3.1 overleaf illustrates the inter-relationships between the three critical pillars of the blue economy: security, sustainability, and economic opportunity. Security governs the oceans, sustainability nurtures the health of the ocean, and if safety and sustainability are not in place, the economic prospects of the blue economy cannot be achieved.

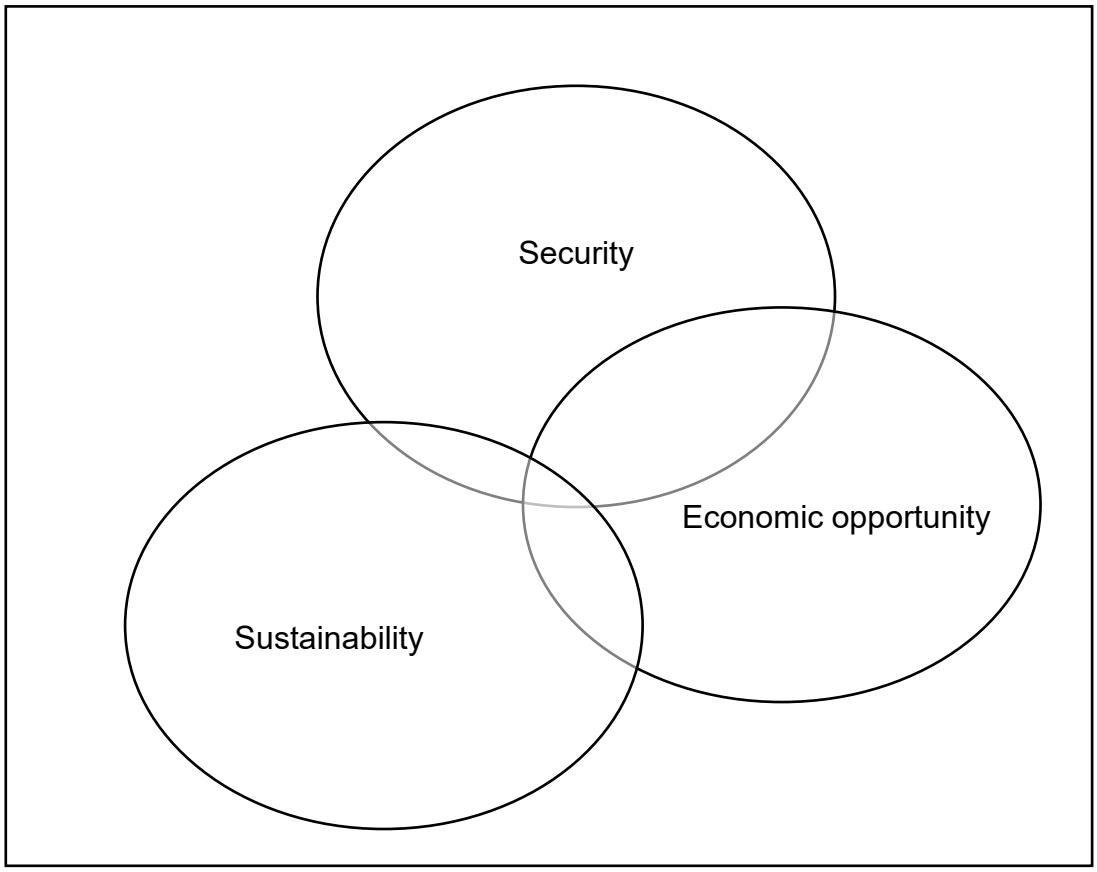


Figure 3.1: The three pillars of the blue economy

Source: Federation of Indian Chambers of Commerce and Industry (FICCI) (2019:24)

The blue economy can also be viewed as an essential economic empowerment tool for women, although their participation is still restricted. A common misconception is that women cannot perform challenging physical tasks (International Development Research Centre, 2018:32). The economic gain of the blue economy cannot be

achieved by men alone and its full potential can never be realised without women's participation.

The three essential pillars of the blue economy are security, sustainability and economic opportunity and these will be further explored. Protection may be linked to caring for life in the ocean and safeguarding the health of the oceans from harm and further disaster. This can be linked to SDG 14 which deals with aquatic life and strive to protect and use the oceans, seas and marine resources for sustainable coastal marine growth (United Nations, 2019:50). Sustainability should refer to all the SDGs of this study: SDG 5, SDG 8 and SDG 14, as all the SDGs all relate to sustainability. Sustainability can be understood in terms of the OECD's (2016:3) claim that the full capacity of the seas and oceans must be achieved.

SDG 8 is meant to encourage economic opportunities that can be related to sustainable economic development, which is aimed at promoting and maintaining balanced sustainable economic growth and job creation for all (United Nations, 2019:37). The pursuit of sustainable economic opportunity involves a response to such problems as plastic contamination and the need for business models of waste management in the blue economy (FICCI, 2019:102). This is one of the oceans' critical issues and if this can be tackled, the ocean will become economically active, giving women and young people in the blue economy more economic opportunities. Economic opportunities concerning women in this study, the United Nations Women (2012:2) argued that this can be achieved through the ability of women to work effectively in the marketplace and compete equally with men in the labour and commodity markets to influence the distribution of wealth between men and women. To conclude, the three pillars of the blue economy can also be related to the blue economy's triple bottom line of poverty, unemployment and inequality. Therefore, if the three pillars of the blue economy are efficient, the triple bottom line problems of poverty, unemployment and inequality can be solved.

3.6 Funding of Blue Economy Developments

The blue economy can be seen as lucrative and has potential for enterprise growth, investment for business and job creation for communities. According to OECD, by 2030, the blue economy will exceed its land equivalents, both in value-added and job creation (FICCI, 2019:119). However, to sustain the blue economy, support from the international communities and donors is needed. The shift in the development of the blue economy will depend significantly on finances. Therefore, advancing the blue

economy would involve investments in infrastructure, conservation, research and development, institutional and human capacity creation, as well as information-sharing and knowledge-building (Caribbean Development Bank, 2018:29). There are specific funding mechanisms that also exist for mobilising capital to grow the blue economy, such as blended finance, blue bonds, debts swaps, development impact bonds, crowdfunding, remittances and contingently recoverable grants (Caribbean Development Bank, 2018:29).

In taking the lead, countries like Seychelles released the first-ever sovereign Blue Bond (FICCI, 2019:120). Also, the Nordic Investment Bank announced the over-subscribed issue of Nordic-Baltic Blue Bonds, which has raised SEK 2 billion. The World Bank also raised more than US$660 million through the launch of sustainable bonds (FICCI, 2019:38). The monies raised indicated that donors attach significance to promoting and implementing sustainable development goals to support the development of the blue economy. Until now, the bulk of the capital deployment towards a sustainable blue economy comes from government commitments (EU Blue Economy Report, 2020:18). Presently, individual investors are also interested in the sector as nine (9) out of ten (10) investors showed interest in the investment-related projects of the sustainable blue economy with nearly half of them citing “high interest" in the subject (EU Blue Economy Report, 2020:18). Specifically, high net worth participants alongside institutions, public institutional investors and large corporates, as well as their investment firms, showed high interest in sustainable blue economy investment (EU Blue Economy Report, 2020:18).

3.7. The Sustainable Development Goals

The SDGs are a mechanism to tackle the global economic crisis and protect the environment and its people. According to Linser and Lier (2020:1), the SDGs are a comprehensive framework for addressing the global socio-economic, ecological and cultural challenges that are linked to poverty, inequality, climate change, environmental degradation, peace and justice. Barclay, Dattler, Lau, Abdelrhim, Marshall and Feeney (2015:2) affirm that the SDGs are based on social, economic and environmentally sustainable development. The SDGs are organised around the 5 Ps: people, planet, prosperity, peace and partnership (Hambrey, 2017:7). In terms of people, ending poverty and hunger ensures that all human beings can reach their full potential of dignity and equality and live in a safe environment. With the planet, by protecting the earth from destruction and increasing development use, maintaining its sustainable resources and taking urgent action on climate change for the good of the

generations to come. Prosperity will ensure that all human beings embrace a stable and satisfying life and that physical, social and technological advancement takes place in harmony with nature. Peace would maintain that society is prosperous and protected from abuse, and without order, there can be no sustainable development. Through the global partnership, sustainable development will enhance economic integration, concentrating on the welfare of the poorest and most vulnerable in society with the co-operation and involvement of all nations (Hambrey, 2017:7).

The UN's 2030 Agenda and its 17 SDGs are based on the Millennium Development Goals (MDGs) (Hambrey, 2017:1). Although the SDGs are much broader in scope and intention, they include the eradicating of poverty, hunger and improvement health and nutrition, reducing inequality, creating peaceful and inclusive societies, safeguarding human rights, promoting gender equality and empowering girls and women as well as protecting the earth and its natural resources for all (Hambrey, 2017:1). These goals are the considerations of the various rates of economic and social development capabilities for women in the blue economy (Hambrey, 2017:1). The 2030 SDGs Agenda also promotes sustainable development for all countries in all three dimensions with the focus on basic respect and protection of human rights, dignity and equality (Hambrey, 2017:1).

As evidenced above, the SDGs have many benefits because they are a crucial component of the UN's 2030 Sustainable Development Agenda (Hambrey, 2017:70). The 2030 Agenda is thus an action plan intended to help individuals and the world to flourish (Firoiu, Lonescu, Bandoi, Florea & Jianu, 2019:1). In addition to the current economic, political, and social context, the 2030 Agenda promotes global prosperity, eliminates poverty in all forms and addresses the most significant obstacles facing the world today (Firoiu et al., 2019:1).

According to the report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (2016:7), SDG 5 focuses on the achievement of gender equity for all women and girls with a particular emphasis on SDG 5 which ensures full and equal participation of women and inclusive leadership opportunities at any level of decision-making in political, economic and public life. SDG 8 promotes sustainable, inclusive and sustainable economic growth, complete and meaningful jobs and stable employment for all (Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, 2016:10). SDG 14 requires nations to conserve and

sustainably use the oceans, seas and marine resources for sustainable development (Report of the Inter-Agency and Expert Group on Sustainable Development, 2016:1).

3.7.1. Sustainable development goal 5

SDG 5 seeks to achieve gender equality through the empowerment of all women and girls (United Nations, 2019:8). The interest in SDG 5 is focused on SDG 5.5, which aims to ensure full and equal participation of women and inclusive leadership opportunities at all stages of decision-making, political, economic and public life for all women (United Nations Women, 2020:1). Across the globe, women are under-represented at all levels of political leadership, in addition to women and girls performing a disproportionate share of unpaid domestic work (United Nations, 2019:32). On average, women spend nearly three times the amount of time that men spend each day in unpaid care and domestic work such as childcare, elderly care and household chores (United Nations, 2019:32). Furthermore, women's inability to have adequate water, sanitation and transportation increase the burden on them, because they lack early childhood education and care and adequate access to social protection and services. The difficulty is further compounded by the traditional notions of the position of women in society as homebuilders, which still exist in most countries. When women engage in care and household chores, they have less time for meaningful decent jobs, education and leisure, further strengthening their socio-economic limitations (United Nations, 2019:32). However, too many women are also denied decision-making authority at home, at work and in political life (United Nations, 2019:33).

In the economic environment, the world has seen an upward trend in the number of women occupying managerial roles, and since 2000, this number has risen in all regions and countries but remains relatively small. Women accounted for 39% of the workforce in 2018, but only 27% occupy managerial positions (United Nations, 2019:33). To fulfil SDG 5 and SDG 5.5 targets, all women and girls must be provided equal rights and opportunities, as well as the ability to live free of violence and prejudice (United Nations (UN) Women, 2020:1). SDG 5 further acknowledges women's equality and empowerment as one of the 17 Sustainable Development Goals and integral aspects of both inclusive and sustainable development. Therefore, all SDGs focus on the collective achievement of Goal 5 (United Nations Women, 2020:1).

The United Nations is making considerable efforts and progress in ensuring that SDG 5 is achievable as the current United Nations Women act to empower women and girls through initiatives to step up action on equality. They are empowering women and girls so that every part of the world can make progress towards sustainable development by 2030 and no one is left behind (United Nations Women, 2020:1). According to the Indian Technical and Economic Cooperation (ITEC) Government of India Programme of the Ministry of External Affairs (ITEC 2018:11), women empowerment means women can acquire the power to manage their affairs within and outside the home and have the authority to make their own decisions. The value of women empowerment enables women to engage more in social, cultural and political life that will contribute to minimising the gap between men and women as well as improving women's involvement in public life (ITEC Programme of the Ministry of External Affairs Government of India, 2018:11).

The United Nations (2019:32) reports that, as more women continue to serve in parliament and leadership positions, more laws are being made to promote women's equality. Therefore, the world is in a better place for women now than in the past. Given this, the United Nations has applauded the tremendous progress that the world has made by being at the forefront of the international movement to eliminate gender barriers for all with a firm belief in a world of justice and equal rights for all (United Nations (UN) Women Annual Report, 2020:2). Also, women activists around the globe are at the forefront of cultural, social, and environmental justice movements that demand structural change and their voices are persistent in calling for equality for all in every aspect of life with no exceptions (UN Women Annual Report, 2020:3). Although they sometimes face aggressive pushbacks in their advocacy for women’s rights, they remain unshaken in their efforts to level gender equality in societies across the globe (UN Women Annual Report, 2020:3).

SDG 5 aims at stopping discrimination against women and girls everywhere. It provides equitable access to education, health care, decent jobs and representation for women and girls with equal access in the economic decision-making process, which may promote sustainable economies and benefit communities and humanity as a whole (United Nations, 2018:31). As a result, SDG 5 will aid this study in eliminating the inequality gaps in the marine industry, so promoting greater empowerment of women and girls. This study tries to advocate for the facilitation of full and successful participation of women in the blue economy, as well as equitable opportunities in the blue economy’s leadership position and decision-making sectors.

3.7.2. Sustainable development goal 8

SDG 8 aims to build productive jobs and economic development by fostering and maintaining inclusive and sustainable employment for everyone living on earth (United Nations, 2019:37). SDG 8 encourages sustainable, equitable and economic growth, full of productive jobs and decent work for all, in order to achieve total economic and prosperity for both women and men including young people, handicapped people and fair pay for all by 2030, according to Barclay et al (2015:4). The Inter-Agency and Expert Group on Sustainable Development Goal Indicators Report (2016:10) also confirms that SDG 8 promotes sustained and inclusive economic growth, enough jobs and meaningful work for all. Globally, the real GDP per capita and productivity of labour have risen, and unemployment has plummeted down to pre-financial-crises levels (United Nations, 2019:37). The stagnant growth has triggered a rethinking of economic and social policies to achieve the goals of SDG 8. SDG 8 seeks increased job opportunities, especially for young people and women, reduce inequalities across regions, reduce informal jobs and promote safe and secure working environments for all employees (United Nations, 2019:37). Although the ongoing pay gap between women and men is still prominent, this reminds us of gender inequality between men and women (United Nations, 2019:39). According to a survey of most recent available statistics from 62 nations, men earn 12 percent more per hour than women counterparts (United Nations, 2019:39).

Additionally, in the related data from around the world, men have a wage advantage in every major occupational group in 49 countries (United Nations, 2019:39). The median pay gap exceeds 20% in managerial and technical occupations as well as among designed and associated trade employees and aircraft machine operators and assemblers (United Nations, 2019:39). Such pay disparities are often embedded in patriarchal societal norms and cultural perceptions about women's role in society. Also, when combined with inequalities in job prospects and lower access to social security, they can contribute to the long-term income gaps and undermine gender equality now and in the future (United Nations, 2019:39).

An essential part of economic development is that most women currently lack jobs that pay adequately to support themselves and their families (UN Women, 2020:12). As a result, the blue economy has the potential to be a sector tasked with creating decent jobs and economic growth through promoting and sustaining inclusive economic prosperity that provides meaningful employment for all. The focus must be on women to take an interest and actively participate in the blue economy to accomplish SDG 8.

However, the fact that women are not actively participating in the blue economy could be due to a lack of knowledge about the industry. Also, lack of resources to invest in women to encourage their participation as well as, educating them about the sector and the lack of funding to promote entrepreneurship for women in the industry. However, the central problem facing women's economic empowerment is to realise that sustainable blue economy potential is due to the lack of adequate data to assess the involvement of women in the sector (Gordon et al., 2019:20). Appropriate data would help define the missing gaps in the industry where precisely women need to be and which positions are open for women to pursue in the blue economy.

3.7.3. Sustainable development goal 14

SDG 14 deals with life below water and seeks to protect and sustainably use the ocean, seas and marine resources for sustainable coastal growth of the sea (United Nations, 2019:50). Likewise, the United Nations Conference on Trade and Development (UNCTAD, 2018:3) states that SDG 14 is committed exclusively to "conserve and make use of sustainable growth of oceans, seas and marine resources. Humans have consumed about 30% of the carbon dioxide (CO2) that they emit but are producing more carbon than ever before, rendering 26% of the ocean more acidic since the start of the industrial revolution (United Nations, 2019:50). Similarly, the sea also produces approximately half the oxygen human breathe and acts as a climate regulator by absorbing atmospheric heat and more than one-quarter of human-made CO2 (The United Nations, 2019:50). The United Nations (2019:50) further states that human life relies on the ocean and the ocean is the greatest habitat and the planet's ecosystem is covering over two-thirds of the earth's surface, providing food and livelihoods for billions of people. Along these lines, one cannot deny that the oceans make life possible for all living things on the planet. At the same time, more than 3 billion people rely on marine and coastal habitats for their livelihoods (United Nations, 2019:50).

Yet, a third of the world's fish stocks are already overexploited, even people living near the oceans cannot survive without it and there are about 13,000 pieces of plastic litter on each square kilometre of the sea (United Nations Development Programme, 2015:17). Furthermore, decades of rising carbon emissions have contributed to ocean heat build-up and changes in their chemical compositions (United Nations, 2019:50). Acidification, climate change (including sea-level rise), extreme weather events and coastal erosions are all possible risks to the ocean, compounding the current challenges of overfishing, pollution and habitat destruction (United Nations, 2019:50).

Similarly, rising acidity endangers marine life and undermine the ocean's function in mitigating climate change (United Nations, 2019:50). This is not a sustainable way of life as indicated by SDG 14, which urges nations and their citizens to maintain and preserve life underwater in a sustainable way. If oceans, seas and marine resources are conserved and sustainably used, policies and treaties must be put in place to promote prudent use of ocean resources and address these treaties objectively.

However, the good news is that the decline in fish stock appears to be stabilising but more still needs to be done, especially in significantly degraded areas. Unreported and unregulated fishing in most countries must have mechanisms to address the needs of small-scale fishing and, finally, the state must take substantial measures to combat illegal fishing activities (United Nations, 2019:51). There is also a need to educate and inform the entire world about climate change by placing strategies and policies in place by various organisations such as the United Nations and the World Bank, different sectors such as private and public sectors, governments, environmental societies and policymakers. The achievement of SDG 14 will reduce the environmental risks of ecological damage to economic activities and minimise the impact on the blue economy considerably, which will lead to a prosperous blue economy (Remmert, 2018:11). The achievement of SDG 14 will also tackle the triple bottom line of sustainability, which is protecting the environment, developing the economy and improving the social well-being of all citizens.

According to the Caribbean Development Bank (2018:29), the five-bottom line of sustainable development of the blue economy is the planet, profit, people, peace and prosperity. Therefore, the welfare of the blue economy would contribute to the sustainable economic growth of the blue economy and the benefit which will in turn address the social, and financial problem of poverty and hunger problems of all people and this will lead to our ecosystem becoming peaceful and prosperous. In line with this, Figure 3.2. below illustrates the five bottom lines of sustainability for environmental security, economic development benefit and social wellbeing of citizens. This five bottom line concept is the essence of sustainability. When the world is not safe, there will be no peace and people cannot live and develop their economic activities to make profits and prosperity.

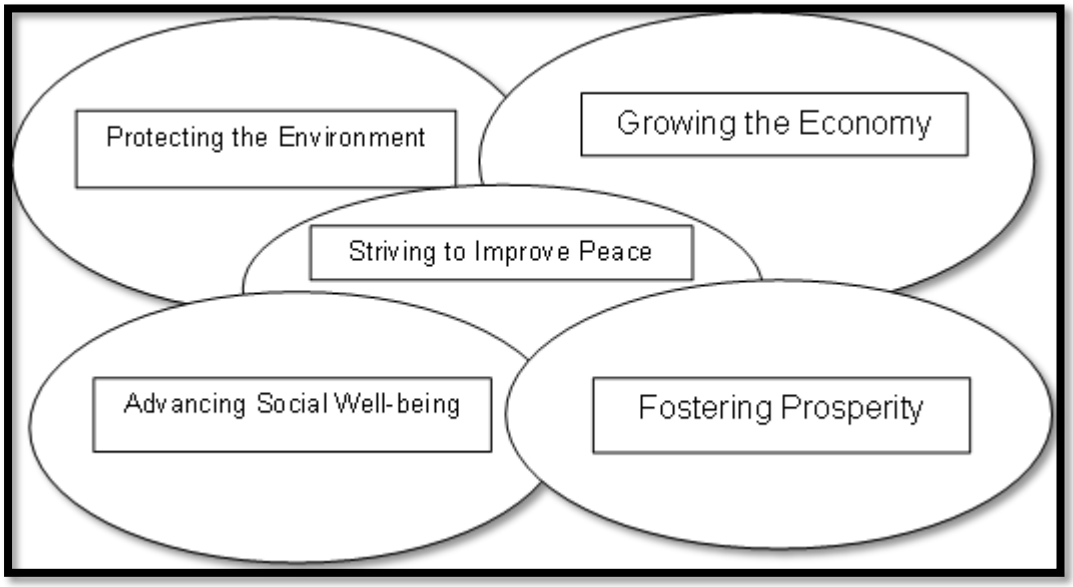


Figure 3.2: The five bottom lines of sustainability

Source: FICCI (2019:29)

Progress on SDG 14 and the achievement of sustainable ocean and marine resource use and development can also lead to the success of Agenda 2030 goals, which are to address the social, economic and environmental aspects of sustainable growth (Berggren & Lymer, 2016). This research also raises awareness of the impact that unsustainable ocean practices activities can have on the blue economy. In line with the above, if all the blue economy stakeholders put more effort into working together on the various challenges of the blue economy, the SDG 14 plan will be achievable. This study aims to highlight, support and facilitate the sustainable use of the ocean and its resources in order to promote long-term economic development through women's empowerment and involvement. Supporting and promoting the sea, and its resources has a ripple effect of an increase in the economic value of the blue economy. That would be appealing to women, and this will inspire them to pursue jobs in the blue economy and show interest in the business opportunities that the blue economy offers. This will thus lead to a significant transformation from the ocean economy to the sustainable blue economy, and in this way, SDG 14 can be achieved.

3.8. Caring for Life Underwater

The benefits provided by the ocean should not be underestimated. According to (Sturesson, Weitz & Person, 2018:13), the oceans occupy over 70% of the world's size, therefore, the oceans and seas cannot be overestimated in economic, social, and environmental value. Sturesson et al. (2018:13) also argued that, as a source of food and livelihood, the oceans are essential for human well-being. The coast and marine regions are projected to be funded partly by around 75% of the world's

population. The oceans also host the largest link to the ecosystem, which offers services such as climate stability, oxygen generation, processing of nutrients and food production (Sturesson et al., 2018:13).

Unlike the situation of the oceans, life underwater is under immense threat. According to the Organisation for Economic Co-operation and Development (OECD, 2019:20), the ocean is already under threat from overfishing, pollution, declining biodiversity and climate change. Presently, the earth's population will reach 8 billion by 2027 (FICCI, 2019:103). This significant rise will generate more economic activities which further place pressure on the ocean resources, thus making sustainability more relevant for achieving the SDGs by 2030. Also, the global effort to grow the blue economy risks damaging the marine ecosystem and human well-being (Bennett et al., 2019:2). Likewise, there is a risk of realisation of unsustainable approaches to the oceans of which the blue economy is part of (FICCI 2019:17). Presently, an increasing rising public opinion is demanding future economic growth and development to be more sustainable.

3.8.1 Health of the ocean and sustainable development approach

Caring for the health of the oceans should also be central to this sustainable development approach (FICCI, 2019:17). In this regard, most countries are prioritising the oceans together with the United Nations (UN) and making extra efforts to raise awareness of the ocean's challenges. High-level initiatives such as Agenda 2030, the creation of an ocean-specific SDG, the 2017 UN Ocean Conference on SDG 14, and the Intergovernmental Panel on Climate Change (IPCC), have seen an increased emphasis on the oceans in recent years (Sturesson et al., 2018:14). Also, at the UN General Assembly, the full spectrum of the ocean's problems was addressed for the first time. It has changed from being the area for specialists in marine and fisheries to one that involves the safety of everyone (Sturesson et al., 2018:14).

This section concludes by emphasising that caring for the ocean is the responsibility of everyone. According to Sturesson et al. (2018:13), the oceans are the responsibility of all, but no one is accountable. The study agrees with the views of the scholars above that the sea is a challenge for all of us and if we are ignorant about it, it will lead to catastrophe. Sustainable ocean use would also empower all the stakeholders involved and all those benefiting from the oceans to achieve the objectives of the SDGs and the blue economy.

3.8.2. Life threats in the ocean

For several years, policymakers, civil society and scientists have been actively involved in the emerging ocean debates and, surprisingly, the business sector, which will ultimately enforce these actions, has not been engaged (FICCI, 2019:1). At the global level, the European Union (EU) is taking the leading role in sustaining the oceans and seas. The EU is a significant leader in shaping global ocean governance through international cooperation and partnership (Scholaert, 2019:1). At the same time, it is taking more steps to protect the marine environment through key existing policies and new legislative measures (Scholaert, 2019:3).

The EU is working towards the United Nations 2030 Agenda of SDG goals on oceans and engaging in negotiations on a new legally binding international conservation and instrument. In encouraging the development of the blue economy, the EU also acknowledges the environmental responsibilities which go along with it. The scholars, however, emphasise that healthy clean oceans will ensure long-term capacity to maintain these economic activities, while environmental degradation will threaten the habitats of the entire world and ultimately, societies' well-being (Scholaert, 2019:1). The researcher also agrees with the above scholars and urges all of us to keep the oceans clean for our benefit. This signifies that world leaders, politicians, government departments, the private and public sectors and the communities are committed to encouraging voices of individuals such as are encouraging voices of individuals to get engaged in raising awareness and promoting the clean ocean campaign.

3.9 Importance of Women in the Blue Economy

It is known that if you want something said, ask a man and if you want something done, ask a woman (Kitada, Williams & Froholdt, 2015:22). But although girls were raised with the belief that they could achieve anything and that no constraint was impossible to overcome, for many women, the reality is different (F& D Quarterly Publication of the International Monetary Fund, 2019:9). Brave young women such as Malala Yousafzai and Greta Thunberg support the rights of girls to receive education and defied the financial elite to address climate change issues. They give hope to the next generation of girls and women to be active and make their voices heard; therefore, the world needs women (F&D Quarterly Publication of the International Monetary Fund, 2019:9).

Women are needed in the blue economy because female involvement in the industry is still low. In the fisheries sector, women constitute 2.6% of the industry, about 1% of women are involved in fishermen's associations and women in decision-making roles are obsolete (Maritime Strategy Plan of Catalonia, 2018:92). Other sectors also have a deficient proportion of women in leadership roles (Maritime Strategy Plan of Catalonia, 2018:92). According to Adema, Ali, Frey, Kim, Lunatic, Piacentini and Queisser (2014:12), women are still under-represented in the business side of the blue economy. There is the mindset that entrepreneurship is not profitable to women, as earnings from owning a business are too low to draw them into entrepreneurship. Moreover, more women than men usually start a business out of ‘necessity’ as they have no other choices for entering the labour market (Adema et al., 2014:15). Also, women are often frequently granted smaller sums of capital when it comes to funding the expansion of businesses (Adema et al., 2014:15). However, there is a rising enthusiasm currently as policymakers wake up to the fact that empowering women is not only morally acceptable, thus it also makes sense economically (F& D Quarterly Publication of International Monetary Fund, 2019:2). Evidence suggests that women empowerment in the blue economy will bring their creativity and innovation into the industry (Comitato Internazionale per lo Sviluppo dei Popoli (CISP). The International Committee for the Development of Peoples (2018:14) states that women traders in the blue economy have become increasingly innovative in ways to support their economic activities. Also, while women are working in the blue economy, they have greater control over their finances than their male counterparts. Women are regarded as good custodians of money, and some men confess to allowing their wives to control their finances. Many experienced fishers attribute their success to their partnership with their wives who manage their savings (International Committee for the Development of Peoples, 2018:17). Furthermore, the provision of seed capital and training for women in India has assisted many of them in overcoming the country's poverty cycle (F&D Quarterly Publication of International Monetary Fund, 2019:2).

Economically, when women are engaged in a country's economy, it leads to an improvement in the GDP. According to Huth (2018:1), there is a body of evidence that shows that women's engagement in a country's economy is critical because when women fulfil their economic potential, GDP accelerates and poverty declines. Lower opportunities and smaller representation of women throughout labour will lead to reduced economic diversification (Kazanjian, Kolouich, Kochhar & Newiak, 2017:76). In addition, the absence of women’s involvement in the blue economy would be

affected by increasing levels of women's unemployment, more unstable and insecure jobs, lower wages and also higher incidence of informal work for women (Otobe, 2017:9). It is not surprising that women also face huge disadvantages in the world of work and have a large risk of falling into poverty (Otobe, 2017:9).

According to Dixon (2018:2), the economic empowerment of women is closely linked to poverty reduction, as women prefer to spend more of their income on their children and communities. Therefore, to enhance women's economic empowerment and gender equality in leadership, senior management, on decision-making boards and in entrepreneurship of the blue economy, a convincing evidence-based case is necessary to attract and retain women talent. Consumer markets like those of which women are the key customers are needed, increasing diversity and improving overall workforce efficiency for women in the blue economy and resolving the potential demographic shift for women in the blue economy (Adema et al., 2014:17). Thus, achieving SDG 5 and SDG 8 as gender equality by 2020 necessitates immediate effort to address the many core causes of sexism and discrimination that continue to limit are still curtailing women's rights in all spheres, including the blue economy (UN Women, 2020:1).

3.9.1. Reasons why women should participate in the blue economy

There are several arguments for why women should participate equally in the blue economy. Some women organisations make a concerted effort to address the male-dominated obstacles (Lakshmi, 2018:1). These efforts can be seen by the Women's International Shipping and Trading Association (WISTA) who has initiated a commitment to include women in the maritime industry (Lakshmi, 2018:1). WISTA International is a global networking organisation for female managers in shipping executives, with over 3000 representatives globally and 45 National WISTA Associations (NWAs) (Lakshmi, 2018:1). Similarly, African Women in the Maritime Industry (WIMAFRICA), a continental non-profit organisation intended to respond to the call for gender equality, women empowerment and co-operation in the growth and development of African women entrepreneurship in the Maritime sector (Adesokan, 2018:1).

According to Adesokan (2018:1), the objective of the WIMAFRICA is to promote African women in the maritime industry, thus maintaining African women's mainstream involvement in all aspects of the blue economy, including policy, advocacy and marine awareness. WIMAFRICA seeks to encourage the growth of human ability, the

development of entrepreneurship and the jobs of women in all facets of the blue economy sector in Africa, Europe and the world (Adesokan, 2018:1). WIMAFRICA also offers strategic leadership and serves as a voice for gender empowerment in the maritime industry in Africa, Europe and the world (Adesokan, 2018:1). Finally, WIMAFRICA'S task is to promote women's development in the blue economy as well as to improve maritime ability to promote safe, secure and effective cleaner oceans (Adesokan, 2018:1).

Furthermore, Women in Maritime in Eastern and Southern Africa (WOMESA) also seek to promote the cause of gender equality in the maritime industry (Maina, 2018:1) by giving women access to equal employment opportunities as well as essential decision-making roles in the Maritime Industry. Indeed, WOMESA is committed to finding solutions to the factors that impede women's progress in this male-dominated blue economy. The forum will discuss approaches to design practical programmes to enhance efficiency in attaining inclusive and sustainable growth (Maina, 2018:1). Also, the global maritime women's programme of the International Maritime Organisation (IMO) promotes a sustainable blue economy to allow women to ride the maritime industry wave of Africa (Lakshmi, 2018:1).

Lakshmi (2018:1) affirms that women's empowerment is an economic no-brainer, given that empowering women to participate equally in the global blue economy could add up to US$28 trillion in GDP by 2025. The researcher also indicated that empowering women could promote sharing thoughts and possibilities to establish new alliances and work together to transfer the concept of the blue economy into concrete actions. Empowerment will assist the coastal segment in building momentum in helping to achieve the UN SDGs, including SDG 5 of the 2030 agenda on gender equality. Encouraging women's involvement in the blue economy will offer them sustainable development, which will provide an important opportunity to recognise how environmental and human science can be used to mobilised and enhance equitable blue economy (Bennett et al., 2019:993). In addition, the development of a sustainable and inclusive blue economy is focused on the constructive and rapid development and implementation, based on collaborative ocean science, of systematic policies and proactive behaviour across effective governance processes (Bennett et al., 2019:993). According to the UN Women Report on Indian Ocean Rim Association 2015 (IORM), women entrepreneurs in the blue economy are on the rise in many Indian Ocean Rim countries and could contribute essentially to domestic economies. Countries that have not yet developed environments that would substantially benefit women entrepreneurs

in the blue economy would greatly benefit from doing so (Marston, 2015:20). Indeed, women contribute significantly to a spectrum of supply chains across Indian Ocean Rim countries. Significant attempts are still needed to integrate them into these chains better and transfer them into more significant value-added development and decision-making positions (Marston, 2015:20). The researcher concluded that, the above arguments presented can help boost women's involvement in the blue economy.

3.9.2. Opportunities available for women to hold leadership roles in the blue economy

One of the most significant problems facing the blue economy is that young female school leavers are unaware of the possibilities the industry offers (South African Maritime Industry Conference (SAMIC, 2017:9). The analysis demonstrates some of the identified opportunities open to the blue economy, such as management of marine ecosystems, renewable energy and biotechnologies and shipping-related marketing, economic intelligence and logistics.

Some resources to empower women according to (UN & ILO, 2012:3) includes the following: gender-sensitive macro-economic training, policies generating more employment for women, gender-sensitive public service initiatives, women in corporate leadership programs, women's leadership in the informal sector and women's entrepreneurship development programme. Others are shared responsibilities for labour, parental leave policies and gender-responsive budgeting (GRB) as an accountability tool. Successful incorporation of gender in managerial roles is the duty of the Human Resources Department. Unless completely anchored throughout the organisation in top leadership and executives, gender diversity will continue to suffer. Management's engagement and action plans must be tangible. The management of organisations should aim at creating opportunities for women where they can obtain both knowledge and visibility in roles that effectively promote progress. In line with the above, the researcher suggests that human resources (HR) policies must include inclusive involvement of women in all employment sectors, particularly the blue economy sectors. Another commitment should be to provide effective mentoring and evaluation for women in their career development. The researcher argues that effective monitoring and evaluation tools, together with new databases, must be in place to produce data on the statistics of women participating in the blue economy. Data findings will help identify areas that need women's involvement and will also help the government to develop its policies.

Although most women are unaware of opportunities available in the different sectors of the blue economy, there are increasing numbers of women working in ports as crane operators, stevedores, train as well as truck drivers and ship officers (McGerry, 2015:23). In Tunisia, the FAO provides technical assistance to women clam collectors to assist them in setting up their association to negotiate fairer rates and reduce transportation expenses (FAO, 2018:2). In addition to this, a different arrangement with an Italian importer of seafood has established a direct business association with these women, helping them to set fixed selling prices for their clams to boost women's trade (FAO, 2018:2). The review shows that the above can be a definite attempt to enhance women's position in the economy. The research also highlighted that women's voices should be considered in addition to the steps in place to raise visibility for women to participate and play an active role in the blue economy. One of the most significant ways a woman can sustain life for herself and her family is taking control of her financial future (Bohler-Muller et al., 2019:2). If this happens, they can alter the unwritten rules that allow women to be recognised and appreciated more than men. Women's valuable involvement in the blue economy can, therefore, contribute to women's critical economic empowerment and development, as well as the stimulation of job creation in many countries.

The researcher perceives that including women in the blue economy will stimulate the economic growth of many countries and these would lead to the development of the blue economy sectors (Kotze et al., 2019:50). This will contribute to sustainable economic development for women in the blue economy. According to Kotze et al. (2019:50), this can only be achieved through different development projects such as capacity building programmes and educational campaigns on the values of women in labour. These can also be achieved by bringing males into the gender-specific approach to women's development while increasing number of women in leadership positions. In addition to shifting gender norms, creating room for women self-empowerment through capacity building programmes are the need for context-specific policymaking for women (Kotze et al., 2019:50). This will help in establishing an enabling climate for equal opportunity and inclusive growth for women (Kotze et al., 2019:50).

3.9.2.1. Entrepreneurship and sustainable economic empowerment for women in the blue economy

There are different prospects for entrepreneurship and economic growth in the blue economy. With the blue economy's contribution to the global economy expected to double from US$1.5 trillion in 2010 to US$3 trillion by 2030(Bennett et al., 2019:1). Many governments and corporations have declared ocean sectors as lucrative investment frontier, including sectors such as fisheries, aquaculture, tourism, bio-prospecting, seabed mining, oil and gas, renewable energy and shipping (Bennett et al., 2019:1). In addition to these developed sectors, fisheries, marine aquaculture, maritime transport, cargo handling and warehousing, shipbuilding, extraction of oil and gas, coastal tourism and recreation sectors are able to produced gross value added of £180 billion in 2017 (Scholaert, 2019:2). Following information provided by the sectors, the researcher stressed that emerging sectors such as marine renewable energy and blue biotechnology displayed great potential for jobs creation, economic development, and innovation. At the same time, new economic opportunities are emerging in the aquaculture and tourism sectors.

Recent research shows that the economic benefits of bringing more women into the labour market of the blue economy cannot be underestimated. According to (Gordon et al., 2019:31), the empowerment-related impacts of women have been in terms of expansion of economic decision-making, independence, increased resource control; capacity to invest in plans, and strategic consumer choices. Also, emerging ocean technology offers critical opportunities for women's economic empowerment in the blue economy. Some of these opportunities involve blue biotechnology, offshore hydrocarbons, ocean renewable energy and blue carbon initiatives (Food & Agriculture Organisations (FAO) of the United Nations, 2017:35).

Women entrepreneurs build value in several ways for their communities (Elam, Brush, Greene, Baumer, Dean & Heavlow, 2019:41). While self-employed, women create a source of income for themselves as well as for their families, frequently involving other members in the network and the profit that comes from their work. Finance and Development (2019:10) proposed that, in order to increase women participation in the workforce and entrepreneurship of the blue economy, emerging markets and developed economies must invest in infrastructure, such as electrification installation done in the rural areas of South Africa. There is also a need to increase the involvement of women in the labour force by 9%. In India, building adequate sanitation facilities narrowed gender gaps for women in the labour force. In the same way,

Mexico implemented public buses for women only to ensure that they could travel safely. In line with the above, the FAO (2017:10) has adopted inclusive rural development policies that represent women more equally. Women joining the blue economy business sector will benefit from Competitive of Enterprise and Small and Medium-sized Enterprise (COSME), which is an EU programme (EC, 2017:49). The programme aims to improve entrepreneurship and the business environment for Small and Medium-Size Enterprises (SMEs) for the competitiveness of SMEs (EC, 2017:49). The blue economy can be seen as a vehicle for advancing economic empowerment for women. The above attitudes, however, must change for women to become economically competitive and reap the economic benefits of the blue economy to its full potential. According to Gordon et al. (2019:21), there is a substantial lack of suitable data to outline the contribution of women in the blue economy sector. Therefore, new analytical data is needed to evaluate women's engagement in the blue economy (Gordon et al., 2019:20). The data will help policymakers to explore and invest resources where necessary to boost the economic situation for women in the blue economy (Gordon et al., 2019:33).

Since most policymakers and business leaders understand the need to attract women to the blue economy sectors, new technology may emerge to address the issues. Gordon et al. (2019:33) stated that the advancement of new human-machine interfaces and artificial intelligences might also give women training opportunities in software and mechatronic engineering sectors of the blue economy (Gordon et al., 2019:33). The concept of the blue economy, as shown in Figure 3.3 (overleaf), is based on common pillars. These fundamental conceptual pillars handle the economic activity and sustainable growth for job creation, conservation of the environment, sustainability, social justice, and human welfare. The blue economy conceptualisation incorporates a strong element for mobilisation of social justice. It is a tool for advancing economic empowerment for women (Gordon et al., 2019:18). The philosophical foundations are also the concepts of economic empowerment for women. Such values are the corporate and business pillars for fostering gender equality in the world they work in.

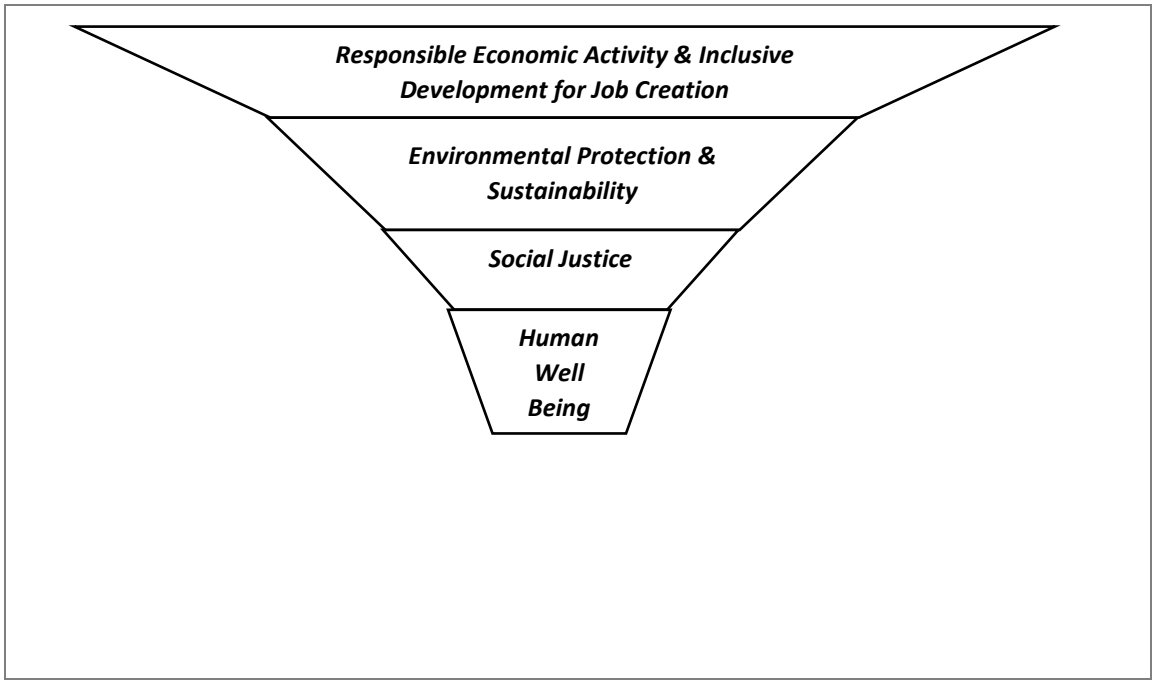


Figure 3.3: The fundamental conceptual pillars of the blue economy

Source: Gordon, Sekyere, Maluleke & Zikhali, (2019:18)

3.9.3. Challenges faced by women in the blue economy

There is adequate proof to show that women are still lacking in the various industries of the blue economy. While women in the industry are very few in comparison to their male counterparts, there are more than enough prospects for women to explore in this sector (Kitada et al., 2015:10). In Turkey's tourism sector, women usually earn between 10% and 15% less than their male counterparts (Çiçek, Zencir & Kozak, and 2017:229). There has also been limited research to highlight the opportunities offered to women by the tourism industry through the modifications brought about by this sector. More research is therefore needed to explore the possibilities the tourism sector has to offer women who want to explore the blue economy tourism sector. Specifically, by providing access to excellent employment opportunities in the tourism sector, women can benefit from improved skills and entrepreneurship growth and development in the blue economy (Antonaras, 2018:130).

Women's economic empowerment should include increasing, a prominent and fundamental focus on women's involvement, and this should be central to the broader debate on coastal tourism economic inclusion (Rogerson, Benkenstein & Mwongera, 2018:2). In the oil and the transportation sector in Ecuador, women face more significant challenges; for instance, all clerical and administrative posts are allocated to women with very few exceptions. Women do not occupy high-ranking positions in chartering, planning and finance (Cevellos, 2015:55). Even Ecuador's oil transportation business is controlled by a single company owned by the Ecuadorian

Navy, EP Flota Ecatoriana Flota Petrolera Ecuatoriana (FLOPEC). All influential positions are reserved for retired male navy officers who are appointed by the Board of Directors and chaired by the Commander-in-Chief of the Navy (Cevellos, 2015:56). Consequently, the paper indicated that it is feasible to argue that women have been given a restricted chance to pursue leadership careers inside FLOPEC. For these reasons, the theory evidenced that arguments can be put forward about why women should be equal participants in the various sectors of the blue economy. To tackle these problems, many of the areas of interest mentioned above and challenges should be addressed by policymakers.

Women in the blue economy face various challenges such as lack of understanding of the blue economy at a grassroots level and the fact that the blue economy is still a male-dominated industry. Similarly, women also face other challenges such as gender stereotyping, lack of education and information, socio-cultural challenges and lack of quality research data focusing on science and technology aspects of women. Even though women have long played a key role in many countries' economies, they still encounter several hurdles to fully participate in the economic sectors of their countries. (Bethel, Buravleva & Tang, 2021:8). Women are also faced with general challenges in the blue economy such as: a lack of knowledge about the jobs and business opportunities, exclusion of women from decision-making positions, fewer women in higher-level positions in the sectors, women's wages being less than men, less attention being paid to women in the workforce, lack of funding and facilities, unstable and insecure jobs for women in the sector, and having a higher number of informal works in the sector. Although women account for over 85% of the workforce in the fishing industry, when credit is allocated, men are considered first. Most women in the blue economy have limited access to finance, resources and the tools they need to expand their businesses (Safety4Sea Editorial Team, 2019:1). Women also face sectorial challenges in the blue economy such as challenges faced by women in the fisheries, tourism and in oil and gas sectors. In addition, most women also work in low-wage, casual and short-term jobs Bertarelli (2021:1).

3.9.4. Addressing the challenges faced by women in the blue economy

There are several schools of thought on how to address challenges faced by women in the blue economy to attract female participation in the sector. Gordon et al. (2019:71) propose that one of the solutions to women's economic empowerment is to increase credit programmes for women which will ensure that their remuneration for work in the sectors are taken care of. For their part, Fernandez, Bocci, Harpers,

Wynarski and Alons (2021:12) propose that there is a need to improve prospects for women by providing them with excellent social conditions which will attract them to jobs in the ocean sector. Promoting policies and measures that encourage the emergence of female role models in the sector can motivate others to pursue careers and business in the blue economy sectors (Shalenh & Mustafa, 2020:5). Gordon et al. (2019:71) also recommend educational programmes related to the blue economy for women. Similarly, Fernandez et al. (2021:9), proposes the expansion of training programmes to encourage exchange of information, expertise, technical help, training and best practices. While health care issues are also one of the challenges faced by women in the blue economy, Gordon et al. (2019:71) acknowledges that health enhancement programmes would assist female workers in any of the blue economy sectors, particularly those dominated by men. All the above proposals to encourages women participations in the blue economy are approved by the researcher because they address the study's main objectives and the problem statements. If all these challenges are addressed, there will be greater participation of women in the blue economy with long-term sustainability and significance that benefits everyone (Fernandez et al., 2021:3).

Additionally, according to the FAO (2012:2), it will help to engage women in fishing for inland fisheries, as many countries are taking a leading role in the rapid growth of fisheries sectors. Women also need to own and manage their fishing boats as well as have their fishing gear. This can be an indication that measures are being put in place to engage women's participation in the blue economy. In this regard, the report found that more support like will promote women's full participation in the blue economy and enable them to erode this male-dominated industry.

3.9.5. Strategies to overcome the challenges faced by women in the blue economy by encouraging increased participation of women in the blue economy sectors

Strategies to overcome these challenges include a change of perception involving women in various aspects of daily life which is heavily influenced by social, cultural and religious norms (Gordon et al., 2019:78). There are several suggestions on how to improve women's involvement in the blue economy. There are several suggestions by women groups in various countries that projects such as International Maritime Organisations (IMOs) programme should be included in the Maritime sector to boost women's engagement in the blue economy industry. The Women's International Shipping and Trading Association (WISTA), also agrees with the Women in Maritime

Leadership Conference held in California to enhance women's involvement in the blue economy. While IMO statistics demonstrate that women make up only 2% of the maritime workforce, a country like South Africa also has some success stories that can inspire and motivate other women to partake in the blue economy. The proposal was that the involvement of women in the blue economy could be promoted through assistance from family, friends, peers, the media industry, and the government.

According to women in the shipping industry, possibilities for women's employment in the maritime sector go beyond the traditional marine jobs and as well as management positions. These include roles in the marine ecosystems, renewable energy and biotechnologies as well as shipping-related marketing, economic intelligence and logistics (SAMIC, 2017:28). Furthermore, empowering women in the maritime sector will require political will to put in place effective policies combined with intervention through education and training systems. Women empowerment involves raising awareness of maritime possibilities from the primary school level and creating maritime vocational schools to develop the skills needed (SAMIC, 2017:28).

3.9.6 Quality of life for women who participate in the blue economy

The world has realised that women participation in the blue economy is vital to alleviating poverty, improving the health and quality of life of women in order to achieve the United Nations Sustainable Development Goals (Dowie et al., 2021:1). The blue economy promises a new horizon for women’s empowerment (Shaleh & Mustafa, 2020:12). As a result, women who participate in the blue economy could earn a potential income for their families and household, thus improving their quality of life. The diversified character of the ocean-based sectors, as well as the quick evolving blue growth programmes, may ensure economic prosperity for women leading to improved quality of life.

For women to improve their quality of life, there is the need to adopt strategies to overcome the challenges faced by women in the blue economy. General strategies such as policies, leadership, awareness creation and education campaign strategies will increase educational opportunities for women in the blue economy. What counts more, according to Shaleh and Mustafa (2020:5), is providing women with equal chances and options that allow them to reach leadership positions. Also, policy strategies on gender mainstreaming could encourage policy development through a gender lens, which will increase the involvement of women in a higher-level role to contribute to their sustainable economic development. Investment for women is

needed in the broader ocean economy as well as skills training to uplift women in the blue economy to improve their quality of life (World Bank Group, 2016:6). These investments could economically empower women in the business sectors of the blue economy which could create more jobs opportunities for women in the sectors.

The fishing sector is one of the attractive sectors that women could explore to provide them with the needed jobs and businesses to improve their quality of life. (World Bank Group, 2016:2) indicated that, fish can be beneficial in addressing food and nutritional security among vulnerable women all over the world, which can lead to their improved quality of life. Women are likely to obtain employment and businesses in the fisheries sectors of the blue economy. Women are expected to make up 15% of those directly employed in fisheries and up to 90 % of occupation in the ancillary sector (World Bank Group, 2016:2). Similarly, aquaculture is predicted to expand in the coming years, and if done properly, it has a potential to be a major source of food and a cornerstone for women in the blue economy (World Bank Group, 2016:2).

This study also explores alternative means of improving the quality of life for women such as societal norms and social justice, which can influence and change the social, cultural and religious perceptions about women (Fernandez et al., 2021:3). In addition, Fernandez et al. (2021:3) argues that society's ability to eradicate sexism and discrimination against women as well as the unequal and unjust treatment that marginalises women, can lead to improvement in the quality of life for women. Also, a change of attitudes toward women, a change of cultural mind-set and the seclusion and segregation of women can be seen as positive steps towards improvement in the quality of life for women (Fernandez et al., 2021:3).

3.9.7. Policy framework for women participation in the blue economy

This policy framework lays down guidelines and duties at a high standard and takes into consideration the legal framework of the blue economy (Health Research Authority (HRA) & Health & Social Care (HSC) Departments, 2017:5). The participation of women in the blue economy and their sustainable economic development policy framework presents the research rules that must be followed for the research to be efficient and equitable. Therefore, the participation of women in the blue economy research is recognised as a vital component of this policy framework. It fosters a positive culture and improvement using research and development to support the development of a greater and long-term blue economy (Government of Western Australia, Department of Health, 2021:1). Increasing general awareness and the active

involvement of women in the blue economy requires effective policymaking and an implementation process to attract women's active participation in the blue economy (UNECA, 2016:39). This study is guided by various policy frameworks such as the International Policy Frameworks and the United Nations Conference on Sustainable Development (UNCSD; 2012). The policy emphasis is on the sustainable use of the blue economy, ocean resources and other natural water bodies for economic growth which will lead to an improvement of livelihoods and minimise risks to the environment (UNECA, 2020:17). The study is also guided by the United Nations Sustainable Development Goals 5, 8 and 14.

This study is also guided by the continental policy frameworks such as the African Union Agenda (AUA) 2063 strategy in which the blue economy is a major contributor to continental transformation and acceleration of economic growth and development for women (UNECA, 2020:23). The existence of the policy frameworks at the continental level illustrates the belief that ocean resources can promote inclusivity for the collective benefit of all individuals, including women (UNECA, 2020:20). Empowering women in the blue economy will necessitates a policy formulation process to build ownership for women (UNECA, 2016:72). According to the UNECA (2016:72), this requires public institutions to collect, store, update and disseminate all relevant information related to women's participation in the blue economy transparently. In addition, the blue economy sectors should inform the public regularly about the social impacts of the activities in the blue economy sectors (UNECA, 2016:72).

Furthermore, at the continental level, this study is guided by sub-regional policy frameworks such as the Southern African Development Community (SADC) Industrialisation Strategy and Roadmap (SISR) 2015-2063 which were approved by the Extraordinary Summit in Harare, Zimbabwe in 2015 (UNECA, 2020:20). The framework seeks to transform regional economies, enhance economic growth and create empowerment. In pursuit of environmental sustainability, the strategy endeavours to promote inclusive and sustainability guided by the blue economy (UNECA, 2020:20). Finally, the ability to integrate different viewpoints and perspectives into a common vision would determine the success of the blue economy policy formulation (UNECA, 2016:72). Gordon et al. (2019:68) conclude that policy interventions are needed to address women's economic empowerment in the blue economy in order to achieve an increased number of women participating in the sectors. Therefore, if more women are allowed to participate in the blue economy and

offered equal opportunities as men, this could influence global GDP to rise by 25% by 2025 (Reva & Kumalo, 2020:3).

The United Nations SDG 5.5 seeks the full and active inclusion of women and equal possibilities at all levels of decision-making in leadership, political, economic and public life (UN, 2015:20). This study on the AUC agenda 2063 framework document's transformation frameworks 6 and 7 promotes participatory and responsible organisations and empowers women and youth to accomplish their African dreams (AUC, 2019:8). The argument is made that the policies and structures are developed and look good on paper, but little gets done when it comes to their implementation. This raises questions about the difficulty of implementation. Is it a finance or resource issue? Such barriers will be overcome if the role players make more attempts, and the policymakers such as the government, civil societies, private and public sectors and women themselves also get involved.

3.10. Conclusion

The blue economy can provide alternative employment opportunities for women if more women are encouraged and trained to participate in the industry. At present, women's participation in the blue economy is limited to a low value, traditional and small skill activities. The participation of women in the blue economy should include leadership positions and board membership. Influential positions in finance, chartering and planning should also be reserved for women. There is a need for governments to develop new policies in the blue economy sector to create more jobs for women. The study brought to our attention that, without the stability of oceans and seas from which the blue economy operates, the sustainable development goals can never be achieved. Hence, the SDGs, which include SDG 5, SDG 8, and SDG 14, are a very important part of the growth of the blue economy. The next chapter covers the research methodology of the study.

CHAPTER 4
RESEARCH METHODOLOGY

4.1. Introduction

The previous chapter outlined the overview of the blue economy projects and initiatives of the blue economy, countries leading and championing the blue economy, importance of the blue economy, funding of the blue economy developments, the sustainable development goals as well caring for life under water and importance of women in the blue economy. The chapter also reports on the research approach, research design, target population, sampling and sample size and research instrument; online survey questionnaire. This chapter also elaborated on pilot study, data collection, reliability and validity of the study, data analysis, limitations of study and ethical considerations.

In order to articulate the research methodology, it is deemed necessary to provide a recap of the research objectives, research questions and the research hypotheses. Later in this chapter, the applicable regression equation will be presented.

The research objectives were:

1) To assess the opportunities that are available for women to be key participants in the blue economy;
2) To analyse the challenges faced by women in the blue economy, and propose the strategies to overcome these challenges;
3) To determine how women's engagement in the blue economy can contribute to their sustainable economic empowerment and growth; and
4) To conceptualise a framework which policy-makers can adopt for the sustainable economic empowerment and growth of women in the blue economy.

Research questions to be addressed by this study are:

1) What opportunities are available for women to be key participants in the blue economy?
2) What challenges are faced by women in the blue economy, and what strategies can assist them to overcome these obstacles?
3) How will the participation of women in the blue economy lead to their sustainable economic empowerment and economic development?
4) What conceptual framework can be adopted by policy-makers to enable sustainable economic growth for women in the blue economy?

The below hypotheses are stated to guide this research insofar as identifying key aspects that are likely to contribute to the conceptual framework to be developed as per research objective 4.

The research hypotheses were:

Hypothesis statement 1

H0: There is NO significant relationship between Autonomy and Job Opportunities.

H1: There is a significant relationship between Autonomy and Job Opportunities.

Hypothesis statement 2

H0: There is NO significant association between Autonomy and Business Opportunities.

H1: There is a significant association between Autonomy and Business Opportunities.

Hypothesis statement 3

H0: There is NO significant association between Autonomy and Social Justice Strategies and Societal Norms.

H1: There is a significant association between Autonomy and Social Justice Strategies and Societal Norms.

Hypothesis statement 4

H0: There is NO significant relationship between Free from Domination and Transport Challenges.

H1: There is a significant relationship between Free from Domination and Transport Challenges.

Hypothesis statement 5

H0: There is NO significant relationship between Free from Domination and Tourism Challenges.

H1: There is a significant relationship between Free from Domination and Tourism Challenges.

Hypothesis statement 6

H0: There is NO significant association between Contribution to Business Income and Transport Challenges.

H1: There is a significant association between Contribution to Business Income and Transport Challenges.

Hypothesis statement 7

H0: There is NO significant relationship between Contribution to Business Income and Job Opportunities.

H1: There is a significant relationship between Contribution to Business Income and Job Opportunities.

Hypothesis statement 8

H0: There is NO significant relationship between Exposure to Information and Job Opportunities.

H1: There is a significant relationship between Exposure to Information and Job Opportunities.

Hypothesis statement 9

H0: There is NO significant association between Exposure to Information and Transport Challenges.

H1: There is a significant association between Exposure to Information and Transport Challenges.

Hypothesis statement 10

H0: There is NO significant relationship between Emerging Skills and Economic Opportunities.

H1: There is a significant relationship between Emerging Skills and Economic Opportunities.

Hypothesis statement 11

H0: There is NO significant relationship between Emerging Skills and Job Opportunities.

H1: There is a significant relationship between Emerging Skills and Job Opportunities.

Hypothesis statement 12

H0: There is NO significant relationship between Emerging Skills and Transport Challenges.

H1: There is a significant relationship between Emerging Skills and Transport Challenges.

Hypothesis statement 13

H0: There is NO significant relationship between Improve Quality of Life and Transport Challenges.

H1: There is a significant relationship between Improve Quality of Life and Transport Challenges.

Hypothesis statement 14
H0: There is NO significant relationship between Improve Quality of Life and Job Opportunities.
H1: There is a significant relationship between Improve Quality of Life and Job Opportunities.

Hypothesis statement 15
H0: There is NO significant relationship between Effective Policy and Oil Gas Challenges.
H1: There is a significant relationship between Effective Policy and Oil Gas Challenges.

Hypothesis statement 16
H0: There is NO significant relationship between Effective Policy and Job Opportunities.
H1: There is a significant relationship between Effective Policy and Job Opportunities.

4.2. Research Approach

Research methodology refers to the understanding of the entire research process, including its social and organisational context, underlying viewpoints, ethics principles and the potential implications of new knowledge from the research enterprise (Adedoyin, 2020:80). This research adopted a quantitative research approach as it involved compilation, analysing and interpreting of quantitative data and assimilation of the data findings (Leedy & Ormrod, 2015). Quantitative research is associated with quantitative analysis, especially when used with predetermined and highly-structured data collection techniques (Saunders, Lewis & Thornhill, 2016:166). Quantitative research uses a range of statistical and graphical methods to analyse relationships between variables calculated numerically and evaluated (Creswell, 2014:12). The researcher believes that the quantitative approach was the most suitable one to adopt as it allows for women currently participating in the blue economy to express their views regarding predetermined areas identified by the researcher from literature and add their contribution as to how to increase women participation in the blue economy in a bid to be recognised as key contributors towards sustainable economic

development. However, to obtain a view from both gender groups, men were also included in the study.

4.3. Research Design

Research design offers the structure or framework used to collect and analyse data (Leedy & Ormrod, 2015). The research design can also, be refer to the overarching plan selected to integrate the various study components in a logical and cogent manner, thereby ensuring that the research problem is successfully addressed (Thakur, 2021:53). According to Thakur (2021:53), research design can serve as a guide for collecting data, measurement, and analysis. It is thus assumed that, the research design is the blueprint of the research methodology which guides and directs the research.

A descriptive research design can be qualitative, quantitative or mixed-method research (Radipere, 2012:148). In general, descriptive studies take raw data and summarise it functionally. A descriptive study is one in which the main aim is to identify the situation that occurs at the time of the research (Elmabruk & Almwber, 2018:1). This study used a quantitative descriptive survey research design. A descriptive survey research design was chosen for this study and seeks to describe and explain the research by using questions in the survey to classify or describe a phenomenon (Radipere, 2012:148). The key advantages of a quantitative descriptive survey research design are that the researcher does not influence the phenomena under investigation as she can only disclose what has occurred or what is happening, and perhaps explain to justify the occurrence of these events (Elmabruk & Almwber, 2018:1).

A quantitative descriptive survey research design was chosen for the studies because descriptive studies try to find answers to the questions 'who, 'what, 'where, 'when, and 'how' and strive to obtain an accurate profile of events, persons or circumstances (Van Schalkwyk, 2018:99). Along this line, 'who' questions will describe participants' responses to the survey. The 'what' will refer to women's current situations and conditions in the blue economy. "How" is an explanation of how women are marginalised and unable to occupy various positions in the blue economy. The blue economy was described as a male-dominated industry, therefore 'where' will address the fact that the study is about the blue economy sector in general. The researcher collected data, using a survey consisting of close ended questions, from participants in the blue economy industries in South Africa in Cape Town, Durban and Pretoria via

an online web-based survey. ‘When’ will ask questions about the study data collection which was done in 2021.

4.4. Target Population

A target population is an entire population, or group that a researcher is interested in researching and analysing (Salkind, 2012:185). The target population for this study was active women and men participating in the blue economy in the various oceans, blue economy and the maritime departments, institutions and businesses in South Africa. The population comprises of thirteen (13) ocean sector organisations, departments and institutions which included: Women International Shipping and Trade Associations (WISTA), South African Institutes of Marine Engineers and Naval Architects (SAIMENA), Kesema Ocean Economy and Enterprise Development Pty Ltd, the Department of Forestry, Fisheries and Environment – Ocean and Coast Sectors and South African Maritime Safety Authority (SAMSA). Others are Transport Education Training Authority (TETA), Department of Planning, Monitoring and Evaluation, Lawhill Maritime School, Transnet Maritime School of Excellence, Transnet National Port Authority, South African Shipyards, South African Associations of Ship-owners and Agents and Ethekwini Maritime Clusters.

4.5. Sampling and Sample Size

A sampling technique includes a set of methods that allow the researcher to reduce the amount of data that will be needed for the study (Murgan, 2015:2). The total sample size was 200 participants which were considered adequate for the analysis to be conducted. Purposive sampling techniques were used for this study. Purposive sampling also known as judgement sampling is a non-probability sampling method in which sample components are chosen depending on the researchers’ judgement (Saunders, Lewis & Thornhill, 2012:288). Most frequently, researchers believe that, by exercising sound judgement, they may obtain a representative sample while saving time and money (Saunders et al., 2012:288). Purposive sampling was used because the sample was specifically selected individuals.

The sampling size was informed by the limited number of women participating in the blue economy. Since there are very few women participating in the blue economy, the researcher made the sample size all-inclusive to include men to encourage a larger sample size. The targeted sample of 200 men and women was drawn from various blue organisations, departments, institutions and businesses in South Africa who are

stakeholders and knowledgeable about the blue economy sectors of the country. The 200 participants are specifically selected individuals from the total target population.

A high response rate from participants enable the researcher to apply the appropriate quantitative analytical tools and tests for survey data responses, including the proposed exploratory factor analysis and multiple regression analysis. The 200 participants were split into 100 males and 100 females. To establish equality without discrimination against men, one hundred (100) women and one hundred (100) men were chosen from leadership positions including managers and directors plus junior positions and business owners. They were surveyed to examine their perspectives on having more women taking future occupations and doing business in the sector. Also, women will be chosen because the study focuses primarily on women, so it is important to hear women's voices on the issues affecting them. The survey also serves as a platform for women to express themselves, their perspectives on working with their male counterparts and their thoughts on inspiring more women to be involved in the blue economy industries.

The participants were reached via an online web-based survey. The purposive planned sample of this study thus comprised 200 men and women from various departments and institutes in South Africa who are knowledgeable about maritime and the blue economy sectors in Cape Town, Durban and Pretoria. The sectors included but were not limited to the following: Women International Shipping and Trade Associations (WISTA), South African Institutes of Marine Engineers and Naval Architects (SAIMENA), Kesema Ocean Economy and Enterprise Development Pty Ltd, the Department of Forestry, Fisheries and Environments Ocean and Coast Sectors, South African Maritime Safety Authority (SAMSA), Transport Education Training Authority (TETA), Department of Planning Monitoring and Evaluation, Lawhill Maritime School, Transnet Maritime School of Excellence, Transnet National Port Authority, South African Shipyards, South African Associations of Shipowners and Agents and Ethekwini Maritime Clusters. Although the research findings of the study are based on women, participants included both sexes to remove bias. The participant's inclusive criteria are as follows:

- The ages of the participants were between 18 to 65 years.
- The gender of the participants includes both males and females.
- The positions of the participants vary from junior positions, senior positions, managerial positions, director positions and business owners.

4.6. Research Instrument: Online Survey Questionnaire

A construct is an abstract term selected to describe a particular phenomenon (Bhattacherjee, 2012:1). It can be a simple concept, such as a weight of a person or a combination of several similar concepts, such as the communication ability of a person, which may consist of many underlying concepts, such as vocabulary, syntax and spelling of an individual. On the other hand, a variable is the measurable interpretation of abstract constructs (Bhattacherjee, 2012:1). The research revealed the constructs and variables as the biographical and background information of participants, opportunities available for women to be key participants in the blue economy, challenges faced by women, strategies to overcome these challenges by encouraging women's participation in the blue economy, sustainable economic development and sustainable economic growth for women's in the blue economy, benefits of introducing a policy structure to increase women's involvement in the blue economy.

An online survey consisting of close-ended questions was used. Close-ended questions will encourage the participant to answer specific questions. Closed-ended questions also come in varied ways and are distinguished by the use of specific choices that a participant can choose from. In this study, closed-ended questions were used because they are simpler and faster for individuals to give a response. A total of 24 online surveys was sent to the participants to answer. The main sections of the online survey are the biographical and background information of participants, opportunities available for women to be key participants in the blue economy, challenges faced by women in the sectors of the blue economy, strategies to overcome challenges by encouraging women's participation in the blue economy, sustainable economic development and growth for women participation in the blue economy and benefits of introducing a new policy structure to increase women's involvement in the blue economy.

For the quantitative study, closed-ended statements using Likert-type response scales were used to gather quantitative data for quantitative analysis. The Likert scale is the rating scale and consists of assertions that suggest a favourable or disadvantageous view of the study subject (Tustin, Ligthelm, Martins, & Van Wyk, 2005:408). Likert-type scale questions allow participants to use declarations explicitly to define their degree of understanding (Tustin et al., 2005:408). In the questionnaire, the study uses a 5-point Likert-scale ranging from strongly disagree, disagree, neither agree nor disagree (neutral), agree to strongly agree.

4.7. Data Collection

Initially, in the empirical study, online web-based surveys were sent to the participants via emails. Confidential documents were sent to the participants with the survey. Instructions on how many questions were on the survey, what the survey was for, how long it will take the participants to complete the survey and who is to participate in the survey, Covid-19 regulations, instructions to assure the participants that the responses collected will be kept confidential and anonymous, were given to the potential respondents to read before participating in the survey. These instructions allow every participant to make their decisions with no negotiations involved. It also allows individuals to decide on how to tackle each question on the survey. Participants were instructed to click on the 'submit' button after completing the survey.

The online web-based survey comprised of closed-ended questions. This was to allow the participants the opportunity to self-complete the survey. A web-based online survey is a computer-accessible data collection survey instrument (Creswell, 2012:383). A web-based survey has the benefit of quickly gathering comprehensive data using validated forms and questions rather than creating them and taking advantage of an individual's extensive use of the internet, including using it as a sit-in for social networking (Creswell, 2012:383). The disadvantage of web-based online surveys is that: they can contribute to a low response rate. Due to technological and security issues with the internet and junk mail, Internet users might always change their e-mail addresses which can lead to a low response rate. Surveys may not be based on random sampling; therefore, it can be difficult to draw inferences for the general populations (Creswell, 2012:383). Also, a web-based survey may be biased towards a particular demographic group that tends to use computers (Creswell, 2012:383).

Data collection was done from July to November 2021 after ethical clearance had been granted. The data collection took approximately five months. A total number of (200) online surveys were sent out to the participants to complete. Out of the (200), a total of (102) surveys were completed with a few missing values, however, duplication and data errors resulted in (81) usable responses.

4.8. Reliability and Validity

Validity and reliability are the most important criteria for evaluating a study (Bryman & Bell, 2015:49) Therefore, quantitative data can also be enhanced by diligent sampling, accurate instrumentation, and proper statistical data handling.

4.8.1. Reliability

Reliability is the accuracy of measuring devices to produces certain results when the object being measured has not been modified (Leedy & Ormrod, 2014:91). Reliability also refers to coherence over a series of measurements. It is characterised as the consistency with which a measuring instrument produces specific results when the measured object has not changed (Ellis & Levy, 2009:332). Reliability deals with the accuracy, dependability and reliability of the study findings obtained from the research (Zohrabi, 2013:259). The researcher has to structure the questions in the questionnaire in such a way that the questions are consistent to the degree that if a participant gives a response to a specific question, they will be required to give the same answer to that question even if the participants are asked the same question repeatedly. If the participant's reaction to the same question changes, it means credibility has been lost (Ellis & Levy, 2009:332).

The 24 research instruments were pre-tested with 24 non-main study participants through a pilot study to check their accuracy before distributing them to the participants (In, 2017:2). A pilot study is important for improving the quality and efficiency of the first study (In, 2017:2). A pilot study is conducted to test the safety of procedures and recruiting ability. It is normally conducted to analyse the randomisation and building process to increase the familiarity of participants with the study methods and to provide estimates for measuring sample size (In, 2017:2). Construct reliability will be assessed after the results of the exploratory factor analysis.

4.8.2. Validity

Validity is the degree to which the system tests what to measure (Leedy & Ormrod, 2014:89). Validity also involves ensuring that the instrument of the study test what it wants to measure (Saunders et al., 2009:150). To verify an instrument is to make sure that the instrument asses what is set out to measure. There are different validity tests in research: face validity, content validity, criterion validity and construct validity. Face validity tests the degree to which the phenomenon under examination is to be assessed by an instrument. After the questionnaire has been developed, the first validity test was performed when the questionnaire was submitted for approval by the supervisor. Once the questionnaire is accepted, the first validity test is completed. The second test to verify the instrument was a pilot test with (24) participants not included in the sample. The success of the pilot test would build trust in the final instrument that will be sent to the participants via an online web-based survey. Comments obtained from those participants may lead to minor adjustments being made to the

questionnaire, after which will then be distributed to respondents. Criterion and construct validity will be confirmed in section 5.6.1 in chapter 5, where the results of the exploratory factor analyses are discussed.

4.9. Pilot Study

A preliminary online survey (pilot study) was developed consisting of (6) sections of close-ended questions (see Appendix A). The different sections of the questionnaire as indicated in Appendix A (Online survey) on page 220 of this thesis entail:

Section 1: Biographical and background information of participants;

Section 2: Opportunities available for women to be key participants in the blue economy;

Section 2.2: Economic opportunities available for women in specific sectors of the blue economy;

Section 3: Challenges faced by women in the blue economy sectors;

Section 4: Strategies to overcome challenges by encouraging women's participation in the blue economy;

Section 5: Sustainable economic development and sustainable economic growth for women's participation in the blue economy; and

Section 6: Benefits of introducing a new policy structure to increase women's involvement in the blue economy.

A pilot study was performed to pre-test the research instrument and identify challenges, obstacles or restricted access. The pilot study was thus to identify any unclear or ambiguously formulated items. The benefit of the pilot studies is that researchers are also becoming aware of the procedure involved in the main survey (In, 2017:2). Pilot studies help researchers identify design vulnerability, gather refined data and analytical techniques, gain experience with research team preparation, analyse recruitment practices and learn valuable information about the participant burden before larger studies are performed (Fraser, Fahlman, Arscott & Guillot, 2018:263). A pilot survey was conducted using a sample of 24 non-main study participants from selected blue economy organisations, departments, institutions and businesses to test the research instrument before the participants participate in the web-based online survey. The research instrument was re-assessed afterwards to determine whether they are any defects in instruments.

4.10 Data Analysis

Data analysis involves transforming data into a functional and desired form. Depending on the data processing system, the output may be obtained in various ways such as images, graphs, tables, vector files, charts and other suitable formats depending on method of data processing. For this study, descriptive statistics, exploratory factor analysis and multiple linear regression analysis were utilised to analyse the quantitative data obtained from the online survey which was distributed to the participants. The collected data was recorded on an Excel spreadsheet and then checked for completion. The data was cleaned and coded before subjecting it to the Statistical Package for Social Sciences (SPSS). Data coding ensures that the original data is converted using a statistical programme into a language that could be interpreted in computer analysis.

The goal of quantitative data analysis is to transform raw data by scanning, analysing and identifying, coding, mapping, exploring and explaining raw data patterns, trends, themes and categories to interpret and provide their underlying meaning. Descriptive statistics made it possible for the investigator to numerically describe and compare variables (Saunders et al., 2016:527). Initially, descriptive statistics such as the mean (as a central tendency metric) were used to explore the trends in the perceptions of participants. An exploratory Factor Analysis is a strategy for reducing data and used to determine the variables in a set form of logical subset (Shrestha, 2021:4). The advantage of using factor analysis is that it provides highly useful information to decision-makers, allowing them to focus on a few key elements rather than a vast number of variables (Shrestha, 2021:4). Factor Analysis is based on assumptions that all variables are correlated to the same extent (Shrestha, 2021:4). At the very least, the variables should be measured at the ordinal level.

According to Osborne (2014:2), Exploratory Factor Analysis (EFA) is a collection of extraction and rotating methods for modelling an unseen structure. Exploratory Factor Analysis was used to analyse each section in the questionnaire to determine if an underlying factor structure exists in the data for each subsection. A minimum observation to subject ration of 5:1 is advised for the conduct of an EFA (Gorsuch, 1983:332) and Hatcher (1994:73). The explorative factor analysis was conducted using principal axis factoring as the extraction method and the rotation method was Promax with Kaiser Normalization.

Multiple linear regression is a technique used to evaluate the linear relationship between a dependent variable and independent variables (Schober & Vetter, 2021:108). A multiple linear regression is used when the study variables have identified dependent variables which could be impacted by a set of independent variables (Shalabh: 2021:1). As the study presents many independent variables such as opportunities for women in the blue economy, challenges faced by women in the blue economy and strategies to overcome the challenges, the use of multiple linear regression models, were used to determine the impact on sustainable economic growth.

4.11 Regression Equations

The regression analysis will be performed for the dependent variables and independent variables later in the chapter. The regression analysis for the dependent variables are opportunities for women in the blue economy, challenges faced by women in the blue economy and strategies to overcome the challenges.

Using the multiple regression, the dependent variables assess the impact of factors that lead to the success of policies promoting women's participation in the blue economy. To conduct the seven-regression model, a multiple regression model will be employed. The regression model will also demonstrate how independent variables influences autonomy, free from domination, contribution to business income, exposure to information, emerging skills, improve quality of life and effective policy.

The formula of the regression model for autonomy is as follows:

$$Autonomy = a + \beta_1\ Finance\ Control + \beta_2\ Economic\ Decision$$

The formula of the regression model of Free from Domination is as follows:

$$Free\ from\ Domination = a + \beta_1\ Leadership\ Participation + \beta_2\ Women's\ talent\ Retention$$

The formula of the regression model of Contributions to Business Income is as follows:

$$Contribution\ to\ Business\ Income = a + \beta_1\ Capital\ for\ Women + \beta_2\ Entrepreneurship + \beta_3\ Increase\ Diversity + \beta_4 Improve\ Women's\ Workforce + \beta_5 Government\ Investing\ in\ Women's\ Workforce + \beta_6 Business\ Development\ Initiatives + \beta_7 Address\ Barriers\ Impeding\ Women's\ Empowerment$$

The formula of the regression model of Exposure to Information is as follows:

Exposure to Information = a + β_1 Training Opportunities + β_2 Rural Development Policies + β_3 Availability Data + β_4 Actionable Programmes & Projects + β_5 Awareness & Education

The formula of the regression model of Emerging Skills is as follows:

Emerging Skills = a + β_1 Growth Potential for Job Creation + β_2 Encouraged Leadership Skills + β_3 Creativities & Innovation

The formula of the regression model of Improve Quality of Life is as follows:

Improve Quality of Life = a + β_1Increased Investment & Wealth Creation + β_2 Building Stable Businesses + β_3 Better Access to Sanitation & Medical Facilities + β_4Poverty Reduction + β_5Increased Earning Potential

The formula of the regression model of Effective Policy is as follows:

Effective Policy = a + β_1Knowledge & Information Sharing + β_2 Raise Awareness of the lack of funding for Entrepreneurs + β_3 Expand Opportunities for Women + β_4Effective Policy Frameworks + β_5Campaign for Amended Policy in countries + β_6Widen Blue Economy Networks + β_7Stimulate Potential Policy Frameworks.

4.12 Limitations of the Study

The study was limited by financial constraints. Limited finances prevented the author from gathering data and gaining more knowledge about the blue economy from more institutes and coastal cities. The data collection period was also subject to time limitations, as the researcher faced difficulties in reaching out to those participants who were unable to access the internet regularly. Due to time and financial constraints, the study was unable to involve other countries surrounded by oceans and seas.

The study was conducted during the COVID-19 pandemic, a period when the researcher was not able to travel to the interview destination to meet up with the participants to collect data physically and due to this, an online web-based survey data collection approach was used to obtain information from the participants. Due to the Covid-19 pandemic, ethics regulations at Unisa have imposed restrictions on many practices, including workplace visits to address high-risk transmission. Therefore, the researcher was not permitted physical access to the workplace of any participant. Lastly, since the investigation focuses solely on the blue economy, the results will have limited generalisation to other facets that may affect the sustainable economic development of women.

4.13. Ethical Considerations

Ethics refer to the adequacy of one's conduct to the needs of those who are affected by the projects (Saunders et al., 2009:183). In any research, ethical concerns are

central and participants must be reassured that the evidence presented to them is treated with a strict standard of confidentiality. In order not to breach the rules laid down by the University of South Africa Policy on Research Ethics, it is crucial to conduct fair and ethical research, which would not result in the violation of the security of the participants. Before any data collection was done, the researcher applied for ethical clearance from UNISA to be granted permission to conduct the study. Further to that, all participants were informed about the purpose of the research in advance via an online information sheet that explains the purpose of the survey to them before online survey questions were sent to them. All data collected will be securely stored for a five (5) year period, after which it will be destroyed. Scholarly work from other authors and data sources will be referenced accordingly.

4.14 Chapter Conclusion

The study's research approach, research design, sample, data collection, questionnaire design, data analysis, validity, reliability and ethical considerations were all covered in this chapter.

The next chapter presents the study findings and data analysis results. Chapter five presents the results of the data analysis.

CHAPTER 5
PRESENTATION OF FINDINGS FROM DATA ANALYSIS

5.1. Introduction

The previous chapter discussed the research methodology of the study. The subsequent subsections of the chapter present the biographical information of the participants, response rate, analysis of data using descriptive statistics and and reliability of the study with regards to Cronbach's Alpha. The chapter also focuses on factor descriptives, pre-diagnostic tests, multicollinearity diagnostic testing, homoskedasticity tests and regression analysis.

5.2. Response Rate

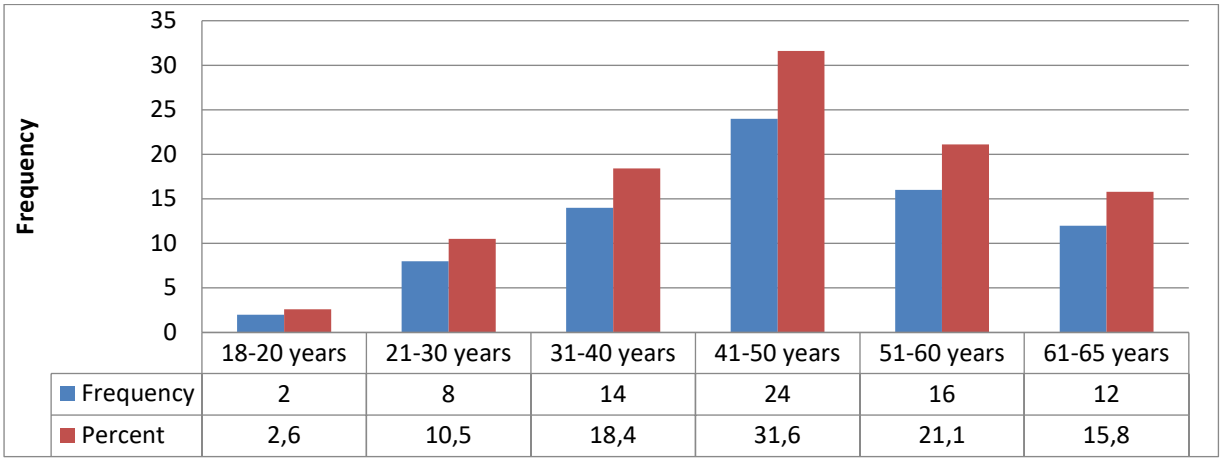
The response rate is calculated by dividing the total number of surveyed participants by the total number of eligible participants (Morton, Bandara, Robinson & Carr, 2012:2). Of this response, out of 200 participants that participate in the survey, 81 were usable and completed responses. The 81 responses include per position: Junior position (10), Supervisory position (13), Managerial position (38), Director (11), Business Owner (3) and Others (6). The realised response rate can be obtained by 81 divided by 200 which equals the response rate of 40.5%. This response rate was slightly above the 30%, which is considered satisfactory (Cleave, 2020:1). Furthermore, the blue economy industries are relatively new, and some participants have difficulty grasping the concept, despite working in the sectors.

5.3. Biographical information of the participants

It is always important to present and understand the profile of participants in a research study to measure their significance in terms of requisite knowledge and experience, which are of value in the subject under investigation. Therefore, to understand the profiles of the participants in this study, data were analysed according to age, gender, race, highest educational level, position and experience.

5.3.1. Distribution of participants according to age

Figure 5.1 overleaf shows the distribution of participants according to age. Participants aged 41 to 60 were the majority (52,7%) with the 41–50 age group at 24 (31.6%) while the 51–60 group was 16 (21.1%). Those less than 20 were 2 (2.6%). Five participants did not indicate their age.



	18-20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-65 years
Frequency	2	8	14	24	16	12
Percent	2,6	10,5	18,4	31,6	21,1	15,8

Figure 5.1: Distribution of participants according to age (N=76)

5.3.2. Distribution of participants according to gender (N=81)

Of the total number of participants who took part in the study, the majority 42 (51.9%) were female, while the remaining 28 (34.6%) were male and 11 (13.6%) preferred not to say, as shown in Figure 5.2 below. This is significant as the subject of the study focuses on the contribution and challenges faced by women (i.e., females) in the blue economy. The inputs of women are therefore valuable in this regard. However, inputs from male counterparts are also of value to give balanced views on the subject of the study.

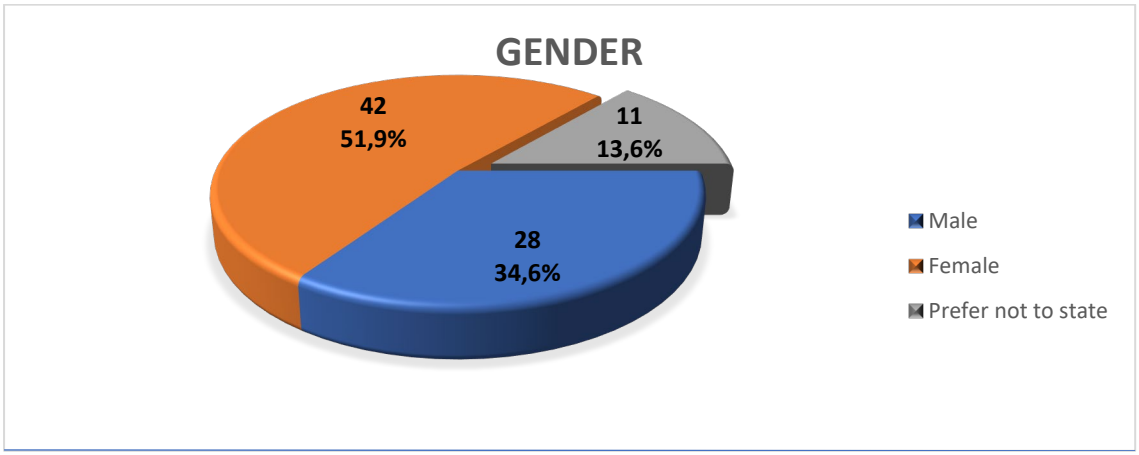
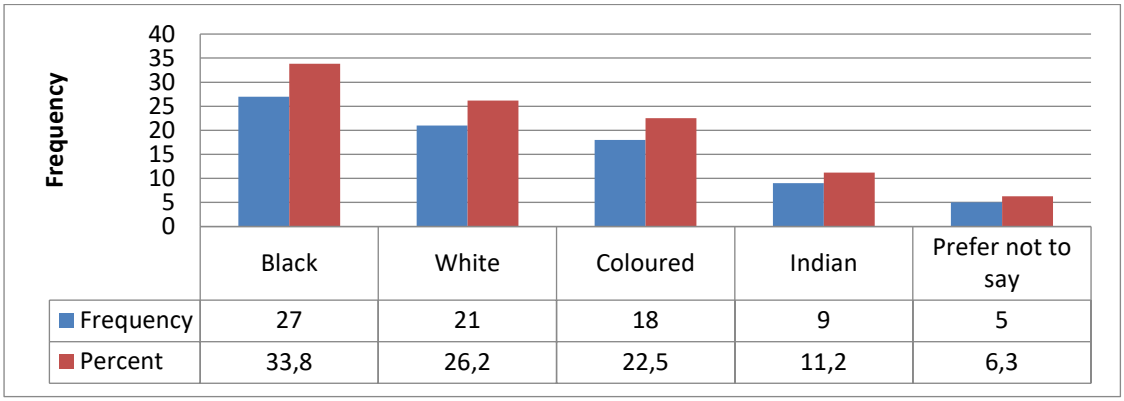


Figure 5.2: Distribution of participants according to gender

5.3.3. Distribution of participants according to race

Figure 5.3 overleaf shows the distribution of participants according to race. The bulk of the participants were black 27 (33.8%), while 21 (26.3%) were white. A total of 18 (22.5%) were coloured and 9 (11.3%) were Indian. Other races that were not specified contributed 5 (6.3%) to the total. This distribution indicates a diverse audience, which is laudable as diverse views are more likely to be shared on the subject of the study. One participant did not indicate their race according to the categories provided

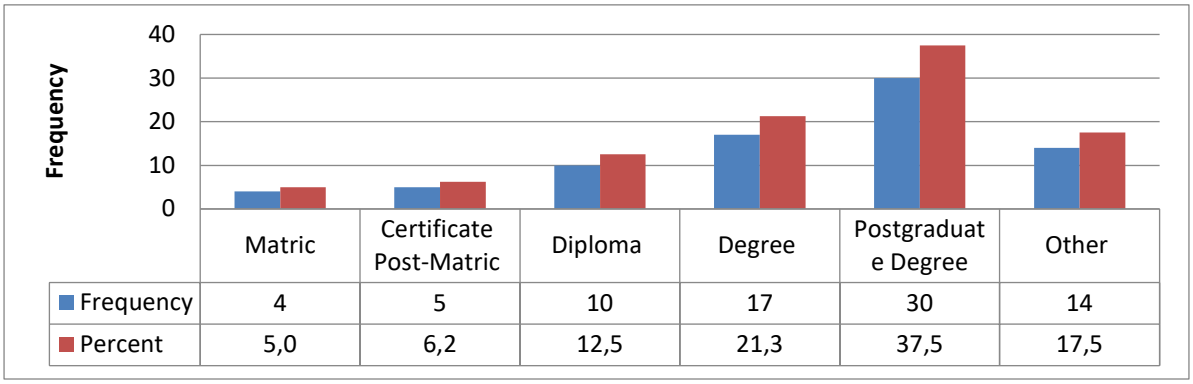


	Black	White	Coloured	Indian	Prefer not to say
Frequency	27	21	18	9	5
Percent	33,8	26,2	22,5	11,2	6,3

Figure 5.3: Distribution of participants according to race (N=80)

5.3.4 Distribution of participation according to Highest Educational Level (N=80)

Figure 5.4 below shows the distribution of participants according to highest educational qualifications. It can be observed that the majority category was 30 (37.5%) with a post-graduate degree while 17 (21.3%) and 14 (17.5%) have a university degree and other qualifications respectively. Diploma holders and post-matric certificate holders were 10 (12.5%) and 5 (6.2%) respectively. Matric certificate holders were the least with 4 (5%). This distribution indicates that the majority (47 or 58.8%) have at least a degree. This is valuable for the study as participants with a degree are generally more informed and can share valuable information on the subject matter of the study. One participant did not indicate other but specified him/herself as a government certified engineer.



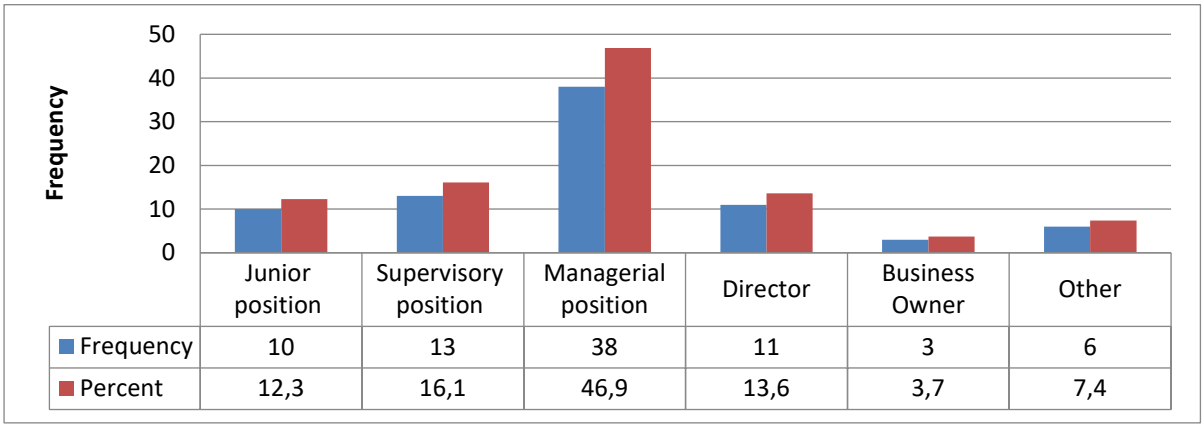
	Matric	Certificate Post-Matric	Diploma	Degree	Postgraduate Degree	Other
Frequency	4	5	10	17	30	14
Percent	5,0	6,2	12,5	21,3	37,5	17,5

Figure 5.4: Distribution of participation according to highest educational level (N=80)

5.3.5 Distribution of participants according to the current position (N=81)

Figure 5.5 overleaf shows the distribution of participants according to their current position working in the blue economic sector. Participants in managerial positions were the most contributing category, with 38 (46.9%), almost half of the total participants. A total of 13 (16.1%) and 11(13.6%) participants were in supervisory and director levels within their organisations, respectively. However, 10 (12.3%) of the participants were

in junior positions, while 3 (3.7%) were business owners. This distribution cuts across various positions and provides diverse views on the subject under investigation.

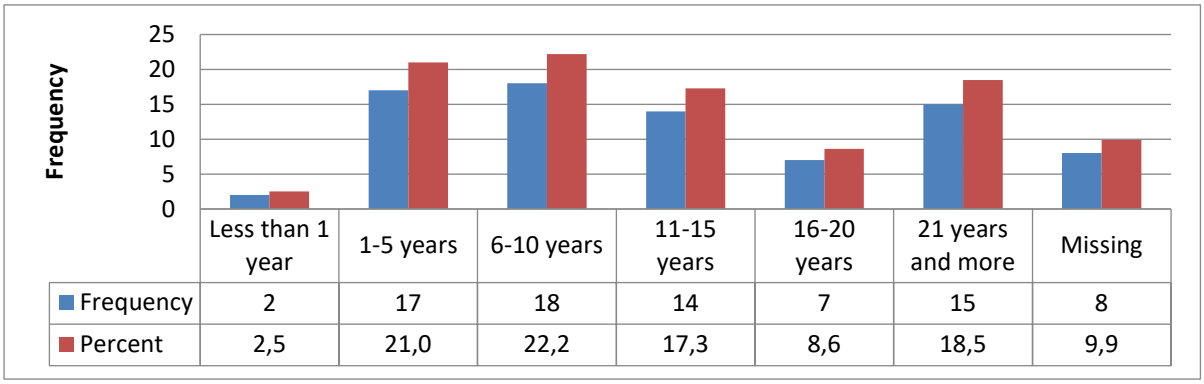


	Junior position	Supervisory position	Managerial position	Director	Business Owner	Other
Frequency	10	13	38	11	3	6
Percent	12,3	16,1	46,9	13,6	3,7	7,4

Figure 5.5: Distribution of participants according to the current position (N=81)

5.3.6 Distribution of participants according to work experience in the Blue Economy sector (N=81)

Figure 5.6 below shows the distribution of participants according to work experience in the blue economy. Of the participants, 18 (22.2%), confirmed that they have been working in the sector for between 6 and 10 years, while 17 (21.0%) declared that they have been working in the sector for between 1 and 5 years. A total of 15 (18.5%) have been working in the sector for over 21 years and 7 (8.6%) have between 16 and 20 years' experience. Two participants (2.5%) say they have been working in the blue economy for less than a year. This means that 54 (66.6%) participants have over 5 years' experience. This experience is invaluable in the contribution of inputs on the subject matter of the study



	Less than 1 year	1-5 years	6-10 years	11-15 years	16-20 years	21 years and more	Missing
Frequency	2	17	18	14	7	15	8
Percent	2,5	21,0	22,2	17,3	8,6	18,5	9,9

Figure 5.6: Distribution of participants according to work experience in the blue economy sector (N=81)

5.4. Analysis of Data Using Descriptive Statistics

This subsection provides a descriptive statistical analysis on the participation of women in the blue economy and their sustainable economic development. The data in this study was based on the perceptions of participants which were measured on a 5-point Likert type response scale (ranging from strongly disagree to strongly agree) plus coding not applicable as a 6.) for sections 2.2, section 3, section 4 section 5 and section 6 of the online survey Using this scale, (1) was associated with strongly disagree, (2) disagree, (3) neutral, (4) agree, (5), strongly agree and (6) was associated with not applicable. It, therefore, follows using this scale that mean scores of between 1 and 2.4 indicated adverse perceptions, while mean scores of between 2.5 and 3.4 indicated neutral opinions. However, mean scores of between 3.5 and 5 indicated favourable opinions. The responses that chose a 6 for a specific question were deleted and considered missing. Further descriptive and inferential statistical analysis only used the 5-point Likert type response scale answers.

Section 2.1 of the online survey was measured on a 5-point extent scale ranging from no extent to a small extent, to a moderate extent, to a large extent and to a very large extent. Explorative descriptive analysis was used in the study since it allows for some analysis before making any assumptions. It can help in the detection of any errors, outliers and anomalous occurrences, as well as finding interesting relations between variables. The explorative analysis encompasses the use of summary statistics such as the mean, coefficient of variation and standard deviation. Despite all the above benefits of explorative analysis, the researcher is cognisant of its downside which include the requirement of a large sample size, the ordinal nature of the data and at the time a need for a scrutiny of mean values especially when there are high frequencies of neutral responses.

5.4.1. General opportunities available for women in the blue economy

Perceptions of participants on the general opportunities available for women in the blue economy are shown in Table 5.1 overleaf. Participants were of the view that there are (to a large extent) job opportunities in the various sectors of the blue economy for women (A2.1_1), there are business opportunities in the various sectors of the blue economy (A2.1_2), there should be a proposal in the shipping industry that women should not be restricted to traditional marine jobs but also exposed to management roles (A2.1_10), there should be projects to support women participation in the blue economy (A2.1_14), and that there should be opportunities for women to attend maritime leadership conferences (A2.1_15). The above-mentioned attributes recorded

a high mean value of 3.6, 3.5, 4.1, 4.3 and 4.4 respectively compared to a maximum possible score of 5. The other remaining attributes in Table 4, recorded a moderate mean score of between 2.5 and 3.4, indicating a moderate extent of availability of opportunities for women in the blue economy.

The coefficient of variation (CV) is one of the measures of spread. It is the ratio of the standard deviation to the mean. The higher the value of the coefficient of variation, the greater the level of dispersion around the mean. Table 5.1 below indicates that the CV for all attributes for general opportunities available for women in the blue economy was high (more than 20%). This demonstrates a high spread of associated values around the mean.

Table 5.1: Perceptions of participants on general opportunities available for women in the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
A2.1_1 Job Opportunities	3.56	1.072	30.16	81
A2.1_2 Business Opportunities	3.51	1.108	31.61	81
A2.1_3 Knowledge, leadership and management roles opportunities	3.25	1.157	35.63	81
A2.1_4 Port Sector Opportunities for women	2.99	1.055	35.30	81
A2.1_5 Funding and training programmes for women	2.60	1.281	49.19	81
A2.1_6 Direct business association for women to fix selling price	2.47	1.276	51.66	81
A2.1_7 Raising awareness for women	2.78	1.304	46.94	81
A2.1_8 Programmes to encourage involvement of women in the blue economy	2.80	1.279	45.63	81
A2.1_9 Programmes to motivate women through education	2.67	1.275	47.80	81
A2.1_10 Proposal should be in place not to restrict women to traditional marine jobs but to exposed them to management roles	4.11	0.975	23.71	81
A2.1_11 Opportunities for women to participate in leadership positions	3.05	1.331	43.66	81
A2.1_12 Improved institutional and organisational programmes in place for women	2.99	1.178	39.42	81
A2.1_13 Opportunities to promote and encourage equal participation for women	2.84	1.327	46.74	81
A2.1_14 Projects to support women in the blue economy	4.32	0.739	17.10	81
A2.1_15 Opportunities for women to attend maritime leadership conference	4.41	0.685	15.55	81

Table 5.1 above indicated that there were fifteen (15) factors representing the perceptions of participants on general opportunities available for women in the blue economy.

5.4.2. Economic opportunities available for women in specific sectors of the blue economy

The perceptions of participants on economic opportunities available for women in specific sectors of the blue economy are shown in Table 5. Based on the information provided, participants were in agreement that economic prospects such as business and employment opportunities exist for women in coastal tourism (Q2.2_1), economic prospects such as business and employment opportunities exist for women in the maritime (Q2.2_2), economic prospects such as business and employment opportunities exist for women in the port activities (Q2.2_4) and that economic prospects such as business and employment opportunities exist for women in the maritime transport sectors of the blue economy (Q2.2_6).

The above-mentioned attributes recorded a favourable mean value that was at least 3.5 compared to a maximum possible score of 5. However, the opinions of participants on economic opportunities available for women in specific sectors of the blue economy were varied. High CV values that were above 30% were recorded in all attributes, as shown in Table 5.2 below. This was indicative of a high spread of views around the mean. Also, two participants marked 'not applicable' and were therefore excluded from the survey and that is why the N value for the answers to this question is 79.

Table 5.2: Perceptions of participants on economic opportunities available for women in specific sectors of the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q2.2_1 Business and employment opportunities exist for women in coastal tourism sectors	3.59	1.204	33.49	79
Q2.2_2 Business and employment opportunities exist for women in maritime living resources sectors	3.65	1.220	33.46	79
Q2.2_3 Business and employment opportunities exist for women in the maritime non-living sectors	3.35	1.188	35.41	79
Q2.2_4 Business and employment opportunities exist for women in the port activities sectors	3.71	1.283	34.58	79
Q2.2_5 Business and employment opportunities exist for women in the shipping and repair sectors	3.35	1.241	36.99	79
Q2.2_6 Business and employment opportunities exist for women in maritime transport sectors	3.61	1.192	33.04	79
Q2.2_7 Economic opportunities for the upliftment of women in the blue economy	3.38	1.371	40.56	79
Q2.2_8 Investment opportunities for women in the blue economy	3.24	1.313	40.51	79
Q2.2_9 Opportunities for job creation for women in the blue economy	3.42	1.383	40.47	79

Table 5.2 above showed that there were nine (9) factors representing the perceptions of participants on economic opportunities available for women in the specific sectors of the blue economy.

5.4.3. General challenges faced by women in the blue economy

The perceptions of participants on general challenges faced by women in the blue economy are indicated in Table 5.2. All the attributes considered in the study as shown in Table 6 (with the exception of Q3.1_7) recorded high mean values that were more than 3.5. This confirms that all the attributes with high mean values in Table 6 except Q3.1_7 were general challenges faced by women in the blue economy. However, for Q3.1_7, the mean values were 3.2. A large portion (27.2%) of the participants expressed a neutral opinion. The opinions of participants on general challenges faced by women in the blue economy were highly spread. This was confirmed by high CV values that were above 30% as indicated in Table 6.

Table 5.3: Perceptions of participants on general challenges faced by women in the blue economy (N=80, not applicable, taken out)

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q3.1_1 Women's lack of knowledge about job opportunities	3.54	1.302	36.80	80
Q3.1_2 Women's lack of knowledge about business opportunities	3.68	1.240	33.75	80
Q3.1_3 Women being excluded from taking strategic decisions in marine management	3.54	1.222	34.53	80
Q3.1_4 Few women are able to hold high-level positions	3.79	1.110	29.31	80
Q3.1_5 Wages are less for women than men	3.59	1.270	35.40	80
Q3.1_6 Low attention paid to women in the workforce of the blue economy	3.49	1.302	37.34	80
Q3.1_7 Women in the blue economy have unstable and unsecured jobs	3.19	1.148	36.03	80
Q3.1_8 Higher informal work for women than men in the blue economy	3.49	1.191	34.14	80
Q3.1_9 Women suffer from inadequate access to funding	3.86	1.166	30.20	80
Q3.1_10 Women not having adequate access to training facilities	3.76	1.285	34.16	80
Q3.1_11Women integration is slow due to barriers such as stereotype against women	3.86	1.250	32.37	80
Q3.1_12 Women health and well-being is receiving a very little attention in the blue economy	3.55	1.252	35.26	80

Table 5.3 above revealed that a maximum of twelve (12) factors were considered for extraction.

5.4.3.1. Challenges facing women in the fisheries sector of the blue economy

The perceptions of participants on challenges facing women in the fisheries sector of the blue economy are indicated in Table 5.4. Most participants were in agreement that women's contributions to the fisheries sector of the blue economy are considered insignificant (Q3.2_1) and also were in agreement that women's roles in the blue economy fisheries sector are neglected (Q3.2_2). The two (2) attributes mentioned above recorded high mean values of 3.6 and 3.8 respectively as shown. However, the opinions of the participants on challenges facing women in the fisheries sector of the blue economy were highly spread. This was confirmed by high CV values that were close to 30% as indicated in Table 5.4.

Table 5.4: Perceptions of participants on challenges facing women in the fisheries sector of the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q3.2_1 Women contributions to the fisheries sector are considered insignificant	3.63	1.072	29.57	80
Q3.2_2 Women roles in fisheries sector are neglected	3.75	1.097	29.24	80

Table 5.4 indicates that only two factors represent the perceptions of participants on challenges facing women in the fisheries sector of the blue economy.

5.4.3.2. Challenges facing women in the tourism sector of the blue economy

The perceptions of participants on challenges facing women in the tourism sector of the blue economy are indicated in Table 5.5. Most of the participants were in agreement that women usually earn less than their male counterparts in the tourism sector of the blue economy (Q3.3_1), women's contributions to the tourism sector of the blue economy are largely ignored (Q3.3_2), women typically occupy non-leadership positions in the tourism sector of the blue economy (Q3.3_3) and that women's participation in the tourism sector of the blue economy is limited (Q3.3_4). All the attributes in Table 5.5 recorded high mean values that were 3.5 or above. However, the opinions of the participants on challenges facing women in the tourism sector of the blue economy were highly spread. This was confirmed by high CV values that were above 30% as shown in Table 5.5.

Table 5.5: Perceptions of participants on challenges facing women in the tourism sector of the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q3.3_1 Women earn less than their male counterparts in tourism	3.62	1.113	30.74	79
Q3.3_2 Women contributions to tourism sectors are largely ignored	3.49	1.186	33.95	79
Q3.3_3 Women usually occupy non-leadership positions in the tourism sector	3.75	1.138	30.36	79
Q3.3_4 Women participation in the tourism sector is limited	3.71	1.156	31.18	79

Table 5.5 above showed four (4) factors for perceptions of participants on challenges facing women in the tourism sector of the blue economy.

5.4.3.3. Challenges facing women in the oil and gas sectors of the blue economy

The perceptions of the participants on challenges facing women in the oil and gas sectors of the blue economy are shown in Table 5.6. Participants were in agreement that clerical and administrative positions are traditionally allocated to women in the oil and gas sectors of the blue economy (Q3.4_1), women do not occupy high-ranking positions in the oil and gas sectors of the blue economy (Q3.4_2) and that women receive limited opportunities to pursue leadership careers in the oil and gas sectors of the blue economy (Q3.4_3). The above-mentioned attributes recorded high mean scores of 4.0, 3.9 and 3.9 respectively.

The opinions of respondents on Challenges facing women in the oil and gas sectors of the blue economy were highly varied. This was confirmed by high standard deviations that were above 25% of the mean mark as indicated in Table 5.6.

Table 5.6: Perceptions of participants on challenges facing women in the oil and gas sector of the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q3.4_1 Clerical and administrative positions are traditionally allocated to women	4.0	1.054	26.6	81
Q3.4.2 Women do not occupy high-ranking positions in the oil and gas sectors	3.9	1.063	27.2	81
Q3.4_3 Women receives limited opportunities to pursue leadership careers in the oil and gas sectors of the blue economy	3.9	1.053	26.7	81

Table 5.6 showed (3) factors for perceptions of participants on challenges facing women in the oil and gas sector of the blue economy.

5.4.3.4. Challenges facing women in the transportation sectors of the blue economy

The perceptions of participants on challenges facing women in the transportation sector of the blue economy are shown in Table 5.7. Participants were in agreement that high-level leadership positions are generally reserved for men in the transportation sector of the blue economy (Q3.5_1) and women have limited opportunities to occupy leadership positions in the transportation sector of the blue economy (Q3.5_2). The above attributes recorded high mean values of 3.9 each. Furthermore, the opinions of participants on challenges facing women in the transportation sector of the blue economy were highly spread. This was confirmed by high CV values that were above 30% as indicated in Table 5.7.

Table 5.7: Perceptions of participants on challenges facing women in the transportation sector of the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q3.5_1 High-level leadership positions are generally reserved for men	3.91	1.227	31.35	81
Q3.5_2 Women have limited opportunities to occupy leadership position in the transportation sector	3.89	1.183	30.43	81

Table 5.7 indicated two factors representing perceptions of participants on challenges facing women in the transportation sector of the blue economy.

5.4.4. General Strategies: Positive support for encouraging women's participation in the blue economy sectors

Perceptions of participants on positive support for encouraging women's participation in the blue economy sectors are shown in Table 5.8. The participants were in disagreement that women own fishing boats in the fishing sectors of the blue economy (Q4.1_4), women manage fishing boats in the fishing sectors of the blue economy (Q4.1_5) and those women have the necessary fishing equipment to partake in the fishing industry of the blue economy (Q4.1_6). The above-mentioned attributes recorded low mean values of 2.3 each as shown. Participants had high percentages of neutral responses (27.2%, 35.8%, 34.6% and 21%) with unequal percentages of disagreement and agreement, on the remaining attributes shown in Table 5.8 (these recorded neutral mean values that were between 2.5 and 3.4). However, the opinions of participants on positive support for encouraging women's participation in the blue economy sectors were highly spread. This was validated by high CV values that were above 30% as indicated in Table 5.8.

Table 5.8: Perceptions of participants on positive support for encouraging women's participation in the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q4.1_1 Policy support for encouraging women's participation in the blue economy	2.95	1.282	43.45	80
Q4.1_2 Women taking a leading role in the rapid growth of aquaculture sectors	2.90	0.989	34.09	80
Q4.1_3 Women taking a leading role in the rapid growth in fishing sectors	2.68	1.003	37.51	80
Q4.1_4 Women own fishing boats in the fishing sectors of the blue economy	2.26	1.076	47.56	80
Q4.1_5 Women managing fishing boats in the fishing sectors of the blue economy	2.25	1.025	45.56	80
Q4.1_6 Women have the fishing equipment to artake in fishing industry of the blue economy	2.28	0.968	42.53	80
Q4.1_7 New government policies to encourage women participation in the blue economy	2.68	1.300	48.61	80

Table 5.8 shows the seven (7) factors representing perceptions of participants on positive support for encouraging women's participation in the blue economy.

5.4.4.1. Societal norms and social justice strategies

Perceptions of participants on societal norms and social justice strategies are shown in Table 5.9. Participants were in agreement that change in social norms, cultural norms and religious norms will eradicate the seclusion and segregation of women in the blue economy (Q4.2_1), change in social norms, cultural norms and religious norms will eradicate sexism and discrimination against women in the blue economy (Q4.2_2), change of social norms, cultural norms and religious norms will eradicate unequal and unjust treatment in the blue economy that can marginalise women (Q4.2_3) and that there is a need for society to change its view of the blue economy being a male-dominated sector (Q4.2_4). The above-mentioned attributes recorded high mean values that were above 4.0, as shown. The opinions of the participants on societal norms and social justice strategies were moderately spread. This was confirmed by moderate CV values that were slightly over 21% as indicated in Table 5.9.

Table 5.9: Perceptions of participants on societal norms and social justice strategies

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q4.2_1 Change of social norms, cultural norms and religious norms will eradicate seclusion and segregation of women in the blue economy	4.09	0.883	21.61	81
Q4.2_2 Change of societal, cultural and religious norms will eradicate sexism and discrimination against women in the blue economy	4.10	0.903	22.03	81
Q4.2_3 Change of social, cultural and religious norms will eradicates unequal and unjust treatment of women in the blue economy	4.07	0.905	22.22	81
Q4.2_4 A need for society to change its view of the blue economy being a male dominated sector	4.32	1.023	23.67	81

Table 5.9 showed four factors underlying perceptions of participants on societal norms and social justice strategies.

5.4.4.2. Autonomy (Independent decision-making)

The perceptions of participants on independent decision-making of women in the blue economy are shown in Table 5.10. Most of the participants agreed that women's participation in the blue economy will give them control over their finances (Q5.1_1) and that women's participation in the blue economy will give them control over their economic decision-making (Q5.1_2). The above-mentioned attributes recorded high mean values of 4.2 and 4.3, respectively. However, the opinions of the participants on the independent decision-making of women in the blue economy were moderately spread. This was confirmed by moderate CV values that were less than 20% as indicated in Table 5.10.

Table 5.10: Perceptions of participants on independent decision-making of women in the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q5.1_1 Women participation in the blue economy will give the control over their finances	4.22	0.758	17.96	81
Q5.1_2 Women participation in the blue economy will give them control over their economic decision-making	4.27	0.758	17.76	81

Table 5.10 reveals the two factors representing perceptions of participants on the independent decision-making of women in the blue economy.

5.4.4.3. Freedom from domination

The perceptions of participants on freedom from the domination of women in the blue economy are shown in Table 14. The participants were in agreement that Women's participation in leadership positions in the blue economy will enable them to partake in board meetings and make board decisions (Q5.2_1) and that women's participation in the blue economy will attract and retain women's talent (Q5.2_2). The above-mentioned attributes recorded high mean values of 4.4 and 4.5, respectively. However, the opinions of the participants on freedom from the domination of women in the blue economy were moderately spread. This was confirmed by moderate CV values that were less than 15% as indicated in Table 5.11.

Table 5.11: Perceptions of participants on freedom from the domination of women in the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q5.2_1 Women participation in the blue economy will enable them to partake in board meetings and board decisions	4.43	0.651	14.68	81
Q5.2_2 Women's participation in the blue economy will attract and retain women's talent	4.51	0.615	13.65	81

Table 14 indicate two factors for perceptions of participants on freedom from the domination of women in the blue economy.

5.4.4.4. Contribution to business income

Perceptions of participants on the contribution of women to business income are shown in Table 15. The mean values of all the attributes in Table 15 were more than 4.0. This means that participants were in agreement that women's participation in the blue economy had various contributions such as attracting investors to provide capital for women's businesses (Q5.3_1), enticing more women to entrepreneurship in the blue economy (Q5.3_2) and increasing diversity in the blue economy's sectors among other contributions (Q5.3_3). Opinions of participants on the contribution of women to business income were moderately spread. This was confirmed by moderate CV values that were less or equal to than 20% of the mean mark as indicated in Table 5.12.

Table 5.12: Perceptions of participants on the contribution of business income for women in the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q5.3_1 To attract investors to provide capital for women businesses	4.20	0.797	18.99	81
Q5.3_2 To entice more women to entrepreneurship in the blue economy	4.43	0.611	13.79	81
Q5.3_3 Women's Participation in the blue economy will increase diversity in the blue economy's sectors.	4.40	0.626	14.25	81
Q5.3_4 To improve the women's workforce.	4.36	0.713	16.35	81
Q5.3_5 Women's participation in the blue economy would compel governments to invest in the blue economy sectors	4.23	0.855	20.20	81
Q5.3_6 Business development initiatives in the blue economy sectors	4.28	0.762	17.79	81
Q5.3_7 To address barriers to social-cultural, financial, education and health factors that impede women empowerment in the sector	4.38	0.717	16.36	81

Table 5.12 shows that five factors represent perceptions of participants on the contribution of business income in the blue economy.

5.4.4.5. Exposure of women to information

The perceptions of participants on exposure of women to information are shown in Table 16. The mean values of all the attributes in Table 16 were more than 4.0. This means that participants were in agreement that women's participation in the blue economy will lead to the provision of more training opportunities and programmes for women (Q5.4_1), women's participation in the blue economy will lead to rural development policies and initiatives to represent women equally (Q5.4_2), women's participation in the blue economy will lead to the availability of more data to outline women's contribution to the sector (Q5.4_3), women's participation in the blue economy will lead to the translation of women's empowerment principles into actionable programmes and projects (Q5.4_4) and women's participation in most sectors of the blue economy can be encouraged by raising awareness and education from primary to high school levels(Q5.4_5). However, the opinions of the participants on exposure of women to information were moderately spread. This was confirmed moderate CV values that were less than 20% except for Q5.4_2 where the CV was 23.0% as shown in Table 5.13.

Table 5.13: Perceptions of participants on exposure of women to information

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q5.4_1 Provision of more training opportunities and programmes for women	4.31	0.718	16.67	81
Q5.4_2 Rural development policy and initiatives to represent women equally	4.09	0.938	22.96	81
Q5.4_3 Availability of more data to outline women's contribution to the sector	4.36	0.763	17.52	81
Q5.4_4 Translation of women's empowerment principles into actionable programmes and projects	4.26	0.721	16.92	81
Q5.4_5 Encouragement of women through raising awareness and education from primary to high school levels.	4.51	0.594	13.19	81

Table 5.13 presented five factors representing perceptions of participants on exposure of women to information.

5.4.4.6. Emergence of new skills

The perceptions of participants on emerging new skills for women in the blue economy are shown in Table 17. The mean values of all the attributes in Table 17 were more than 4.0. This means that participants were in agreement that women's participation in the blue economy can lead to growth potential for job creation, women's participation in the blue economy would encourage leadership skills for women in the blue economy and women's participation in the blue economy can lead to creativity, innovation and technological development of the sector. Opinions of participants on the emerging of new skills for women in the blue economy were moderately spread. This was confirmed by moderate CV values that were less than 20% as shown in Table 17.

Table 5.14: Perceptions of participants on emerging of new skills for women in the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q5.5_1 Can led to growth potential for job creation	4.40	0.683	15.55	81
Q5.5_2 Encourage leadership skills for women in the blue economy	4.36	0.713	16.35	81
Q5.5_3 Can led to creativity, innovation and technological development of the sector	4.27	0.742	17.37	81
Q5.5_4 Design of programmes to enhance efficiency in attaining inclusive sustainable growth for women in the blue economy sectors	4.32	0.668	15.45	81

Table 5.14 illustrates the four factors of the perceptions of emerging new skills for women in the blue economy.

5.4.4.7. Improved quality of life

The perceptions of participants whether the participation of women in the blue economy can result in improved quality of life. The mean scores of all the attributes in Table 18 were more than 4.0. This means that participants were in agreement that women's participation in the blue economy can lead to increased investment, wealth creation, and accumulation of assets, stable businesses for women, lead to an increase in better access to sanitation and medical facilities for women, lead to poverty reduction for women and lead to an increase in earning potential for women. However, the opinions of participants on the above subject matter were moderately spread. This was validated by moderate CV values that were less than 21% as shown.

Table 5.15: Perceptions of participants if the participation of women in the blue economy can result in improved quality of life

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q5.6_1 Women's participation in the Blue Economy can lead to increased investment, wealth creation, and accumulation of assets	4.22	0.880	20.85	81
Q5.6_2 Women's participation in the Blue Economy can lead to building stable businesses for women to ensure their sustainability	4.31	0.769	17.84	81
Q5.6_3 Women's participation in the blue economy would lead to an increase in better access to sanitation and medical facilities for women	4.17	0.919	22.03	81
Q5.6_4 Women's participation in the blue economy would lead to poverty reduction for women	4.28	0.825	19.26	81
Q5.6_5 Women's participation in the blue economy would lead to an increase in earning potential for women	4.43	0.688	15.52	81

Table 5.15 depicts the five factors on the perceptions of participants that agreed that the blue economy can result in the improvement of the quality of life for women.

5.4.5. Introduction of effective policy frameworks to increase women's participation in the blue economy

The perceptions of participants on the introduction of effective policy frameworks to increase women's participation in the blue economy are shown in Table 19. The mean values of all the attributes in Table 19 were more than 4.0. This means that the participants were in agreement that the introduction of an effective policy framework would emphasise knowledge and sharing of information about the industry opportunities for women, the establishment of an efficient policy framework will raise awareness on the lack of funding for women entrepreneurs in the various sectors of the blue economy, the establishment of an appropriate policy framework would expand the opportunities that the blue economy could provide to the government's GDP and

that the development of favourable policy frameworks to recognize and promote the blue economy will be aided by the establishment of effective policy framework in the blue economy. However, the opinions of participants on the introduction of effective policy frameworks to increase women's participation in the blue economy were moderately spread. This was confirmed by moderate CV values that were less than 22% as shown in Table 19.

Table 5.16: Perceptions of participants on introductions of effective new policy frameworks to increase women's participation in the blue economy

Attribute	Mean	Std. Deviation	CV %	Analysis N
Q6.1_1 The introduction of an effective policy framework would emphasise knowledge and sharing information about the industry opportunities for women.	4.12	0.696	16.88	81
Q6.1_2 The establishment of an efficient policy framework will raise awareness on the lack of funding for women entrepreneurs in the various sectors of the blue economy.	4.05	0.820	20.25	81
Q6.1_3 The establishment of an appropriate policy framework would expand the opportunities that the blue economy could provide to the government's GDP.	4.11	0.791	19.23	81
Q6.1_4 The development of favourable policy frameworks to recognize and promote the blue economy will be aided by the establishment of effective policy framework in the blue economy.	4.06	0.780	19.21	81
Q6.1_5 The creation of an effective policy framework would encourage governments and other comparable organisations to campaign for amended policies advocating for women's participation in the blue economy in many countries.	4.00	0.866	21.65	81
Q6.1_6 The introduction of an effective policy framework would widen the blue economy network that can create employment within the industry.	4.22	0.652	15.44	81
Q6.1_7 The development of an effective policy framework would introduce effective policies through combining education and training systems.	4.14	0.787	19.02	81
Q6.1_8 The introduction of effective policy framework design would stimulate potential policy frameworks to increase women's participation in the blue economy thus serving as a documented advocate for the greater involvement of women in the blue economy sectors.	4.14	0.818	19.77	81

Table 5.16 shows eight factors representing the perceptions of participants on how the introductions of effective new policy frameworks can increase women participation in the blue economy.

5.5. Validity and Reliability of the Study: Exploratory Factor Analysis (EFA)

Validity and reliability will be assessed through Exploratory Factor Analysis. Exploratory, rather than confirmatory factor analysis, was used since the statements in each section were developed from the literature and are not derived from previously used instruments. Furthermore, the small sample size necessitates the use of Exploratory Factor Analysis. The sections to be analysed cover economic

opportunities available for women in specific sectors of the blue economy, challenges faced by women in the blue economy sectors, challenges facing women in the fisheries sectors of the blue economy, challenges facing women in the tourism sectors of the blue economy, challenges facing women in the oil and gas sectors of the blue economy, challenges facing women in the transportation sectors of the blue economy and the strategies to overcome the challenges by encouraging women's participation in the blue economy.

5.6. Exploratory factor analysis

Factors in statistics are unobservable and not measurable constructs that are used to represent variables (Mehmedinovic, 2017). Factor analysis reduces items into many underlying dimensions. The Kaiser-Meyer-Olkin (KMO) test was used to measure sampling adequacy for each section analysed. KMO is an index that is a measure of the proportion of variance among variables that might be common variance. The KMO value can range from 0 to 1 (Shrestha, 2021:6). Therefore, sampling is appropriate if the KMO value is between 0.8 and 1.0. KMO values of 0.7 to 0.79 are average. Subsequently, KMO values of 0.6 to 0.69 are considered poor. If the KMO value is less than 0.6, the sampling is insufficient, and corrective measures should be done (Shrestha, 2021:6). If the number is less than 0.5 the factor analysis results will almost be unsuitable for data analysis (Shrestha, 2021:6). Large values for the KMO indicate that factor analysis is justified. Bartlett's test of sphericity is used to test the null hypothesis assertion that the variables are orthogonal, i.e. not correlated. An explorative factor analysis was conducted, using principal axis factoring as the extraction method and Promax as the rotation method to determine the number of underlying dimensions in the data. An exploratory factor analysis (EFA) was conducted on each subsection.

5.5.1 General opportunities available for women in the blue economy

For section 2.1 of the online survey, general opportunities available for women in the blue economy, a KMO value of 0.877 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. A total of three (3) factors were extracted for general opportunities using the eigenvalue greater than 1 criterion. The total variance explained by these factors is 75.3%. The final factor loadings are shown in Table 20. A cut-off of 0.4 for factor loadings was used in this analysis, as suggested

by Mehmedinovic (2017). This means that loadings lower than 0.4 were considered as not contributing enough to that factor and were, therefore, not shown in the matrix.

Table 5.17: Factor loadings for general opportunities

Items	Factor		
	1	2	3
A2.1_1 There are job opportunities in the various sectors of the blue economy for women		0.835	
A2.1_2 There are business opportunities in the various sectors of the blue economy for women		0.922	
A2.1_3 There are opportunities created for women to obtain knowledge about leadership and management roles that effectively promote progress	0.609		
A2.1_4 There are increasing numbers of women employed in the port's sectors of the blue economy such as crane operators and stevedores, train and truck drivers and ship's officers	0.586		
A2.1_5 There is assistance for women such as funding, training programmes, and mentorship in setting up their businesses	1.006		
A2.1_6 There are arrangements to establish a direct business association for women helping them to set fixed selling prices for their businesses to boost women's trade	0.858		
A2.1_7 There are measures in place to raise awareness for women to engage and play an active role in the blue economy.	0.947		
A2.1_8 There are programmes in place that motivate women to promote the sector through educating their family, friends, peers, the media industry and government	0.953		
A2.1_9 There are programmes in place that motivate women to promote the sector through educating their family, friends, peers, the media industry and government.	0.915		
A2.1_10 There should be a proposal in the shipping industry that women should not be restricted to traditional marine jobs but also exposed, to management roles.			0.474
A2.1_11 There are opportunities for women to participate in leadership positions	0.824		
A2.1_12 There are improved institutional and organisational programmes in place for women in the blue economy.	0.930		
A2.1_13 There are opportunities to promote and encourage equal participation for women in the blue economy.	0.889		
A2.1_14 There should be projects to support women participation in the blue economy			0.894
A2.1_15 There should be opportunities for women to attend maritime leadership conferences.			0.919

Furthermore, reliability is defined as the consistency of measurement and is generally measured by Cronbach's alpha coefficient (Leedy & Ormrod, 2016). According to Leedy and Ormrod (2016), it is recommended that Cronbach's alpha values of at least 0.7 are acceptable for previously used instruments while a threshold of 0.6 is considered acceptable for exploratory research, and this means that the instrument can give consistent results in repeated use. In fact, Hair, Black, Babin and Anderson (2010) recommended that alpha coefficient of less than 0.6 is poor, 0.6 to < 0.7 is moderate, 0.7 to < 0.8 is good, 0.8 to < 0.9 is very good and >=0.9 is excellent.

Using Cronbach's alpha, the internal consistency (reliability) for factor 1 above comprising of ten (10) items was found to be 0.970. On the other hand, Cronbach's alpha values that were recorded for factor 2 (A2.1_1 and A2.1_2) and factor 3 (A2.1_10, A2.1_14, A2.1_15) were 0.877 and 0.761, respectively. Since all the Cronbach's alpha values were above 0.7, it is considered that they are good and acceptable (Hair et al., 2010). As such, the internal consistency of general opportunities for women, as represented by the three (3) factors, in the blue economy construct, was deemed satisfactory. Although one of the factors only consists of two (2) items, it is admissible, although not necessarily desirable (Eisinga, Grotenhuis & Pelza, 2013).

The three factors were subsequently labelled as factor 1 (GOf1) and are made up of general support and opportunities for women such as leadership and management roles for women, women to gain employment in port sectors of the blue economy, funding, training and mentorship programmes for women. The factors also include fixing selling prices for women businesses, women playing active roles in the blue economy, motivation programmes for women to promote the blue economy sectors, leadership roles for women, and institutional and organisational programmes for women. Factor 2 (GOf 2) comprises job and business opportunities for women. Factor 3 (GOf 3) includes additional projects and conference support and opportunities.

5.5.2. Economic opportunities available for women in specific sectors of the blue economy

For section 2.2, economic opportunities, a KMO value of 0.859 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. A total of two (2) factors were extracted for section 2.2- economic opportunities available for women in specific sectors of the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by these factors is 82.12%. The factor loadings are shown in Table 5.18.

Table 5.18: Factor loadings for economic opportunities available for women in specific sectors of the blue economy

Items	Factor	
	1	2
Q2.2_1 Economic prospects such as business and employment opportunities exist for women in the coastal tourism sectors of the blue economy such as recreational activities, coastal tourism events and marine wildlife.	0.872	
Q2.2_2 Economic prospects such as business and employment opportunities exist for women in the maritime living resources sectors of the blue economy such as the captured fisheries sector, aquaculture sector, and processing and distribution sectors.	0.827	
Q2.2_3 Economic prospects such as business and employment opportunities exist for women in the maritime non-living sectors such as the oil sector, natural gas sector, maritime aggregates support sector, petroleum and natural gas extraction and other mining activities.	0.871	
Q2.2_4 Economic prospects such as business and employment opportunities exist for women in the port activities' sectors of the blue economy such as warehousing and storage, cargo handling, construction of water projects and service activities incidental to water transportation.	0.771	
Q2.2_5 Economic prospects such as business and employment opportunities exist for women in the shipbuilding and repair sectors of the blue economy such as the building of ship and floating structures sectors, building of leisure and supporting boats' sectors, marine machinery sectors, marine equipment, and repair and maintenance of ships' and boats' sectors.	0.891	
Q2.2_6 Economic prospects such as business and employment opportunities exist for women in the maritime transport sectors of the blue economy such as sea and coastal passenger water transport, sea and coastal freight water transport sector, inland passenger water transport sector, inland freight and water transport sector, renting and leasing of water transport equipment sectors.	0.964	
Q2.2_7 There are economic opportunities for the upliftment of women in the blue economy.		0.899
Q2.2_8 There are economic opportunities for the upliftment of women in the blue economy.		0.947
Q2.2_9 There are opportunities for job creation for women in the blue economy.		1.010

Using Cronbach's alpha, the reliability for factor 1 above comprising six (6) items was found to be 0.951. On the other hand, Cronbach's alpha value that was recorded for factor 2 (A2.2_7 up to A2.2_9) was 0.962. Since both the Cronbach's alpha values were above 0.7, we can conclude the satisfactory presence of internal consistency of the two factors comprising economic opportunities available for women in specific sectors of the blue economy construct. The two factors were subsequently labelled as general economic opportunities (factor1) and specific upliftment, investment opportunities and job creation opportunities for women (factor2).

5.5.3. Challenges faced by women in the blue economy sectors

For section 3.1, a KMO value of 0.872 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. A total of two (2) factors were extracted for section 3.1- challenges faced by women in the blue economy sectors using the eigenvalue greater than 1 criterion. The total variance explained by these factors is 68.13%. The factor loadings are shown in Table 22.

Table 5.19: Factor loadings for challenges faced by women in the blue economy sectors

Items	Factor	
	1 General Challenges	2 Lack of knowledge about job and business opportunities in the blue economy
Q3.1_1 Women lacks knowledge about job opportunities existing in the blue economy sectors		0.917
Q3.1_2 Women lacks knowledge about business opportunities existing in the blue economy sectors		1.064
Q3.1_3 Women in the blue economy sectors are excluded from taking strategic decisions in marine management.	0.740	
Q3.1_4 Few women participating in the blue economy are able to hold high-level positions such as senior management and leadership positions.		
Q3.1_5 Wages in the blue economy for the majority of women are less than those of their male counterparts.	0.828	
Q3.1_6 Low attention is paid to women in the workforce of the blue economy.	0.986	
Q3.1_7 Women working in the blue economy sector have unstable and unsecured jobs.	0.857	
Q3.1_8 There is higher informal work for women than men in the blue economy.	0.666	
Q3.1_9 Women in the business sectors of the blue economy suffer from inadequate access to funding to assist them in establishing their businesses.	0.551	
Q3.1_10 Women in the business sectors of the blue economy do not have adequate access to training facilities to assist them to establish their businesses.	0.719	
Q3.1_11 Women's integration into the blue economy sector is slow due to barriers such as stereotyping against women pursuing jobs in the blue economy industry.	0.789	

Items	Factor	
	1 General Challenges	2 Lack of knowledge about job and business opportunities in the blue economy
Q3.1_12 In the blue economy industry, women's health, and well-being is receiving very little attention.	0.821	

Using Cronbach's alpha, the reliability for factor 1 above comprising nine (9) items was found to be 0.949. On the other hand, Cronbach's alpha value that was recorded for factor 2 (Q3.1_1 and Q3.1_2) was 0.965. Since all the Cronbach's alpha values were above 0.7, which is acceptable as recommended by Hair et al (2010), the internal consistency of the two (2) challenges' factors faced by women in the blue economy sectors construct were deemed satisfactory. The two factors were subsequently labelled as women's lack of knowledge about job opportunities and business opportunities existing in the blue economy sectors (factor 2) and general challenges (factor 1).

5.5.4. Challenges facing women in the fisheries sector of the blue economy

For section 3.2, a KMO value of 0.500 (which is equal to the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. Only one (1) factor was extracted for section 3.2- challenges faced by women in the fisheries sector of the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 84.49%. The factor loadings for the single factor are shown in Table 5.20.

Table 5.20: Factor loadings for challenges faced by women in the fisheries sector of the blue economy

Items	Factor
	1
Q3.2_1 Women's contributions to the fisheries sector of the blue economy are considered insignificant.	0.919
Q3.2_2 Women's roles in the blue economy fisheries sector are neglected.	0.919

Using Cronbach's alpha, the reliability for factor 1 above comprising of two (2) Items was found to be 0.916. Since Cronbach's alpha value was above 0.7 which is acceptable as recommended by Hair et al (2010), the internal consistency of challenges faced by women in the fisheries sector of the blue economy construct was deemed satisfactory.

5.5.5. Challenges facing women in the tourism sector of the blue economy

For section 3.3, a KMO value of 0.865 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. Only one factor was extracted for section 3.3 - challenges faced by women in the tourism sector of the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 82.66%. The factor loadings for the single factor are shown in Table 24.

Table 5.21: Factor loadings for challenges faced by women in the tourism sector of the blue economy

Items	Factor
	1
Q3.3_1 Women usually earn less than their male counterparts in the tourism sector of the blue economy.	0.908
Q3.3_2 Women's contributions to the tourism sector of the blue economy are largely ignored.	0.939
Q3.3_3 Women typically occupy non-leadership positions in the tourism sector of the blue economy.	0.904
Q3.3_4 Women's participation in the tourism sector of the blue economy is limited.	0.886

Using Cronbach's alpha, the reliability for factor 1 above comprising of four items was found to be 0.950. Since Cronbach's alpha value was above 0.7 which is acceptable as recommended by Hair et al (2010), the internal consistency of challenges faced by women in the tourism sector of the blue economy construct was deemed satisfactory.

5.5.6. Challenges facing women in the oil and gas sectors of the blue economy

For section 3.4 of the online survey, a KMO value of 0.706 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. A total of one factor was extracted for section 3.4- challenges faced by women in the oil and gas sector of the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 72.70%. The factor loadings for the single factor are shown in Table 5.22.

Table 5.22: Factor loadings for challenges faced by women in the oil and gas sector of the blue economy

Items	Factor
	1
Q3.4_1 Clerical and administrative positions are traditionally allocated to women in the oil and gas sectors of the blue economy.	0.754
Q3.4_2 Women do not occupy high-ranking positions in the oil and gas sectors of the blue economy.	0.957
Q3.4_3 Women receive limited opportunities to pursue leadership careers in the oil and gas sectors of the blue economy.	0.835

Using Cronbach's alpha, the reliability for factor 1 above comprising of three items was found to be 0.884. Since Cronbach's alpha value was above 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of challenges faced by women in the oil and gas sector of the blue economy construct was deemed satisfactory. It can be observed from Table 24 that the job opportunities in the Oil and Gas sectors such as administrative positions allocated to women, women being unable to occupy high-level ranking positions and women receiving limited opportunities to pursue leadership careers and Transport Challenges such as high-level leadership positions reserved for men and limited opportunities for women to occupy leadership positions have a significant ($p < 0.05$) influence on the policy to increase women's participation in the blue economy. GOf2, Oil Gas Challenges and Transport Challenges had positive regression beta coefficients of 0.437, 0.369 and 0.373 respectively. This was an indication that GOf2, Oil Gas Challenges and Transport Challenges had a favourable influence on effective policies for women's participation in the blue economy. The positive beta is associated with the acknowledgement that challenges do exist and it influences policies for women's participation in the blue economy. However, there was no statistical evidence to suggest that the remaining predictor variables influenced the policy to increase women's participation in the blue economy.

5.5.7. Challenges facing women in the transportation sector of the blue economy

For section 3.5, a KMO value of 0.500 (which is equal to the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. Only one factor was extracted for section 3.5- challenges faced by women in the transportation sector of the blue economy using the eigenvalue greater than 1 criterion. The total variance explained

by this factor is 89.68%. The factor loadings for the single factor are shown in Table 5.23.

Table 5.23: Factor loadings for challenges faced by women in the transportation sector of the blue economy

Items	Factor
	1
Q3.5_1 High-level leadership positions are generally reserved for men in the transportation sector of the blue economy.	0.947
Q3.5_2 Women have limited opportunities to occupy leadership positions in the transportation sector of the blue economy.	0.947

Using Cronbach's alpha, the reliability for factor 1 above comprising of two (2) items was found to be 0.946. Since Cronbach's alpha value was above 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of challenges faced by women in the transportation sector of the blue economy construct was deemed satisfactory.

5.5.8. Strategies to overcome challenges by encouraging women's participation in the blue economy

For section 4.1, a KMO value of 0.852 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. Only one factor was extracted for section 4.1- Strategies to overcome challenges by encouraging women's participation in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 70.38%. The factor loadings are shown in Table 5.24.

Table 5.24: Factor loadings for strategies to overcome challenges by encouraging women's participation in the blue economy

Items	Factor
	1
Q4.1_1 Policy support for encouraging women's participation in the blue economy	0.767
Q4.1_2 Women are taking a leading role in the rapid growth of aquaculture sectors of the blue economy.	0.820
Q4.1_3 Women are taking a leading role in the rapid growth of the fishing sectors of the blue economy	0.853
Q4.1_4 Women own fishing boats in the fishing sectors of the blue economy.	0.828

Items	Factor
	1
Q4.1_5 Women manage fishing boats in the fishing sectors of the blue economy.	0.848
Q4.1_6 Women have the necessary fishing equipment to partake in the fishing industry of the blue economy.	0.900
Q4.1_7 There has been an introduction of new government policies to encourage women participation in the blue economy.	0.851

Using Cronbach's alpha, the reliability for factor 1 above comprising of 7 items was found to be 0.939. Since Cronbach's alpha value was above 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of challenges faced by women in the transportation sector of the blue economy construct was deemed satisfactory.

5.5.9.1. Societal norms and social justice strategies

For section 4.2, a KMO value of 0.832 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. One factor was extracted for section 4.2- Societal norms and social justice strategies in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 82.09%. The factor loadings are shown in Table 5.25.

Table 5.25: Factor loadings for societal norms and social justice strategies in the blue economy

Items	Factor
	1
Q4.2_1 Change of social norms, cultural norms and religious norms will eradicate the seclusion and segregation of women in the blue economy.	0.942
Q4.2_2 Change of social norms, cultural norms and religious norms will eradicate sexism and discrimination against women in the blue economy.	0.959
Q4.2_3 Change of social norms, cultural norms and religious norms will eradicate unequal and unjust treatment in the blue economy that can marginalise women.	0.956
Q4.2_4 There is a need for society to change its view of the blue economy being a male-dominated sector.	0.750

Using Cronbach's alpha, the reliability for factor 1 above comprising of four (4) items was found to be 0.941. Since Cronbach's alpha value was above the threshold of 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of societal norms and social justice strategies in the blue economy construct were

deemed satisfactory. Factor 1 scales demonstrated an excellent level of internal consistency with a high Cronbach's alpha value of 0.941.

5.5.9.2. Autonomy (independent decision-making)

For section 5.1, a KMO value of 0.500 (which is equal to the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. One factor was extracted for section 5.1- Autonomy (Independent decision-making) in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 93.60%. The factor loadings are shown in Table 5.26.

Table 5.26: Factor loadings for Autonomy (Independent Decision-making) in the blue economy

Items	Factor
	1
Q5.1_1 Women's participation in the Blue Economy will give them control over their finances.	0.967
Q5.1_2 Women's participation in the Blue Economy will give them control over their economic decision-making.	0.967

Using Cronbach's alpha, the reliability for factor 1 above comprising two items was found to be 0.967. Since Cronbach's alpha value was above the threshold of 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of independent decision-making in the blue economy construct was deemed satisfactory.

5.5.9.3. Free from domination

For section 5.2, a KMO value of 0.500 (which is equal to the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. One factor was extracted for section 5.2- Free from domination in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 88.28%. The factor loadings are shown in Table 5.27.

Table 5.27: Factor loadings for Free from Domination in the blue economy

Items	Factor
	1
Q5.2_1 Women's participation in leadership positions in the Blue Economy will enable them to partake in board meetings and make board decisions.	0.940
Q5.2_2 Women's participation in the Blue Economy will attract and retain women's talent.	0.940

Using Cronbach's alpha, the reliability for factor 1 above comprising of two (2) items was found to be 0.937. Since Cronbach's alpha value was above the threshold of 0.7 which is acceptable as recommended by Hair et al. (2010), the internal consistency of Free from Domination in the blue economy construct was deemed satisfactory.

5.5.9.4. Contribution to business income

For section 5.3, a KMO value of 0.879 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. One factor was extracted for section 5.3- Contribution to Business Income in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 76.17%. The factor loadings are shown in Table 5.28.

Table 5.28: Factor loadings for contribution to business income in the blue economy

Items	Factor
	1
Q5.3_1 Women's participation in the Blue Economy will attract investors to provide capital for women businesses.	0.913
Q5.3_2 Women's participation in the Blue Economy will entice more women to entrepreneurship in the blue economy	0.903
Q5.3_3 Women's participation in the Blue Economy will increase diversity in the blue economy's sectors.	0.804
Q5.3_4 Women's participation in the Blue Economy would improve the women's workforce.	0.821
Q5.3_5 Women's participation in the Blue Economy would compel governments to invest in the blue economy sectors.	0.819
Q5.3_6 Women's participation in the blue economy would lead to business development initiatives in the blue economy sectors.	0.919
Q5.3_7 Women's participation in the Blue Economy will address barriers to social-cultural, financial, education and health factors that impede women empowerment in the sector.	0.920

Using Cronbach's alpha, the reliability for factor 1 above comprising of 7 items was found to be 0.954. Since Cronbach's alpha value was above the threshold of 0.7,

which is acceptable as recommended by Hair et al. (2010), the internal consistency of Contribution to Business Income in the blue economy construct was deemed satisfactory.

5.5.9.5. Exposure to information

For section 5.4, a KMO value of 0.848 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. One factor was extracted for section 5.4- Exposure to information in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 77.59%. The factor loadings are shown in Table 5.29.

Table 5.29: Factor loadings for exposure to information in the blue economy

Items	Factor
	1
Q5.4_1 Women's participation in the Blue Economy will lead to the provision of more training opportunities and programmes for women.	0.856
Q5.4_2 Women's participation in the Blue Economy will lead to rural development policies and initiatives to represent women equally.	0.883
Q5.4_3 Women's participation in the Blue Economy will lead to the availability of more data to outline women's contribution to the sector.	0.954
Q5.4_4 Women's participation in the Blue Economy will lead to the translation of women's empowerment principles into actionable programmes and projects.	0.862
Q5.4_5 Women's participation in most sectors of the Blue Economy can be encouraged by raising awareness and education from primary to high school levels.	0.845

Using Cronbach's alpha, the reliability for factor 1 above comprising five items was found to be 0.939. Since Cronbach's alpha value was above the threshold of 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of Exposure to Information in the blue economy construct was deemed satisfactory.

5.5.9.6. Emergence of new skills

For section 5.5, a KMO value of 0.834 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. One factor was extracted for section 5.5- Emerging of New Skills in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 76.92%. Factor loadings are shown in Table 5.30.

Table 5.30: Factor loadings for emerging new skills in the blue economy

Items	Factor
	1
Q5.5_1 Women's participation in the blue economy can lead to growth potential for job creation.	0.895
Q5.5_2 Women's participation in the blue economy would encourage leadership skills for women in the blue economy	0.846
Q5.5_3 Women's participation in the Blue Economy can lead to creativity, innovation and technological development of the sector.	0.883
Q5.5_4 Women's participation in the Blue Economy can lead to the design of programmes to enhance efficiency in attaining inclusive sustainable growth for women in the blue economy sectors.	0.884

Using Cronbach's alpha, the reliability for factor 1 above comprising of four (4) items was found to be 0.929. Since Cronbach's alpha value was above the threshold of 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of Emergence of New Skills in the blue economy construct was deemed satisfactory.

5.5.9.7. Improved quality of life

For section 5.6, a KMO value of 0.877 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. A total of one factor was extracted for section 5.6- Improved quality of life in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 81.71%. The factor loadings are shown in Table 5.31.

Table 5.31: Factor loadings for improved quality of life in the blue economy

Component	Factor
	1
Q5.6_1 Women's participation in the Blue Economy can lead to increased investment, wealth creation, and accumulation of assets.	0.938
Q5.6_2 Women's participation in the Blue Economy can lead to building stable businesses for women to ensure their sustainability.	0.910
Q5.6_3 Women's participation in the blue economy would lead to an increase in better access to sanitation and medical facilities for women.	0.862
Q5.6_4 Women's participation in the blue economy would lead to poverty reduction for women.	0.941
Q5.6_5 Women's participation in the blue economy would lead to an increase in earning potential for women.	0.865

Using Cronbach's alpha, the reliability for factor 1 above comprising of five-item components was found to be 0.954. Since Cronbach's alpha value was above the threshold of 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of improved quality of life in the blue economy construct was deemed satisfactory.

5.5.9.8. Benefits of introducing a new policy structure to increase women's involvement in the blue economy

For section 6.1, a KMO value of 0.873 (which is above the 0.5 cut-offs) was obtained. In addition, Bartlett's sphericity was statistically significant, as the corresponding probability was less than 0.05. This indicates a strong relationship among variables and justifies the use of factor analysis for this section. A total of one factor was extracted for section 6.1- Benefits of introducing a new policy structure to increase women's involvement in the blue economy using the eigenvalue greater than 1 criterion. The total variance explained by this factor is 67.49%. The factor loadings are shown in Table 5.32

Table 5.32: Factor loadings for benefits of introducing a new policy structure to increase women's involvement in the blue economy

Items	Factor
	1
Q6.1_1 The introduction of an effective policy framework would emphasise knowledge and sharing information about the industry opportunities for women.	0.832
Q6.1_2 The establishment of an efficient policy framework will raise awareness on the lack of funding for women entrepreneurs in the various sectors of the blue economy.	0.893
Q6.1_3 The establishment of an appropriate policy framework would expand the opportunities that the blue economy could provide to the government's GDP.	0.860
Q6.1_4 The development of favourable policy frameworks to recognize and promote the blue economy will be aided by the establishment of effective policy framework in the blue economy.	0.850
Q6.1_5 The creation of an effective policy framework would encourage governments and other comparable organisations to campaign for amended policies advocating for women's participation in the blue economy in many countries.	0.771
Q6.1_6 The introduction of an effective policy framework would widen the blue economy network that can create employment within the industry.	0.794
Q6.1_7 The development of an effective policy framework would introduce effective policies through combining education and training systems.	0.669
Q6.1_8 The introduction of effective policy framework design would stimulate potential policy frameworks to increase women's participation in the blue economy thus serving as a documented advocate for the greater involvement of women in the blue economy sectors.	0.879

Using Cronbach's alpha, the reliability for factor 1 above comprising eight (8) items was found to be 0.941. Since Cronbach's alpha value was above the threshold of 0.7, which is acceptable as recommended by Hair et al. (2010), the internal consistency of the benefits of introducing a new policy structure to increase women's involvement in the blue economy construct was deemed satisfactory.

5.5.9. Reliability of the study with regard to Cronbach's Alpha

The internal reliability of the scales in this study was measured using Cronbach's alpha values which range between 0 and 1 per section analysed. It is observed that all the constructs that were measured in this study had Cronbach's alpha values that were more than the 0.7 standard thresholds. This was indicative of a very good level of internal consistency as recommended by Leedy and Ormrod (2016).

5.7. Factor Descriptives

The table below shows the descriptive statistics for the newly identified factors.

Table 5.33: Factor descriptives

Factor Description	Mean	Median	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
GOf1 General opportunities	2,8432	2,6000	1,10702	0,452	-0,871	1,10	5,00
GOf2 Job opportunities	3,5309	3,5000	1,02879	-0,041	-1,121	1,50	5,00
GOf3 Business opportunities	4,2798	4,3333	0,66553	-0,585	-0,580	2,67	5,00
EOf1 Economic opportunities	3,5443	3,5000	1,08196	-0,221	-0,938	1,00	5,00
EOf2 Economic opportunities	3,3457	3,3333	1,29898	-0,160	-1,245	1,00	5,00
General Challenges	3,5917	3,6667	1,03381	-0,677	-0,125	1,00	5,00
General_Challengesf2	3,5988	4,0000	1,24353	-0,696	-0,522	1,00	5,00
Fishery Challenges	3,6875	4,0000	1,03494	-0,459	-0,421	1,00	5,00
Tourism Challenges	3,6424	3,7500	1,05748	-0,756	0,399	1,00	5,00
Oil & Gas Challenges	3,9383	4,0000	0,95177	-0,803	0,203	1,00	5,00
Transport_ Challenges	3,9012	4,0000	1,17372	-0,981	0,170	1,00	5,00
Strategy_ PositiveSupport	2,5696	2,4286	0,93500	0,654	0,381	1,00	5,00
Strategy_ SocialNorms	4,1451	4,2500	0,85774	-1,409	2,947	1,00	5,00
Autonomy	4,2469	4,0000	0,74634	-0,670	-0,283	2,00	5,00
Free Domination	4,4691	5,0000	0,61413	-0,710	-0,577	3,00	5,00
ContributionBusiness Income	4,3263	4,4286	0,64691	-0,449	-1,028	3,00	5,00
Exposure to Information	4,3037	4,4000	0,67758	-0,605	-0,668	2,60	5,00
Emerging Skills	4,3364	4,2500	0,63757	-0,463	-0,830	3,00	5,00
Improve Quality life	4,2840	4,4000	0,75423	-0,931	0,366	2,20	5,00
Effective Policy	4,1049	4,0000	0,65475	-0,254	-0,643	2,50	5,00

As per the above table, the highest mean value was observed for 'freedom from domination' (4.46) indicating a high level of agreement with the statements while the lowest mean was observed for transport challenges, with a mean value of 2.57, thereby indicating a low level of agreement with the statement. The skewness and kurtosis values between -2 and +2 indicate that the assumption of the normal

distribution is valid for all newly identified factors, except for Strategy_ Social Norms who had a kurtosis value above 2 (2.95). The value for asymmetry and kurtosis between -2 and + 2 is considered acceptable to prove a normal univariate distribution (George & Mallery, 2010). However, Byrne (2001) and Kline (2011) stress that a kurtosis value ranging between -7 and +7 is acceptable for regression and structural equation modelling.

5.8. Pre-diagnostic Testing

It is always important to perform a preliminary analysis before delving into statistical analysis. Preliminary analysis helps to prepare data for further analysis and it describes core features of the data which informs what statistical procedures are appropriate to use in the study. Before the regression modelling results that aim to address the research objectives are presented, it is essential to test for homoscedasticity and multicollinearity. These assumptions of regression modelling were tested in the subsequent subsections.

5.9. Multi-collinearity Diagnostics

Collinearity, in statistics, refers to a situation where two (2) predictor variables are near perfect linear combinations of each other (Bryman, 2016). Therefore, multicollinearity involves more than two (2) independent variables that are closely associated with each other, and they cannot independently predict the value of the dependent variable. Multicollinearity is not desirable in regression analysis as it creates instability in regression estimates causing high standard errors (Creswell, 2014). Therefore, before the development of regression models, it is always advisable to test for the existence of multicollinearity in a set of multiple regression independent variables. Variance inflation factor (VIF) and tolerance (reciprocal of VIF) are statistics that are used to measure the amount of multicollinearity in a set of multiple regression independent variables. According to Saunders et al. (2016), a VIF of above 4 or tolerance below 0.25 indicates that multicollinearity probably exists. Furthermore, when VIF is higher than 10 and tolerance is lower than 0.1, there is significant multicollinearity that must be corrected.

Multicollinearity diagnostic checks across all the dependent variables were done and the results are indicated in Table 36. It is observed that VIF values were lower than a conservative threshold value of 4 (and tolerance levels were above 0.25) in all the attributes, except for general challenges and challenges facing women in the fisheries sector of the blue economy. However, VIF values for general challenges and

challenges facing women in the fisheries sector of the blue economy were greater than 4 but less than 10 (at 5.282 and 6.485 respectively). This means that there was no significant multicollinearity that has to be corrected.

Table 5.34: Multicollinearity diagnostic checks

Attributes	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
GOf1 General opportunities	0.355	2.813
GOf2 Job opportunities	0.383	2.611
GOf3 Business opportunities	0.770	1.298
EOf2 Economic opportunities	0.469	2.130
General_Challengesf2	0.481	2.078
Oil Gas Challenges	0.276	3.627
Transport Challenges	0.286	3.495
Strategy Societal Norms	0.345	2.896
General_Challenges_1	0.189	5.282
Fishery_Challenges_1	0.309	3.237
Tourism_Challenges_1	0.154	6.485
Strategy_PosSupport_1	0.401	2.494
EOf1_1 Economic Opportunities	0.457	2.188

5.10. Homoscedasticity Tests

Homoscedasticity refers to a condition in which the variance of the residual, or error term, in a regression model, is constant (Antwi and Hamza, 2015). Various tests can be used to test the existence of homoscedasticity. In this study, homoscedasticity was tested using a scatter plot as shown in Figures 13 to 19. The plots of standardised residuals versus standardised predicted values indicated a random pattern. It can therefore be concluded that there is no evidence of heteroskedasticity that needs to be addressed in the regression analysis.

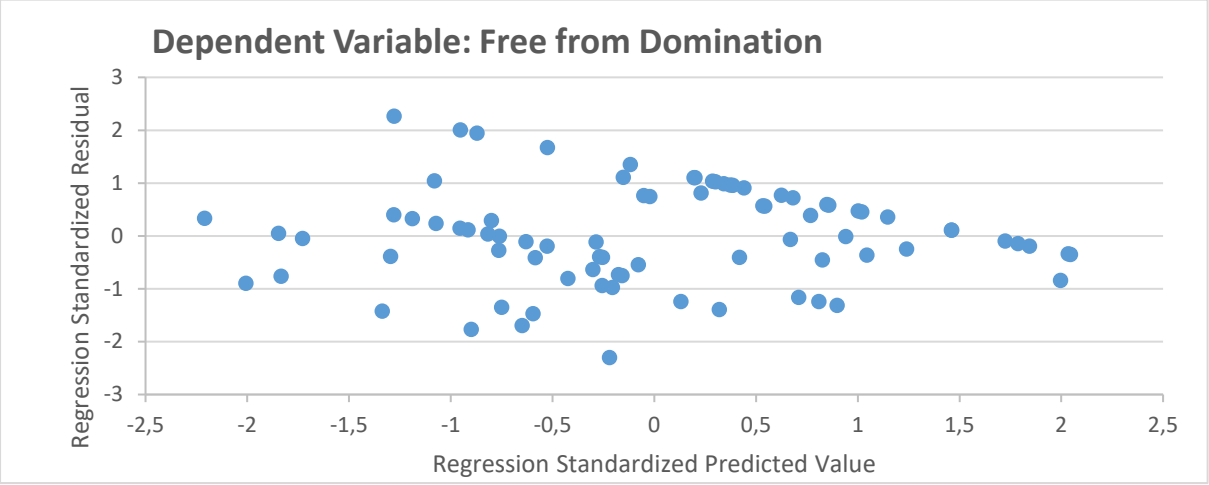


Figure 5.7: Free domination scatterplot of residuals against predicted values

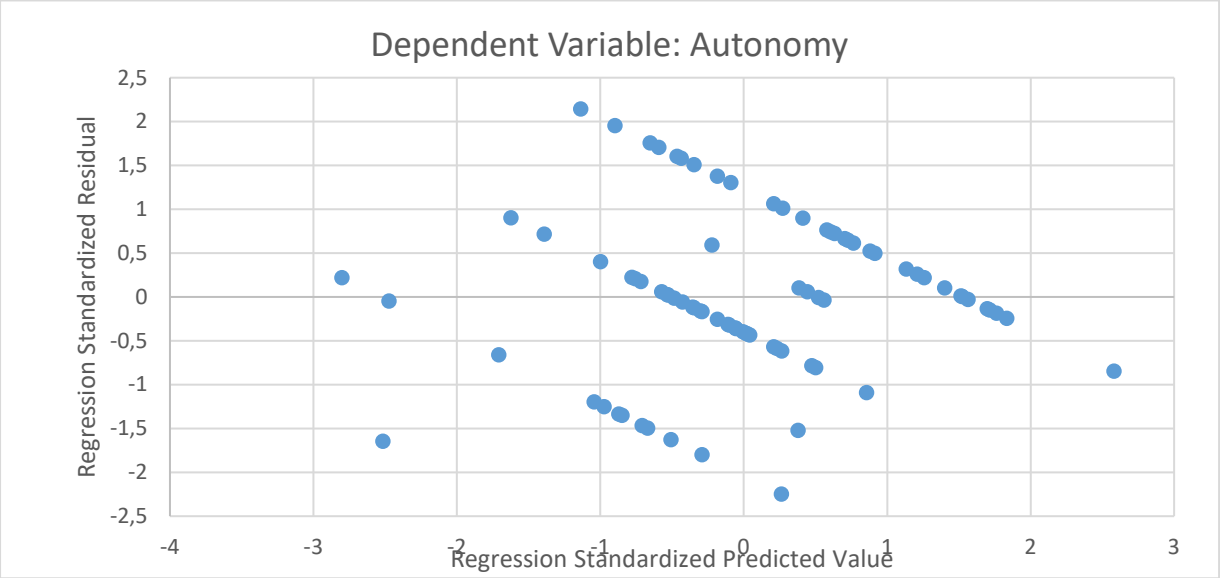


Figure 5.8: Autonomy scatterplot of residuals against predicted values

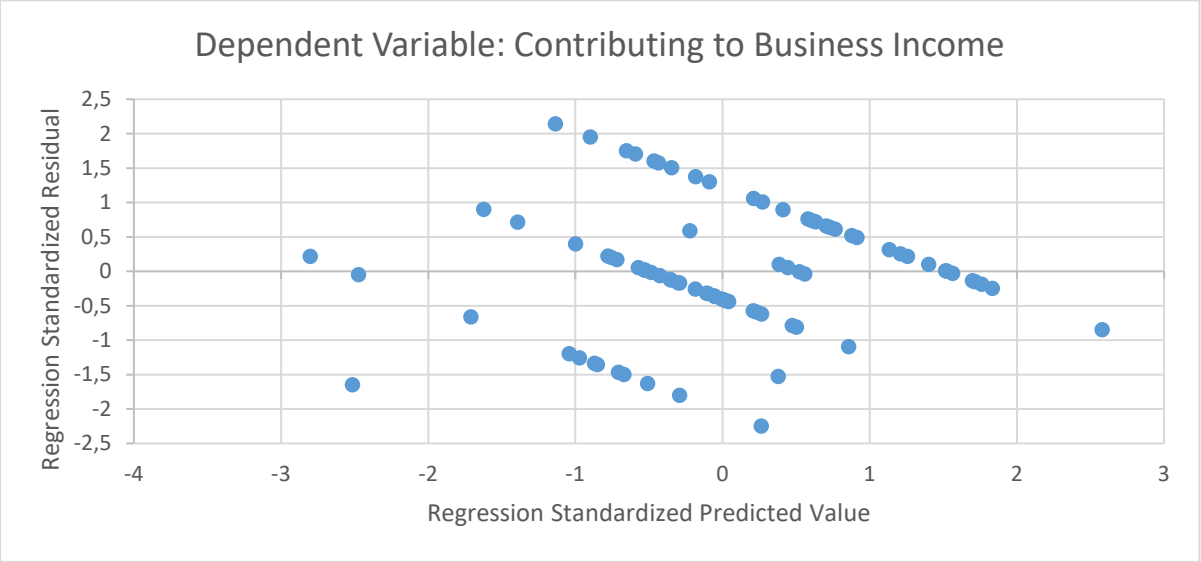


Figure 5.9: Contribution business income scatterplot of residuals against predicted values

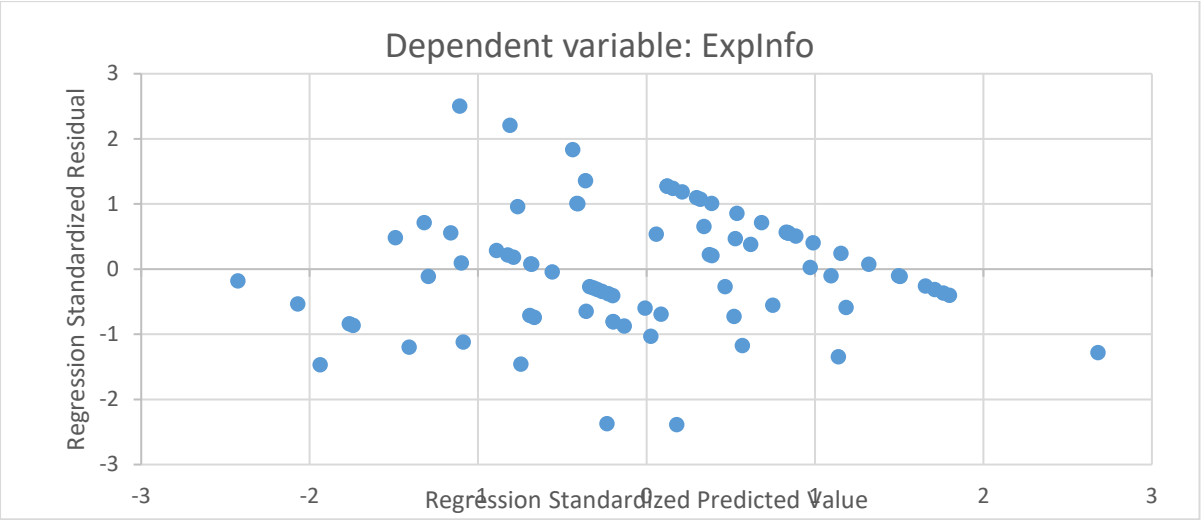


Figure 5.10: Exposure to Information scatterplot of residuals against predicted values

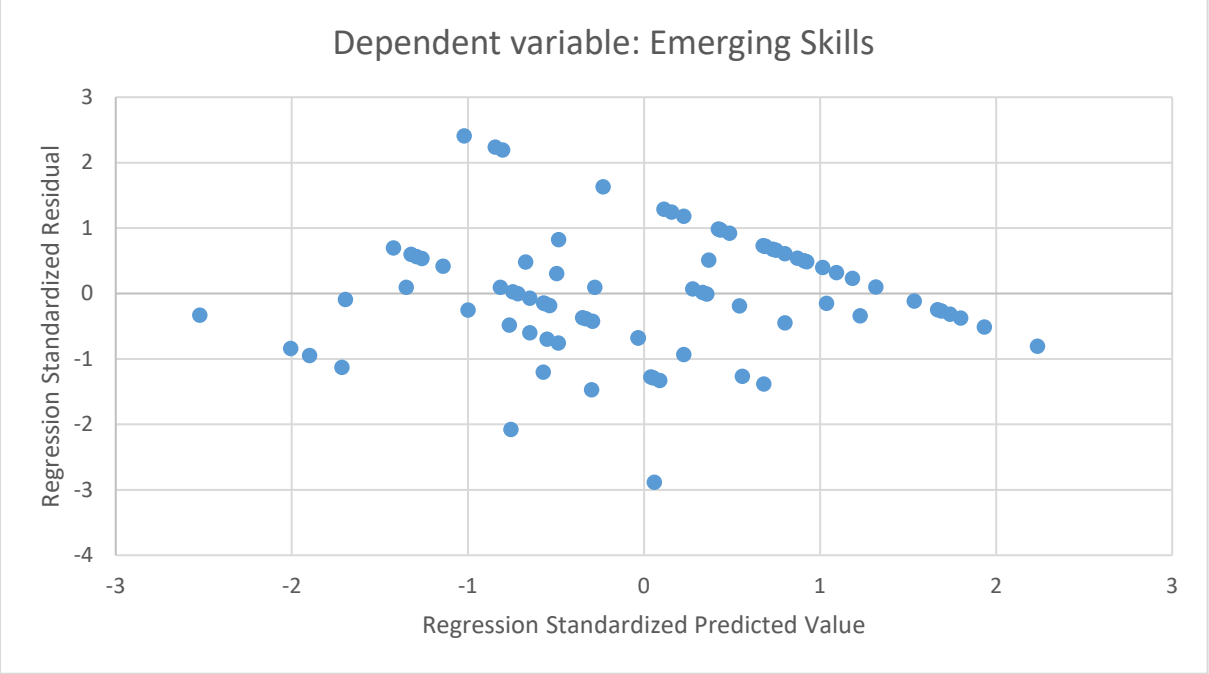


Figure 5.11: Emerging skills scatterplot of residuals against predicted values

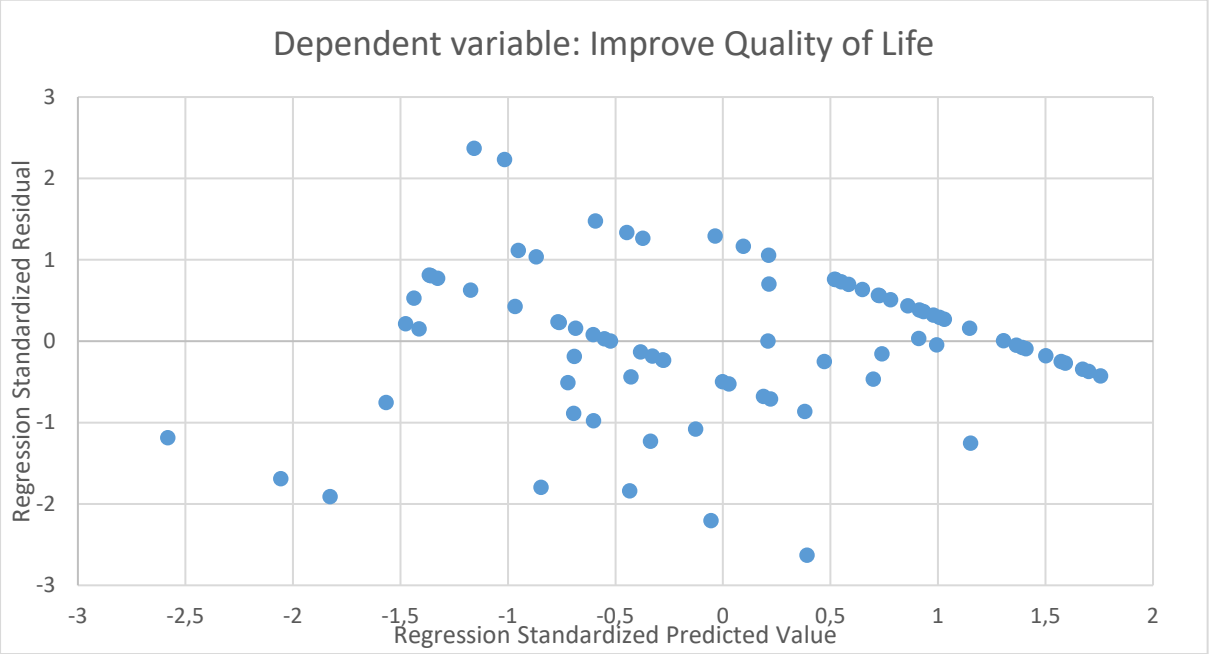


Figure 5.12: Quality Life scatterplot of residuals against predicted values

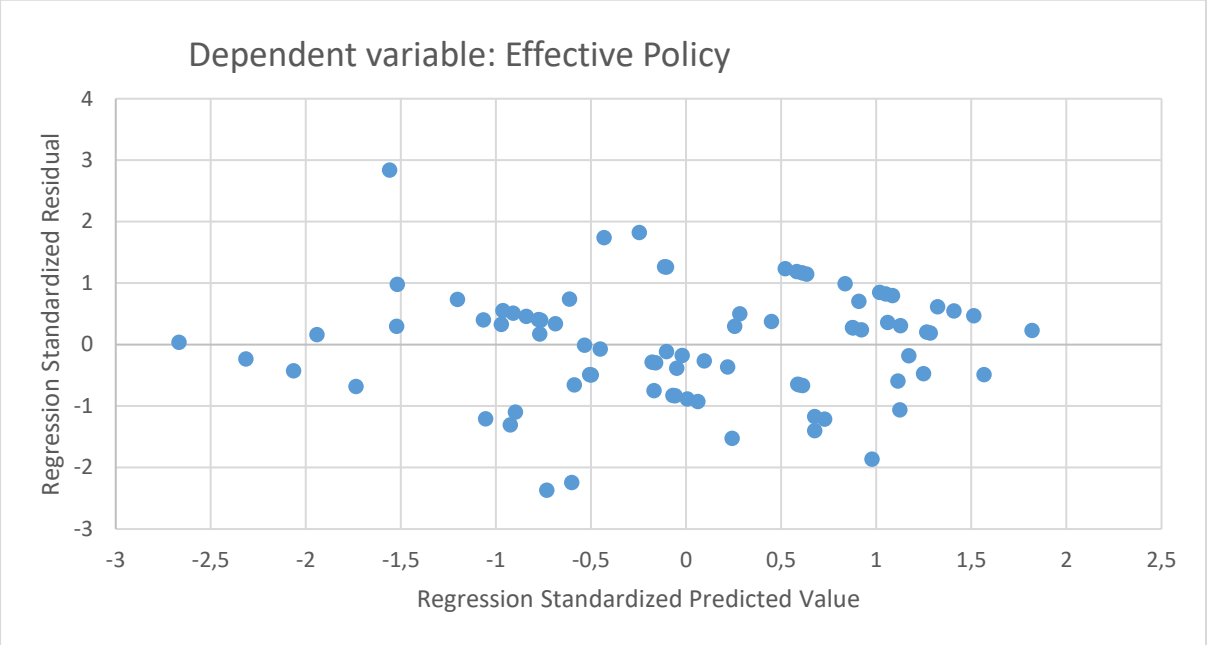


Figure 5.13: Effective policy scatterplot of residuals against predicted values

5.11. Regression Analysis

Multiple linear regression assumes that there is a causal relationship between variables under investigation (Creswell and Clark, 2014). The dependent variables are autonomy, free from domination, contributions to business income, exposure to information, emerging skills, improve quality of life and effective policy. The independent variables are opportunities for women in the blue economy, challenges faced by women in the blue economy and the strategies to overcome challenges faced by women in the blue economy. A multiple regression model was conducted for each

of the seven dependent variables, respectively. Regression Model 1 illustrates the influence of independent variables (shown in Table 5.35) on Autonomy (dependent variable).

Table 5.35: Regression analysis demonstrating the influence of independent variables on autonomy

Model	Independent variables	Standardized Coefficients(Beta)
1	(Constant)	
	GOf1 General Opportunities	0.254
	GOf2 Job Opportunities	0.289*
	GOf3 Business Opportunities	0.251**
	EOf2 Economic Opportunities	-0.221
	General_Challengesf2	0.026
	OilGas_Challenges	-0.096
	Transport_Challenges	0.003
	Strategy_SocNorms	0.300
	General_Challenges_1	0.099
	Fishery_Challenges_1	-0.134
	Tourism_Challenges_1	0.227
	Strategy_PosSupport_1	-0.039
	EOf1_1 Economic Opportunities	-0.155
	Adjusted R^2	0.326
	F (p value)	3.98 (.000)

* denotes p < 0.1, ** denotes p< 0.05, ***denotes p < 0.01

Results of regression Model 1 shown in Table 5.35 indicate that:

- The R2 value was moderate and indicated that 32.6% of the variation in the dependent variable, Autonomy, can be explained by the respective set of variables in the model.
- The F test for regression Model 1 was statistically significant (i.e. the beta coefficients differed significantly from zero – p values < 0.01).
- The standardized beta values and associated significance indicate that the following variables were statistically significant predictors of Autonomy.
- GOf2 Job Opportunities (β=0.289) and Social Justice Strategies and Societal Norms (β =0.251) were statistically significant at a 10% level of significance;
- GOf3 Business Opportunities (β=0.300) was statistically significant at a 5% level of significance.

The above results demonstrate that there are weak positive statistical relationships between Autonomy with GOf2 Job Opportunities and Social Justice Strategies and Societal Norms. This is an indication that, if women have control over finances, decision making and independence, it will yield a positive result in the career opportunities that they pursue. This will also change the way societal perceptions of

women, therefore resulting in positive social justice strategies and societal norms. This is an indication that, if women have control over finances, decision making and independence, it will yield a positive result in the career opportunities that they pursue. This will also change the way societal perceptions on women, therefore resulting in positive social justice strategies and societal norms. There is also, a moderate positive statistical relationship with GOf3 Business Opportunities. However, autonomy relates positively to business opportunities as it will assist women in making independent business decisions in the blue economy.

Regression Model 2 illustrates the influence of independent variables (shown in Table 5.38) on Free from Domination (dependent variable).

Table 5.36 Regression analysis demonstrating the influence of independent variables on free from domination

Model	Independent variables	Standardized Coefficients(Beta)
2	(Constant)	
	GOf1 General Opportunities	0.088
	GOf2 Job Opportunities	0.119
	GOf3 Business Opportunities	0.175
	EOf2 Economic Opportunities	0.115
	General_Challengesf2	0.208
	OilGas_Challenges	-0.075
	Transport_Challenges	0.384*
	Strategy_SocNorms	0.054
	General_Challenges_1	0.249
	Fishery_Challenges_1	0.157
	Tourism_Challenges_1	-0.591**
	Strategy_PosSupport_1	-0.014
	EOf1_1 Economic Opportunities	-0.035
	Adjusted R^2	0.120
	F (p value)	1.84 (0.054)

* denotes p < 0.1, ** denotes p< 0.05, ***denotes p < 0.01

Results of regression Model 2 shown in Table 5.39 indicated that;

- The R2 value was very small and indicated that only 12.0% of the variation in the dependent variable, Free from Domination, can be explained by the respective set of variables in the model.
- The F test for regression Model 2 was not statistically significant (i.e. the beta coefficient did not differ significantly from zero – p-values > 0.05).

However, as the aim of the research is not a prediction, but to determine the extent of the relationship between each of the independent variables, given the other independent variables in the model, with the dependent variable, the standardized beta values and associated significance indicate that the following variables were statistically significant predictors of Free from Domination;

- Transport Challenges (β = 0.384) was statistically significant at a 10% level of significance
- Tourism Challenges_1(β = -0.591) was statistically significant at a 5% level of significance.

The above results demonstrate that there was a moderate positive statistical relationship between Free from Domination with Transport Challenges and a strong negative statistical relationship with Tourism Challenges. This shows that, if women can make board decisions, this will attract and retain women's talents in the transport sectors, therefore, addressing the transport challenges women are faced within the transport sectors. On the contrary, being free from domination can make women less attracted to the tourism sector. If women are mostly in the board room taking strategy decisions, they will show less interest in taking part in the business opportunities that the tourism business sectors have to offer.

Regression Model 3 illustrates the influence of independent variables (shown in Table 5.37) on Contributions to Business Income (dependent variable).

Table 5.37: Regression analysis demonstrating the influence of independent variables on contributions to business income

Model	Independent variables	Standardized Coefficients(Beta)
3	(Constant)	
	GOf1 General Opportunities	0.150
	GOf2 Job Opportunities	0.298*
	GOf3 Business Opportunities	0.119
	EOf2 Economic Opportunities	-0.129
	General _Challengesf2	-0.161
	OilGas_Challenges	0.228
	Transport_Challenges	0.397**
	Strategy_SocNorms	-0.013
	General_Challenges_1	0.350
	Fishery_Challenges_1	-0.160
	Tourism_Challenges_1	-0.191
	Strategy_PosSupport_1	-0.057
	EOf1_1 Economic Opportunities	0.097
	Adjusted R^2	0.313
	F (p value)	3.80(.000)

* denotes p < 0.1, ** denotes p< 0.05, ***denotes p < 0.01

Results of regression Model 3 shown in Table 38 indicated that:

- The R2 value was moderate and indicated that 31.3% of the variation in the dependent variable, Contributions to Business Income, can be explained by the respective set of variables in the model.
- The F test for regression Model 3 was statistically significant (i.e. the beta coefficient differed significantly from zero – p-value < 0.01).

The standardized beta values and associated significance indicate that the following variables were statistically significant predictors of Contribution to Business Income:

- GOf2 Job Opportunities (β = 0.298) was statistically significant at a 10% level of significance
- Transport Challenges (β = 0.397) was statistically significant at a 5% level of significance

The above results demonstrate that there are moderate positive statistical relationships between Contribution to Business Income with Transport Challenges and GOf2 Job Opportunities. The positive relationships predict that, if business income increases, such as provisions for capital for women, increases resources control, the capacity to invest in a small and medium-size programmes for women, this will lead to the empowerment of women in the transport sectors which will address some of the challenges that women are facing in the transport sectors. The empowerment of women could also lead to the creations of job opportunities for women in the various sectors of the blue economy.

Regression Model 4 illustrates the influence of independent variables (shown in Table 5.38) on Exposure to Information (dependent variable).

Table 5.38: Regression analysis demonstrating the influence of independent variables on exposure to information

Model	Independent variables	Standardized Coefficients(Beta)
4	(Constant)	
	GOf1 General Opportunities	0.139
	GOf2 Job Opportunities	0.428***
	GOf3 Business Opportunities	0.150
	EOf2 Economic Opportunities	-0.198
	General_Challengesf2	-0.146
	OilGas_Challenges	0.246
	Transport_Challenges	0.545***
	Strategy_SocNorms	-0.004
	General_Challenges_1	0.285
	Fishery_Challenges_1	-0.142
	Tourism_Challenges_1	-0.292
	Strategy_PosSupport_1	0.010
	EOf1_1 Economic opportunities	-0.008
	Adjusted R^2	0.456
	F (p value)	6.15(.000)

* denotes p < 0.1, ** denotes p< 0.05, ***denotes p < 0.01

Results of regression Model 4 shown in Table 39 indicated that:

(i) The R2 value was moderate and indicated that 45.6% of the variation in the dependent variable, Exposure to Information, can be explained by the respective set of variables in the model.

(ii) The F test for regression Model 4 was statistically significant (i.e. the beta coefficient differed significantly from zero – p-value < 0.01).

(iii) The standardized beta values and associated significance indicate that the following variables were statistically significant predictors of Exposure to Information:

The GOf2 Job Opportunities (β = 0.428) and Transport Challenges (β = 0.545) were statistically significant at a 1% level of significance.

The above results demonstrate that there is a moderate positive statistical relationship between Exposure to Information and GOf2 Job Opportunities and a strong positive statistical relationship between Exposure to Information and Transport Challenges. This shows that there is an indication that, women need to be informed and exposed to the opportunities that the blue economy is offering to partake in it therefore a positive relationship exists between exposure to information and job opportunities. Also, if women are well informed, and exposed to information and knowledge about the opportunities available in the blue economy sectors, it will have a moderate impact on the challenges faced by women in the transportation sectors of the blue economy such as High-level leadership positions are generally reserved for men in the transportation sector of the blue economy. Women have limited opportunities to occupy leadership positions in the transportation sector of the blue economy.

Regression Model 5 illustrates the influence of independent variables (shown in Table 5.39) on Emerging Skills (dependent variable).

Table 5.39: Regression analysis demonstrating the influence of independent variables on emerging skills

Model	Independent variables	Standardized Coefficients(Beta)
5	(Constant)	
	GOf1 General Opportunities	0.161
	GOf2 Job Opportunities	0.355**
	GOf3 Business Opportunities	0.149
	EOf2 Economic Opportunities	-0.203*
	General_Challengesf2	-0.122
	OilGas_Challenges	0.202
	Transport_Challenges	0.520
	Strategy_SocNorms	-0.024
	General _Challenges_1	0.209
	Fishery_Challenges_1	-0.201
	Tourism_Challenges_1	-0.064
	Strategy_PosSupport_1	0.022
	EOf1_1 Economic Opportunities	0.030
	Adjusted R^2	0.449

Model	Independent variables	Standardized Coefficients(Beta)
	F (p value)	6.01(.000)

* denotes p < 0.1, ** denotes p< 0.05, ***denotes p < 0.01

Results of regression Model 4 shown in Table 40 indicated that:

- The R2 value was moderate and indicated that 44.9% of the variation in the dependent variable, Emerging Skills, can be explained by the respective set of variables in the model.
- The F test for regression Model 5 was statistically significant (i.e. the beta coefficient differed significantly from zero – p-value < 0.01).

The standardized beta values and associated significance indicate that the following variables were statistically significant predictors of Emerging Skills:

- GOf2 Job opportunities (β =0.355) were statistically significant at a 5% level of significance
- EOf2 Economic Opportunities ((β = -0.203) was statistically significant at a 10% level of significance
- Transport Challenges (β = 0.520) was statistically significant at a 1% level of significance.

The above results demonstrate that there are a moderate positive statistical relationship between Emerging Skills and GOf2 Job Opportunities, a strong positive statistical relationship between Emerging Skills and Transport Challenges and a weak negative statistical relationship between Emerging Skills and Economic Opportunities. The moderate positive statistical relationship between emerging skills and GOf2 job opportunities observed implies that emerging new skills for women such as creativity and innovation, leadership and new technologies such as interfaces and artificial intelligence, will lead to the creation of new job opportunities for women in the blue economy sectors. Emerging new skills have a strong influence on addressing transport challenges faced by women in the blue economy through various job creations in the transport sectors.

Regression Model 6 illustrates the influence of independent variables (shown in Table 40) on Improve Quality of Life (dependent variable).

Table 5.40: Regression analysis demonstrating the influence of independent variables on Improve Quality of Life

Model	Independent variables	Standardized Coefficients(Beta)
6	(Constant)	
	GOf1 General Opportunities	0.102
	GOf2 Job Opportunities	0.371***
	GOf3 Business Opportunities	0.156
	EOf2 Economic Opportunities	-0.275
	General_Challengesf2	-0.114
	OilGas_Challenges	0.166
	Transport_Challenges	0.377**
	Strategy_SocNorms	-0.014
	General_Challenges_1	0.243
	Fishery_Challenges_1	-0.207
	Tourism_Challenges_1	0.008
	Strategy_Positive Support_1	-0.061
	EOf1_1 Economic Opportunities	0.092
	Adjusted R^2	0.431
	F (p value)	5.66(.000)

* denotes p < 0.1, ** denotes p< 0.05, ***denotes p < 0.01

Results of regression Model 6 shown in Table 41 indicated that:

- The R2 value was moderate and indicated that 43.1% of the variation in the dependent variable, Improve Quality of Life, can be explained by the respective set of variables in the model.
- The F test for regression Model 6 was statistically significant (i.e. the beta coefficient differed significantly from zero – p-value < 0.01).

The standardized beta values and associated significance indicate that the following variables were statistically significant predictors of Quality of Life:

- GOf2 Job Opportunities (β =0.371) was statistically significant at a 1% level of significance
- Transport Challenges (β =0.377) were statistically significant at a 5% level of significance

The above results demonstrate that there are moderate positive statistical relationships between Improve Quality of Life with Transport challenges and GOf2 Job Opportunities. Therefore, improved quality of life for women will encourage more women to occupy high-level leadership positions in the transportation sector. This encourages a moderate positive statistical relationship between improved quality of life and the transportation sectors of the blue economy.

Regression Model 7 illustrates the influence of independent variables (shown in Table 5.41) on Effective Policy (dependent variable).

Table 5.41: Regression analysis demonstrating the influence of independent variables on effective policy

Model	Independent variables	Standardized Coefficients(Beta)
7	(Constant)	
	GOf1 General Opportunities	-0.011
	GOf2 Job Opportunities	0.437***
	GOf3 Business Opportunities	0.042
	EOf2 Economic Opportunities	-0.186
	General _Challengesf2	-0.085
	OilGas_Challenges	0.369**
	Transport_Challenges	0.373
	Strategy_SocNorms	-0.059
	General_Challenges_1	0.338
	Fishery_Challenges_1	-0.314
	Tourism_Challenges_1	-0.217
	Strategy_PosSupport_1	-0.068
	EOf1_1 Economic Opportunities	-0.043
	Adjusted R^2	0.303
	F (p value)	3.67(.000)

* denotes p < 0.1, ** denotes p< 0.05, ***denotes p < 0.01

Results of regression Model 7 shown in Table 42 indicated that;

- The R2 value was moderate and indicated that 30.3% of the variation in the dependent variable, Effective Policy, can be explained by the respective set of variables in the model.
- The F test for regression Model 7 was statistically significant (i.e. the beta coefficient differed significantly from zero – p-value < 0.01).

The standardized beta values and associated significance indicate that the following variables were statistically significant predictors of Effective Policy:

- GOf2 Job Opportunities (β =0.437) was statistically significant at a 1% level of significance;
- Oil Gas Challenges (β =0.369) were statistically significant at a 5% level of significance.

The above results demonstrate that there are moderate positive statistical relationships between Effective Policy with Oil and Gas Challenges and GOf2 Job Opportunities. This review that, if effective policies are in place for women to participate in the blue economy, it will address some of the challenges faced by women in the Oil and Gas sectors such as clerical and administrative positions being traditionally allocated to women, women not occupying high-ranking positions, Women receive having limited opportunities to pursue leadership careers in the oil and gas sector. An effective policy could also lead to more job opportunities for women in the blue economy sectors as policy could influence a moderate change for women in the sectors.

5.11.1 Regression model

The regression model tests the statistical hypotheses that a relationship exists between independent variables such as opportunities for women, challenges faced by women and strategies to overcome challenges faced by women in the blue economy as well as the components of the dependent variables such as autonomy, free from domination, contributions to business income, exposure to information, emerging skills, improve quality of life and effective policy. Therefore, we have failed to reject the hypotheses.

It can be observed in Table 43 that the job opportunities in the oil gas sectors such as administrative positions allocated to women, women being unable to occupy high-level ranking positions and women receiving limited opportunities to pursue leadership careers and Transport Challenges such as high-level leadership positions reserved for men and limited opportunities for women to occupy leadership positions have a significant ($p < 0.05$) influence on the policy to increase women's participation in the blue economy. GOf2, Oil Gas Challenges and Transport Challenges had positive regression beta coefficients of 0.437, 0.369 and 0.373 respectively. This was an indication that GOf2, Oil Gas Challenges and Transport Challenges had a favourable influence on effective policies for women's participation in the blue economy. The positive beta is associated with the acknowledgement that challenges do exist and it influences policies for women's participation in the blue economy. However, there was no statistical evidence to suggest that the remaining predictor variables influenced the policy to increase women's participation in the blue economy.

Table 5.42: Measuring influence of predictors on policy effectiveness to promote women participation in blue economy using multiple linear regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.482	0.580		4.280	0.000
	GOf1 General Opportunities	-0.006	0.093	-0.011	-0.069	0.945
	GOf2 Job Opportunities	0.278	0.096	0.437***	2.898	0.005
	GOf3 Business Opportunities	0.041	0.105	0.042	0.395	0.694
	EOf2 Economic Opportunities	-0.094	0.069	-0.186	-1.368	0.176
	General_Challengesf2	-0.045	0.071	-0.085	-0.634	0.528
	Oil Gas Challenges	0.254	0.122	0.369**	2.077	0.042
	Transport Challenges	0.208	0.097	0.373**	2.139	0.036
	Strategy_SocialNorms	-0.045	0.121	-0.059	-0.373	0.710
	General_Challenges_1	0.214	0.136	0.338	1.575	0.120
	Fishery_Challenges_1	-0.198	0.106	-0.314	-1.867	0.066
	Tourism_Challenges_1	-0.135	0.147	-0.217	-0.914	0.364
	Strategy_PosSupport_1	-0.048	0.103	-0.068	-0.461	0.646

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	EOf1_1 economic opportunities	-0.026	0.084	-0.043	-0.311	0.757

* denotes p < 0.1, ** denotes p< 0.05, ***denotes p < 0.01

5.11.2 Research hypotheses

The hypotheses statement as indicated in the previous chapter were:

Hypothesis statement 1
H0: There is NO significant relationship between Autonomy and Job Opportunities.
H1: There is a significant relationship between Autonomy and Job Opportunities.

Hypothesis statement 2
H0: There is NO significant association between Autonomy and Business Opportunities.
H1: There is significant association between Autonomy and Business Opportunities.

Hypothesis statement 3
H0: There is NO significant association between Autonomy and Social Justice Strategies and Societal Norms.
H1: There is a significant association between Autonomy and Social Justice Strategies and Societal Norms.

Hypothesis statement 4
H0: There is NO significant relationship between Free from Domination and Transport Challenges.
H1: There is a significant relationship between Free from Domination and Transport Challenges.

Hypothesis statement 5
H0: There is NO significant relationship between Free from Domination and Tourism Challenges.
H1: There is a significant relationship between Free from Domination and Tourism Challenges.

Hypothesis statement 6
H0: There is NO significant association between Contribution to Business Income and Transport Challenges.
H1: There is a significant association between Contribution to Business Income and Transport Challenges.

Hypothesis statement 7

H0: There is NO significant relationship between Contribution to Business Income and Job Opportunities.

H1: There is a significant relationship between Contribution to Business Income and Job Opportunities.

Hypothesis statement 8

H0: There is NO significant relationship between Exposure to Information and Job Opportunities.

H1: There is a significant relationship between Exposure to Information and Job Opportunities.

Hypothesis statement 9

H0: There is NO significant association between Exposure to Information and Transport Challenges.

H1: There is a significant association between Exposure to Information and Transport Challenges.

Hypothesis statement 10

H0: There is NO significant relationship between Emerging Skills and Economic Opportunities.

H1: There is a significant relationship between Emerging Skills and Economic Opportunities.

Hypothesis statement 11

H0: There is NO significant relationship between Emerging Skills and Job Opportunities.

H1: There is a significant relationship between Emerging Skills and Job Opportunities.

Hypothesis statement 12

H0: There is NO significant relationship between Emerging Skills and Transport Challenges.

H1: There is a significant relationship between Emerging Skills and Transport Challenges.

Hypothesis statement 13

H0: There is NO significant relationship between Improve Quality of Life and Transport Challenges.

H1: There is a significant relationship between Improve Quality of Life and Transport Challenges.

Hypothesis statement 14
H0: There is NO significant relationship between Improve Quality of Life and Job Opportunities.
H1: There is a significant relationship between Improve Quality of Life and Job Opportunities.

Hypothesis statement 15
H0: There is NO significant relationship between Effective Policy and Oil Gas Challenges.
H1: There is a significant relationship between Effective Policy and Oil Gas Challenges.

Hypothesis statement 16
H0: There is NO significant relationship between Effective Policy and Job Opportunities.
H1: There is a significant relationship between Effective Policy and Job Opportunities.

5.11.3 Hypotheses testing

A null hypotheses test was conducted for the study as shown in Table 45 below. The following conclusions were drawn from the hypothesis test below. The table indicates that there is a weak and positive statistical relationship between Autonomy and GOf2 Job Opportunities therefore the Null hypothesis is rejected. There is also a moderate and positive statistical relationship between Autonomy and GOf3 Business Opportunities therefore the null hypothesis is rejected. Furthermore, there is a weak and positive statistical relationship between Autonomy and Social Justice Strategies and Societal Norms therefore null hypothesis is rejected.

There is a positive statistical relationship between Free from Domination and Transport Challenges while there is a strong and negative statistical relationship between Free from Domination and Transport Challenges leading to the null hypothesis being rejected. There is a moderate and positive statistical relationship between Contribution to Business Income and Transport Challenges leading to the null hypothesis being rejected. Similarly, there is a moderate and positive statistical relationship between Contribution to Business Income and GOf2 Job Opportunities causing the null hypothesis to be rejected.

There is a moderate and positive statistical relationship between Exposure to Information and GOf2 Job Opportunities. Significantly, there is a moderate and positive statistical relationship between Exposure to Information and Transport Challenges. Similarly, there is a moderate and positive statistical relationship between Exposure to Information and Transport Challenges making the three hypotheses to be rejected. The hypothesis test also shows a negative and weak statistical relationship between Emerging Skills and EOf2 Economic Opportunities because of this, the null hypothesis is rejected. There is also a moderate and positive statistical relationship between Emerging Skills and GOf2 Job Opportunities. For these reasons the hypothesis is rejected. There is a strong and positive statistical relationship between Emerging Skills and Transport Challenges and so, the null hypothesis is rejected.

There is a moderate and positive statistical relationship between Improve Quality Life and GOf2 Job Opportunities while there is a moderate and positive statistical relationship between Effective Policy and Oil Gas Challenges therefore the null hypothesis is rejected. There is a moderate and positive statistical relationship between Effective Policy and GOf2 Job Opportunities as a result, the hypothesis is rejected.

Table 5.43: Indicating hypothesis test, results, statistical significance and conclusion

Null Hypothesis	**Results**	**Statistical significance**	**Conclusion**
There is a NO significant relationship between Autonomy and GOf2 Job Opportunities	Null hypothesis Rejected	* Statistically significant	There is a weak, positive statistical relationship between Autonomy and GOf2 Job Opportunities
There is a NO significant relationship between Autonomy and GOf3 Business Opportunities	Null hypothesis Rejected	**Statistically significant	There is a positive but statistical relationship between Autonomy and GOf3 Business Opportunities
There is a NO significant association between Autonomy and Social Justice Strategies and Societal Norms	Null hypothesis Rejected	* Statistically significant	There is a positive but statistically weak relationship between Autonomy and Social Justice Strategies and Societal Norms
There is a NO significant relationship between Free from Domination and Transport Challenges	Null hypothesis Rejected	* Statistically significant	There is a positive but statistical relationship between Free from Domination and Transport Challenges
There is a NO significant relationship between Free from Domination and Tourism Challenges	Null hypothesis Rejected	** Statistically significant	There is a statistically significant, negative relationship between Free from Domination and Transport Challenges
There is a NO significant relationship between Contribution to Business Income and Transport Challenges	Null hypothesis Rejected	** Statistically significant	There is a positive but statistical relationship between Contribution to Business Income and Transport Challenges
There is a NO significant relationship between Contribution to Business Income and GOf2 Job Opportunities	Null hypothesis Rejected	* Statistically significant	There is a positive but statistical relationship between Contribution to Business Income and GOf2 Job Opportunities
There is a NO significant relationship between Exposure to Information and GOf2 Job Opportunities	Null hypothesis Rejected	*** Statistically significant	There is a positive but statistical relationship between Exposure to Information and GOf2 Job Opportunities
There is a NO significant relationship between Exposure to	Null hypothesis Rejected	*** Statistically significant	There is a positive but statistical relationship between Exposure to Information and Transport Challenges

Null Hypothesis	**Results**	**Statistical significance**	**Conclusion**
Information and Transport Challenges			
There is a NO significant relationship between Emerging Skills and EOf2 Economic Opportunities	Null hypothesis Rejected	* Statistically significant	There is a statistically significant and a negative relationship between Emerging Skills and Economic Opportunities
There is a NO significant relationship between Emerging Skills and GOf2 Job Opportunities	Null hypothesis Rejected	** Statistically significant	There is a positive and statistical relationship between Emerging Skills and Job Opportunities
There is a NO significant relationship between Emerging Skills and Transport Challenges	Null hypothesis Rejected	*** Statistically significant	There is a positive but statistically strong relationship between Emerging Skills and Transport Challenges
There is a NO significant relationship between Improve Quality Life and Transport Challenges	Null hypothesis Rejected	** Statistically significant	There is a positive but statistical relationship between Improve Quality of Life and Transport Challenges
There is a NO significant relationship between Improve Quality Life and GOf2 Job Opportunities.	Null hypothesis Rejected	*** Statistically significant	There is a positive and statistical relationship between Improve Quality Life and Job Opportunities.
There is a NO significant relationship between Effective Policy and Oil Gas Challenges	Null hypothesis Rejected	** Statistically significant	There is a positive and a statistical relationship between Effective Policy and Oil Gas Challenges
There is a NO significant relationship between Effective Policy and GOf2 Job Opportunities	Null hypothesis Rejected	*** Statistically significant	There is a positive and statistical relationship between Effective Policy and Job Opportunities.

NB: * = Weak relationship between two objects; ** = Significant statistical relationship; *** Highly significant and statistically strong relationship

Table 5.42: Regression model adequacy was validated using Analysis of Variance (ANOVA) as well as using R2.

It is observed in Table 5.41 that the p-value of the regression model is less than the standard 5% level of significance ($p < 0.05$). This implied that all the beta coefficients are statistically significantly different from zero as the null hypothesis for the ANOVA test is that all beta coefficients are zero.

Table 5.44: Regression model validation using ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.269	13	1.098	3.672	0.000
	Residual	20.027	67	0.299		
	Total	34.296	80			

Regression model adequacy was also validated using adjusted R2. An adjusted R2 value of 0.303 was achieved. This is fairly moderate, indicating that about 30.3 % of the variance in the effective policy is explained by the predictor variables.

5.12. Chapter Conclusion

This chapter presented the quantitative data analysis on the participation of women in the blue economy and their sustainable economic development. The results of the study indicated that there are general opportunities as well as economic opportunities available for women in the blue economy. However, the results showed that women's contributions to the fisheries sector of the blue economy are considered insignificant and their roles are neglected. It was also established that women receive limited opportunities to pursue leadership careers in the oil and gas and transport sectors.

The results of the study indicated that a change in social norms, cultural norms and religious norms will eradicate the seclusion and segregation of women in the blue economy, give them autonomy and enable them to partake in board meetings and make board decisions. The results showed that women's participation in the blue economy had various contributions such as attracting investors to provide capital for women's businesses, enticing more women to entrepreneurship in the blue economy and increasing diversity in the blue economy's sectors, among other contributions. It was also shown that women's participation in the blue economy will lead to the

provision of more training opportunities and programmes for women and will lead to rural development policies.

Other benefits of women's participation in the blue economy include increased investment, wealth creation, and accumulation of assets, stable businesses for women, an increase in better access to sanitation and medical facilities for women, poverty reduction for women and an increase in earning potential for women. The results show that introducing an effective policy framework would emphasise knowledge and sharing information about the industry opportunities for women. The establishment of an efficient policy framework will raise awareness of the lack of funding for women entrepreneurs in the various sectors of the blue economy. The establishment of an appropriate policy framework would also expand the opportunities that the blue economy could provide to the government's GDP.

Multiple linear regression revealed that Job opportunities, Oil Gas Challenges and Transport Challenges have a significant ($p < 0.05$) influence on the policy effectiveness in increasing women's participation in the blue economy. There was no statistical evidence to suggest that the remaining predictor variables influenced the policy to increase women's participation in the blue economy. The results from the regression models illustrating the influences of independent variables on autonomy as a dependent variable show that there is positive but a weak statistical relationship between Autonomy with Job Opportunities and Social Justice Strategies and Societal Norms and a positive statistical relationship with GOf3 Business Opportunities.

The results from the regression models illustrating the influence of independent variables on Free from Domination (dependent variable) demonstrate that there was a positive statistical relationship between Free from Domination with Transport Challenges and a negative but a strong statistical relationship with Tourism Challenges. Also, there are positive statistical relationships between Contribution to Business Income with Transport Challenges and Job Opportunities. The above results have shown that there is a positive but statistical relationship between Exposure to Information and Job Opportunities and a positive but a strong statistical relationship between Exposure to Information and Transport Challenges.

There is however a positive but statistical relationship between Emerging Skills and Job Opportunities, a positive but strong statistical relationship between Emerging Skills

and Transport Challenges and a weak but negative statistically relationship between Emerging Skills and Economic Opportunities when the regression analysis demonstrates the influence of independent variables on Emerging Skills was conducted. The above results demonstrate that there is positive but a statistical relationship between Improve Quality with Transport challenges and Job Opportunities. The above results illustrated that there is positive but a statistical relationship between Effective Policy with Oil Gas Challenges and Job Opportunities.

The next chapter will review the discussions, recommendations, and conclusions of the research.

CHAPTER 6: DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter is a synthesis of the research conducted as well as discussion of findings, conclusions and recommendations. The chapter commences with the proposed conceptual framework for the participation of women in the blue economy and discussion of the key findings, conclusions and recommendations.

To recap, this study sought to meet the following research objectives:

1) To assess the opportunities that are available for women to be key participants in the blue economy;
2) To analyse the challenges faced by women in the blue economy, and propose the strategies to overcome these challenges; in the blue economy;
3) To determine how women's engagement in the blue economy can contribute to their sustainable economic empowerment and growth;
4) To conceptualise a framework which policy-makers can adopt for the sustainable economic empowerment and growth of women in the blue economy.

6.2. Conceptual Framework on Women's Participation in the Blue Economy

Figure 6.1 below presents the final conceptual framework's outcome of participation of women in the blue economy and their sustainable economic development. The framework is based on the present study's findings. The framework indicates how more women will have the courage to participate in the blue economy sectors, which will lead to their sustainable economic development. The challenges can also be overcome with equal opportunities presented to women to become equal participants in the blue economy. What counts, even more, is the provision of equal prospects and options for women, allowing them to rise to positions of leadership which will encourage other women to get their fair share of financial advantages, as well as a sense of empowerment (Reahanah et al., 2020:5). Reahanah et al. (2020:5) conclude that, when women are provided with equal opportunities in the blue economy, more women will participate as a consequence, which will lead to their sustainable economic development.

6.2.1. Explanation of the outcomes of the conceptual framework outcome

The conceptual framework outcome in Figure 20 below represents two variables which are independent variables, including women's participation in the blue economy, challenges faced by women in the blue economy and the strategies to overcome these challenges faced by women in the blue economy. The framework signifies opportunities for women in the blue economy. The section represents general opportunities, job opportunities, business opportunities and economic opportunities available for women in the blue economy. The framework shows challenges faced by women in the blue economy. These challenges include general challenges and the sectorial challenges faced by women in the blue economy.

Additionally, the framework indicates strategies to overcome challenges faced by women in the blue economy. These strategies include general strategies, as well as societal and social justice strategies. The dependent variables of the conceptual frameworks are represented by the introduction of effective policy which could lead to the sustainable economic development of women. The conceptual framework outcome relates to the economic empowerment of women in the blue economy, which is shown in the conceptual framework outcome as autonomy, free domination, effective policy, contribution to business income, exposure to information, emerging new skills and quality life for women in the blue economy. Also, the framework outcome identifies the sustainable economic growth and innovation for women in the blue economy.

These include improved business opportunities for women, increased investment opportunities for women and improved quality of life for women. The conceptual framework outcome confirms the general opportunities GOf1 which are the job opportunities GOf2, the business opportunities GOf3 and the economic opportunities. The framework outcome also outlines the general challenges1 faced by women in the blue economy such a fisheries sector challenges, tourism sector challenges, oil and gas sector challenges and the transport sector challenges facing women in blue economy. It also shows that general strategy could lead to positive support for women in the blue economy as well as societal and social justice strategies.

The framework outcome selects autonomy, free domination, effective policy, the contribution of business income, exposure to information, emerging skills and

improved quality of life as dependent variables that could lead to sustainable economic development and economic growth for women in the blue economy.

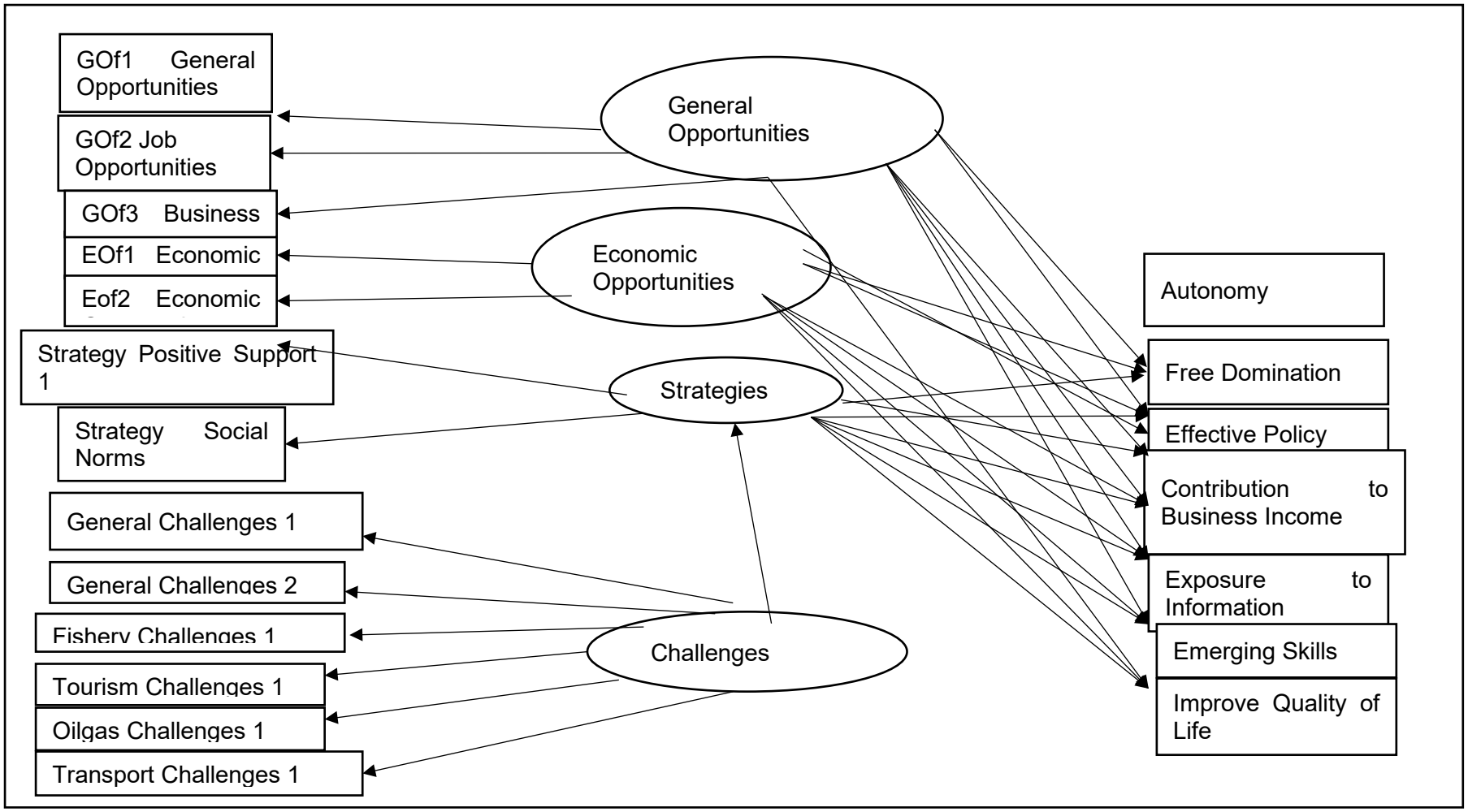


Figure 6.1: The conceptual framework outcome of the present study

Source: Author's own conceptualisation
NB: GOf1 =General opportunities; GOf2 = Job opportunities; GOf3=Business opportunities; EOf1=Economic opportunities; EOf2= Economic opportunities

6.3. Critical underlying Factors driving Participation of Women in Blue Economy

Using factor analysis, the findings revealed that three critical underlying factors are driving the participation of women in the blue economy. These factors include: Factor 1 which is general opportunities, i.e., job and business opportunities, as well as economic opportunities for women. Kontakos (2019:172) pointed out that business opportunities and entrepreneurship are empowerment tools for Small and Medium-sized enterprises in the blue economy and this can attract women to the blue economy.

Factor 1 also includes challenges faced by women in the blue economy and these are challenges in the fisheries, tourism, oil and gas, as well as challenges facing women in the transportation sectors of the blue economy. To overcome these obstacles, the stakeholders of the blue economy need to employ a hub and spoke approach, where women's resources will be leveraged to directly address these disadvantages (Gulf Blue Initiatives, 2021:5). Additionally, Factor 1 includes strategies to overcome the challenges such as societal norms and social justice strategies, autonomy (independent decision-making), freedom from domination, contribution to business income, exposure to information, the emergence of new skills and improved quality of life.

The blue economy is the long-term strategy to support the sustainable development of the ocean sectors and this approach recognises the sea and oceans as key drivers for success and development in the blue economy (Kontakos, 2019:165). In addition to this, Factor 1 also includes introducing new policy structures to increase women's involvement in the blue economy. It is the integrated ocean policy that can be developed to contribute to achieving the strategy's goals for sustainable and equitable growth for women (Kontakos, 2019:165). The findings also identify eight factors that emerged from Factor 2. Under general opportunities for women is an indication that there are job and business opportunities in the various sectors for women in the blue economy.

Under the economic opportunities available in the specific sectors, there are also opportunities for the upliftment of women as well investment and opportunities for job creation. There is a need to identify economic prospects in the blue economy that can encourage private sector growth, job creation and economic development for women in the blue economy (Department of Trade and Industry, International Finance

Corporation and Finmark Trust, 2021:4). To ensure these opportunities are available to explore in the blue economy, Gulf Blue Initiatives (2021:5) stressed that, there is a need for sustainable plans that assist women in developing innovation-based economic plans that ensure overarching blue economy jobs that pay high wages, while also taking care to support diversity, equity and inclusion that leads to greater opportunities for women in the blue economy.

Factor 2 also highlights the general challenges faced by women, which include a lack of knowledge about job opportunities existing in the blue economy sectors. Women lack knowledge about business opportunities existing in the blue economy sectors and suffer from inadequate access to training facilities that can assist them to establish their businesses. Microfinance is often cited as a resource for women's economic empowerment. Financing should, however, be accompanied by impact assessments, particularly about the type of skills development that could encourage sustainable growth beyond micro-enterprise (Department of Trade and Industry, International Finance Corporation and Finmark Trust, 2021:4).

Additionally, three issues emerge from Factor 3 under the general opportunities available for women in the blue economy. Factor 3 suggested that there should be projects to support women's participation in the blue economy and there should be opportunities for women to attend maritime leadership conferences. According to the United Nations Economic Commission for Africa (2020:3), there is a need to identify economic prospects in the blue economy sector that can boost private sector development, job creation and economic development for women in the blue economy. This is in line with the literature, which gives more factors as drivers of women's participation in the blue economy.

6.4. Discussions of the Key Findings, Conclusions, and Recommendations

6.4.1. Research Objective 1: General opportunities available for women in the blue economy

6.4.1.1 Summary and discussion of key findings

The opportunities available for women in the blue economy are contained under general opportunity (Bari, 2017:11). This general opportunity is sub-divided into economic opportunities which comprise business opportunities and job opportunities for women in the blue economy respectively (Nagy & Nene, 2021:9). Business and

Job opportunities are available in the following sectors of the blue economy – fisheries, aquaculture, offshore oil and gas, tourism and transportation. Some opportunities also exist in the numerous sectors of the blue economy Bethal, Burauleva and Tang, (2021:3). These sectors include; coastal and marine tourism, fisheries and aquaculture, offshore oil and gas, marine bioprospecting and biotechnology and ocean renewable energy.

There is also a need to shift the current thinking that women's positions are solely associated with household activities such as childcare and domestic activities (Cerrato & Cifre, 2018:7). In the same vein, the blue economy sectors also present opportunities for women to recognise their true potential, such as opportunities that will result in the upliftment of women, investment opportunities for job creation and opportunities for women to contribute millions to the GDP of their countries.

Additionally, there are opportunities for women to participate in leadership positions and for women to attend maritime leadership conferences (Dale, Elvestuen, Freiberg, Isaksen, Maeland et al., (2019:6). There is also an indication that shipbuilding, shipping and ship scrapping are the three big economic activities of the blue economy. However, Dale et al. (2019:16) indicate that some of the ocean tourism opportunities for women are sailing, diving and whale expedition. In addition, tourism has the potential to develop and empower women as well as larger markets in the blue economy.

6.4.1.2 Conclusion

The study presents several opportunities for women to participate in the blue economy which is made up of job opportunities, economic opportunities and business opportunities. Women can only participate in these opportunities in the blue economy if they are exposed to the sectors. To accomplish this, women will have to endeavour to maximise the long-term value of business development and employment in the blue economy industry. Good stable business development will foster the continued development of strong knowledge for women for their long-term competitiveness in the industry (Dale et al., 2019:6).

6.4.1.3 Recommendations

It is advisable to invest in campaigns for women run by the states, private sectors blue economy organisations, departments and various blue economy institutions to drive women to acquire knowledge about the blue economy. For women to engage and explore the opportunities afforded by the blue economy, most cultural and religious practices in many countries should accept and accommodate women and their work ethics and stop the discrimination against women. In addition, in the blue economy, recruitment policies in terms of promotion, salary and flexible work conditions must be fundamentally adapted to accommodate women

In the blue economy, women require strong and appropriate support, such as leadership training, skills development and education. Better policies should be implemented to empower the few current women-owned businesses in the blue economy sector and encourage new business creation to develop women economically in the blue economy sector. Grant assistance incentives and business funding should be prioritised to make the sector look more attractive to women who want to engage in business in those sectors.

This study helped to reveal the negative mind-set of people regarding women working in the blue economy sector. Therefore, it is desirable to have specific programs that can assist in changing perceptions of people regarding women working in the blue economy. This can mitigate women to break barriers and achieve great things which benefit them individually as well as benefitting the rest of society. Jobs and various business opportunities need to be created by the various ocean sector organisations, departments, institutions, investors and stakeholders through training and empowerment programmes for women to obtain knowledge about leadership and management roles that will effectively promote their progress.

Resources, as well as grants and loans funds, should be made available by the state and the private sectors to support women to participate in the blue economy. These funds can be used for women's training, mentorship programmes and other logistical support such as transportation to help women to start their businesses. Women should be deliberately target with relevant information associated with business opportunities, job opportunities, economic opportunities and information on other women in business

and in senior positions that can be used as models. His can help to give other women exposure and motivation using real life examples.

Measures and resources should be put in place by various ocean sector organisations, departments, institutions governments and various partners of the blue economy to raise awareness for women to engage and play an active role in the blue economy. These awareness programs can take different forms and are made available through a variety of media channels such as print media, radio, television and billboards for visibility purposes. There should be women's ocean empowerment programmes in place that encourage the involvement of women in the blue economy. These programs should motivate women to promote the sector through educating their family, friends, peers, the media industry and government.

A deliberate policy should be put in place which ensures that women participate in leadership positions within the industry. Projects should be tailor-made to support women's participation in the blue economy to empower them. Furthermore, women's participation in the blue economy should be assisted by investment companies, funders, donors and sponsors with market and investment opportunities to ensure that their businesses are sustainable. Even if all kind of support is given to women in business and in executive positions, these women should be given all the freedom to express themselves so that the can express their creative and knowledge on their chosen areas of focus. Independence gives room for objectivity, imagination and resourcefulness that can add a lot of value to the communities and general economy of the country. It is also essential to understand challenges that are faced by other women in the sector so that corrective actions can be developed.

6.4.2. Research objective 2: General challenges faced by women in the blue economy

Research objective two presents a summary and discussions of key findings, conclusions and recommendations of general challenges faced by women in the blue economy.

6.4.2.1 Summary and discussion of key findings

The challenges faced by women in the blue economy included general and sectorial challenges. General challenges faced by women included a lack of women’s

knowledge and awareness about job and business opportunities available to them in the blue economy sector. There are other challenges such as the exclusion of women from decision-making. Few women occupying higher-level positions also earn less than their male counterparts and little attention is paid to women's issues in the workforce. Sectorial challenges faced by women, on the other hand, included the challenges faced by women in the fisheries, aquaculture, oil and gas and transportation sectors of the blue economy. Sectorial challenges are influenced by many factors including traditional, cultural and mind-set fixation among others (Shaleh, & Mustafa, 2020:10).

Also, challenges faced by women in fishery and aquaculture sectors including women's contributions to the fishery sector of the blue economy are considered insignificant. Other challenges faced by women in the sectors are those that of women's roles in the blue economy's fishery sectors being neglected in their overall performance. Furthermore, the United Nations Economic Commission for Africa (2020:8) agrees that most women in the fishing industry work in informal jobs with little job security, regular incomes and social protection.

6.4.2.2. Challenges faced by women in tourism sectors of the blue economy

These challenges include women earning less than their male counterparts, women's contributions to the tourism sector of the blue economy are largely ignored and they do not occupy leadership positions. In contrast to the findings, one of the many challenges faced by women in coastal tourism is their physical and economic displacement in the coastal tourism sectors (Kabil, Priatmoko, Magda and David, 2021:3). Other challenges highlight that woman usually earn less than their male counterparts and there is no research focusing on women's involvement in the blue economy's tourism sector. Similarly, the challenge faced by women in the transportation sector is a major lack of opportunity to occupy leadership positions because most high-level leadership positions are generally reserved for men.

6.4.2.3 Challenges faced by women in oil & gas sectors of the blue economy

The study's findings revealed that women face various hurdles in the oil and gas sectors of the blue economy such as, the clerical and administrative positions are usually allocated traditionally to women in the sector, instead of men. As a result,

women do not occupy high-ranking positions and receive limited opportunities to pursue leadership careers in the oil and gas sectors.

6.4.2.4 Conclusion

Various challenges and concerns facing women in the various sectors of the blue economy such as fisheries, tourism sectors, oil and gas and transportation, need to be addressed to make the industry more attractive for women. The SDGs' practical steps are inclusive enough to provide a road map for women to gain access to the available opportunities in the blue economy to overcome these challenges (Shaleh & Mustafa, 2020:2). In the blue economy, women's health and well-being also need to receive more attention. Salaries and incentives for women need to be increased to make the industry more attractive for women's participation. Furthermore, women's existing roles need to be recognised and rewarded

6.4.2.5 Recommendations

One of the efforts made in addressing these challenges is the establishment of the Blue Economy Research Institutes (BERI) in the University of Seychelles to stimulate thought and create a knowledge-sharing platform and awareness about the sector (Greenhill, Huges, Day & Stanley,2015:3). The problem of women not occupying high-ranking positions can be resolved by developing empowerment programmes to attract women. Dale et al. 2019:16) acknowledge that, as the oil and gas business is critical for economic development, employment creation and development of cutting-edge technology would be a solution for women in the blue economy's oil and gas sector. Women's economic empowerment (WEE) in the blue economy is emphasised by their lack of access to productive resources, particularly in the oil and gas industry (African Development Bank, 2017:6).

Additionally, there are other potential benefits to fostering women's economic empowerment in the oil and gas industries, these including enhanced family welfare, greater diversity and increased profitability (African Development Bank, 2017:8). Women need to be made aware of business- and job opportunities existing in the different sectors in the blue economy. The awareness programmes should be visible to be effective and should be made available via a variety of channels. Women in the blue economy sectors need to be included in leadership positions and should be empowered to take strategic decisions in marine management.

6.4.3. Research objective 3: Determining how women's engagement in the blue economy can contribute to their sustainable economic growth and empowerment

6.4.3.1 Summary and discussion of key findings

There are various strategies that can encourage women to play a more prominent role in the blue economy. These could be divided into general strategies, societal norms and social justice strategies. General strategies are sub-divided into autonomy (independent decision-making), freedom from domination, contribution to business income, exposure of women to information, emerging new skills and improved quality of life. Also, Societal Norms & Social Justice Strategy is the second group of strategies.

6.4.3.2. General Strategies for women's engagement in the blue economy

6.4.3.2.1 Autonomy (independent decision-making)

Women's participation gives them control over their finances and enables them to make economic decisions. According to the OECD-DAC (2016:1), women's ability to exercise their rights and make strategic decisions is related to their ability to create consistent, appropriate and independent income.

6.4.3.2.2. Freedom from domination

Women's participation in leadership positions in the blue economy will enable them to partake in board meetings and make board decisions. OECD Report (2020:11) identifies policies such as quotas have been shown to boost the number of women on boards of directors in the short run. This policy will be very useful to the blue economy to increase women's participation in board meetings of the blue economy.

6.4.3.2.3. Contribution to business income

The findings reveal that women's participation in the blue economy will help them make contributions to their business income such as attracting investors to provide capital for women's businesses, enticing more women to entrepreneurship and increasing diversity in the blue economy's sectors, among other contributions.

6.4.3.2.4 Access to information

This section emphasises the importance of recording detailed personal information such as race, gender, sex, marital status, nationality, ethnicity, colour, sexual orientation, age, physical and mental health, wellbeing, disability, religion, conscience,

belief, culture, language and birth (Information Regulatory South Africa, 2021:6). However, creating awareness based on information and knowledge may be important for designing and implementing policies for women in the blue economy (Nagy & Nene, 2021:1).

6.4.3.2.5. Emerging of new skills

The study showed that women's participation in the blue economy can lead to growth potential for job creation. It would encourage leadership skills for women in the blue economy and can lead to creativity, innovation and technological development of the sector. The flexibility for women to engage in the blue economy activities to acquire skills and confidence and form part of social networking are all examples of new opportunities, which will link to job creation that can be empowering for women in the blue economy (OECD-DAC, 2016:1).

6.4.3.2.6. Improved quality of life

There is no doubt that the blue economy can provide productive employment and a once-in-a-lifetime opportunity for women, as well as many businesses to gain economic independence, alleviate poverty and improve their quality of life. The findings revealed that women's participation in the blue economy may increase investment, wealth creation, and accumulation of assets, stable businesses for women and an increase better access to sanitation and medical facilities for women (EU Blue Economy Report, 2021:9).

6.4.3.2.7. Societal norms and social justice strategies

Societal norms and social justice norms have existed for decades. Nonetheless, decades of societal norms can be influenced by awareness-raising and community engagement to change the mindset of society's views on women (Dietrich, Skakun, Khaleel & Peute, 2021:4). The findings of the research listed change in social norms, such as cultural and religious norms, as one means of eradicating the seclusion and segregation of women in the blue economy. This will also eradicate sexism and discrimination against women. Similarly, change in social, cultural and religious norms will also eradicate unequal and unjust treatment of women in the blue economy, which was indicated by the findings. Dietrich et al. (2021:4) argue that change in societal norms can influence the household's financial needs, where the idea of women being breadwinners becomes more acceptable in society.

6.4.3.3. Conclusion

The literature proposed equal employment and opportunities for women in the blue economy. Empowerment programmes were also proposed. In addition, support for women's participation in the blue economy should be a joint effort by governments and the private sector. The state and the private sector should develop initiatives to support women's increased participation in the blue economy to improve the efficiency of decision-making within these bodies (United Nations, 2020:45). There should also be a design of sectoral policies and programmes by various blue economy sectorial decision-making authorities and policymakers to enable women and men to reap the same social and economic benefits from the industry (United Nations, 2020:45).

6.4.3.4. Recommendations

Women's involvement in entrepreneurship in the blue economy can be advanced by government policy programmes. Women should not only rely on the government, but establish women's business associations to enable women to empower one another and discover solutions to the numerous issues that are facing women in the blue economy. Subsidies and loan guarantees should be made available to support women's businesses in the blue economy. Different government programmes and policies should be established to help them to get start-up funding for their businesses. Again, the focus should be placed on instruments that can be used to assist women-owned businesses in realising their full potential for development and growth, such as better finance facilities, networking opportunities and tools that can attract the sectors to investors.

The study provides an understanding of what happens with women in the blue economies to develop strategies to support and empower them. Therefore, there is a need to share informative data which will assist to identify the needs of women in the blue economy. That information is not known about women's participation in the blue economy. There should be a policy in place to support and encourage women's participation in the sectors of the blue economy. Women should be encouraged to take a leading role in the rapid growth of aquaculture and fisheries sectors by providing incentives and a visible and achievable reward system.

6.4.4. Research Objective 4: To conceptualise a framework for sustainable economic empowerment and economic growth for women in the blue economy

6.4.4.1. Proposed conceptual framework for participation of women in the blue economy

It is only in recent years that the concept of women's economic empowerment has been given its place in most policy discussions globally (Kan & Klasen, 2021:76). Global commitments such as the United Nations development goals, Beijing Platform for Action and the United Nations Millennium Development Goals have contributed to improving frameworks to encourage women's economic empowerment (Kan & Klasen, 2021:76). The proposed conceptual framework for women's engagement in the blue economy as previously shown in Figure 19 has an independent variable which is women's participation in the blue economy and a dependent variable which is implementation of effective policy that can lead to their sustainable economic development.

The independent variable includes general opportunities and economic opportunities for women, challenges faced by women in the blue economy and strategies to overcome the challenge. The framework highlights various challenges faced by women in sectors such as fisheries, tourism, oil and gas sector and transport which are also independent variables. Strategies such as social norms and social justice strategies, which includes autonomy, freedom from domination, contribution to business income, emerging new skills and improving quality of life are considered as sustainable economic development for women in the blue economy. The framework also has dependent variables which are an effective policy and sustainable economic development.

6.4.4.2. Introduction of effective policy frameworks to increase women's participation in the blue economy sectors

The final objective of the study is to conceptualise a framework for sustainable economic empowerment and economic growth for women in the blue economy. Research objective four will introduce effective policy frameworks to increase women's engagement in the blue economy sectors.

6.4.4.3. Summary and discussion of key findings

Establishing a new policy framework can therefore facilitate enhanced roles for women in the blue economy. Shaleh and Mustafa (2020:10) have noted that there is a dire need for new and effective national policies and development plans with a focus on including and catering for women in the blue economy. The present study finds that introducing effective policies would emphasise knowledge sharing and information about the industry's opportunities for women. Furthermore, the establishment of an efficient policy framework will raise awareness of the lack of funding for women entrepreneurs in the various sectors of the blue economy.

The study also finds that the establishment of an appropriate policy framework would expand the opportunities that the blue economy could provide to the government's GDP. Additionally, the findings proposed that the development of favourable policy frameworks would promote the blue economy. Shaleh & Mustafa (2020:8) argued that policies alone will not be enough to alleviate the issues that women face within the blue economy, rather enforcing regulations, adhering to agreements and general overseeing all aspects of the blue economy are critical to accomplishing the objectives of the blue economy for women.

6.5. Factors Influencing Policy Effectiveness to Support Women In Blue Economic Sectors

6.5.1. The relationship between dependent variables and the independent variables of the study

The results of the regression analysis reveal that Oil Gas Challenges and Job Opportunities have significant influence on policy effectiveness. There was no statistical evidence to suggest that other predictor variables that were considered in the study influenced the effectiveness of policies to empower women. The Oil Gas Challenges and Job Opportunities showed a moderate and positive statistical relationship with Effective Policy Shaleh & Mustafa (2020:11) asserts that the challenges in the blue economy can be addressed through actions that require stakeholders in the blue economy, together with various governments, to utilise traditional methods as well as modern technology to enhance policies and programmes for growth in the emerging sectors (Shaleh & Mustafa, 2020:11).

This can ensure that individual woman as well as the whole country benefit from the blue economy sector. These findings are contradicting the literature theory which suggested that opportunities for women, challenges faced by women and strategies to overcome the challenges, as well as sustainable economic development and growth, have a significant impact on the effectiveness of policies to empower women in the blue economic sector. Regression analysis results also show that there is a moderate and positive statistical relationship between Improve Quality Life and Job Opportunities. The results also revealed that there is a moderate and positive statistical relationship between Improve Quality Life and Transport Challenges. The findings of this study show that there is a strong and positive statistical relationship between Emerging Skills and Transport Challenges.

Additionally, a moderate and positive statistical relationship between Emerging Skills and Job Opportunities was recorded. However, findings showed that a negative and weak statistical relationship between Emerging Skills and Economic Opportunities existed. The findings reveal that there is a moderate and positive statistical relationship between Exposure to Information and Transport Challenges. A moderate and positive statistical relationship between Exposure to Information and Job Opportunities was also recorded. Regression analysis results show that there is a moderate and positive statistical relationship between Contribution to Business Income and Job Opportunities.

In addition, the findings showed the existence of a moderate and positive statistical relationship between Contribution to Business Income and Transport Challenges. The findings of the study indicate a strong and negative statistical relationship between Free from Domination and Transport Challenges. Despite this, a moderate and positive statistical relationship between Free from Domination and Transport Challenges was recorded. The results also show a weak and positive statistical relationship between Autonomy and Social Justice Strategies and Societal Norms. However, a moderate and positive statistical relationship between Autonomy and Business Opportunities was recorded. Furthermore, a weak and positive statistical relationship between Autonomy and Job Opportunities was recorded.

6.5.2. Conclusion

The literature recognises that increasing general awareness and active involvement of women in the blue economy require effective policymaking and implementation. The study is therefore guided by various policy frameworks such as the International Policy Frameworks of the United Nations Conference on Sustainable Development, the United Nations Sustainable Development Goals 5, 8, and 14 and the continental policy frameworks, such as the African Union Agenda (AUA) 2063. These policy frameworks bodies could play an active role in the establishment of the appropriate policy to encourage women's participation in the blue economy. The creation of job and economic opportunities and focusing on providing solutions to transport challenges and other logistical challenges affecting women are essential to the upliftment of women in the blue economy. These have a significant influence on quality of life, emerging skills, exposure to information, contribution to business income, independence and effective policies to empower women in the blue economic sector.

6.5.3. Recommendations

The study shows that there is a need for policy development and improvements to encourage women's participation in the blue economy. The study also motivates a revision of current gender policies which are biased against women. Awareness of the importance of empowering women through resourcing, providing opportunities, uplifting them, training and development in areas of economic development of women is required.

6.6. Suggestions for Further Research

The mixed-method approach is considered to have high levels of reliability of data while at the same time allowing for more in-depth information on factors that drive policy effectiveness in women's participation in the blue economy. Using the two research approaches would allow for more in-depth and detailed assessment of factors that hinder women from fully participating in the blue economy. Also, extending the participating stakeholders to include government, the private sector, civil society, funders, and other players would add value to future studies in the area.

Deliberate policies should be made that ensures that the wages of women are equal to those of their male counterparts from senior positions to the lowest levels possible.

Similarly, the policy should ensure women have adequate access to funding to assist them in establishing their businesses in the blue economy.

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APPENDIX A: ONLINE SURVEY

PARTICIPATION OF WOMEN IN THE BLUE ECONOMY AND THEIR SUSTAINABLE ECONOMIC DEVELOPMENT

CONFIDENTIAL

Researcher:

Cynthia Kumadeka

Student Number: 33343225

Phone Number: 076 499 1142

University of South Africa (UNISA)

Note: All responses are confidential and neither the individual nor the organisation will be identified in any report or release.

Dear Sir/Madam

My name is Cynthia Kumadeka, and I am doing my PhD research in Management Studies (Finance) with the University of South Africa. The title of my PhD dissertation/research is: **PARTICIPATION OF WOMEN IN THE BLUE ECONOMY AND THEIR SUSTAINABLE ECONOMIC DEVELOPMENT.** As one of the stakeholders of the blue economy, you are invited to participate in my research by completing this Online-Survey.

The link to the online survey questionnaire on the participation of women in the blue economy and their sustainable economic development is

https://wits.eu.qualtrics.com/jfe/form/SV_cUSOmiD4OaR5qu2

Please kindly grant me your time to participate in the online survey

GENERAL INSTRUCTIONS

- There is one online survey to be answered. There are six (6) sections comprised of close-ended questions. Please select the correct answer with a tick in the spaces provided in each section of the close-ended questions.
- Only stakeholders of the associated blue economy sectors, ocean economy sectors and maritime sectors should complete the questionnaire.

- Due to the Covid-19 Pandemic, ethics regulations at Unisa have imposed restrictions on many practices, including workplace visits to address the possibility of high-risk transmission. Therefore, the researcher will not be permitted physical access to the workplace of any participants completing this survey. The survey can only be accessed and completed online.
- The survey will take approximately 20 minutes to answer.

Be assured that the responses collected will be kept confidential and anonymous.

SECTION 1: BIOGRAPHICAL AND BACKGROUND INFORMATION OF PARTICIPANTS

Please complete the questions below by ticking the appropriate block with the correct answer.

1. Full Name of organisation represented:

1.1. Age:

1	18-20 years	
2	21-30 years	
3	31-40 years	
4	41-50 years	
5	51-60 years	
6	61-65 years	

1.2. Gender category:

1	Male	
2	Female	
3	Prefer not to say	

1.3. Race category:

1	African	

2	White	
3	Coloured	
4	Indian	
5	Prefer not to say	

1.4: Highest Educational Level

1	Matric/Grade 12	
2	Certificate Post-Matric	
3	Diploma	
4	Undergraduate University Degree	
5	Postgraduate Degree	
6	Other (Please Specify)	

1.5: What is your current position working in this blue economy sector?

1	Junior position	
2	Senior position (supervisory)	
3	Managerial position	
4	Director	
5	Business Owner	
6	Other (Please Specify)	

1.6: How long have you worked in this blue economy sector?

1	Less than 1 year	
2	1-5 years	
3	6-10 years	
4	11-15 years	

5	16-20 years	
6	21 years and more	

SECTION 2: OPPORTUNITIES AVAILABLE FOR WOMEN TO BE KEY PARTICIPANTS IN THE BLUE ECONOMY

Please tick the appropriate block with one of the following 5-point scale: to no extent, to a small extent, to a moderate extent, to a large extent, to a very large extent

2.1	**General opportunities available for women in the blue economy** **The extent to which:**	**To no extent**	**To a small extent**	**To a moderate extent**	**To a large extent**	**To a very large extent**
1	There are job opportunities in the various sectors of the blue economy for women	1	2	3	4	5
2	There are business opportunities in the various sectors of the blue economy for women	1	2	3	4	5
3	There are opportunities created for women to obtain knowledge about leadership and management roles that effectively promote progress	1	2	3	4	5
4	There are increasing numbers of women employed in the ports' sectors of the blue economy such as crane operators and stevedores, train and truck drivers and ship's officers	1	2	3	4	5
5	There is assistance for women such as funding, training programmes, and mentorship in setting up their businesses	1	2	3	4	5
6	There are arrangements to establish a direct business association for women helping them to set fixed selling prices	1	2	3	4	5

	for their businesses to boost women's trade					
7	There are measures in place to raise awareness for women to engage and play an active role in the blue economy.	1	2	3	4	5
8	There are programmes in place that encourage the involvement of women in the blue economy	1	2	3	4	5
9	There are programmes in place that motivate women to promote the sector through educating their family, friends, peers, the media industry and government.	1	2	3	4	5
10	There should be a proposal in the shipping industry that women should not be restricted to traditional marine jobs but also exposed, to management roles.	1	2	3	4	5
11	There are opportunities for women to participate in leadership positions	1	2	3	4	5
12	There are improved institutional and organisational programmes in place for women in the blue economy.	1	2	3	4	5
13	There are opportunities to promote and encourage equal participation for women in the blue economy.	1	2	3	4	5
14	There should be projects to support women participation in the blue economy	1	2	3	4	5
15	There should be opportunities for women to attend maritime leadership conferences.	1	2	3	4	5

SECTION 2.2: ECONOMIC OPPORTUNITIES AVAILABLE FOR WOMEN IN SPECIFIC SECTORS OF THE BLUE ECONOMY

Please tick the appropriate block to rate the extent to which you strongly disagree, disagree, agree, strongly agree, neither agree nor disagree (Neutral), not applicable with the following statements by selecting the appropriate number on the 1 to 6 point scale next to the statement.

1=Strongly disagree	2=Disagree	3=Neither agree nor disagree (Neutral)	4=Agree	5=Strongly agree	6=Not applicable

		Strongly disagree	Disagree	Neither agree nor disagree (Neutral)	Agree	Strongly agree	Not applicable
1	Economic prospects such as business and employment opportunities exist for women in the coastal tourism sectors of the blue economy such as recreational activities, coastal tourism events and marine wildlife.	1	2	3	4	5	6
2	Economic prospects such as business and employment opportunities exist for women in the maritime living resources sectors of the blue economy such as the captured fisheries sector, aquaculture sector, and processing and distribution sectors.	1	2	3	4	5	6
3	Economic prospects such as business and employment opportunities exist for women in the maritime non-living sectors such as the oil sector, natural gas sector, maritime aggregates support sector, petroleum and natural gas	1	2	3	4	5	6

	extraction and other mining activities.						
4	Economic prospects such as business and employment opportunities exist for women in the port activities' sectors of the blue economy such as warehousing and storage, cargo handling, construction of water projects and service activities incidental to water transportation.	1	2	3	4	5	6
5	Economic prospects such as business and employment opportunities exist for women in the shipbuilding and repair sectors of the blue economy such as the building of ship and floating structures sectors, building of leisure and supporting boats' sectors, marine machinery sectors, marine equipment, and repair and maintenance of ships' and boats' sectors.	1	2	3	4	5	6
6	Economic prospects such as business and employment opportunities exist for women in the maritime transport sectors of the blue economy such as sea and coastal passenger water transport, sea and coastal freight water transport sector, inland passenger water transport sector, inland freight and	1	2	3	4	5	6

	water transport sector, renting and leasing of water transport equipment sectors.						
7	There are economic opportunities for the upliftment of women in the blue economy.	1	2	3	4	5	6
8	There are investment opportunities for women in the blue economy.	1	2	3	4	5	6
9	There are opportunities for job creation for women in the blue economy.	1	2	3	4	5	6

SECTION 3: CHALLENGES FACED BY WOMEN IN THE BLUE ECONOMY SECTORS

Please tick the appropriate block to rate the extent to which you strongly disagree, disagree, agree, strongly agree or neither agree nor disagree (Neutral), not applicable with the following statements by selecting the appropriate number on the 1 to 6 point scale next to the statement.

1=Strongly disagree	2=Disagree	3=Neither agree nor disagree (Neutral)	4=Agree	5=Strongly agree	6=Not applicable

	Statement	Scale					
3.1	**General challenges faced by women in the blue economy**						
1	Women lacks knowledge about job opportunities existing in the blue economy sectors	1	2	3	4	5	6

2	Women lacks knowledge about business opportunities existing in the blue economy sectors	1	2	3	4	5	6
3	Women in the blue economy sectors are excluded from taking strategic decisions in marine management.	1	2	3	4	5	6
4	Few women participating in the blue economy are able to hold high-level positions such as senior management and leadership positions.	1	2	3	4	5	6
5	Wages in the blue economy for the majority of women are less than those of their male counterparts.	1	2	3	4	5	6
6	Low attention is paid to women in the workforce of the blue economy.	1	2	3	4	5	6
7	Women working in the blue economy sector have unstable and unsecured jobs.	1	2	3	4	5	6
8	There is higher informal work for women than men in the blue economy.	1	2	3	4	5	6
9	Women in the business sectors of the blue economy suffer from inadequate access to funding to assist them in establishing their businesses.	1	2	3	4	5	6
10	Women in the business sectors of the blue economy do not have adequate access to training facilities to assist them to establish their businesses.	1	2	3	5	5	6
11	Women's integration into the blue economy sector is slow due to barriers such as stereotyping against women pursuing jobs in the blue economy industry.	1	2	3	4	5	6
12	In the blue economy industry, women's health, and well-being is receiving very little attention.	1	2	3	4	5	6
3.2	**Challenges facing women in the fisheries sector of the blue economy**						

1	Women's contributions to the fisheries sector of the blue economy are considered insignificant.	1	2	3	4	5	6
2	Women's roles in the blue economy fisheries sector are neglected.	1	2	3	4	5	6

3.3	**Challenges facing women in the tourism sector of the blue economy**						
1	Women usually earn less than their male counterparts in the tourism sector of the blue economy.	1	2	3	4	5	6
2	Women's contributions to the tourism sector of the blue economy are largely ignored.	1	2	3	4	5	6
3	Women typically occupy non-leadership positions in the tourism sector of the blue economy.	1	2	3	4	5	6
4	Women's participation in the tourism sector of the blue economy is limited.	1	2	3	4	5	6
3.4	**Challenges facing women in the oil and gas sectors of the blue economy**						
1	Clerical and administrative positions are traditionally allocated to women in the oil and gas sectors of the blue economy.	1	2	3	4	5	6
2	Women do not occupy high-ranking positions in the oil and gas sectors of the blue economy.	1	2	3	4	5	6
3	Women receive limited opportunities to pursue leadership careers in the oil and gas sectors of the blue economy.	1	2	3	4	5	6
3.5	**Challenges facing women in the transportation sector of the blue economy**						
1	High-level leadership positions are generally reserved for men in the transportation sector of the blue economy.	1	2	3	4	5	6
2	Women have limited opportunities to occupy leadership positions in the transportation sector of the blue economy.	1	2	3	4	5	6

SECTION 4: STRATEGIES TO OVERCOME CHALLENGES BY ENCOURAGING WOMEN'S PARTICIPATION IN THE BLUE ECONOMY

Please tick the appropriate block to rate the extent to which you strongly disagree, disagree, agree, strongly agree, neither agree nor disagree (Neutral), not applicable with the following statements by selecting the appropriate number on the 1 to 6 point scale next to the statement.

1=Strongly disagree	2=Disagree	3=Neither agree nor disagree (Neutral)	4=Agree	5=Strongly agree	6=Not applicable

4.1	**General Strategies: positive support for encouraging women's participation in the blue economy sectors**						
1	There is policy support for encouraging women's participation in the sectors of the blue economy.	1	2	3	4	5	6
2	Women are taking a leading role in the rapid growth of aquaculture sectors of the blue economy.	1	2	3	4	5	6
3	Women are taking a leading role in the rapid growth of the fishing sectors of the blue economy	1	2	3	4	5	6
4	Women own fishing boats in the fishing sectors of the blue economy.	1	2	3	4	5	6
5	Women manage fishing boats in the fishing sectors of the blue economy.	1	2	3	4	5	6
6	Women have the necessary fishing equipment to partake	1	2	3	4	5	6

	in the fishing industry of the blue economy.						
7	There has been an introduction of new government policies to encourage women participation in the blue economy	1	2	3	4	5	6
4.2	**Societal norms and social justice strategies**						
1	Change of social norms, cultural norms and religious norms will eradicate the seclusion and segregation of women in the blue economy.	1	2	3	4	5	6
2	Change of social norms, cultural norms and religious norms will eradicate sexism and discrimination against women in the blue economy.	1	2	3	4	5	6
3	Change of social norms, cultural norms and religious norms will eradicate unequal and unjust treatment in the blue economy that can marginalise women.	1	2	3	4	5	6
4	There is a need for society to change its view of the blue economy being a male-dominated sector.	1	2	3	4	5	6

SECTION 5: SUSTAINABLE ECONOMIC DEVELOPMENT AND SUSTAINABLE ECONOMIC GROWTH FOR WOMEN'S PARTICIPATION IN THE BLUE ECONOMY

Please tick the appropriate block to rate the extent to which you strongly disagree, disagree, agree, strongly agree or neither agree nor disagree (Neutral) with the following statements by selecting the appropriate number on the 1 to 5 point scale next to the statement.

1=Strongly disagree	2=Disagree	3=Neither agree nor disagree (Neutral)	4=Agree	5=Strongly agree

5	Sustainable economic empowerment and economic growth of women in the blue economy	Strongly disagree	Disagree	Neither agree nor disagree (Neutral)	Agree	Strongly agree
5.1	**Autonomy (Independent Decision Making)**					
1	Women's participation in the Blue Economy will give them control over their finances.	1	2	3	4	5
2	Women's participation in the Blue Economy will give them control over their economic decision-making.	1	2	3	4	5
5.2	**Free from Domination**					
1	Women's participation in leadership positions in the Blue Economy will enable them to partake in board meetings and make board decisions.	1	2	3	4	5
2	Women's participation in the Blue Economy will attract and retain women's talent.	1	2	3	4	5
5.3	**Contribution to Business Income**					
1	Women's participation in the Blue Economy will attract investors to provide capital for women businesses.	1	2	3	4	5
2	Women's participation in the Blue Economy will entice more women to entrepreneurship in the blue economy.	1	2	3	4	5

3	Women's participation in the Blue Economy will increase diversity in the blue economy's sectors.	1	2	3	4	5
4	Women's participation in the Blue Economy would improve the women's workforce.	1	2	3	4	5
5	Women's participation in the Blue Economy would compel governments to invest in the blue economy sectors.	1	2	3	4	5
6	Women's participation in the blue economy would lead to business development initiatives in the blue economy sectors.	1	2	3	4	5
7	Women's participation in the Blue Economy will address barriers to social-cultural, financial, education and health factors that impede women empowerment in the sector	1	2	3	4	5
5.4	**Exposure to information**					
1	Women's participation in the Blue Economy will lead to the provision of more training opportunities and programmes for women.	1	2	3	4	5
2	Women's participation in the Blue Economy will lead to rural development policies and initiatives to represent women equally.	1	2	3	4	5
3	Women's participation in the Blue Economy will lead to the availability of more data to outline women's contribution to the sector	1	2	3	4	5

4	Women's participation in the Blue Economy will lead to the translation of women's empowerment principles into actionable programmes and projects.	1	2	3	4	5
5	Women's participation in most sectors of the Blue Economy can be encouraged by raising awareness and education from primary to high school levels.	1	2	3	4	5
5.5	**Emerging of New Skills**					
1	Women's participation in the Blue Economy can lead to growth potential for job creation.	1	2	3	4	5
2	Women's participation in the blue economy would encourage leadership skills for women in the blue economy	1	2	3	4	5
3	Women's participation in the Blue Economy can lead to creativity, innovation and technological development of the sector.	1	2	3	4	5
4	Women's participation in the Blue Economy can lead to the design of programmes to enhance efficiency in attaining inclusive sustainable growth for women in the blue economy sectors.	1	2	3	4	5
5.6	**Improved quality of life**					
1	Women's participation in the Blue Economy can lead to increased investment, wealth creation, and accumulation of assets	1	2	3	4	5
2	Women's participation in the Blue Economy can lead to building stable businesses for women to ensure their sustainability	1	2	3	4	5

3	Women's participation in the blue economy would lead to an increase in better access to sanitation and medical facilities for women.	1	2	3	4	5
4	Women's participation in the blue economy would lead to poverty reduction for women.	1	2	3	4	5
5	Women's participation in the blue economy would lead to an increase in earning potential for women.	1	2	3	4	5

SECTION 6 BENEFITS OF INTRODUCING A NEW POLICY STRUCTURE TO INCREASE WOMEN'S INVOLVEMENT IN THE BLUE ECONOMY

Please tick the appropriate block to rate the extent to which you strongly disagree, disagree, agree, strongly agree or neither agree nor disagree (Neutral) with the following statements by selecting the appropriate number on the 1 to 5 point scale next to the statement.

1=Strongly disagree	2=Disagree	3=Neither agree nor disagree (Neutral)	4=Agree	5=Strongly agree

6.1	Introduction of effective policy frameworks to increase women's participation in the blue economy	Strongly disagree	Disagree	Agree	Strongly agree	Neither agree nor disagree (Neutral)
1	The introduction of an effective policy framework would emphasise knowledge and sharing information about the industry opportunities for women.	1	2	3	4	5

2	The establishment of an efficient policy framework will raise awareness on the lack of funding for women entrepreneurs in the various sectors of the blue economy.	1	2	3	4	5
3	The establishment of an appropriate policy framework would expand the opportunities that the blue economy could provide to the government's GDP.	1	2	3	4	5
4	The development of favourable policy frameworks to recognize and promote the blue economy will be aided by the establishment of effective policy framework in the blue economy.	1	2	3	4	5
5	The creation of an effective policy framework would encourage governments and other comparable organisations to campaign for amended policies advocating for women's participation in the blue economy in many countries.	1	2	3	4	5
6	The introduction of an effective policy framework would widen the blue economy network that can create employment within the industry.	1	2	3	4	5
7	The development of an effective policy framework would introduce effective policies through combining education and training systems.	1	2	3	4	5
8	The introduction of effective policy framework design would stimulate potential policy frameworks to increase women's participation in the blue economy thus serving as a documented advocate for the greater	1	2	3	4	5

	involvement of women in the blue economy sectors.					

Thank you for giving your time to participate in filling this questionnaire. Your input is highly appreciated.

APPENDIX B: PARTICIPANT INFORMATION SHEET FOR ONLINE ANONYOMOUS SURVEY

21 July 2021

PARTICIPANT INFORMATION SHEET FOR ONLINE ANONYOMOUS SURVEY

Title: PARTICIPANTION OF WOMEN IN THE BLUE ECONOMY AND THEIR SUSTAINABLE ECONOMIC DEVELOPMENT

Dear Prospective participant,

You are invited to participate in a survey conducted by Cynthia Mawufemor Afua Kumadeka, under the supervision of Professor Patricia Makoni, in the Department of Finance, Risk Management, Investment and Banking, towards a PhD in Management Studies (Finance) at the University of South Africa (UNISA).

The survey you have received has been designed to assess the participation of women in the blue economy, and their sustainable economic development. You were selected to participate in this survey because you are one of the key stakeholders who are knowledgeable about the blue economy sectors. You will not be eligible to complete the survey if:

- you fall outside the age bracket of 18 to 65 years; and
- you hold a position that is not of a junior, senior, manager, director and/or business owner.

By completing this survey, you agree that the information you provide may be used for research purposes, including dissemination through peer-reviewed publications and conference proceedings.

It is anticipated that the information we gain from this survey will help us to collect important information that could determine the diminished role of women's development in the growth of the blue economy in order to bridge the gap between highly male-dominated roles. You are, however, under no obligation to complete the survey, and can withdraw from the study prior to submitting the survey. The survey is developed to be anonymous, meaning that we will have no way of linking the information that you provide to you personally. Any identifying information that is obtained in connection with this survey will remain confidential, and will be disclosed only with your permission or as required by law. If you choose to participate in this survey it will take up no more than 20 minutes of your time. You will not benefit from your participation as an individual; however, it is envisioned that the findings of this study will be beneficial to the blue economy

sector in South Africa, in pursuit of the UN's SDGs. You will not be reimbursed or receive any incentives for your participation in the survey. We do not foresee that you will experience any negative consequences by completing the survey. The study is a low-risk research because it is a web-based online survey. The only minor risk and harm it may cause is the potential that the participants may be forced to excuse themselves for a few minutes from their work schedule to complete the web-based online survey questionnaires. The researcher undertakes to keep any information provided herein confidential, and to report on the findings from the perspective of the participating group, rather than that of an individual.

The records will be kept for five years for audit purposes, whereafter they will be permanently destroyed. The hard copies will be shredded, and electronic versions will be permanently deleted from the hard drive of the researcher's computer.

The research was reviewed and approved by the University of South African Ethics Review Committee. The primary researcher, Cynthia Mawufemor Afua Kumadeka, can be contacted during office hours at phone number 0764991142 or email: cmakumadeka@yahoo.com or 33343225@mylife.unisa.ac.za. The Supervisor, Professor Patricia Makoni, can be contacted during office hours at phone number 0124293029 or via email at makonpl@unisa.ac.za. Should you have any questions regarding the ethical aspects of the study, you can contact the Chairperson of the University of South Africa Ethics Research Committee, Mrs Carmen Poole at 012-4334668 or send an email to loedoc@unisa.ac.za or Dr Marianne Engelbrecht at engelm1@unisa.ac.za. Alternatively, you can report any serious unethical behaviour at the University's Toll-Free Hotline 0800 86 96 93.

You are making a decision whether or not to participate by continuing to the next page. You are free to withdraw from the study at any time prior to clicking the send button.

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PO Box 392 UNISA 0003 South Africa
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www.unisa.ac.za

Thank you for your time.

Cynthia Kumadeka

APPENDIX C: ETHICAL CLEANCE CERTIFICATE:

COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCE RESEARCH ETHICS REVIEW COMMITTEE

22 July 2021

NHREC Registration # : (if applicable)
ERC Reference # : 2021_CRERC_024(FA)
Name : Mrs Cynthia Mawufemor Afua Kumadeka
Student No#: 33343225

Dear Mrs Cynthia Mawufemor Afua Kumadeka

Decision: Ethics Approval from 2021 to 2026

Researcher(s): Mrs Cynthia Mawufemor Afua Kumadeka, 33343225@mylife.unisa.ac.za
Tel No: 0764991142
College of Economic and management Sciences
Department of Department of Finance, Risk Management and Banking
University of South Africa

"Participation of Women in the Blue Economy and their Sustainable Economic Development"

Qualification: PhD

Thank you for the application for research ethics clearance by the Unisa College of Economic and management Sciences Research Ethics Review Committee for the above-mentioned research. Ethics approval is granted for 5 years (**22 July 2021 until 21 July 2026**).

*The **low risk application** was **reviewed** by the College of Economic and management Sciences Research Ethics Review Committee on **19 July 2021** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the

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College of Economic and management Sciences Research Ethics Review Committee.

3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after the expiry date **(21 July 2026**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.
8. Permission is to be obtained from the university from which the participants are to be drawn (the Unisa Senate Research, Innovation and Higher Degrees Committee) to ensure that the relevant authorities are aware of the scope of the research, and all conditions and procedures regarding access to staff/students for research purposes that may be required by the institution must be met.
9. If further counselling is required in some cases, the participants will be referred to appropriate support services.

Note:

*The reference number **2021_CRERC_024 (FA)** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

Prof Nisha Sewdass
Chairperson, CRERC
E-mail: sewdan@unisa.ac.za
Tel: 012 429 2795

Prof MT Mogale
Executive Dean: CEMS
E-mail: mogalmt@unisa.ac.za
Tel: 012 429 4805

APPENDIX D: EDITOR'S CERTIFICATE

Aghogho Akpome

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Richards Bay, 3900
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University of Zululand
Email: aakpome@gmail.com;
AkpomeA@unizulu.ac.za
Cell: 0719430700

20 June 2022

To Whom It May Concern

This is to confirm that I have done language editing and proof-reading on the following thesis and made comprehensive for its improvement:

Title:

Participation of Women in the Blue Economy and Their Sustainable Economic Development

Author:

Cynthia Mawufemor Afua Kumadeka (University of South Africa, student no: 33343225)

Do not hesitate to contact me if the need arises.

Many thanks and regards,

Aghogho Akpome, *DLitt et Phil*

Member: *English Academy of Southern Africa (Council member, 2014-)*
Research Fellow: *Centre for African Studies, University of the Free State (2013-2016)*

APPENDIX E: TURNITIN SIMILARITY INDEX MATCH

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