

# Innovations

## Local Content Strategies and Sustainability of Pharmaceutical Industry in Southeast, Nigeria

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### Abstract

*The study examined the effects of Local Content Strategies and Sustainability of Pharmaceutical Industry in Southeast, Nigeria. The specific objectives were to: examine the effect of domestic sourcing of raw materials on the sustainability of organisational productivity of pharmaceutical industry in Southeast, Nigeria; evaluate the effect of procurement of local materials on the maintaining costs of pharmaceutical industry in Southeast, Nigeria; establish the extent to which Investment in local content initiatives affect waste management of pharmaceutical industry in Southeast, Nigeria; ascertain the extent to which development of local production of goods affect personal health of workers of pharmaceutical industry in Southeast, Nigeria; assess the influence of labour creation on operational safety of pharmaceutical industry in Southeast, Nigeria; determine the extent to which transfer of skills influence quality of products of pharmaceutical industry in Southeast, Nigeria. The study was anchored on Resource-Based View theory. The study adopted survey research design with a total population of 3172. The sample size was 343 respondents gotten using Freund and William's statistical formula, however, a total of 330 copies of duly completed and returned questionnaire were used for the analysis. The study also adopted stratified sampling technique to reach out to different strata using structured questionnaire. The validity of the instrument was measured using face and content validity. Cronbach's Alpha Statistic was used to test the reliability of the instrument, of which the results were all above 70% required standard. The primary data collected were statistically tested using regression analysis with the aid of SPSS. The study found that Local Content Strategies have significant effect on Sustainability of Pharmaceutical Industry in Southeast, Nigeria. The study, therefore recommended, among others, that pharmaceutical companies actively strengthen partnerships with local suppliers; establish long-term agreements, foster collaboration with local raw material providers, and invest in initiatives that enhance the quality and reliability of domestically sourced materials.*

**Keywords:** Local Content Strategies and Sustainability of Pharmaceutical Industry

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### 1.1 Introduction

The pharmaceutical sector plays a prominent role in the general health of citizens in any economy. Nigeria is not an exception. Owing to the significant role of this sector to the general welfare of the economy, it is imperative to give serious attention to issues that concern the sector. The Nigerian pharmaceutical sector is known to be complex as it involves numerous players (manufacturers, national regulators, wholesalers and retailers, government ministries and other stakeholders). This means that there is need for these stakeholders to put in additional effort to create an enabling environment to exploit the full potentials of the

sector (Obukhowo, Olele and Buzugbe, 2018). As stated earlier, the pharmaceutical industry plays a vital role in promoting public health by ensuring access to safe, effective, and affordable medicines. In Nigeria, like many other developing countries, there is a growing recognition of the importance of local content strategies to enhance the sustainability of the pharmaceutical industry (Dong & Mirza, 2016). The Pharmaceutical Manufacturers Group of the Manufacturers Association of Nigeria (PMG-MAN, 2010) asserted that the Nigerian pharmaceutical sector has the potential to be a leader in the production and distribution of pharmaceuticals in Sub-Saharan Africa, with nine Nigerian pharmaceutical firms (Drugfield Pharmaceuticals Ltd, Emzor Pharmaceutical Industries Ltd, Evans Medical Plc, Fidson Healthcare Plc, GlaxoSmithKline Nigeria, May & Baker Nigeria Plc, Mopson Pharmaceutical Industries Ltd, Neimeth International Pharmaceuticals and PZ Cussons Plc) exporting their products to various ECOWAS countries.

Local content refers to the proportion of goods, services, and workforce that originate from the domestic market. Nigeria, with its large population and healthcare needs, heavily relies on imported pharmaceutical products. This heavy dependence on imports poses challenges such as limited access, high costs, and vulnerability to supply chain disruptions. To address these challenges, the Nigerian government and various stakeholders have been implementing local content strategies to enhance the domestic production of pharmaceuticals and promote sustainability in the industry. Local content strategies of pharmaceutical firms refer to the approaches adopted by these companies to promote and support local manufacturing, research, and development activities in the countries or regions where they operate. These strategies are aimed at fostering domestic capabilities, creating jobs, driving economic growth, and addressing healthcare needs within the local market. Local content policies, which are generally protectionist and discriminatory, have had mixed results in various economies around the world: being effective in growing fledgling industries in developing economies, but in some cases serving the interest of few or creating a distortion in an economy where wrong sectors or outputs are protected (Acheampong, Ashong and Svanikier, 2016).

Local content strategies in the Nigerian pharmaceutical industry aim to achieve several objectives. First, they seek to reduce the country's dependence on imported medicines by increasing local production capacity. This involves supporting the establishment and expansion of local pharmaceutical manufacturing companies (Dong & Mirza, 2016). Second, local content strategies focus on enhancing research and development capabilities within the country. By investing in research and development, Nigeria can foster innovation and develop new drugs tailored to its specific healthcare needs (United Nations Industrial Development Organization, 2011). Furthermore, local content strategies promote technology transfer and knowledge exchange through partnerships and collaborations with international pharmaceutical companies. This enables the acquisition of technical expertise, quality control standards, and manufacturing best practices (United Nations Industrial Development Organization, 2011). To ensure the sustainability of the pharmaceutical industry, local content strategies need to be supported by a conducive policy and regulatory environment. The National Agency for Food and Drug Administration and Control (NAFDAC) plays a critical role in enforcing regulations and quality standards for pharmaceutical products in Nigeria. NAFDAC's efforts to curb substandard, falsified, and counterfeit medicines contribute to safeguarding public health and promoting trust in locally produced medicines (National Agency for Food and Drug Administration and Control, 2019).

The southeastern part of Nigeria has a vibrant pharmaceutical industry that contributes to healthcare provision in the region. The industry encompasses various components, including pharmaceutical manufacturing, distribution, wholesale, and retail. The sector is characterized by a mix of locally owned pharmaceutical companies, multinational corporations, and small-scale enterprises (Obi, Nworgu and Nwodo, 2019). One of the key challenges facing the pharmaceutical industry in the southeastern region is the reliance

on imported medicines. Many essential drugs are imported from foreign countries, leading to issues such as high costs, limited availability, and vulnerability to supply chain disruptions. To address these challenges and enhance sustainability, local content strategies have been pursued. Local content strategies in the pharmaceutical industry of southeastern Nigeria aim to promote domestic manufacturing and reduce dependence on imports. This involves supporting the establishment and expansion of local pharmaceutical manufacturing companies. By encouraging local production, the region can improve access to medicines, reduce costs, and create employment opportunities (Oguejiofor&Eze, 2020). To further enhance the sustainability of the pharmaceutical industry, the southeastern region has also focused on research and development (R&D) activities. Investing in R&D enables the region to develop new drugs, conduct clinical trials, and innovate in line with the local healthcare needs. This contributes to improved health outcomes, economic growth, and self-sufficiency in the supply of medicines (Nwokike& Andes, 2019). To ensure the long-term sustainability of the pharmaceutical industry in the southeastern region, collaborations and partnerships with international pharmaceutical companies are crucial. These partnerships facilitate technology transfer, knowledge exchange, and capacity building. They enable local pharmaceutical companies to acquire advanced manufacturing technologies, quality control standards, and research capabilities. By leveraging these partnerships, the region can enhance its competitiveness, maintain high-quality standards, and stay abreast of global advancements in the pharmaceutical industry (Oguejiofor&Eze, 2020). Moreover, collaborations and partnerships with international pharmaceutical companies have played a significant role in technology transfer and knowledge exchange. These collaborations facilitate the transfer of technical expertise, quality control standards, and manufacturing best practices. They also provide opportunities for capacity building and training, contributing to the growth and sustainability of the local pharmaceutical industry in the southeastern region (Obi et al., 2019). To ensure regulatory compliance and quality standards, the National Agency for Food and Drug Administration and Control (NAFDAC) plays a vital role in the southeastern pharmaceutical industry. NAFDAC oversees the registration, regulation, and monitoring of pharmaceutical products, ensuring safety, efficacy, and quality (Oguejiofor&Eze, 2020).

Local content strategies are crucial for the sustainability of the pharmaceutical industry in Nigeria. They enable the country to reduce over-dependence on imports, enhance research and development capabilities, promote technology transfer, and create a robust domestic pharmaceutical sector. The pharmaceutical industry in the southeastern part of Nigeria faces challenges related to overdependence on imported medicines. However, through local content strategies focusing on domestic manufacturing, research and development, and collaborations with international partners, the region is working towards enhancing the sustainability of the pharmaceutical industry. By promoting local production, improving R&D capabilities, and ensuring regulatory compliance, the southeastern region aims to provide better access to quality medicines and contribute to the overall healthcare system in Nigeria. Effective implementation of these strategies, along with supportive policies and regulations, will contribute to improving access to quality medicines, stimulating economic growth, and ultimately advancing public health in Nigeria. However, the pharmaceutical industry in the southeastern, Nigeria faces several challenges that impact its sustainability and growth. These challenges revolve around key areas such as the procurement of local materials, maintaining costs, investment in local content initiatives, development of locally produced goods, personal health, labor creation, operational safety, transfer of skills, quality products, technologies, and energy consumption. Addressing these issues is essential to ensure the industry's long-term viability and its contribution to the region's healthcare system. One of the primary challenges is the procurement of local materials and the subsequent impact on maintaining costs. The industry faces difficulties in accessing an adequate supply of high-quality local materials, often leading to a reliance on imported materials. This dependency increases production costs, which, in turn, can result in higher prices for medicines and reduced

accessibility for the local population. Finding ways to improve the availability and quality of local materials while managing costs is crucial for the industry's sustainability.

Furthermore, investment in local content initiatives is another critical aspect that requires attention. Understanding the extent of the relationship between investment in local content initiatives and the sustainability of the pharmaceutical industry is essential. Such initiatives, including support for local manufacturing and research, aim to reduce over-dependence on imports and foster a self-reliant industry. Evaluating the effectiveness and impact of these initiatives will guide decision-making processes and ensure optimal resource allocation for sustainable growth. The development of locally produced goods holds promise for improving personal health outcomes in the southeastern region. By producing medicines and healthcare products locally, the industry can enhance access to quality healthcare. Thus, it is imperative to assess the nature of the relationship between the development of locally produced goods and personal health. Rigorous quality control measures and adherence to regulatory standards are necessary to ensure that locally produced goods are safe, effective, and do not compromise personal health. Labor creation and operational safety are crucial considerations for sustainable industry growth. Promoting job opportunities within the pharmaceutical industry is vital for economic development and reducing unemployment. Simultaneously, ensuring a safe working environment is essential for the well-being of industry personnel. Challenges related to skilled labor availability, training, and occupational health and safety need to be addressed to enhance labor creation and maintain a secure and productive workforce. The transfer of skills and knowledge from international partners to the local workforce is another important aspect. Leveraging the expertise of international pharmaceutical companies can enhance the quality of locally produced medicines. Evaluating the effectiveness of skills transfer programs and knowledge exchange initiatives is crucial for empowering the local workforce and ensuring the production of high-quality pharmaceutical products that meet international standards. Additionally, the industry's adoption of appropriate technologies and energy consumption practices is vital for sustainability. Assessing the availability, accessibility, and effectiveness of technologies used in the pharmaceutical industry of the southeastern region is necessary to identify areas for improvement. Optimizing energy consumption through efficient production processes and embracing sustainable technologies can reduce environmental impact and enhance the industry's overall sustainability.

Addressing these challenges and understanding the relationships between various factors is fundamental to the sustainable development of the pharmaceutical industry in the southeastern part of Nigeria. By devising strategies to enhance local material procurement, manage costs, promote investment in local content, ensure the development of high-quality products, create employment opportunities, prioritize operational safety, facilitate skills transfer, and optimize technology and energy consumption, the industry can contribute to the region's healthcare system, promote economic growth, and improve the well-being of the population. It is in the light of these challenges, that the study investigated local content strategies and sustainability of pharmaceutical industry in South Eastern Nigeria. To effectively carry out the investigation, the following questions were guided the study:

- RQ1: To what extent does domestic sourcing of raw materials affect the sustainability of organisational productivity of pharmaceutical industry in Southeast, Nigeria?
- RQ2: To what degree does procurement of local materials affect the maintaining costs of pharmaceutical industry in Southeast, Nigeria?
- RQ3: To what degree does Investment in local content initiatives affect waste management of pharmaceutical industry in Southeast, Nigeria?

- RQ4: To what extent does development of local production of goods affect personal health of workers of pharmaceutical industry in Southeast, Nigeria?
- RQ5: To what degree does labour creation affect operational safety of pharmaceutical industry in Southeast, Nigeria?
- RQ6: To what extent does transfer of skills influence quality of products of pharmaceutical industry in Southeast, Nigeria?

## **2.0 Literature Review**

### **2.1 Domestic sourcing of raw materials and Sustainability of organisational productivity**

Extant literatures appear to reveal that there could be implications for domestic raw materials sourcing on the sustainability of organizational productivity. Haider (2010) study on raw material sourcing and firm performance in South-West Bangladesh revealed a positive correlation between intra-regional sourcing and firm performance in the manufacturing sector of Khulna, Jessore, Satkhira, and Bagerhat districts. Furusawa, Inui, Ito, and Tang (2018) investigation into global sourcing and domestic production networks emphasized the spatial concentration of domestic production networks following firms' offshoring decisions, highlighting the dynamics of input sourcing and its effects on both domestic and foreign suppliers. Pas (2021) research on local sourcing, examined motivations, benefits, and challenges, pointing out that despite logistic benefits and flexibility, challenges may lead organizations to prefer global sourcing. Egwuatu (2022) examination of material management in plastic manufacturing companies in Anambra State, Nigeria established a significant relationship between material planning, handling, procurement strategies, and organizational productivity. Nguyen, Hsu-Hao, Pham, Thi, Do, Nguyen, and Nguyen (2022) study in Vietnam emphasized the positive effect of domestic raw material sourcing on small and medium enterprises' performance, cautioning against the potential drawbacks of international raw material sources. Collectively, evidence in extant literature supports the proposition that domestic sourcing of raw materials contributes positively to organizational productivity in various industrial contexts.

### **2.2 Procurement of local materials and Maintaining costs**

Extant literature on procurement-related factors and their impact on various industries provides valuable insights into the multifaceted nature of procurement strategies and their effects. Ogusanmi (2013) study in the construction industry emphasizes the influence of procurement selection criteria, tendering methods, and variation orders on project performance, and highlighted the interconnectedness of these factors. Oladinrin, Olatunji, and Hamza (2013) contribute to the discourse by examining the effect of procurement systems on building project performance in Nigeria, emphasizing the need for a nuanced approach to procurement selection based on specific project requirements. Faremi, Adenuga, and John (2015) investigation into maintenance expenditure optimization in institutional buildings in Nigeria underscores the importance of considering diverse factors such as building characteristics and administrative aspects for cost-effective maintenance practices. Momanyi (2016) examination of the impact of firms' offshoring decisions on domestic production networks expands the discussion beyond procurement, revealing how global sourcing decisions can reshape the spatial concentration of production networks. Nguyen, Hsu-Hao, Pham, Thi, Do, Nguyen, and Nguyen (2022) study in Vietnam focuses on the effects of raw material sources on small and medium enterprises (SMEs) performance, highlighting the advantages of domestic sourcing over international alternatives. Ugban and Okoro (2017) investigation into the competitive landscape in the Nigerian pharmaceutical sector emphasizes the correlation between organizational size and performance, indicating that larger firms tend to fare better in this industry. Kipkemoi (2017) stresses the importance of procurement methods and its effect on organizational performance, emphasising the development of strong ties with key suppliers for consistent supply and quality. Ettmayr and Lloyd (2017) research on local content requirements

(LCRs) in the South African renewable energy sector underscores the challenges associated with implementing LCRs without careful consideration of pre-existing conditions, calling attention to the potential drawbacks of such policies. Akeem (2017) exploration of cost control and cost reduction in organizational performance highlights the positive impact of cost control on overall organizational effectiveness. Nyangau, Kibuine, and Ouko (2019) investigation into e-procurement in Nairobi County, Kenya, emphasizes the significance of factors such as pricing in influencing e-procurement performance. Abdulkadir, Gidado, Muhammad, Anas, and Kunya (2020) study on procurement procedures in Nigerian construction projects reveals the high impact of project management and direct labor procurement methods on cost performance. Ibekwe, Ngige, and Jacobs (2020) research on the impact of total productive maintenance programs in Anambra state emphasizes the positive effect on organizational performance. Onwuka (2021) examination of supply chain management tactics in the Nigerian oil and gas industry highlights the potential for job creation and socioeconomic growth through effective local content strategies. Adenaiya and Alabi-Akuge (2021) investigation into procurement processes in the Nigerian construction sector emphasizes the need for strategic procurement methods for successful project completion. Nwaguru and Sylva (2022) study on the effective application of local content policy in the Nigerian oil and gas industry emphasizes the importance of synergy among local enterprises to overcome challenges and fully realize the objectives of the local content policy. El Nemr (2022) evaluation of factors affecting the upkeep and running expenses of administrative buildings in Egypt underscores the significance of design issues, financial considerations, and effective maintenance management for sustainable and cost-effective building maintenance. These reviews collectively suggest that procurement-related factors play a crucial role in shaping the performance and sustainability of organizations across various industries, and careful consideration of these factors is essential for optimizing outcomes.

### **2.3 Investment in local content initiatives and Waste Management**

The extant literature reviewed presents a multifaceted exploration of waste management dynamics, encompassing diverse geographical and industrial contexts. While Adeniran, Adewale, and Olofa (2014) focus on the impact of haphazard solid waste disposal in Ado Ekiti, Nigeria, and advocate for comprehensive waste management policies, De and Debnath (2015) highlight health consequences related to improper waste disposal in Kolkata. Osuga and Okello's (2015) study on Comply, a wood processing firm in Kenya, establishes a positive correlation between waste management and environmental performance, emphasizing the need for clear policies. Abul's (2015) investigation in Mangwaneni, Manzini city, underscores the health and environmental repercussions of dumpsite proximity, recommending appropriate management regulations. Adejumo, Adekoyo, and Sangotegbe (2017) explore rural perceptions in Oyo state, Nigeria, emphasizing the correlation between waste generation and climate change awareness. Nicholas (2018) evaluates the effects of solid waste management procedures on general health in Makindye division, revealing various challenges in waste management. Ogundele, Raphael, and Abiodun (2018) delve into the association between environmental factors, waste disposal practices, and public health in Agbowo and Bodija communities, highlighting regional disparities. Nwachukwu, Nwelue, Ibekwe, Anyanwu, Obilor, Ekwe-Emeagha, Okereke-Ejiogu, Ellah, and Ohajianya (2018) study in Owerri investigates the impact of household waste on farmers' health, suggesting the need for proper waste disposal alternatives. Zamri, Kamarudin, Samah, Saudi, Wahab, Saad, and Bati (2019) explore waste management practices in Malaysian states, emphasizing the importance of coordinated state efforts. Ndukwe, Uzoegbu, Ndukwe, and Agibe (2019) analyze the environmental and health impacts of solid waste disposal in Umuahia, Abia State, revealing the importance of proper waste disposal policies. Victoire, Martin, Abias, Pacifique, and Claude (2020) study in Kinyinya sector, Somalia, underscores the challenges in garbage collection and disposal, indicating the need for improved waste

management strategies. Molina and Catan (2020) assess the awareness and practices of solid waste management among students in Zamboanga City, revealing gaps in knowledge about waste management regulations. Shegow and Funwie (2020) study in Wadajir district, Somalia, highlights the environmental and health impacts of poor waste management practices, emphasizing the need for community involvement. Moyo (2020) investigation in Lusaka, Zambia, demonstrates the health consequences of improper waste disposal, urging effective waste management policies. Aminu, Ladapo, and Ogunlalu (2020) research in Ikenne Local Government Area, Ogun State, emphasizes the environmental and health effects of inappropriate solid waste disposal, advocating for policies supporting healthy waste disposal practices. Fox (2021) study on local content adoption in Uganda's oil industry explores stakeholder patterns and motives, revealing the influence of international donors on education and training initiatives. Ogbu, Taigbenu, and Asuquo (2022) examination of construction procurement documents highlights the impact of documentation errors on project cost performance. Fadhullah, Imran, Ismail, Jafaar, and Abdullah (2022) research in Panji, Malaysia, examines household waste practices and management attitudes, identifying correlations between waste segregation habits and socio-demographic factors. Okoro and Ndukwe (2022) qualitative study on local content law in Nigeria underscores challenges faced by indigenous firms and advocates for an expanded local content law. Overall, the literature collectively emphasizes the intricate relationships between waste management, public health, environmental sustainability, and socio-economic factors across different regions and industries.

#### **2.4 Local production of goods and personal health of workers**

Russo & Banda (2015) examination of pharmaceutical production dynamics in Mozambique and Zimbabwe reveals the positive impact of favorable economic conditions, international support, and increased demand due to AIDS treatment on the development of local pharmaceutical industries. Steele, Ali, Levitskiy & Subramanian (2020) study, conducted in the context of the COVID-19 pandemic, emphasizes the necessity of reducing dependency on foreign pharmaceutical companies by promoting local manufacturing, addressing issues such as technology transfer, and enhancing technical education in the health sector. Tawfik, Tawfik, Alajmi, Badr, Al-Jedai, Almozain, Bukhary, Halwani, Al-Awadh, Alshamsan, Babhair, & Almalik (2022) research in Saudi Arabia underscores the role of local pharmaceutical manufacturing in ensuring drug security, highlighting challenges related to governance, research and development, regulatory regimes, and human resources. Shifting focus to employee well-being, Perfecto, Revenio, Kazi, Samia (2020) and CIPD (2021) explore the connection between mental health and productivity in organizations. Perfecto et al. find a positive correlation between psychological well-being and task performance, urging interventions to improve mental states and create a healthier work environment. CIPD's UK-focused study underscores the pandemic's impact on workplace well-being and emphasizes the pivotal role managers play in supporting employee health, stressing the need for equipping them with the necessary knowledge and skills. Overall, these studies collectively contribute valuable insights into the multifaceted challenges and opportunities in local pharmaceutical manufacturing and workplace well-being.

#### **2.5 Labour Creation and Operational Safety**

Extant literature provides valuable insights into the interplay between labour creation, operational safety, and health in various industries, laying a foundation for understanding these dynamics in the pharmaceutical sector in Southeast Nigeria. Muiruri and Kwasira (2015) highlight the pivotal role of the human resource function in implementing Occupational Health and Safety (OHS) programs, emphasizing training, appraisal, audit, and planning as significant influencers. Akinwale and Olusanya (2016) reveal the implications of inadequate investment in safety intelligence programs, leading to prevalent occupational hazards and negative impacts on productivity. Otolaiye (2016) emphasizes the importance of safety management systems in moderating the relationship between safety culture and performance, highlighting the need for a

robust safety framework. Amponsah-Tawiah and Mensah (2016) focus on the mining industry in Ghana, demonstrating a positive relationship between occupational health and safety management and organizational commitment. Kaynak, Toklu, and Toklu (2016) explore the impact of OHS practices on organizational commitment and job performance, emphasizing the positive effects of safety procedures, risk management, and organizational safety support. Dim, Okoye, and Okoye (2018) extend the scope to the plastic industry, revealing the beneficial impact of safety management on profitability, customer satisfaction, employee commitment, and cost savings. Shuen (2018) investigates the moderated mediation effect of safety leadership on safety communication and participation, emphasizing the importance of safety culture in this interaction. Greeperson (2019) conducts a case study on the Arusha airport authority, revealing both the significant impact of occupational health and safety programs and the challenges hindering their full implementation. Korkmaz and Park (2019) focus on safety communication's impact on awareness and behavior, suggesting that improving social network measures can enhance safety outcomes.

Umugwaneza, Irechukwu, and Mugabe (2019) study workplace safety and health standards in Rwandan steel manufacturing firms, emphasizing the impact on employee commitment and performance. Garcia, Bailey, and Young (2019) investigate local content strategies in technology firms in Northern Ireland, linking them to innovation capabilities and long-term survival. Ayalew and Demissie (2020) explore the impact of an OHS program on organizational productivity in a tannery factory, revealing positive effects on productivity. Agboola, Esan, Ojo, and Omotosho (2020) assess workers' perceptions of occupational safety measures, highlighting their positive impact on individual and organizational performance. Iskamto, Ghazali, Aftharnorhan, and Riau (2020) investigate OSH's impact on midwife performance, noting the significance of work safety in enhancing overall performance. Adesola, Onwuegbuna, and Abodunrun (2021) focus on Nigeria, revealing the positive impact of occupational safety and health regulations on labor productivity. Kessy and Raymond (2021) explore the functions of occupational health and safety management systems in reducing workplace hazards, emphasizing the importance of effective application and implementation. Ullah, Sulaiman, Ali, Ahmad, Scholz, and Han (2021) highlight the role of work safety in enhancing social sustainability in public sector hospitals, with unexpected findings regarding management practices. Segbenya and Yeboah (2022) study OHS's impact on construction worker performance in Ghana, emphasizing the need for regular health and safety induction and training. Bittire and Chuma (2022) explore the effects of OHS techniques on organizational performance in the Ethiopian Electric Power Corporation, revealing a positive and significant impact. Naji, Isha, Allazani, Saleem, and Alzoraiki (2022) focus on safety communication as a moderator between safety culture and performance in the petrochemical sector, revealing the mediating role of safety communication in this relationship. In the context of the pharmaceutical industry in Southeast Nigeria, these studies provide a comprehensive understanding of the factors influencing labour creation and operational safety. And highlighting the importance of a robust safety framework, effective safety management systems, and the role of communication and culture in ensuring a safe and productive work environment.

## **2.6 Transfer of Skills and Quality of Products**

Extant literature on the transfer of skills and quality of products in the pharmaceutical industry provides valuable insights into various aspects of knowledge transfer and its impact on organizational performance. Palacios-Marques, Peris-Ortiz, and Merigo (2013) emphasized the importance of a holistic business view, competency-based management, continuous learning, and information technology infrastructure in enhancing knowledge transfer and positively influencing firm performance in knowledge-intensive industries. This underscores the significance of a comprehensive approach to skill transfer. Ayodeji (2015) investigation into the impact of product quality on organizational performance, with a focus on a specific industry, found a considerable relationship between product quality and customer happiness, as well as

between product quality and sales turnover. This suggests that the quality of products plays a vital role in influencing organizational outcomes. Razak (2016) quantitative study on toothpaste products in Indonesia highlighted the significance of product quality and meeting production standards in satisfying customers. The study also revealed that the functional value of the product did not significantly influence customer satisfaction, emphasizing the importance of adhering to quality standards in the production process. Setyanti and Farida (2016) explored the impact of knowledge sharing on the business performance of small and medium enterprises (SMEs) in Indonesia. The study demonstrated that knowledge sharing positively influenced the business performance of SMEs, and product innovation played a moderating role in strengthening this relationship. This suggests that both knowledge transfer and innovation contribute to the overall performance of organizations. Ofobruku and Yusuf (2016) study in the agriculture industry in Nigeria revealed a positive impact of knowledge transfer on employees' performance. The findings emphasized that as knowledge transfer mechanisms were implemented, employees' performance improved, highlighting the importance of knowledge transfer programs in enhancing organizational outcomes. Sohrabi, Souri, and Kalantar(2017) study on knowledge transfer and product complexity in the supply chain context found that both internal and external knowledge transfer positively impacted supply chain flexibility. The study suggested that creating an environment conducive to knowledge transfer and managing product complexity are essential for enhancing supply chain flexibility.

Wilson, Clark, and Adams (2017) investigated the effects of local content strategies on organizational sustainability in the renewable energy industry. The study demonstrated that companies effectively implementing local content strategies experienced improved financial performance, enhanced reputation, and strengthened relationships with local stakeholders. This emphasizes the role of strategic approaches, including knowledge transfer, in achieving organizational sustainability. Hamdoun, Jabbour, and Othman (2018) study explored the joint effects of quality and environmental management on firms' innovation, incorporating the role of knowledge transfer. The findings indicated that both quality management and environmental management positively influenced knowledge transfer and innovation. This highlights the interconnectedness of quality management, environmental practices, and knowledge transfer in fostering innovation. Suhepi and Syah (2018) study on training design, individual characteristics, and work environment's impact on training transfer and employee performance found that individual characteristics positively influenced the transfer of training. This suggests that factors such as ability, personality, self-efficacy, and motivation to learn play a crucial role in the effectiveness of training transfer. Ngwiri (2019) examination of technology transfers and their influence on the growth of micro and small catering enterprises in Kenya revealed that the combined effect of production skills and technology transfer had a greater impact on enterprise growth. This underscores the importance of integrating technology transfers for overall business growth. Kurnia and Besrat (2019) study on consumer loyalty in a restaurant context found that product quality did not directly affect consumer loyalty but had a significant effect on customer satisfaction. Customer satisfaction, in turn, positively influenced consumer loyalty. The study highlighted the mediating role of customer satisfaction in the relationship between product quality and consumer loyalty. Ibiduni, Kolawole, Olokundun, and Ogbari (2020) study on knowledge transfer and innovation performance of informal economy SMEs in international business relationships indicated varying impacts of different dimensions of knowledge transfer on innovation performance. Notably, knowledge transfer through training showed an inverse and insignificant relationship with innovation performance, suggesting the need for a nuanced approach to knowledge transfer strategies.

Ozoko and Ede (2020) evaluation of the influence of learning on the product quality of chemical and pharmaceutical firms in Nigeria emphasized the positive effects of employee absorption of knowledge on product quality. The study concluded that continuous learning is a valuable organizational practice that

supports improvement in knowledge, competence, and performance. Nimfa, Uzir, Maimako, Eneizzan, Latiff and Wahab (2021) investigation into the impact of innovation competitive advantage components on product quality in SMEs highlighted the mediating role of technology adoption. The study emphasized that technology adoption mediated the relationship between customer preference, strategic business model, and product quality, providing insights into the mechanisms through which innovation strategies influence product quality. Rahmawati and Sentana (2021) study on frozen semen quality, customer satisfaction, and loyalty in Indonesia demonstrated the positive effect of product quality on customer satisfaction and loyalty. The findings highlighted the interconnectedness of product quality, customer satisfaction, and loyalty in a specific context. Mwangi (2021) study on procurement cost optimization and firm performance in manufacturing firms in Kenya indicated that procurement cost optimization significantly predicted firm performance. This underscores the importance of strategic cost management practices in influencing organizational outcomes. Naini, Santoso, Andriani, Claudia, and Nurfadillah (2022) study on the effects of product quality, service quality, and customer satisfaction on customer loyalty in a restaurant context found that product quality, customer satisfaction, and service quality significantly influenced customer loyalty. The study provided insights into the specific indicators of product and service quality that impact customer satisfaction and loyalty. Ejika, Ukpata, Atika, and Fumba (2022) investigation into how product quality affects consumer happiness and loyalty revealed that product quality is a major factor in customer satisfaction and loyalty. The study emphasized the need for firms to continuously monitor and improve product quality to maintain customer satisfaction and loyalty. Rambe and Khaola (2023) study on the mediating role of product quality in the association between technology transfer and small-scale agricultural company competitiveness demonstrated that product quality mediated the relationship between technology transfer and competitiveness. The study also highlighted the moderating effect of asset value on the relationship between product quality and competitiveness. Thus, in summary, these extant literatures provide a comprehensive understanding of the various dimensions of knowledge transfer, product quality, and their influence on organizational outcomes in different industries and contexts.

### **3.0 Methodology**

The study adopted survey research design. The population of the study was 3172 Staff of Pharmaceutical Industry in Southeast, Nigeria. Sample size of 343 respondents was used, which was determined using Freund and William's statistical formula, however, a total of 330 copies of duly completed and returned questionnaire were used for the analysis. The study adopted stratified sampling technique to reach out to different strata using a structured questionnaire. The research instrument was validated using face and content validity. Cronbach's Alpha Statistic was used to test the reliability of the instrument, of which the results were all above 70%. The primary data collected were collated and tested using regression analysis at 5% level of significance with the aid of SPSS version 23.

## **4.0 Results and Discussion**

### **4.1 Results/ Implication**

Domestic sourcing of raw materials significantly affects the sustainability of organisational productivity of pharmaceutical industry in Southeast, Nigeria, ( $\beta = 0.755$ );( $p < 0.05$ ), which implies that sustainability of organisational productivity of pharmaceutical industry depends largely on sourcing of raw materials locally. Procurement of local materials significantly affect the maintaining costs of pharmaceutical industry in Southeast, Nigeria, ( $\beta = 0.746$ );( $p < 0.05$ ), which implies that cost effective procurement practices for local materials will positively affect cost of running pharmaceutical industries Southeast, Nigeria. Investment in local content initiatives

significantly affect waste management of pharmaceutical industry in Southeast, Nigeria, ( $\beta = 0.744$ );( $p < 0.05$ ), which implies that allocating resources specifically for waste reduction, implementing environmentally friendly technologies, and collaborating with local waste management authorities will enhance waste management of

significantly influence quality of products of pharmaceutical industry in Southeast, Nigeria, ( $\beta = 0.747$ );( $p < 0.05$ ), which implies that by fostering a culture of skill transfer and innovation, the pharmaceutical industry in Southeast Nigeria can ensure the production of high-quality products that meet global standards, contributing to sustained competitiveness and industry growth. pharmaceutical industry in Southeast, Nigeria. Development of local production of goods significantly affect personal health of workers of pharmaceutical industry in Southeast, Nigeria, ( $\beta = 0.744$ );( $p < 0.05$ ), which implies that regular health check-ups, providing personal protective equipment, and implementing wellness initiatives will greatly enhance

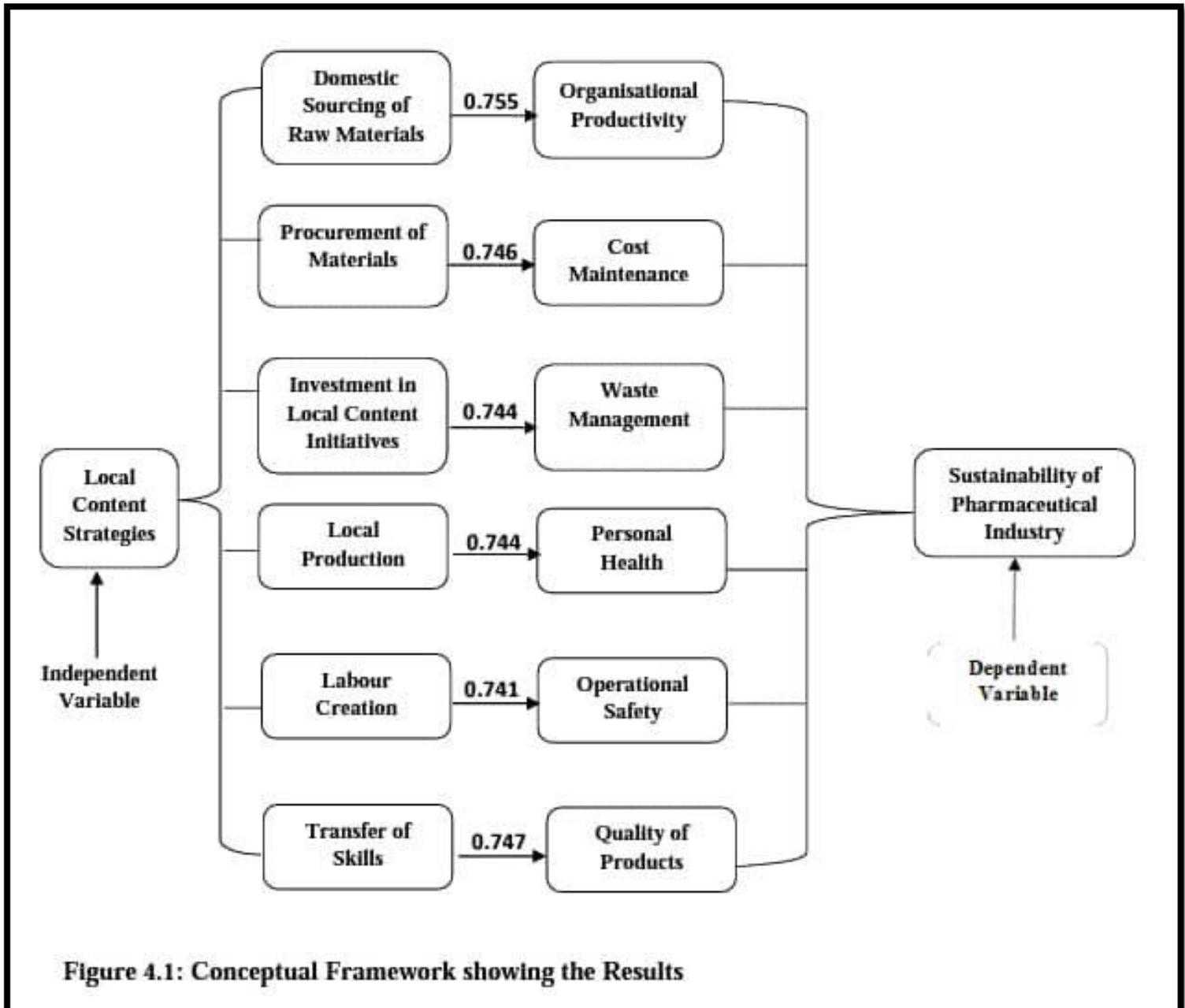


Figure 4.1: Conceptual Framework showing the Results

personal health of workers of pharmaceutical industry in Southeast, Nigeria. Labour creation significantly affect operational safety of pharmaceutical industry in Southeast, Nigeria, ( $\beta = 0.741$ );( $p < 0.05$ ), which implies that promoting a safe working environment through continuous training and employee involvement will contribute to the sustained operational safety of the pharmaceutical industry in Southeast, Nigeria. Transfer of skills

## 4.2 Discussion

### 4.2.1 Domestic sourcing of raw materials and sustainability of organisational productivity

The findings collectively shed light on the intricate relationship between domestic raw material sourcing and sustainability of organizational productivity of pharmaceutical industry in Southeast, Nigeria. Haider's (2010) investigation in South-West Bangladesh presents a compelling case for the positive impact of intra-regional sourcing on firm performance in various manufacturing sectors. The study's focus on Khulna, Jessore, Satkhira, and Bagerhat districts reveals the significance of sourcing raw materials from nearby regions, suggesting a potential proximity advantage in terms of performance metrics such as average sales growth, employment growth, capacity utilization rate, target fulfillment rate, and operating profit to sales ratio. Furusawa, Inui, Ito, and Tang (2018) study introduces a global perspective, emphasizing the intricate dynamics of firms' offshoring decisions and their consequences on domestic production networks. The research underscores the importance of communication with suppliers in input sourcing decisions, leading to a nuanced understanding of the challenges and benefits associated with global versus domestic sourcing. The findings highlight the potential restructuring effects within industries, suggesting that firms may favor nearby suppliers with more differentiated inputs after offshoring decisions. Pas (2021) exploration of local sourcing motivations and challenges aligns with the broader discourse, emphasizing the logistic benefits and flexibility associated with sourcing materials locally. However, the study acknowledges that challenges, such as product availability and high purchase prices, may prompt organizations to resort to global sourcing despite a general preference for local alternatives. Egwuatu (2022) study focusing on material management in plastic manufacturing companies in Anambra State, Nigeria, provides a localized perspective. The findings affirm a significant positive relationship between material planning, handling, procurement strategies, and organizational productivity. This study contributes to the growing body of evidence supporting the crucial role of effective material management in enhancing overall productivity. Nguyen, Hsu-Hao, Pham, Thi, Do, Nguyen, and Nguyen (2022) research in Vietnam offers further insights, emphasizing the positive impact of domestic raw material sourcing on small and medium enterprises' performance. The study underscores the disadvantages associated with international raw material sources, suggesting that a strategic emphasis on domestic sourcing can enhance the operational effectiveness of SMEs. The synthesis of the findings of these various studies, support the overarching conclusion that domestic sourcing of raw materials tends to positively influence organizational productivity across various industries and geographical regions. The nuanced insights provided by each study contribute to a more comprehensive understanding of the complex dynamics involved in raw material sourcing decisions and their implications for firm performance.

### 4.2.2 Procurement of local materials and Maintaining costs

The findings provided substantial evidence that local material procurement has a significant effect on the maintaining costs of pharmaceutical industry in Southeast Nigeria. this is in line with some of the findings of previous studies. for instance, Ogusanmi (2013) study on procurement-related factors in the construction industry emphasizes the interconnectedness of procurement selection criteria, tendering methods, and

project performance. This interconnectedness suggests that a strategic approach to procurement, such as the procurement of local materials, can influence overall project costs, including maintenance expenditures. The studies by Nyangau, Kibuine, and Ouko (2019) on e-procurement and Adamu, Gyamfi, and Bila (2021) on public sector procurement methods further underline the significance of procurement strategies in influencing organizational costs, thereby corroborating the idea that local material procurement can impact maintaining costs. In the context of the pharmaceutical industry in Southeast Nigeria, Ugbam and Okoro (2017) investigation into the competitive landscape of the sector reveals that the size of pharmaceutical enterprises correlates positively with their performance. Larger firms, often better equipped for strategic procurement, might be better positioned to engage in cost-effective local material procurement, subsequently influencing maintaining costs positively. Additionally, Ibekwe, Ngige, and Jacob (2020) study on the impact of total productive maintenance programs suggests that a holistic approach to organizational maintenance, which may involve strategic procurement decisions, contributes positively to organizational performance. This holistic perspective aligns with the notion that local material procurement can impact maintaining costs positively by fostering efficient and effective maintenance practices. Considering the broader economic context, the study by Pas (2021) on local sourcing emphasizes the benefits and challenges associated with sourcing materials locally. While challenges such as product availability and higher purchase prices may exist, the study suggests that the advantages of local sourcing, including logistical benefits and flexibility, outweigh the challenges. This perspective resonates with the notion that strategic procurement decisions, particularly the procurement of local materials, can contribute positively to organizational performance and maintaining costs. Thus, the findings from some of the previous studies strongly support the findings of the current study that the procurement of local materials has a significant positive effect on the maintaining costs of the pharmaceutical industry in Southeast Nigeria. Strategic procurement decisions, informed by factors such as local sourcing, project management, and efficient maintenance practices, contribute synergistically to overall organizational performance and cost-effectiveness in the long term.

#### **4.2.3 Investment in local content initiatives and Waste Management**

The findings revealed that investment in local content initiatives has a significant effect on waste management of pharmaceutical industry in Southeast, Nigeria. This finding is in line with some of the findings of previous studies in this area. For instance, Adeniran, Adewale, and Olofa (2014) emphasize the need for comprehensive waste management policies in Ado Ekiti, Nigeria, indicating the importance of a structured approach to address haphazard solid waste disposal. De and Debnath (2015) draw attention to the health consequences associated with improper waste disposal in Kolkata, emphasizing the urgency for improved waste management practices. Osuga and Okello (2015) study on Comply, a wood processing firm in Kenya, establishes a positive correlation between effective waste management and improved environmental performance. This correlation suggests that investment in waste management initiatives, as advocated by Abul (2015) in Mangwaneni, Manzini city, could yield positive outcomes in terms of both health and environmental protection. Adejumo, Adekoyo, and Sangotegbe (2017) exploration of rural perceptions in Oyo state, Nigeria, adds to the discussion by highlighting the correlation between waste generation and climate change awareness. Nicholas (2018) evaluates the challenges associated with solid waste management procedures in Makindye division, underlining the importance of addressing these challenges to enhance waste management practices.

Ogundele, Raphael, and Abiodun (2018) study in Agbowo and Bodija communities emphasizes the need for regional-specific waste management policies, acknowledging the disparities in waste disposal practices and their health impacts. The studies collectively underscore the significance of proper waste disposal alternatives, as indicated by Nwachukwu et al. (2018) study in Owerri, and the importance of coordinated

state efforts, as demonstrated by Zamri et al. (2019) exploration of waste management practices in Malaysian states. Ndukwe, Uzoegbu, Ndukwe, and Agibe (2019) analysis of the environmental and health impacts of solid waste disposal in Umuahia, Abia State, further emphasizes the need for well-defined waste disposal policies. The challenges in garbage collection and disposal highlighted by Victoire et al. (2020) study in Kinyinya sector, Somalia, point to the necessity of improved waste management strategies. Molina and Catan (2020) assessment of awareness and practices among students in Zamboanga City reveals gaps in knowledge about waste management regulations, suggesting the importance of educational initiatives. Shegow and Funwie (2020) study in Wadajir district, Somalia, and Moyo (2020) investigation in Lusaka, Zambia, both underscore the health consequences of improper waste disposal. These studies call for effective waste management policies to mitigate the negative health impacts. Aminu, Ladapo, and Ogunlalu (2020) research in Ikenne Local Government Area, Ogun State, emphasizes the environmental and health effects of inappropriate solid waste disposal, supporting the argument for policies that encourage healthy waste disposal practices. Fox (2021) exploration of local content adoption in Uganda's oil industry adds a different perspective, indicating the influence of stakeholder interventions, particularly from international donors, in shaping waste management initiatives. Ogbu, Taigbenu, and Asuquo (2022) examination of construction procurement documents highlights the impact of documentation errors on project cost performance, suggesting that effective waste management also requires attention to the administrative aspects of project implementation. In the context of the specific findings of these previous studies in relation to the pharmaceutical industry in Southeast Nigeria, the findings provide a robust foundation for understanding the broader implications of waste management practices. The positive correlation between investment in local content initiatives and waste management in this industry aligns with the broader themes and recommendations echoed in those previous studies. Overall, these findings from the previous studies and the findings of this current study, presented a collective support of the argument that strategic investment in waste management initiatives is crucial for achieving positive outcomes in terms of public health, environmental sustainability, and socio-economic development.

#### **4.2.4 Local production of goods and personal health of workers**

The findings revealed that local production of goods has a significant effect on the personal health of workers and thus align with and complement the insights from the previous studies on pharmaceutical manufacturing, particularly Russo & Banda (2015), Steele et al. (2020), and Tawfik et al. (2022). Russo & Banda's exploration of local pharmaceutical manufacturing in Mozambique and Zimbabwe highlights the positive impact of the pharmaceutical industry on public health. Similarly, Steele et al.'s study emphasizes the holistic consideration of local pharmaceutical manufacturing, including the mission to bring out local brands of medicine and intensify clinical research and trials, ultimately contributing to healthcare improvement. Tawfik et al.'s research in Saudi Arabia also underscores the vital role of local pharmaceutical production in maintaining resilience and improving drug security, thereby positively influencing public health. Furthermore, the emphasis on the economic viability of local production in Steele et al.'s study aligns with the current findings, suggesting that local production not only benefits the local economy but also has positive implications for the health of workers. The focus on overcoming overdependence on drug imports in Tawfik et al.'s study resonates with the current study's emphasis on the significance of local production for personal health, reinforcing the idea that reduced dependency on imports is crucial for the well-being of workers. Considering the psychological well-being aspect, the current study's alignment with Perfecto et al.'s (2020) findings strengthens the argument that local production positively influences employee health. Perfecto et al. emphasize the strong positive association between psychological well-being and task performance, advocating for interventions to improve well-being and create a less stressful work environment. This aligns with the current study's findings, suggesting that local production positively impacts personal health and

well-being among workers. Thus, the current study's findings resonate with the themes of the previous studies, highlighting the positive impact of local production on personal health and well-being, economic viability, and resilience in healthcare systems. The collective evidence underscores the multifaceted benefits of promoting local production for both economic and health-related outcomes.

#### **4.2.5 Labour Creation and Operational Safety**

The current study found that Local/indigenous Labor Creation has a significant effect on Operational Safety in the pharmaceutical industry. This result aligns with and contributes to the broader body of literature on labor creation and operational safety within various industries. Examining previous studies provides additional insights and context for understanding the implications of the current findings. Muiruri and Kwasira (2015) study in Kenya emphasized the role of the HR function in implementing Occupational Health and Safety (OHS) programs, highlighting the importance of training, appraisal, audit, and planning in ensuring operational safety. The current study's emphasis on the local/indigenous labor force contributing to operational safety resonates with Muiruri and Kwasira's findings, as both studies underscore the significance of human resources in maintaining safety standards. Akinwale and Olusanya (2016) exploration of occupational health and safety intelligence in Nigeria revealed a high level of awareness but inadequate investment in safety programs. This aligns with the Southeast Nigeria study, suggesting that despite recognizing the importance of safety, there may be challenges in the effective implementation of safety measures in different regions. Otitolaiye (2016) investigation into the role of safety management systems in the food and beverage industries in Lagos, Nigeria, highlighted the positive association between safety culture, safety management systems, and safety performance. This supports the idea that a robust safety culture and effective safety management systems are crucial for ensuring operational safety, a theme consistent with the Southeast Nigeria study. Amponsah-Tawiah and Mensah (2016) study in Ghana's mining industry emphasized the positive relationship between occupational health and safety management and organizational commitment. This aligns with the current study's findings, emphasizing the importance of prioritizing employees' health and safety needs for increased commitment and performance. Kaynak, Toklu, and Toklu (2016) research on OHS practices and their impact on organizational commitment and job performance supports the idea that effective OHS practices positively influence organizational commitment. This resonates with the Southeast Nigeria study's emphasis on the role of local/indigenous labor creation in enhancing operational safety. The study by Dim, Okoye, and Okoye (2018) in Awka, Nigeria, stressed the beneficial impact of safety management on various aspects of organizational performance. This aligns with the Southeast Nigeria study, suggesting that safety considerations should take precedence over other pressures for optimal organizational outcomes. Thus, in summary, the current study's findings on the significant effect of local/indigenous labor creation on operational safety in the pharmaceutical industry in Southeast Nigeria align with and contribute to the broader literature on labor creation and operational safety. The synthesis of previous studies provides a comprehensive context, highlighting recurring themes and emphasizing the importance of effective safety measures, regulations, and organizational strategies in promoting operational safety and influencing overall organizational outcomes.

#### **4.2.6 Transfer of Skills and Quality of Products**

The current study found that Transfer of Skills significantly affects the Quality of Products in the pharmaceutical industry in Southeast Nigeria. This finding aligns with several previous studies that explored the relationships between various factors and product quality in different industries and contexts. Hamdoun, Jabbour, and Othman (2018) study explored the joint effects of quality and environmental management on firms' innovation, emphasizing the positive role of knowledge transfer. This aligns with the current study's

focus on the transfer of skills positively influencing product quality. Suhepi and Syah (2018) study on training transfer and employee performance found that individual characteristics positively impact the transfer of training. While not directly related to product quality, the emphasis on individual characteristics aligns with the current study's focus on the transfer of skills. Ngwiri (2019) study in Kenya emphasized the combined effect of production skills and technology transfer on the growth of micro and small catering enterprises. This aligns with the current study's focus on skills transfer positively affecting the pharmaceutical industry's product quality. Kurnia and Besrat (2019) study on consumer loyalty in a restaurant indicated that product quality significantly influenced customer satisfaction. This emphasizes the importance of product quality in customer loyalty, aligning with the Southeast Nigeria study's emphasis on skills transfer influencing product quality. Ibiduni et al. (2020) study on knowledge transfer and innovation performance in SMEs highlighted the varying impacts of different dimensions of knowledge transfer. This suggests that specific aspects of skills transfer may have different effects, aligning with the Southeast Nigeria study's focus on the transfer of skills influencing product quality. Ozoko and Ede (2020) study on learning and product quality in chemical and pharmaceutical firms in Nigeria found positive effects on standard products and reliability. This supports the current study's findings that skills transfer positively affecting the pharmaceutical industry's product quality. Also, the study of Nimfa et al. (2021) which investigated the impact of innovation competitive advantage components on product quality, emphasizing the mediating role of technology adoption supports the findings of this current study. This aligns with the Southeast Nigeria study's focus on skills transfer positively influencing product quality. Rahmawati and Sentana (2021) study in Indonesia explored the relationship between frozen semen quality and customer loyalty, emphasizing the mediating role of customer satisfaction. While not directly related to the pharmaceutical industry, the study underscores the importance of product quality and customer satisfaction, aligning with the current study's emphasis on skills transfer influencing product quality. Mwangi (2021) study in Kenya emphasized the significant predictive role of procurement cost optimization on the performance of manufacturing firms. While not directly related to skills transfer, the study suggests that optimizing specific organizational aspects can positively impact firm performance, aligning with the Southeast Nigeria study's focus on skills transfer positively influencing product quality. Naini et al. (2022) study on the effects of product quality, service quality, and customer satisfaction on customer loyalty in a restaurant found significant impacts on customer loyalty. This aligns with the current study's emphasis on skills transfer influencing product quality and, consequently, customer satisfaction and loyalty. Furthermore, Ejika et al. (2022) investigation into how product quality affects consumer happiness and loyalty found that product quality is a major factor of customer satisfaction and loyalty. This supports the current study's focus on skills transfer positively influencing product quality and, consequently, customer satisfaction and loyalty. Rambe and Khaola (2023) study in South Africa and Zimbabwe explored the mediating role of product quality between technology transfer and small-scale agricultural company competitiveness. This aligns with the current study's emphasis on skills transfer influencing product quality and, consequently, organizational competitiveness. Thus, in summary, the findings from the current Southeast Nigeria study resonate with various aspects of the reviewed literature. The emphasis on the positive impact of skills transfer on product quality aligns with the broader literature exploring the relationships between knowledge transfer, innovation, organizational strategies, and overall performance in different industries and contexts.

## **5.0 Conclusion and Recommendation**

### **5.1 Conclusion**

In conclusion, the findings of this study provide valuable insights into the impact of local content strategies on the sustainability of the pharmaceutical industry in Southeast Nigeria. The results indicate that various elements of local content strategies play a significant role in influencing different aspects of the pharmaceutical sector. Firstly, the study establishes that domestic sourcing of raw materials is crucial for the sustainability of organizational productivity in the pharmaceutical industry. This emphasizes the importance of reducing dependence on imported materials and highlights the need for a robust local supply chain. Secondly, effective procurement of local materials is shown to positively affect the maintaining costs of pharmaceutical operations. Cost-effective procurement practices contribute to the overall financial health of the industry, ensuring efficient resource utilization. Thirdly, the study demonstrates that investment in local content initiatives has a significant impact on waste management in the pharmaceutical industry. Allocating resources for waste reduction, adopting environmentally friendly technologies, and collaborating with local waste management authorities are essential for enhancing waste management practices. Furthermore, the development of local production of goods is found to have a positive effect on the personal health of workers in the pharmaceutical industry. This underscores the importance of implementing health and safety measures, including regular health check-ups and the provision of personal protective equipment. Additionally, the creation of employment is identified as a key factor influencing the operational safety of the pharmaceutical industry. Promoting a safe working environment through continuous training and employee involvement is crucial for sustaining operational safety. Lastly, the transfer of skills is shown to significantly influence the quality of products in the pharmaceutical industry. Fostering a culture of skill transfer and innovation ensures the production of high-quality products that meet global standards, contributing to sustained competitiveness and industry growth. Conclusively, flowing from the findings therefore, the study concluded that local content strategies has a significant effect on the sustainability of the pharmaceutical industry in Southeast Nigeria. this affirms the critical role that local content strategies play in ensuring the sustainability and growth of the pharmaceutical industry in Southeast Nigeria. The identified factors, including domestic sourcing, cost-effective procurement, waste management, employee health and safety, labor creation, and skill transfer, collectively contribute to building a resilient and competitive pharmaceutical sector in the region. Policymakers, industry stakeholders, and practitioners can leverage these insights to formulate and implement effective strategies for the continued development of the pharmaceutical industry in Southeast Nigeria.

### **5.2 Recommendation**

**5.2.1** Given the significant effect of domestic sourcing on the sustainability of organizational productivity in the pharmaceutical industry in Southeast Nigeria, it is recommended that pharmaceutical companies actively strengthen partnerships with local suppliers. Organizations should establish long-term agreements, foster collaboration with local raw material providers, and invest in initiatives that enhance the quality and reliability of domestically sourced materials. This will not only contribute to the economic growth of the local community but also ensure a stable and cost-effective supply chain, thereby bolstering the overall sustainability of organizational productivity.

**5.2.2** Considering the substantial influence of local material procurement on maintaining costs in the pharmaceutical industry in Southeast Nigeria, it is recommended that companies adopt a strategic approach to optimize their procurement processes. This includes conducting regular cost-benefit analyses, diversifying local suppliers to minimize dependency risks, and actively participating in local industry associations to stay informed about market trends. By implementing effective procurement strategies, organizations can enhance cost efficiency and ensure the long-term sustainability of their operations.

**5.2.3** On the effect of investment in local content initiatives on waste management in the pharmaceutical industry in Southeast Nigeria, it is recommended that pharmaceutical industry integrate waste management considerations into their local content strategies. This involves allocating resources specifically for waste reduction, implementing environmentally friendly technologies, and collaborating with local waste management authorities. By aligning local content initiatives with waste management goals, pharmaceutical companies can mitigate environmental impact and contribute to sustainable industry practices.

**5.2.4** In recognizing the substantial influence of the development of local production on the personal health of workers, it is recommended that pharmaceutical companies prioritize occupational health and safety programs. This includes regular health check-ups, providing personal protective equipment, and implementing wellness initiatives. Moreover, organizations should engage with local healthcare providers to ensure that workers have access to quality medical services. By prioritizing workers' health, the pharmaceutical industry can create a sustainable and supportive work environment.

**5.2.5** In acknowledging the significant impact of labor creation on operational safety in the pharmaceutical industry in Southeast Nigeria, it is recommended that organizations invest in comprehensive safety training programs for employees. Companies should conduct regular safety audits, involve employees in safety decision-making processes, and establish a culture of safety awareness. Promoting a safe working environment through continuous training and employee involvement will contribute to the sustained operational safety of the pharmaceutical industry.

**5.2.6** Given the substantial influence of skill transfer on the quality of pharmaceutical products, it is recommended that organizations prioritize continuous learning and skill development programs. Companies should establish mentorship initiatives, encourage knowledge-sharing among employees, and invest in technologies that enhance product quality. By fostering a culture of skill transfer and innovation, the pharmaceutical industry in Southeast Nigeria can ensure the production of high-quality products that meet global standards, contributing to sustained competitiveness and industry growth.

### **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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**Appendix 1: Coefficients<sup>a</sup> for Domestic sourcing of raw materials and Productivity**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.637	.115		14.271	.000
	Domestic Sourcing of Raw Materials	.629	.030	.755	20.848	.000

a. Dependent Variable: Sustainability of Organisational Productivity

**Appendix 2: Coefficients<sup>a</sup> for Procurement of local materials and Maintaining costs**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.652	.117		14.079	.000
	Procurement of Local Material	.625	.031	.746	20.268	.000

a. Dependent Variable: Maintaining Costs

**Appendix 3: Coefficients<sup>a</sup> for Investment in local content initiatives and Waste Management**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.530	.123		12.464	.000
	Investment in Local Content Initiative	.651	.032	.744	20.167	.000

a. Dependent Variable: Waste Management

**Appendix 4: Coefficients<sup>a</sup> for Local production of goods and personal health of workers**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.634	.119		13.726	.000
	Development of Local Production Goods	.629	.031	.744	20.143	.000

a. Dependent Variable: Personal Health of Workers

**Appendix 5: Coefficients<sup>a</sup> for Labour Creation and Operational Safety**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.635	.120		13.684	.000
	Labour Creation	.626	.031	.741	19.990	.000

a. Dependent Variable: Operational Safety

<b>Appendix 6: Coefficients<sup>a</sup> for Transfer of Skills and Quality of Products</b>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.651	.117		14.139	.000
	Transfer of Skills	.624	.031	.747	20.345	.000

a. Dependent Variable: Quality of Product