Transformative Strategies: The Impact of Technology and Innovation on Micro and Small Table Water Enterprises in Lagos, Nigeria

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.9020125

Received: 28 January 2025; Accepted: 01 February 2025; Published: 06 March 2025

ABSTRACT

In today's global market, businesses face intensive competition and challenges, and research has shown that through the proper usage of current technologies and innovations, some challenges of sustainable and human development can be addressed while also providing added value to the firm. Hence, this study examines the tactics employed by micro- and small-table water enterprises in Lagos, Nigeria, with an emphasis on how innovation and technology affect their ability to compete in the market and operate efficiently. A survey research design was adopted, and the study was based on convenience sampling. Samples from 50 micro and small enterprises in Lagos were surveyed. Data were obtained based on a convenience sample of five respondents from the management and marketing departments of each of the 50 enterprises (250 respondents). . In total, 216 usable questionnaires were returned. Data were analyzed using descriptive statistics, percentages, and t-tests. Validity and reliability tests showed that all variables were valid and reliable. The findings reveal that entrepreneurs using modern technology have a competitive edge, improving their networking and expanding their market reach, especially in e-commerce and transportation. However, many entrepreneurs struggle to implement these strategies because of the significant challenges. Small bottled water businesses often resist adopting new marketing technologies, which affects their success. The main barriers include strict government regulations, complicated registration, and limited funding. This study emphasizes the importance of these businesses in providing clean drinking water and suggests more government support and technological help. We also recommend further research in other Nigerian states.

Keywords: Transformative; Strategies; Technology; Innovation; Micro; Small; Table water; Enterprises; Lagos; Nigeria.

INTRODUCTION

Innovation and technology have had a significant impact on the world economy, presenting enterprises with both opportunities and difficulties. However, little is known about how innovation and technology drive the growth of micro and small enterprises in developing countries, such as Nigeria. This study examines how innovation and technology affect micro- and small-table-water enterprises in Lagos, Nigeria.

Telecommunications, transportation, production, advertising, market globalization, e-commerce, technology transfer, technology, and innovation support marketing activities. However, the majority of developing nations lack the infrastructure necessary to support contemporary breakthroughs and technologies, which results in low production capacity utilization of technology and slow economic growth. Udegbe, S. E. (2017).

Technology and innovation have been sources of economic and business growth in many countries, especially in developing nations such as Nigeria. This study aims to assess whether technology and innovation are beneficial to micro and small enterprises in developing nations, such as Lagos, with a focus on micro and small table water enterprises in Lagos.

The bottled water industry in Lagos, Nigeria, is a vital part of the country's economy and provides affordable drinking water to millions of people. However, these enterprises face challenges, such as fluctuating production costs, regulatory hurdles, and competition from larger brands. Innovation has become a critical survival strategy for businesses, enabling them to adapt to environmental changes and maintain their competitiveness.

This study investigates the innovative strategies employed by micro- and small-bottled water enterprises (MSBWEs) in Lagos to remain competitive and address operational challenges. Micro and small enterprises (MSEs) play a significant role in developing economies by contributing significantly to GDP, job creation, and poverty alleviation. This study aimed to identify the most effective approaches and their outcomes for MSEs in Lagos, focusing on their effectiveness and implications for policy and practice.

Objectives

1. Determine whether Lagos's micro- and small-bottled water enterprises are open to using innovation and technology in their marketing operations.

2. To determine whether technology and innovation support sustained business success in micro and small enterprises in Lagos.

3. Determine whether micro and small enterprises face challenges while implementing innovative methods.

4. To look into how much government regulations affect the expansion of micro and small bottled water enterprises

Questions

1. To what extent are Lagos' micro- and small-bottled water enterprises open to using innovation and technology in their marketing strategies?
2. To what extent does technology and innovation support sustained business success in micro and small enterprises in Lagos?
3. To what extent do micro and small enterprises face challenges while implementing innovative methods?
4. To what extent do government regulations affect the expansion of micro- and small-bottle water enterprises?

Hypotheses

The following null hypotheses were formulated and tested to achieve the objectives of this study.

1. H01: Micro and small enterprises selling bottled water in Lagos are not readily open to using technology and innovation in their marketing strategies.
2. H02: Innovation and technology do not have a significant impact on helping micro and small entrepreneurs of table water in Lagos maintain their long-term success.
3. H03: Micro and small enterprises in table water in Lagos do not face significant challenges when implementing innovative methods.
4. H04: Government laws do not significantly impact the growth of micro- and small-bottle water businesses.

LITERATURE REVIEW

The literature review emphasizes the critical role of technology and innovation in driving organizational success and competitiveness. The effectiveness of any firm can be attributed to how well it alters its business attitudes toward technology and innovation. Any idea or product that a person or organization deems fresh is considered an innovation. "A person's reaction to an idea depends on how new they think it is from their point

of view. According to Robertson and Tu (2001), a notion is deemed innovative if it appears new to the individual. A technological understanding of how to do something better than what is currently regarded as state-of-the-art is called innovation. A company's innovation capacity is essential for several reasons. Businesses can flourish and enter new markets through innovation.

Innovation is the development, acceptance, and use of new ideas, methods, products, or enhanced services on their own. According to Canlan-tone et al. (2002), the process of innovation includes the collection, dissemination, and use of new knowledge as well as the effective implementation of creative ideas within an organization. Audrey and Jaraji (2016) defined technology as the use of tools, resources, processes, and power sources to increase productivity and make life more bearable. Making things happen is what the technology is about. Derived from the Greek words techno and logos, technology refers to the capacity of humans to construct objects using their hands and/or machinery. It entails using knowledge to change and adapt to the real-world objectives of human existence or the environment.

Technological innovations facilitate improved communication and social interaction, reduce reliance on traditional meetings, and enable instant information exchange over distances. This connectivity not only supports market growth but also enhances organizations' ability to engage consumers through digital platforms. Udegbe S. E. 2017; Leek et al., 2003, Pires and Aisbett, 2003, Reunis et al., 2005, Wu et al., 2003, Claycomb et al., 2004, Audrey and Jaraji 2016, Shu, & Strassmann, 2005, Terziovski. 2010,

This study focuses on micro and small enterprises (MSEs) in Nigeria, which constitute over 90% of businesses and are vital for economic development, employment, and poverty alleviation. This study aims to evaluate the willingness of these enterprises to adopt technology and innovation in marketing, the impact of these factors on sustained business success, the challenges faced in implementing innovative practices, and the effects of government regulations on their growth.

Dynamic Capabilities Theory is employed to highlight the necessity for organizations to adapt and reconfigure resources in response to changing environments. In the context of the bottled water industry in Nigeria, this review notes significant growth driven by urbanization and the demand for safe drinking water. However, MSEs encounter challenges, such as infrastructural deficits and regulatory pressures, which require adaptive strategies for sustainability. This review discusses the capital-intensive nature of bottled water production, focusing on efficient production methods influenced by labor and capital costs. It outlines the transformation process from raw, contaminated water to potable water, emphasizing the importance of operations management in ensuring a high-quality output. Quality control is paramount because the production of high-quality packaged water is essential for customer satisfaction and long-term profitability. Despite the growing demand for bottled water in Nigeria, concerns about its safety necessitate stringent quality-control measures.

RESEARCH METHODS

This study used both the primary and secondary data. Primary data were obtained using standardized instruments (questionnaires), while secondary data were obtained from extant literature. A convenience sample of 50 micro and small businesses selling bottled water in Lagos, Nigeria, was taken. Data were obtained based on a convenience sample of five respondents from the management and marketing departments of each of the 50 enterprises.

Instructed questionnaires were delivered to the respondents. Confidentiality was assured, and an incentive for participating in the research by making the report of the research available to the respondents, if they so desired, was promised. A total of 250 questionnaires were administered to respondents from 50 micro and small enterprises in Lagos. A total of 222 completed questionnaires were returned, and 216 copies were usable for the present study, resulting in an effective response rate of 86.4%. Data were analyzed using descriptive statistics, percentages, and t-tests. The research instrument demonstrated high reliability and validity. The Cronbach's alpha reliability coefficient for the variables (0.711) and business growth measures (0.710) exceeded 0.70, suggesting adequate reliability (Cronbach, 1947).

The opinions of marketing management scholars confirmed the content validity of the measures used, while the

pilot study results confirmed their predictive validity.

Demographic Information of the Respondents

The demographic profile of the respondents surveyed showed that the majority of the respondents (63%) fell into the age group of 30-40 years; 66% were male, and 34% were female. Most of the entrepreneurs are graduates, accounting for 71%, while 75% are married, and 62.9% have between three and five years of work experience as entrepreneurs. Generally, the demographic profiles of the respondent sample represent a rich dataset of age, working experience, and educational qualifications.

FINDINGS AND DISCUSSION

The purpose of this study is to examine transformative strategies with a special focus on the impact of technology and innovation on micro and small table water enterprises in Lagos, Nigeria.

Key to research variables used

A1: Your company sells table water.

A2 = Your company uses innovation and technology.

A3 = Your company faces significant challenges while implementing innovative methods.

A4 = Your company's business is significantly affected by government laws.

A5 = Innovation and technology utilization increase the capacity to develop increased network capabilities.

A6: Innovation and technology enhance information and business growth.

A7 = Innovation and technology utilization facilitate the marketing of table water.

A8 = Innovation and technology use to increase communication with customers.

A9 = Innovation and technology utilization enhance transportation to reach out to customers.

A10 = Innovation and technology utilization to enhance table water production.

A11 = Innovation and technology utilization to facilitate promotion.

A12 = Innovation and technology utilization enhance the long-term success of an enterprise.

Table 1: Descriptive statistics of transformative strategies: The impact of technology and innovation on micro and small table water enterprises in Lagos, Nigeria (n = 216).

Variable	Mean	STD DEV	Skewness	Kurtosis
A1	6.1419	1.5173	-1.829	2.978
A2	4.0351	1.1383	-1.164	2.001
A3	5.7042	1.1405	-1.739	2.902
A4	5.412	1.3912	-1.601	2.596
A5	5.6381	1.3201	-1.712	2.907
A6	5.4052	1.3804	-1.601	2.594
A7	5.4395	1.3491	-1.632	2.642

A8	5.8124	1.5902	-1.803	3.147
A9	5.517	1.4024	-1.674	2.721
A10	5.282	1.2109	-1.565	2.514
A11	5.0129	1.1952	-1.392	2.214
A12	4.2687	1.2321	-1.6742	2.6814

Source: Fieldwork 2024

To accomplish the objectives of the research study, the results of the responses to the questions are presented in Table 1. The mean values in Table I show that all variables (A1–A12) had some degree of support for the questions asked. The most significant amount of support for the questions was shown by A1 (A1 = Your company is involved in selling table water), which had a mean value of 6.1419. This indicates that every respondent who was surveyed either worked for or owned a company that sold table water. Additionally, when generating from the mean value, A8 with a mean score of 5.8124 (A8 = Innovation and technology use increase communications with customers) came in second. According to the results of in-person interviews, technology facilitates the development of network capabilities. Mobile phones and digital marketing tools like social media, email, and web-based advertising facilitate communication between current and potential clients. Current research indicates that, by eliminating the need for in-person meetings and enabling real-time information transmission, technological advancements also promote better social interaction and communication at work. (Borders et al., 2001; Archer and Yuan, 2000) This link promotes the growth of businesses. With a mean score of 4.0351, Table 1 also demonstrates that (A2) "A2 = Your company makes use of innovation and technology" is given the least attention. This is because advanced technology and innovations are not given the highest priority by the majority of micro and small enterprises selling table water in Nigeria, which hinders their ability to grow. In the current competitive economic environment, businesses that do not make technical advancements run the risk of falling behind in terms of productivity and competition.

The Test of Research Hypotheses

Research Hypothesis One-H0: Micro and small enterprises that sell bottled water in Lagos are not readily open to using technology and innovation in their marketing strategies.

The mean column in Table I shows that A2: Your company makes use of innovation and technology, with a mean value of 4.0351, received the least emphasis on support for the research questions. The mean value of the research question was 4.0351, which was less than the support for the hypothesis. This is because most micro and small enterprises that sell bottled water in Lagos, Nigeria do not prioritize sophisticated technology and innovations, which slows business growth. In a competitive economic scenario, companies that fail to advance technological risk lag in terms of productivity. Additionally, 86.20% of the respondents said that it is expensive for them to attach importance to technology and innovation. While they agree that using technology and innovation in their marketing strategies will enhance business growth, they are financially constrained because of difficulty accessing loans from banks. Therefore, the null hypothesis was accepted and the alternative hypothesis was rejected. The t-test analysis showed a t-score of 1.49, which is less than the t-table value of 1.96, indicating that micro and small enterprises that sell bottled water in Lagos are not readily open to using technology and innovation in their marketing strategies.

Research Hypothesis Two-H0: Innovation and technology do not have a significant impact on helping micro and small entrepreneurs of table water in Lagos to maintain long-term success.

Table I's mean column shows that A12: Innovation and Technology Utilization Enhances Long-Term Success of Your Enterprises had the second-lowest support for the research questions posed, with a mean value of 4.2687. Similarly, statistics showed that 66% of respondents to the survey thought that technology and innovation had little bearing on the long-term viability of micro and small enterprises selling table water in Lagos. However, yes, they believe that when applied adequately, innovation and technology can contribute to business growth to a good degree and also maintain the long-term success of micro and small enterprises used (as supported by extant literature, Udegbe S. E., 2017, Casolaro I, G. Gobbi G. (2007)). Ovalle and Marquez

2003; Claycomb et al. 2004; Berger 2003). . However, because it requires a significant amount of capital, micro and small table water enterprises in Lagos are not oriented toward a high degree of innovation and technology use. As a result, the alternative hypothesis is rejected, and the null hypothesis that innovation and technology do not significantly affect the ability of micro and small table water entrepreneurs in Lagos to sustain long-term success is accepted. Based on this study, it can be concluded that the majority of micro and small business owners that sell table water have significant barriers to using innovation and technology in their operations due to the high costs involved. Similarly, the t-score for A12 in the t-test analysis (not shown here) was 1.471 when evaluated at the 5 percent level of significance. The null hypothesis, "H0: Innovation and technology don't have a significant impact on helping micro and small entrepreneurs of table water in Lagos maintain long-term success," is accepted because the t-score value is less than the t-table value of 1.96. Therefore, the alternative hypothesis is rejected.

Research Hypothesis Three-H0: Micro and small enterprises of table water in Lagos do not face significant challenges while implementing innovative methods.

The study question has an encouraging level of support, as indicated by the mean column in Table I, which shows that A3: Company faces significant challenges while putting innovative methods into practice, equaling 5.7042. In a similar vein, statistics showed that 86% of those surveyed said that micro and small table water enterprises in Lagos do encounter major obstacles when implementing new strategies. The null hypothesis is thus rejected. Likewise, in the t-test analysis (not recorded here), the value when tested at a 5-percent level of significance, the t-value was A3 = 4.736. Since the t-score values exceed the t-table value of 1.96, the null hypothesis is rejected, and the alternative hypothesis that micro and small enterprises of table water in Lagos do face significant challenges while putting innovative methods into practice is hereby accepted.

Research Hypothesis Four-H0: The growth of micro and small bottled water businesses is not significantly impacted by government laws.

From the mean column in Table I, it can be seen that A4: Company businesses are significantly impacted by government laws, witnessing an encouraging degree of support for the research question. A4 = 5.4120. According to data gathered, 77% of those surveyed said that government regulations had a major influence on business operations. For instance, having a NAFDAC number, paying taxes, registering with SON, obtaining LASSA permission, and obtaining local government permits and levies are all requirements for your firm. All of these registrations are costly and, for the most part, present obstacles and difficulties for micro and small business owners. In Lagos, micro and small table water businesses encounter many obstacles while attempting to adhere to governmental regulations. Therefore, the null hypothesis—that the growth of micro and small bottled water businesses is not significantly impacted by government laws—is hereby rejected. Similarly, the t-score value in the t-test analysis (not shown here) was A3 = 3.67 when evaluated at a 5 percent level of significance. The alternative hypothesis—that government regulations have a major influence on the growth of micro and small bottled water enterprises—is accepted as the t-score values are higher than the t-table value of 1.96.

Conclusion and Research Suggestions for Future Studies

The research has empirically investigated the "Transformative strategies: the impact of technology and innovation on micro and small table water enterprises in Lagos, Nigeria. “The survey conducted among table water entrepreneurs in Lagos revealed a generally positive perception of innovation and technology, although responses varied significantly. The findings indicate that entrepreneurs who embrace modern technology and innovation are likely to gain competitive advantages in the market, enhancing their networking capabilities. The application of these innovations is shown to improve information dissemination and market expansion, particularly in areas such as e-commerce, production, transportation, and telecommunications.

Despite the awareness of the importance of innovation and technology, many entrepreneurs in Lagos face substantial challenges in implementing these strategies. The study highlights that micro and small bottled water businesses are often resistant to adopting technological advancements in their marketing efforts, which hampers their long-term success. Key obstacles include stringent government regulations, complex registration

processes, and limited access to financing. Furthermore, the research underscores the role of these small businesses in providing access to clean drinking water in Lagos. The findings suggest a need for increased government support and technological assistance to facilitate the growth of these enterprises.

The study contributes to a deeper understanding of how innovation and technology can bolster the development of micro and small table water businesses in Lagos, Nigeria. It is important to note that the study's scope was limited to Lagos, and further research in other Nigerian states is recommended to validate the findings and assess their applicability on a national scale.

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