The Effect of Logistics Management on the Performance of Small and Medium Pharmaceutical Companies in Southern Nigeria

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ABSTRACT

Background: Logistics management plays a critical role in the performance and sustainability of small and medium-sized enterprises (SMEs) in the pharmaceutical sector, particularly in developing economies where infrastructural and regulatory challenges persist. This study examined the impact of logistics management on the performance of pharmaceutical SMEs in Southern Nigeria, focusing on key logistics indicators, service quality, and business growth drivers.

Methods: A quantitative research approach was adopted, employing a structured questionnaire to collect data from 95 pharmaceutical SME owners. The data were analysed using the Statistical Package for the Social Sciences (SPSS), revealing that effective logistics management significantly enhances service reliability, cost efficiency, and overall business performance.

Results: The study identified critical logistics indicators such as real-time tracking, efficient transportation, reduced taxation, uninterrupted power supply, and streamlined communication. However, challenges such as delayed deliveries, high logistics costs, and inadequate infrastructure continue to impede SME growth. The findings underscore the importance of government intervention in improving logistics infrastructure, reducing importation costs, and enforcing regulatory frameworks to enhance operational efficiency. **Conclusion:** The study recommends the adoption of advanced logistics technologies, strengthened business networks, and strategic policy reforms to support pharmaceutical SMEs.

1.0 Introduction

Logistics management is a cornerstone of operational success in the pharmaceutical industry, where the quality and timely delivery of medicines often determine health outcomes[1]. Logistics management encompasses the planning, implementation, and control of the efficient and effective flow of goods, services, and information across the supply chain, from origin to consumption, ensuring customer satisfaction[2]. In the pharmaceutical context, this involves product procurement, warehousing, inventory management, and delivery processes while maintaining the quality and integrity of medicines throughout the supply chain[3]. Unlike standard logistics, pharmaceutical logistics must meet the unique demands of healthcare institutions such as hospitals, clinics, and pharmacies, requiring strict attention to factors such as storage, temperature, and humidity control[4].

Effective logistics management ensures that the right products are delivered in the correct quantities, at the right time, and in optimal condition, thereby enabling firms to gain a sustainable competitive advantage[5]. Efficient management of transport, storage, packaging, and material

handling is integral to achieving this goal[6]. For pharmaceutical firms, the complexity of logistics is heightened by the critical role medicines play in safeguarding health and life, as well as by the stringent regulatory frameworks governing the industry[7]. These challenges are even more pronounced in developing economies, where systemic barriers such as inadequate infrastructure, skill shortages, and limited technological capabilities constrain the efficiency of the pharmaceutical supply chain[8].

In Nigeria, the pharmaceutical industry holds significant potential for growth, with an anticipated market value of approximately US$40 billion over the next decade[9]. The sector is vital to the country's healthcare system and economic development, accounting for about 60% of drug manufacturing within the ECOWAS sub-region'[10]. Despite this promise, Nigerian pharmaceutical firms, particularly small and medium enterprises (SMEs), face considerable logistical challenges, including fragmented distribution networks, inadequate storage facilities, and suboptimal inventory management[11]. These issues have contributed to inefficiencies that hinder growth and competitiveness, with pharmaceutical imports exceeding $1.45 billion in 2019 (International Trade Center, 2019).

The role of logistics management in addressing these challenges is crucial, particularly for SMEs, which are key players in the healthcare logistics ecosystem. While research on pharmaceutical logistics has largely focused on inventory levels, warehousing, and logistics network design, there is limited literature addressing the specific logistics challenges and service requirements of SMEs[12]. This gap underscores the need for further investigation into how logistics management practices influence the performance and growth of pharmaceutical SMEs. Consequently, this study aims to examine the effect of logistics management on the performance of small and medium pharmaceutical companies in Southern Nigeria. Specifically, it seeks to (1) identify indicators of effective logistics and their impact on pharmaceutical SMEs, (2) establish the relationship between logistics management and SMEs' success, and (3) explore the factors driving the growth of pharmaceutical SMEs in the region. By addressing these objectives, the study provides critical insights into optimising logistics management for improved performance in Nigeria's pharmaceutical sector.

2.0 Methodology

2.1 Research Philosophy
This study adopts a positivist philosophy, emphasising the collection and analysis of quantitative data[13, 14]. This aligns with positivism's focus on factual, scientific evidence devoid of human interpretation[14]. Data collection involved a structured survey comprising both open-ended and closed-ended questions.

2.2 Research Approach
The abductive approach was adopted for this study to build upon prior research while identifying trends that establish or refute the study's objectives. This hybrid approach ensures a robust exploration of logistics management's impact on the performance of small and medium pharmaceutical companies in Southern Nigeria.

2.3 Research Strategy
Research strategies can be broadly categorised as qualitative or quantitative[15]. This study employs a quantitative strategy, focusing on relationships between variables that will be statistically assessed[13, 14, 16]. A single data collection technique, an online questionnaire survey, was utilised via the Google Forms platform[14].

2.4 Data Collection Method
A questionnaire was used to collect data on participants' attributes, opinions, and attitudes[13]. The survey focused on gathering information regarding the impact of logistics management on the performance of pharmaceutical SMEs in Southern Nigeria. The questionnaire was divided into sections, with the first section comprising open-ended questions to elicit qualitative insights and subsequent sections containing closed-ended questions with a Likert-scale rating system to quantify responses[17]. This design facilitates a balanced approach to understanding participant perspectives and behaviours.

2.4.1 Questionnaire Design
To ensure participant engagement, the questionnaire took approximately 10 minutes to complete[18]. A pilot study involving a community pharmacy owner in Southern Nigeria was conducted to test the clarity of the questions. Feedback from the pilot informed revisions, resulting in a finalised questionnaire that is clear and concise for the main study.

2.4.2 Layout of the Questionnaire
The questionnaire is split into four sections, as exemplified in table 1 below, to guarantee that the study objective is

achieved. The first section includes the respondent's demographics, which include gender, age, highest level of education, and years of operation. The second section focuses on asking questions that will allow the researcher to infer what the participants think about effective logistic indicators and their effect on the performance on pharmaceutical SMEs. The third section contains questions that will aid in the investigation of the relationship between logistics management and the performance of pharmaceutical SMEs in Nigeria. The fourth section then attempts to identify the factors influencing the growth of pharmaceutical SMEs in Nigeria.

Table 1: Overview of Data Types and Analytical Focus

		Data Overview	
Section	**Questions**	**Data Type**	**Analytical Focus**
One	1-4	Quantitative	Demographics, years of operation
Two	5-9	Quantitative and Qualitative	Logistics effectiveness and impact on pharmaceutical SMEs
Three	10-16	Quantitative and Qualitative	Logistics management and SME performance in Nigeria
Four	17-21	Quantitative and Qualitative	Factors responsible for growth of pharmaceutical SMEs in Nigeria.

2.4.3 Sampling Technique

Convenience sampling, also known as accidental or availability sampling, was employed15, 17. While this method carries inherent biases, it is appropriate for this study due to the lack of accurate records of pharmaceutical SMEs in Southern Nigeria14. The sample consisted of 100 community pharmacy store owners in the region. Eligibility criteria was ownership of a small or medium-sized pharmacy. The survey link was distributed online, with follow-up phone calls to encourage participation.

2.5 Data Analysis

Data analysis followed a structured process adapted from19. The online questionnaire data was coded in the first stage of data preparation. Subsequently, the Statistical Package for Social Sciences (SPSS) was used to adjust and interpret the date. The next stage involved data investigation to find correlations19 after which statistical tests were done through SPSS19. The fourth stage was to discuss and visualise presentation of data analysis findings using tables and charts19, 20.

2.6 Ethical Considerations

Ethical considerations are critical to the integrity of a study14. Participants were informed about the study's objectives and their rights to withdraw without penalty. Sensitive information, such as gender, education, and years in business, was handled confidentially. The study was approved by Glasgow Caledonian University's ethics board. Participants provided informed consent prior to participation, and their responses remained anonymous.

3.0 Results

3.1 Demographic Characteristics of Respondents

A total of 100 Google Form questionnaire links were distributed to respondents representing the study population. Of these, 95 completed responses were recorded, yielding a 95% response rate. The analysis in this section is based on the responses of these 95 participants. Table 2 below provides an overview of the demographic characteristics of the respondents.

Table 2: Demographic characteristics of respondents

Characteristics		Frequency	Percentage (%)
Gender	Male	56	58.9
	Female	38	40.0
	Prefer not to say	1	1.1
Age	20 – 25 years	7	7.4
	26 – 30 years	40	42.1
	31 – 35 years	22	23.2
	36 – 40 years	12	12.6
	41 – 45 years	9	9.5
	46 – 50 years	2	2.1
	50 and above	3	3.2
Highest Level of Education	SSCE Certificate	0	0.0
	Bachelor's Degree	61	64.2
	Master's Degree	28	29.5
	PhD	1	1.1
	Others	5	5.3
Years of Operation	1 – 3 years	22	23.2
	4 – 6 years	17	17.9
	7 – 9 years	44	46.3
	10 years and above	12	12.6

Table 2 presents the demographic characteristics of the respondents who participated in the study. The sample consists of 95 respondents, with a majority being male (58.9%), while females make up 40%, and 1.1% preferred not to disclose their gender. In terms of age distribution, the largest proportion of respondents (42.1%) falls within the 26–30 years age range, followed by 31–35 years (23.2%). Only a small percentage (3.2%) of participants are aged 50 and above.

Regarding educational qualifications, most respondents hold a Bachelor's degree (64.2%), while 29.5% have a Master's degree, and only 1.1% possess a PhD. None of the respondents reported having only an SSCE certificate, indicating a highly educated sample. The data on years of operation show that nearly half of the respondents (46.3%) have been in business for 7–9 years, while 23.2% have operated for 1–3 years. A smaller proportion (12.6%) has been in business for over a decade. These demographic insights provide a foundational understanding of the respondents, indicating that the majority are young, highly educated business owners with moderate industry experience.

Similarly, Table 3 examines the role of logistics in the performance of pharmaceutical SMEs in Nigeria, covering key areas such as service reliability, business efficiency, and challenges affecting growth. Overall, the table highlights that while logistics plays a critical role in pharmaceutical SMEs, issues such as service reliability, timely deliveries, and regulatory challenges impact business efficiency and growth.

Table 3: Indicators of effective logistics and their impact on pharmaceutical SMEs

Section A: Perception of Logistics Services

S/N	Survey Question	Opinion	Frequency	Percentage (%)
1	How would you rate logistics companies in Nigeria in terms of reliability?	Poor	10	10.5
		Average	59	62.1
		Good	24	25.3
		Excellent	10	10.5
		Total	**95**	**100.0**
2	Logistics capacities can represent a key enabler regarding pharmaceutical business performance in terms of efficiency and effectiveness.	Strongly Disagree	7	7.4
		Disagree	3	5.3
		Undecided	9	9.5
		Agree	44	46.3
		Strongly Agree	30	31.6
		Total	**95**	**100.0**
3	Pharmaceuticals businesses need logistics management at all levels.	Strongly Disagree	4	4.2
		Disagree	2	2.1
		Undecided	6	6.3
		Agree	55	57.9
		Strongly Agree	28	29.5
		Total	**95**	**100.0**
Section B: Logistics and Business Performance				
1	How often do you place orders for your products?	Never	2	2.1
		Sometimes	45	47.4
		Always	48	50.5
		Total	**95**	**100.0**
2	When I place orders, I usually have them delivered to me on time.	Strongly Disagree	1	1.1
		Disagree	35	36.8
		Undecided	24	25.3
		Agree	35	36.8
		Strongly Agree	0	0.0
		Total	95	100.0
3	How would you rate the services of the courier company you make use of?	Poor	7	7.4
		Average	44	46.3
		Good	42	44.2
		Excellent	2	2.1
		Total	**95**	**100.0**
4	Do you agree or disagree that the logistics services you receive have improved the performance of your pharmaceutical business?	Strongly Disagree	1	1.1
		Disagree	12	12.6
		Undecided	30	31.6
		Agree	47	49.5

		Strongly Agree	5	5.3
		Total	**95**	**100.0**
5	The logistics services I received have impacted positively on the financial health of my company.	Strongly Disagree	0	0.0
		Disagree	16	16.8
		Undecided	26	27.4
		Agree	47	49.5
		Strongly Agree	6	6.3
		Total	95	100.0
6	The logistics services I received have enabled my pharmaceutical business to generate new profits.	Strongly Disagree	0	0.0
		Disagree	19	20.0
		Undecided	22	23.2
		Agree	49	51.6
		Strongly Agree	5	5.3
		Total	**95**	**100.0**

Section C: Factors Affecting Growth of Pharmaceutical SMEs in Nigeria

1	Unpredictable market conditions are one of the major challenges responsible for growth of pharmaceutical SMEs in Nigeria.	Strongly Disagree	0	0.0
		Disagree	3	3.2
		Undecided	15	15.8
		Agree	57	60.0
		Strongly Agree	20	21.1
		Total	**95**	**100.0**
2	Weak regulatory frameworks are responsible for the growth of pharmaceutical SMEs in Nigeria.	Strongly Disagree	4	4.2
		Disagree	12	12.6
		Undecided	26	27.4
		Agree	41	43.2
		Strongly Agree	12	12.6
		Total	**95**	**100.0**
3	Nigeria unpredictable currency rate has traditionally impeded expansion in Nigeria's pharmaceuticals business.	Strongly Disagree	3	3.2
		Disagree	1	1.1
		Undecided	9	9.5
		Agree	51	53.7
		Strongly Agree	31	32.6
		Total	**95**	**100.0**
4	Unavailability of modern facilities for the manufacture and storage of medicines is to blame for pharmaceutical SMEs lack of growth in Nigeria.	Strongly Disagree	2	2.1
		Disagree	7	7.4
		Undecided	12	12.6
		Agree	53	55.8
		Strongly Agree	21	22.1
		Total	**95**	**100.0**

4.0 Discussion

This study evaluated the indicators of effective logistics and their impact on pharmaceutical SMEs in Southern Nigeria. It was observed that logistics capacities, proper management at all levels, efficient transportation systems, uninterrupted power supply, reduced taxation, shorter delivery times, real-time tracking, favorable government policies, employee training, effective communication between logistics providers and consumers, and fair compensation emerged as significant indicators of effective logistics. These factors significantly impact pharmaceutical SMEs in Southern Nigeria. The findings from this study align with Woodburn21, who explored constraints in medical supply chains across Sub-Saharan Africa. His research highlighted key logistics indicators such as efficient transport management, well-structured inventory policies, strong political support, well-defined roles, adequate supervision, and proper budgeting.

Moreover, this study found that logistics companies in Nigeria provide services that are generally rated as average in terms of reliability, with 62.1% of respondents holding this view. This suggests that while logistics services are functional, there is room for improvement. Strengthening logistics indicators could lead to enhanced customer satisfaction, reduced operating costs, faster delivery, and overall growth in consumer patronage.

The study further assessed the relationship between logistics management and performance of pharmaceutical SMEs in Southern Nigeria. The findings from this study indicate that most pharmaceutical SME owners recognise the positive impact of logistics services on their businesses. Specifically, 54.8% of respondents either agreed or strongly agreed that logistics services improved their business performance. Additionally, 55.8% confirmed that these services positively influenced their financial health, while 56.9% acknowledged that logistics services contributed to generating new profits. The study corroborates Omoush22, who found a strong link between supply chain management and operational performance. Similarly, Musau 23 confirmed that supply chain management is a significant predictor of business performance. These results highlight the importance of efficient logistics management in sustaining and enhancing business performance.

Another key insight from this study relates to order placement and product delivery. While 50.5% of respondents reported always placing orders, only 36.8% agreed that deliveries arrived on time. This suggests that delays in product delivery remain a critical challenge for pharmaceutical SMEs. Furthermore, courier service ratings indicate a mixed perception, with 46.3% of respondents rating their services as average and 44.2% rating them as good. This suggests that while courier companies perform adequately, inefficiencies still exist. Additionally, high logistics costs could be a burden on SMEs, potentially increasing drug prices and impacting overall business sustainability.

Factors responsible for the growth of pharmaceutical SMEs in Southern Nigeria was another key focus of this study. This study confirms that unpredictable market conditions (81.1% agreement), weak regulatory frameworks (55.8% agreement), currency instability (86.3% agreement), and a lack of modern manufacturing and storage facilities (77.9% agreement) are the primary challenges hindering the growth of pharmaceutical SMEs in Nigeria. Other significant constraints include insecurity affecting product movement, poor road infrastructure, multiple taxation, high operational costs, administrative bottlenecks, limited access to financing, and the high cost of drug importation. The study's findings regarding factors influencing the growth of pharmaceutical SMEs are consistent with24, who identified key barriers to SME growth, including budget constraints, lack of logistics expertise, high IT costs, and rapid technological advancements. Overall, these findings emphasise the urgent need for policy interventions aimed at improving Nigeria's logistics infrastructure, stabilising economic conditions, and enhancing regulatory frameworks to support the growth of pharmaceutical SMEs.

4.1 Recommendations

In light of the findings of this study, the following recommendations are proposed to enhance logistics management and improve the performance of pharmaceutical SMEs in Southern Nigeria:

4.1.1 Development of Effective Logistical Indicators

Establishing relevant and efficient logistics indicators is essential for optimising supply chain performance. Regular monitoring, appointment of dedicated personnel for quantification, and the integration of advanced technologies are crucial steps for improving logistics efficiency. The adoption of real-time tracking systems will enhance communication and provide users with up-to-date information on the pick-up and delivery of pharmaceutical products.

4.1.2 Enhancing Service Quality and Response Time

The findings indicate that service quality and delivery

response times remain key challenges in the logistics sector. Owners of pharmaceutical SMEs in Southern Nigeria should upgrade their logistics operations to meet international standards. By ensuring that fundamental logistics structures are in place, such as streamlined processes, automated tracking, and efficient inventory management to improve service quality and response time.

4.1.3 Implementation of Quality Distribution Practices

Pharmaceutical SMEs should adopt and prioritise quality distribution practices to ensure effective logistics management throughout the supply chain. From initial product procurement to the final delivery to end-users, maintaining a consistent and structured logistics management system will enhance efficiency in manufacturing, storage, and distribution processes.

4.1.4 Strengthening Business Networks

Collaboration among pharmaceutical SMEs through business networks can enhance operational efficiency and reduce logistics costs. A well-integrated network of business owners allows for shared resources, end-to-end supply chain visibility, and seamless coordination. Such collaborations can optimise inventory management, enhance distribution efficiency, and reduce overhead expenses.

4.1.5 Policy Interventions to Improve Logistics Infrastructure

The Nigerian government should prioritise investments in well-functioning transportation management systems, improved road networks, consistent power supply, and modern inventory management policies. Additionally, effective regulatory frameworks should be established to oversee pharmaceutical logistics, ensuring quality assurance, reducing importation costs, and eliminating multiple taxation burdens on pharmaceutical SMEs. Addressing these issues will lead to a more stable and efficient pharmaceutical supply chain, ultimately reducing the risks associated with expired or substandard medicines.

4.2 Future Research Opportunities

To generate more comprehensive and generalizable findings, future research should be conducted with a larger sample of pharmaceutical companies across multiple regions in Nigeria. Additionally, further studies should explore the long-term impact of logistics management on the performance and sustainability of small and medium-sized pharmaceutical enterprises.

A qualitative research approach could provide deeper insights into the operational challenges and strategic opportunities for pharmaceutical SMEs. Furthermore, expanding the study sample will allow for more robust statistical analyses, improving the reliability and validity of research findings. By addressing these research gaps, future studies can contribute to a more effective logistics framework that enhances pharmaceutical business performance in Nigeria.

5.0 Conclusion

This study provides empirical evidence on the significance of logistics management in enhancing the performance of small and medium-sized pharmaceutical companies in Southern Nigeria. The findings reveal that efficient logistics systems contribute to improved service delivery, reduced operational costs, and increased business profitability. However, challenges such as poor infrastructure, high taxation, and supply chain inefficiencies continue to hinder the sector's growth. The study highlights the need for SMEs to adopt technology-driven logistics solutions, improve inventory management practices, and foster collaborative business networks to enhance supply chain visibility. Additionally, government policies must address infrastructural deficits, streamline importation procedures, and ensure regulatory consistency to support the pharmaceutical industry's development. By implementing these strategies, pharmaceutical SMEs in Nigeria can achieve greater operational efficiency, enhance competitiveness, and contribute more effectively to the healthcare sector.

Conflict of Interest

The authors declare no conflict of interest.

Reference

1. Calixto E (2016) *Gas and oil reliability engineering:modeling and analysis*: Gulf Professional Publishing, Oxford, United Kingdom, 789.

2. Świtała M, Cichosz M, Trzęsiok J (2019) How to achieve customer satisfaction? Perspective of logistics outsourcing performance. *LogForum,* 15(1):39-51. http://doi.org/10.17270/J.LOG.2019.316

3. Gizaw T, Bogale M, Gudeta T. (2021) Investigating the effect of pharmaceutical logistics service performance on customer satisfaction: a two-step approach with structural

equation modeling. *Journal of Pharmaceutical Policy and Practice,* 14(1):64. https://doi.org/10.1186/s40545-021-00351-6

4. Chen M-C, Hsu C-L, Lee L-H (2019) Service quality and customer satisfaction in pharmaceutical logistics: An analysis based on kano model and importance-satisfaction model. *International Journal of Environmental Research and Public Health,* 16(21):4091. https://doi.org/10.3390/ijerph16214091

5. Li L (2014) *Managing supply chain and logistics: Competitive strategy for a sustainable future*: World Scientific Publishing Company, Singapore, 432.

6. Owusu Kwateng K, Manso JF, Osei-Mensah R (2014) Outbound logistics management in manufacturing companies in Ghana. *Review of Business & Finance Studies,* 5(1):83-92. https://ssrn.com/abstract=2324316

7. Kohler JC, Pavignani E, Michael M, Ovtcharenko N, Murru M, Hill PS (2012) An examination of pharmaceutical systems in severely disrupted countries. *BMC International Health and Human Rights,* 12(1):34. https://doi.org/10.1186/1472-698X-12-34

8. James EE, Inyang IB (2022) Logistics management and marketing performance of small and medium-sized manufacturing firms. *International Journal of Entrepreneurship and Business Innovation,* 5(1):1-15. DOI: 10.52589/IJEBI D1D3KF26

9. Lartey PA, Graham AE, Lukulay PH, Ndomondo-Sigonda M (2018) Pharmaceutical sector development in Africa: progress to date. *Pharmaceutical Medicine,* 32(1):1-11. https://doi.org/10.1007/s40290-018-0220-3

10. Isola WA, Mesagan EP (2016) Determinants of pharmaceutical industry's performance in Nigeria. *Managing Global Transitions,* 14 (3): 267–282. https://ir.unilag.edu.ng/handle/123456789/9947

11. Obukohwo EO, Olele EH, Buzugbe PN (2018) Assessing efficiency in the pharmaceutical sector of Nigeria. *CBN Journal of Applied Statistics,* 9(2):131-148. doi:10.33429/Cjas.09218.6/6

12. Faber N, De Koster RB, Smidts A (2018) Survival of the fittest: the impact of fit between warehouse management structure and warehouse context on warehouse performance. *International Journal of Production Research,* 56(1-2):120-139.

https://doi.org/10.1080/00207543.2017.1395489

13. Wilson V (2014) Research methods: triangulation. *Evidence Based Library and Information Practice,* 9(1):94-95. http://creativecommons.org/licenses/by-nc-sa/2.5/ca/

14. Saunders M (2009) *Research methods for business students.* Vol 8. London, England: Person Education Limited Wilson J. Essentials of business research: A guide to doing your research project. 2014

15. Fisher CM (2007) *Researching and writing a dissertation: A guidebook for business students*: Pearson Education.

16. Leedy PD, Ormrod JE (1980) *Practical research*: Macmillan New York.

17. Sreejesh S, Mohapatra S, Anusree M (2014) *Business research methods: An applied orientation*: Springer

18. Denscombe M (2017) *EBOOK: The good research guide: For small-scale social research projects*: McGraw-Hill Education (UK).

19. Wisker G (2017) *The postgraduate research handbook: Succeed with your MA, MPhil, EdD and PhD*: Bloomsbury Publishing.

20. Woodburn PA (2013) Analysis of challenges of medical supply chains in sub-Saharan Africa regarding inventory management and transport and distribution. *LondonWestminster Business School.*

21. Omoush MM (2020) Investigation the relationship between supply chain management activities and operational performance: Testing the mediating role of strategic agility-a practical study on the pharmaceutical companies. *International Business Research*, 13(2):1-74.

22. Musau EG *(*2020) Supply chain management and organizational performance among kenyan textile firms: a moderated mediation model of government support and environmental uncertainty. *International Journal of Managing Value and Supply Chains*, 11(3):17-28.

23. Mafini C, Omoruyi O (2013) Logistics benefits and challenges: the case of SMEs in a South African local municipality. *The Southern African Journal of Entrepreneurship and Small Business*, 6(1):145-167