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# Integrating Arabic Language, Sociological Perspectives and Physical Education in Fostering Green Practices in the Maritime Industry

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**Abstract.** The significance of fostering green practices in the maritime industry lies in the need to address environmental concerns and promote sustainable development. Green practices can help reduce carbon emissions, minimize pollution, and protect marine ecosystems. To achieve this purpose, this study examines the integration of Arabic language, sociological perspectives, and physical education in fostering green practices within the maritime industry in Lagos State, Nigeria. Employing an ex-post facto research design, the study utilized a stratified random sampling technique to select 150 participants from three public tertiary institutions. Data was collected using a validated questionnaire (ALSPPEMIQ) with a reliability coefficient of 0.815. The findings reveal that specific sociolinguistic factors significantly influence decision-making and behavior related to environmental sustainability in the maritime industry. Additionally, existing physical education programs demonstrate effectiveness in promoting environmental awareness and sustainable practices among maritime professionals. The study also found a significant impact of an integrated curriculum (Arabic language, sociological perspectives, and physical education) on the environmental knowledge, attitudes, and behaviors of maritime professionals in Lagos State. These results highlight the importance of a multidisciplinary approach in fostering green practices within the maritime industry. The study concludes that this integrated approach can help in creating a more environmentally conscious workforce and contribute to sustainable development in Lagos State, Nigeria. The Study recommends that there is need to encourage collaboration and partnerships between educational institutions, government agencies, and maritime organizations to support the implementation of green practices in the industry through the integration of language, sociological perspectives, and physical education components.

**Keywords:** Green practices, Arabic language, Maritime industry, Sociological perspective and Physical education

## 1. Introduction

The maritime industry plays a crucial role in the global economy as it facilitates the transportation of goods and people across the seas. As the industry continues to expand, there is a growing concern about its environmental impact, leading to a push towards adopting green practices to reduce carbon emissions and promote sustainability. The integration of Arabic language, sociological perspectives, and physical education in fostering green practices within the maritime industry in Lagos State, Nigeria, presents a unique and multifaceted approach to addressing environmental sustainability. As the world grapples with the challenges posed by climate change and environmental degradation, the maritime industry—crucial for trade and transportation—must adopt innovative strategies that promote sustainability.

Arabic is a Semitic language spoken by millions worldwide, particularly in the Arab world. It serves as a vital means of communication and cultural exchange (Holes, 2004). In the context of this study, Arabic language proficiency can facilitate better communication among stakeholders in the maritime industry, particularly in Lagos State with Cosmopolitan status can boast of significant Arabic-speaking populations.

Sociology on the other hand, is the study of social behaviour, institutions, and structures. Sociological perspectives provide insights into how social contexts influence individual and collective behaviors (Giddens et al., 2017). In this research, sociological perspectives will help analyze how social norms and values can affect the adoption of green practices within the maritime industry.

While Physical education encompasses structured programmes that promote physical activity and health awareness among individuals (Kirk, 2010). Integrating physical education into maritime training can enhance physical fitness and promote teamwork among personnel, which is essential for implementing effective green practices.
The maritime industry is a critical component of global trade and economic development. It encompasses various activities related to shipping, navigation, fishing, and marine resource management (Stopford, 2009). In Nigeria, particularly Lagos State, the maritime sector plays a pivotal role in facilitating trade and contributing to economic growth. However, this industry also faces significant environmental challenges, including pollution, habitat destruction, and overfishing.

Green practices in the maritime industry involve adopting environmentally friendly measures to reduce the industry's carbon footprint and promote sustainability. Globally, there is a growing emphasis on adopting green practices within the maritime industry to mitigate its environmental impact. Green practices refer to sustainable methods that reduce waste, conserve resources, and protect ecosystems (International Maritime Organization [IMO], 2019). Examples include implementing energy-efficient technologies on ships, adopting cleaner fuels, and enhancing waste management systems.

In Lagos State, Nigeria, the need for sustainable practices in the maritime industry is increasingly urgent due to rapid urbanization and population growth. The Lagos State Government has initiated various policies aimed at promoting sustainability in maritime activities (Lagos State Ministry of Environment, 2020). However, there remains a gap in effectively integrating innovative strategies that incorporate local languages and socio-cultural factors into these practices.

The significance of fostering green practices in the maritime industry lies in the need to address environmental concerns and promote sustainable development. Green practices can help reduce carbon emissions, minimize pollution, and protect marine ecosystems. Additionally, implementing green practices can lead to cost savings, improved efficiency, and enhanced competitiveness in the industry. The adoption of sustainable practices can significantly reduce pollution levels in coastal waters and preserve biodiversity (Kumar & Singh, 2018). Importantly, green practices can enhance the economic viability of the maritime sector by reducing operational costs associated with waste disposal and fuel consumption (Buhaug et al., 2009). Lastly, promoting sustainability aligns with global efforts to combat climate change and achieve the United Nations Sustainable Development Goals (UNSDGs), particularly Goal 14: Life Below Water.

While there are compelling arguments for adopting green practices in the maritime industry, some researchers highlight potential challenges. Proponents argue that implementing sustainable practices can lead to long-term economic benefits by improving efficiency and reducing costs (Petersen et al., 2016). Additionally, fostering a culture of sustainability can enhance a company's reputation and attract environmentally conscious clients (Böhringer & Jochem, 2007). Conversely, critics argue that transitioning to greener practices may require significant upfront investments that smaller companies may struggle to afford (Wang et al., 2018). Furthermore, there may be resistance from stakeholders accustomed to traditional methods who view changes as disruptive or unnecessary. This highlights the need for comprehensive training programmes that address these concerns while emphasizing the long-term benefits of sustainability.

Integrating Arabic language into maritime training programmes can provide a holistic approach to sustainability and facilitate better communication among diverse stakeholders in Lagos State's maritime sector. This integration is particularly relevant given Nigeria's multicultural landscape where Arabic-speaking communities play a significant role in trade activities. Effective communication can enhance collaboration among stakeholders working towards common goals related to green practices. Sociological perspectives are equally important as they provide insights into how social norms influence behavior within organizations. Understanding these dynamics can help identify barriers to adopting green practices while also highlighting opportunities for engagement through community-based initiatives (Harrison & Newholm, 2006). For instance, incorporating community feedback into decision-making processes can foster greater acceptance of sustainable practices. Physical education plays a crucial role in promoting teamwork and physical fitness among personnel involved in maritime activities. Training programmes that include physical education components can enhance collaboration among workers while also

emphasizing the importance of health and safety in implementing green initiatives (Kirk & Macdonald, 2001).

The significance of integrating Arabic language proficiency into maritime training cannot be overstated. It not only facilitates effective communication but also fosters cultural understanding among diverse groups involved in maritime activities. This cultural competence is essential for addressing local environmental issues collaboratively. Sociological perspectives provide a framework for understanding how societal values influence attitudes toward environmental sustainability. By examining these social dynamics within the context of Lagos State's maritime industry, stakeholders can develop targeted interventions that resonate with local communities (Giddens et al., 2017). Physical education contributes to building a workforce that is not only physically capable but also aware of health implications associated with environmental degradation. Training programmes that emphasize physical fitness alongside sustainability principles can foster a culture of health-consciousness among workers.

Proponents argue that integrating these three components into green practices enhances overall effectiveness by creating a more holistic approach to sustainability in the maritime industry. For instance, incorporating Arabic language training can improve stakeholder engagement while sociological insights can inform culturally relevant strategies for promoting environmental awareness (Mason & Bevan-Dye, 2013). However, some critics contend that integrating multiple disciplines may complicate training programmes or dilute focus on specific skills necessary for effective implementation of green practices (Harrison & Newholm, 2006). Additionally, logistical challenges related to resource allocation for such integrated programmes may pose significant barriers.

Previous research has explored the benefits of integrating various disciplines into vocational training programmes. For instance, studies have demonstrated that incorporating local languages can enhance learner engagement and retention (Al-Hassan et al., 2020), while understanding community dynamics can improve participation in environmental initiatives (Ojo et al., 2018). Additionally, integrating physical education has been shown to enhance teamwork skills among participants (Kirk & Macdonald, (2001). However, there is a lack of specific research examining how these integrations apply within the context of Nigeria's maritime industry.

While existing studies provide valuable insights into language integration and sociological factors influencing environmental practices globally or within other sectors in Nigeria (Ogunleye & Ojo, 2017), there is a notable lack of empirical research focusing on how these elements interact specifically within Lagos State's maritime industry context. Furthermore, most studies have not examined how physical education contributes directly to fostering green practices and there is insufficient exploration regarding stakeholder perceptions about integrating Arabic language skills alongside sociological insights into training programs aimed at promoting sustainability.

Failing to integrate Arabic language proficiency along with sociological perspectives and physical education into green practices poses significant risks for Nigeria's maritime industry—especially concerning environmental sustainability efforts. Without effective communication mechanisms established through language training, stakeholders may struggle with collaboration on critical environmental initiatives, cultural misunderstandings could hinder progress toward shared sustainability goals and the workforce may lack essential teamwork skills necessary for implementing effective green strategies.

While there exists foundational knowledge regarding each component related to this study—Arabic language integration; sociological perspectives; physical education; and their roles within fostering sustainable practices—there remains an urgent need for focused research exploring their collective impact specifically within Lagos State's maritime sector context. Addressing these gaps will not only contribute significantly toward enhancing educational frameworks but also promote broader societal benefits through improved environmental stewardship efforts across Nigeria's vital industries. Therefore, the study seeks to examine the integration of Arabic language, Sociological perspectives, and Physical Education in fostering green practices in the Maritime industry in Lagos state, Nigeria.

### 1.1 Statement of the Problem

The maritime industry in Lagos State, Nigeria, faces significant challenges related to environmental sustainability. Despite its economic importance, the

industry has contributed to pollution, resource depletion, and ecological degradation. Addressing these issues requires a multifaceted approach that incorporates various perspectives and disciplines.

While previous research has explored the benefits of integrating different disciplines into vocational training programs, there is a limited understanding of how this can be applied specifically to the maritime industry in Nigeria. This study aims to address this knowledge gap by investigating the potential of integrating Arabic language, sociological perspectives, and physical education to foster green practices within the maritime sector.
The Arabic language, as a lingua franca in many regions besides West Africa, can play a crucial role in promoting cultural exchange and understanding within the maritime industry. By exploring the integration of Arabic language into sustainability initiatives, this research aims to highlight the importance of linguistic diversity in fostering green practices and facilitating cross-cultural communication within the industry.

Understanding the social and cultural dynamics of coastal communities is essential for promoting sustainable maritime practices. Despite the growing recognition of the social dimensions of sustainability, little research has been done to examine how sociological perspectives can inform and influence environmental practices in this sector. Sociological perspectives can provide insights into the factors that influence behavior, attitudes, and decision-making related to environmental issues. By integrating sociological perspectives into vocational training, the study aims to equip individuals with the skills to engage with their communities effectively and promote sustainable practices.

Physical education can contribute to the development of physical fitness, environmental awareness, and teamwork skills, all of which are essential for sustainable maritime practices. While physical education is often associated with promoting physical fitness and wellbeing, its potential to instill values such as respect for the environment and sustainability has been largely overlooked in the context of the maritime sector.

This research seeks to address the aforementioned key knowledge gaps in the existing literature on sustainability within the maritime industry in Lagos, Nigeria. By filling these knowledge gaps, this research will provide a foundation for future studies and initiatives aimed at promoting sustainability and environmental stewardship within the maritime sector in Lagos and beyond.

It is against this background that this study seeks to investigate the integration of Arabic language, Sociological perspectives, and Physical Education in fostering green practices in the Maritime industry in Lagos state, Nigeria.

### 1.2 Purpose of the Study

The main purpose of this study is to examine the integration of Arabic language, Sociological perspectives, and Physical Education in fostering green practices in the Maritime industry in Lagos state, Nigeria.
Specifically, the study seeks to:

- identify the specific sociolinguistic factors that influence decision-making and behavior related to environmental sustainability in the maritime industry in Lagos State, Nigeria;
- evaluate the effectiveness of existing physical education programs in promoting environmental awareness and sustainable practices among maritime professionals in Lagos State, Nigeria and
- measure the impact of integrated curriculum (Arabic language, sociological perspectives, and physical education) on the environmental knowledge, attitudes, and behaviors of maritime professionals in Lagos State, Nigeria.

### 1.3 Research Hypotheses

The following research hypotheses guided this study at 0.05 alpha level.

$H_{01}$: There is no specific sociolinguistic factors that influence decision-making and behavior related to environmental sustainability in the maritime industry in Lagos State, Nigeria.
$H_{02}$: There is no significant effectiveness of existing physical education programs in promoting environmental awareness and sustainable practices among maritime professionals in Lagos State, Nigeria.
$H_{03}$: There is no significant impact of integrated curriculum (Arabic language, sociological perspectives, and physical education) on the environmental knowledge, attitudes, and behaviors of maritime professionals in Lagos State, Nigeria.

## 2. Literature Review- Overview of Green Practices in the Maritime Industry

The maritime industry plays a crucial role in global trade, accounting for over 80% of the world's trade by volume. However, the industry is also a significant

contributor to environmental pollution, with emissions of greenhouse gases, ballast water discharges, and oil spills having detrimental effects on marine ecosystems. In recent years, there has been a growing recognition of the need for the maritime industry to adopt green practices to mitigate its environmental impact (Böhringer & Jochem, 2017). This literature review provides an overview of the current state of green practices in the maritime industry, with a focus on emissions reduction, energy efficiency, and waste management.

Emissions reduction is a key area of focus for green practices in the maritime industry. The International Maritime Organization (IMO), the United Nations agency responsible for regulating international shipping, has set ambitious targets for reducing greenhouse gas emissions from ships. In 2018, the IMO adopted the Initial Strategy on the reduction of greenhouse gas emissions from ships, which aims to reduce total annual greenhouse gas emissions from international shipping by at least 50% by 2050 compared to 2008 levels. To achieve these targets, the maritime industry is exploring various technologies and alternative fuels, such as liquefied natural gas (LNG) and hydrogen fuel cells, to reduce emissions from ships (International Maritime Organization, 2018).

Energy efficiency is another important aspect of green practices in the maritime industry. Improving the energy efficiency of ships not only reduces fuel consumption and emissions but also lowers operating costs for shipowners (Kumar & Singh, 2018). One of the key strategies for improving energy efficiency is through the use of innovative hull designs and propulsion systems. For example, the introduction of air lubrication systems and energy-saving devices, such as ducted propellers and waste heat recovery systems, can significantly reduce fuel consumption and emissions from ships. In addition, the adoption of digital technologies, such as voyage optimization software and performance monitoring systems, can help optimize ship operations and improve energy efficiency.

Waste management is also a critical component of green practices in the maritime industry. Ships generate a wide range of waste during their operations, including sewage, garbage, and oily water. Proper waste management is essential to prevent pollution of the marine environment and ensure compliance with environmental regulations (Rodrigues &Soares, 2020). The IMO has established regulations, such as the MARPOL Annex V on the prevention of pollution by garbage from ships, to regulate the discharge of waste from ships. Shipowners are increasingly implementing waste management systems, such as onboard waste segregation and recycling facilities, to minimize the impact of their operations on the environment.

Several studies have highlighted the benefits of green practices in the maritime industry. For example, a study by Oltmann and Heij (2019) found that implementing energy-saving measures, such as hull cleaning and propeller polishing, can reduce fuel consumption and emissions from ships by up to 5%. Another study by Rodrigues and Soares (2020) assessed the environmental impact of alternative fuels, such as LNG and biofuels, on shipping operations and concluded that these fuels have the potential to significantly reduce greenhouse gas emissions from ships. These findings highlight the importance of green practices in reducing the environmental impact of the maritime industry.

In conclusion, the maritime industry is increasingly adopting green practices to mitigate its environmental impact. Emissions reduction, energy efficiency, and waste management are key areas of focus for green practices in the industry. The adoption of innovative technologies and alternative fuels, as well as the implementation of waste management systems, are essential to achieving sustainable shipping operations. Further research is needed to assess the effectiveness of green practices in reducing the environmental impact of the maritime industry and to identify new opportunities for improving sustainability in the sector.

## 3. Research Methodology

The focus of this research study is to examine the integration of Arabic language, sociological perspectives, and physical education in fostering green practices within the maritime industry in Lagos State, Nigeria. To achieve this aim, an ex-post facto research design was employed. This design is appropriate for the study as it allows for the analysis of existing conditions and outcomes without manipulating the independent variables—namely, the integration of Arabic language, sociological perspectives, and physical education—aimed at fostering green practices in the maritime industry.

For participant selection, a stratified random sampling technique was utilized. This method ensures that every member of the population has an equal and independent chance of being selected, allowing for effective representation across different strata. The use of this technique is critical for achieving a sample that accurately reflects the diversity within the population

under study. The sample for this study was drawn from three public tertiary institutions. Specifically, 50 participants were selected from the Institute of Maritime Studies at the University of Lagos (UNILAG), another 50 participants from both the Institute of Arabic and Islamic Studies (INSAIS) in Ejigbo and the Markaz Arabic and Islamic Training Centre in Agege, Lagos. Additionally, 50 participants were drawn from the Department of Sociology at Lagos State University of Education in Oto/Ijanikin, Lagos State. This resulted in a total sample size of 150 participants, comprising both students and lecturers.

The primary instrument used for data collection was a questionnaire titled "Arabic Language, Sociological Perspectives, and Physical Education on Maritime Industry Questionnaire" (ALSPPEMIQ). The instrument underwent face and content validation to ensure its relevance and appropriateness for the study's objectives. Additionally, Cronbach's alpha was employed to assess the internal consistency of the instrument, yielding a reliability coefficient of 0.815. Data collected from participants were analyzed using Chi-square statistical tool. These analysis was chosen for their ability to determine relationships between variables and assess differences across groups effectively.

## 4. Results and Findings

**Table 1:** Frequency Distribution of Participants according to their Institution (n=150)

| S/N | Name of the Institution | Frequency | Percentage (%) |
|---|---|---|---|
| 1. | Institute of Maritime Studies at the University of Lagos (UNILAG), Lagos State | 50 | 33.33 |
| 2. | Institute of Arabic and Islamic Studies (INSAIS) in Ejigbo, Lagos State | 25 | 16.67 |
| | Markaz Arabic and Islamic Training Centre in Agege, Lagos State | 25 | 16.67 |
| 3. | Lagos State University of Education, Oto, Ijanikin, Lagos State | 50 | 33.33 |
| | **Total** | **150** | **100** |

This table shows the frequency distribution of the participants according to their institutions in a research study focused on examining the integration of Arabic language, Sociological perspectives, and Physical Education in fostering green practices in the Maritime industry in Lagos state, Nigeria. 33.33% of the participants (50 individuals) are from the Institute of Maritime Studies at the University of Lagos (UNILAG), Lagos State. 16.67% of the participants (25 individuals each) are from the Institute of Arabic and Islamic Studies (INSAIS) in Ejigbo, Lagos State, and the Markaz Arabic and Islamic Training Centre in Agege, Lagos State. Another 33.33% of the participants (50 individuals) are from the Lagos State University of Education, Oto, Ijanikin, Lagos State.

Overall, the total number of participants in the study is 150 individuals, with each institution representing a significant portion of the sample. This data suggests that the study has a diverse range of participants from different educational backgrounds, which could provide valuable insights into the integration of Arabic language, Sociological perspectives, and Physical Education in fostering green practices in the Maritime industry in Lagos state, Nigeria.

**Table 2:** Frequency Distribution of Participants according to their Gender (n=150)

| S/N | Gender | Frequency | Percentage (%) |
|---|---|---|---|
| 1. | Male | 82 | 54.67 |
| 2. | Female | 68 | 45.33 |
| | **Total** | **150** | **100** |

The table shows the frequency distribution of participants according to their gender in the study examining the integration of Arabic language, sociological perspectives, and physical education in fostering green practices in the Maritime industry in Lagos state, Nigeria. Out of a total of 150 participants, 82 were male (54.67%) and 68 were female (45.33%). This data indicates that there were slightly more male participants in the study compared to female participants. It is important to consider gender differences when analyzing the results of the study, as they may have implications for how Arabic language, sociological perspectives, and physical education can be integrated to promote green practices in the Maritime industry in Lagos state.

### Testing of Hypothesis

**Research Hypothesis One:** There is no specific sociolinguistic factors that influence decision-making and behavior related to environmental sustainability in the maritime industry in Lagos State, Nigeria.

**Table 3:** Summary of **specific sociolinguistic factors that influence decision-making and behavior related to environmental sustainability in the maritime industry in Lagos State, Nigeria.**

| S/N | Items | $X^2$ | DF | Asymp. Sig. |
|---|---|---|---|---|
| | I believe that sociolinguistic factors play a significant role in influencing decision-making and behavior related to environmental sustainability in the maritime industry in Lagos State, Nigeria. | 6.87 | 3 | 0.012 |
| | I think that cultural norms and values have a direct impact on how individuals in the maritime industry make decisions regarding environmental sustainability. | 12.55 | 3 | 0.021 |
| | I feel that the language and communication styles used in the maritime industry in Lagos State affect the way environmental sustainability initiatives are carried out. | 9.76 | 3 | 0.005 |
| | I do not think that societal expectations and perceptions about environmental issues have any influence on decision-making and behavior in the maritime industry. | 14.92 | 3 | 0.081 |
| | I think that linguistic diversity and language barriers hinder effective communication and collaboration for environmental sustainability efforts in the maritime industry in Lagos State. | 7.23 | 3 | 0.000 |
| | | 51.33 | | |

Calculated Chi-square =51.33, DF =3 at 0.05 level of significant, Critical Table = 7.815

**Decision Rule:** Based on the data provided in Table 3, the decision rule for Research Hypothesis One is as follows: If the calculated chi-square value (51.33) is greater than the critical value at the 0.05 level of significance (7.815), then we reject the null hypothesis. Since the calculated chi-square value (51.33) is significantly greater than the critical value (7.815), we reject the null hypothesis. This means that there is a significant association between sociolinguistic factors and decision-making and behavior related to environmental sustainability in the maritime industry in Lagos State, Nigeria. In other words, the data supports the conclusion that sociolinguistic factors, such as cultural norms, language use, and societal expectations, do indeed influence decision-making and behavior related to environmental sustainability within this context.

**Research Hypothesis Two:** There is no significant effectiveness of existing physical education programs in promoting environmental awareness and sustainable practices among maritime professionals in Lagos State, Nigeria.
Table 4: Summary of significant effectiveness of existing physical education programs in promoting environmental awareness and sustainable practices among maritime professionals in Lagos State, Nigeria.

| **S/N** | **Items** | **$X^2$** | **DF** | **Asymp. Sig.** |
|---|---|---|---|---|
| | Physical education programs in maritime institutions effectively promote environmental awareness among maritime professionals. | 18.30 | 3 | 0.025 |
| | Physical education activities help maritime professionals understand the importance of sustainable practices in the maritime industry. | 10.40 | 3 | 0.000 |
| | The physical education curriculum in maritime institutions adequately covers topics related to environmental sustainability. | 13.54 | 3 | 0.039 |
| | Physical education programs provide opportunities for maritime professionals to engage in activities that promote environmental conservation. | 10.40 | 3 | 0.002 |
| | I believe that physical education programs have a positive impact on the environmental attitudes and behaviors of maritime professionals. | 7.60 | 3 | 0.005 |
| | | 58.9 | | |

Calculated Chi-square = 58.9, DF =3 at 0.05 level of significant, Critical Table = 7.815

From the data obtained in Table 4, if calculated chi-square value is greater than the critical value at the 0.05 level of significance, reject the null hypothesis. Therefore, based on the above rule, the calculated chi-square value in this case is 58.9, which is significantly greater than the critical value of 7.815 at the 0.05 level of significance. Therefore, the null hypothesis was rejected. This indicates that there is a significant relationship between physical education programs and the promotion of environmental awareness and sustainable practices among maritime professionals in Lagos State, Nigeria. The data suggests that these programs are effective in influencing the attitudes, knowledge, and behaviors of maritime professionals related to environmental issues.
Research Hypothesis Three: There is no significant impact of integrated curriculum (Arabic language, sociological perspectives, and physical education) on the environmental knowledge, attitudes, and behaviors of maritime professionals in Lagos State, Nigeria.

**Table 5:** Summary of significant impact of integrated curriculum (Arabic language, sociological perspectives, and physical education) on the environmental knowledge, attitudes, and behaviors of maritime professionals in Lagos State, Nigeria.

| S/N | Items | $X^2$ | DF | Asymp. Sig. |
|---|---|---|---|---|
| | I have developed a more positive attitude towards environmental sustainability since participating in the integrated curriculum. | 22.56 | 3 | 0.000 |
| | The integrated curriculum has equipped me with the necessary skills to contribute to sustainable practices in the maritime industry. | 4.97 | 3 | 0.231 |
| | I have observed a change in my behavior towards environmental issues since the application of the integrated curriculum. | 16.82 | 3 | 0.001 |
| | I believe that integrating Arabic language, sociological perspectives, and physical education to promote environmental awareness and sustainable practices can be efficient and effective. | 11.35 | 3 | 0.010 |
| | Integrating Arabic language, sociological perspectives, and physical education can significantly improve understanding of environmental issues in the maritime industry. | 8.79 | 3 | 0.033 |
| | | 64.49 | | |

Calculated Chi-square =64.49, DF =3 at 0.05 level of significant, Critical Table = 7.815

From the data obtained in Table 5, since the calculated Chi-square value of 64.49 is greater than the critical value of 7.815 at the 0.05 level of significance and the p-values for most items are less than 0.05, we reject the null hypothesis and conclude that there is a significant impact of integrated curriculum (Arabic language, sociological perspectives, and physical education) on the environmental knowledge, attitudes, and behaviors of maritime professionals in Lagos State, Nigeria.

## 5. Discussion of Findings

The findings from the data analysis reveal that there are specific sociolinguistic factors that influence decision-making and behavior related to environmental sustainability in the maritime industry in Lagos State, Nigeria. The results show statistically significant relationships between various sociolinguistic factors and their impact on decision-making and behavior in this industry.

The first item, which states that sociolinguistic factors play a significant role in influencing decision-making and behavior related to environmental sustainability, garnered a Chi-square value of 6.87 and a significance level of 0.012. This suggests that there is a relationship between sociolinguistic factors and decision-making in the maritime industry. This finding aligns with previous research that has highlighted the importance of sociolinguistic factors in shaping behavior and decision-making processes (Chivukula, 2017; Singh, 2019). The second item, discussing the impact of cultural norms and values on decision-making in environmental sustainability, received a Chi-square value of 12.55 and a significance level of 0.021. This finding is supported by literature that emphasizes the role of culture in influencing attitudes and behaviors towards environmental issues (Hassan, 2015; Lee, 2018).

The third item, focusing on the language and communication styles in the maritime industry impacting environmental sustainability initiatives, obtained a Chi-square value of 9.76 and a significance level of 0.005. This result is consistent with studies that have highlighted the importance of effective communication in promoting sustainable practices in various industries (Jones, 2016; Smith, 2020). The fourth item, which suggests that societal expectations and perceptions do not influence decision-making in the maritime industry, yielded a Chi-square value of 14.92 and a significance level of 0.081. Despite the relatively higher significance level, this finding contradicts existing literature that emphasizes the role of societal perceptions in shaping behavior and decision-making processes (Brown, 2017; Wang, 2019).

The final item, discussing how linguistic diversity and language barriers hinder communication for environmental sustainability efforts, received a Chi-square value of 7.23 and a significance level of 0.000. This finding is in line with previous research that highlights the challenges posed by linguistic diversity in promoting effective communication and collaboration for sustainability initiatives (Gupta, 2018; Patel, 2020). Overall, the data analysis supports the research hypothesis that specific sociolinguistic factors do influence decision-making and behavior related to environmental sustainability in the maritime industry in Lagos State, Nigeria. The findings align with existing literature on the impact of sociolinguistic factors on decision-making processes and highlight the importance of considering these factors in promoting environmental sustainability in the maritime industry.

The findings from this study in Table 4 indicate that existing physical education programs in maritime institutions in Lagos State, Nigeria have a significant effectiveness in promoting environmental awareness

and sustainable practices among maritime professionals. This is supported by the significant Chi-square value of 58.9 at a 0.05 level of significance. The results show that physical education programs effectively promote environmental awareness, help professionals understand the importance of sustainable practices, cover topics related to environmental sustainability, and provide opportunities for engagement in activities that promote environmental conservation.

These findings are in line with previous studies that have highlighted the importance of incorporating environmental education in professional training programs to promote sustainable practices (Arecord, 2017; Wilson & Scalera, 2015). The positive impact of physical education programs on the environmental attitudes and behaviors of maritime professionals supports the notion that education plays a crucial role in fostering environmental awareness and promoting sustainable practices in different industries (Miles & Covello, 2019; Jones et al., 2018).

Overall, the results suggest that physical education programs in maritime institutions can serve as effective tools for promoting environmental awareness and sustainable practices among professionals in the maritime industry.

Based on the findings from this study in Table 5, the findings support the research hypothesis that there is a significant impact of the integrated curriculum (Arabic language, sociological perspectives, and physical education) on the environmental knowledge, attitudes, and behaviors of maritime professionals in Lagos State, Nigeria. Specifically, the participants reported developing a more positive attitude towards environmental sustainability, observing a change in their behavior towards environmental issues, and believing that integrating the curriculum components is efficient and effective for promoting environmental awareness and sustainable practices in the maritime industry.

These findings align with previous literature on the effectiveness of integrated curriculum in promoting environmental education and sustainability practices. For example, research by Wals and Jickling (2002) emphasized the importance of integrating different subject areas to enhance understanding of complex environmental issues. Additionally, studies by Tilbury et al. (2011) have shown that integrated curriculum approaches can lead to positive changes in attitudes and behaviors towards environmental sustainability. Overall, the results of this study suggest that integrating Arabic language, sociological perspectives, and physical education can play a significant role in improving environmental knowledge, attitudes, and behaviors among maritime professionals in Lagos State, Nigeria.

## 6. Conclusion

This research has highlighted the importance of examining the integration of Arabic language, sociological perspectives, and physical education in fostering green practices in the maritime industry in Lagos State, Nigeria. The findings have shown that there are specific sociolinguistic factors that influence decision-making and behavior related to environmental sustainability in the maritime industry. Additionally, the existing physical education programs have shown significant effectiveness in promoting environmental awareness and sustainable practices among maritime professionals in Lagos State. Furthermore, the integrated curriculum of Arabic language, sociological perspectives, and physical education has demonstrated a significant impact on the environmental knowledge, attitudes, and behaviors of maritime professionals in Lagos State, Nigeria.

Overall, this research suggests that a holistic approach that combines language, sociology, and physical education can play a crucial role in fostering green practices within the maritime industry in Lagos State, Nigeria. This integrated approach can help in creating a more environmentally conscious workforce and contribute to sustainable development in Lagos State, Nigeria.

## 7. Recommendations

Based on the findings from the study, the following recommendations were made:

1. Implement language training programs in Arabic specifically tailored to the maritime industry in Lagos State to enhance communication and understanding of environmental sustainability practices.
2. Conduct workshops and training sessions on sociological perspectives related to environmental sustainability to increase awareness and encourage informed decision-making among maritime professionals.
3. Enhance existing physical education programs in the maritime industry by incorporating modules on environmental awareness and sustainable practices to promote green initiatives.
4. Develop an integrated curriculum that combines Arabic language, sociological perspectives, and physical education specifically targeting maritime

professionals in Lagos State to holistically address environmental knowledge, attitudes, and behaviors.

5. Encourage collaboration and partnerships between educational institutions, government agencies, and maritime organizations to support the implementation of green practices in the industry through the integration of language, sociological perspectives, and physical education components.

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