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Lean Management and Organization Performance in the Educational Sector, a Study of Selected Institutions in Nigeria

Sholanke Olumde Abiodun, Olajide Olubayo

Inspire Polytechnic, Egbeda, Lagos, Nigeria

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Abstract: This research investigates how lean management influences organisational performance within the educational sector, focusing on three prominent institutions: the University of Lagos, Lagos State University, and Inspire Polytechnic. Implementing lean management principles and techniques has enabled organisations to be more purposeful in delivering goods and services while also minimizing waste. Although lean management originated in the manufacturing industry, there is a wealth of research regarding its application in the service sector. A survey research design was employed, utilizing a structured questionnaire comprising 25 questions as the method of data collection. With a population of 2,243, selecting them from the final year students of each institutions, a total of 743 questionnaires were distributed, with 722 being completed and returned. The participants included both students and staff from these institutions. Furthermore, ordinal logistic regression was employed to analyze the data, and the ordinal regression model tested the hypotheses. Ethical standards, including voluntary participation, confidentiality, thorough briefing, privacy, and safeguarding against harm, were rigorously followed. The findings indicated that the implementation of Value Stream Mapping positively and significantly influences the performance of the institutions. Additionally, it was found that waste reduction has a notable effect on organizational performance. Therefore, it is essential for organizations to manage waste effectively. A key finding was that students expressed concerns about the lengthy wait times for administrative assistance. The researcher also suggested that organizations, particularly in the education sector, should identify the areas within their operations that provide value to the institution and concentrate on them. Furthermore, the time students have to wait should be minimized, and the unnecessary consumption of material resources should be limited.

I. Background Of Study

Organisations constantly strive for efficiency and effectiveness; however, in practical terms, not all organisations are able to achieve these goals. Efficiency, for instance, requires the optimisation of resources to minimise wastage, which is the primary focus of lean management (Markovitz, 2011). Lean management emphasises waste reduction, value creation, alignment of customer experiences with expectations, and continuous improvement of organisational processes. This philosophy has been extensively discussed by scholars such as Mann (2010), Markovitz (2011), and Balle and Balle (2005). Where organisations successfully adopt and implement lean management principles, overall performance can be significantly enhanced (Uwa et al., 2023).

Despite the proven benefits of lean management, many organisations continue to face challenges such as economic wastage and idle resources. While some organisations fail to question or review their processes to identify inefficiencies, others struggle to understand the reasons for declining profits, reduced customer patronage, limited market share expansion, and high employee turnover rates. These challenges result in financial losses, often making businesses vulnerable to competition. Importantly, such issues are not confined to the manufacturing sector alone but extend to service-oriented organisations as well (Singh et al., 2025). Both private and public sectors experience these challenges, with the public sector being more adversely affected due to corruption and bureaucratic bottlenecks.

There is abundant literature on lean management, each underscoring its significance in modern organisations. The dynamic challenges of the 21st century demand efficient resource utilisation, driving researchers to explore and apply lean management across diverse sectors. Its applicability beyond production further validates its relevance. For instance, studies have explored lean management in the military (Schawntz et al., 2023) and the police (Klein et al., 2022). Most of these studies, however, have concentrated on the relationship between lean management and organisational performance.

Only a few research efforts have examined the application of lean management in higher education institutions (Reizebos, 2021). Higher institutions, though primarily academic, are also service-oriented organisations, and some even engage in business-related activities. In Nigeria, the National Universities Commission (2025) reports that there are 284 universities, while the National Board for Technical Education (2025) records 152 polytechnics. This sector is central to national human capital development. Nevertheless, government funding for public universities and polytechnics remains low, supported mainly by a 3% tax on assessable company profits through the Tertiary Education Trust Fund (2022). Private institutions, on the other hand, receive no special funding and often rely solely on individual capital and tuition fees. Despite this, many of them still grapple with inefficiency and mismanagement.

Given the critical role of higher education in Nigeria, it is important to explore the application of lean management in higher institution of learning and organisational performance within this sector. Therefore, this research seeks to examine the effect of lean management on organisational performance in higher institutions of learning, with a particular focus on three institutions in

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Nigeria: the University of Lagos (a federal university), Lagos State University (a state-owned institution), and Inspire Polytechnic (a private institution).

The specific objectives of the study are to:

i. Examine the relationship between value stream mapping and operational efficiency in the University of Lagos, Lagos State University and Inspire Polytechnic
ii. Investigate the impact of waste elimination on customer satisfaction in the University of Lagos, Lagos State University, and Inspire Polytechnic.

Hypothesis

H0: There is no significant relationship between value stream mapping and operational efficiency at the University of Lagos, Lagos State University and Inspire Polytechnic

H1 : There is a significant relationship between value stream mapping and operational efficiency at the University of Lagos, Lagos state University, and Inspire Polytechnic

H0: Waste elimination has no significant impact on customer satisfaction the University of Lagos, Lagos State University, and Inspire Polytechnic

H1 2: Waste elimination has a significant impact on customer satisfaction in the University of Lagos, Lagos state University, and Inspire Polytechnic

Statement Of Problem

Organisations pursue efficiency as a goal as making use of less resources to achieve increased profit is what is ideal for a 21st century organisations. Both human and material resources are tailored towards achieving optimality. In doing this, processes are checked to ensure it is in conformity with the realisation of value attached to the mission statements of the firm. (Atakpa,2022). Workers are supposed to be trained to avoid wastage in the system and their operations are geared towards waste elimination and to remove any idle resources or unwanted materials in production or service.

However, organisations still experience waste despite all this. This is not limited to the manufacturing sector. As noted by Rezebos(2022), the educational sector for example needs a total overhauling so as to discover the extent of deviation from standard and the level of waste in higher institutional of learning. There are few researches in the area of education, especially in Nigeria. Hence, this research work focuses on the application of lean management in three major higher institutions in Nigeria and its effect on their performance.

Scope Of Study

This study covers three major higher institutions of learning in Nigeria: University of Lagos, Lagos state University, and Inspire Polytechnic.

II. Literature Review

Conceptual Review

Lean Management

The idea of the lean management emanated from Toyotal Production system credited to Ohno(1988) and Shingo (1985), however, it was popularized by Womack and Jones(1990). Lean management focuses on removing unnecessary wastages which inhibit the growth of the organisation. It emphasizes streamlining production or services to what the customer needs, this helps to remove unnecessary processes. Although it started from manufacturing concern, its application has moved beyond this.

Hence, the term *lean* was introduced to emphasize the minimization of waste, the maximization of value, and the pursuit of efficiency. According to Awad, Ali, and Hegazy (2022), lean management is primarily customer-oriented, focusing on waste reduction while fostering continuous improvement within the organization. This principle of ongoing enhancement is referred to as *Kaizen* in Japanese language and is considered an integral component of lean philosophy.

Lean management incorporates various techniques and methodologies, such as **5S, Six Sigma, Visual Management, Kaizen, SMED (Single-Minute Exchange of Die), Kanban, Value Stream Mapping,** and **Value Identification** (PECB, 2023). These tools enable organizations to systematically reduce waste, improve quality, and align processes with consumer needs. To achieve this, organizations must be deliberate and consistent in implementing lean practices. Ultimately, the application of lean management methods enhances productivity and ensures the efficient utilization of resources.

Value Stream Mapping

The value stream mapping is one of the key techniques that emanated from the Toyotal production system. It entails mapping each of the systems in an organisation so as to see the workflow and identify areas which adds value and eliminates the ones that lead to waste. Organisations must identify each of their processes but value must be the goal. This value is based on customer

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choices or needs. The VSM allows the management to identify their system processes, identify waste and design a new workflow that is more efficient.

In designing a new workflow, organisations must look at their specific areas and analyse the type of process they want to improve on. Additionally,they must look at their goals which must be specific, measurable and it must be focused on their target so as to achieve their goals. However, there are few research work done on the use of value stream mapping in the educational sector. This was noted by Riezebos et al(2021). This is because of the difficulty in measuring some of the processes involved in the activities of providing value in the sector. However lean management is useful in the educational setting as it helps to address the challenges of wastage. This was buttressed by Thomas and Anthony,(2017) as they agreed that visual stream mapping can be applied in higher institution of learning to streamline processes and improve efficiency. In the academics, it can be applied in administrative processes such as mapping the flow of students' applications, registration and graduation processes so as to reduce waste. Furthermore, lecturers can apply it in curriculum building so as to know which area is relevant and the one that is not.

Waste Elimination

One of the major goals of lean management is to identify the customer needs and produce based on the needs of the customers .(Womack et al,1996) This became a new trend after Ohno introduced the Toyotal Production System (Ohno,1988). Instead of producing for the customers, he opined that to reduce waste, businesses must adopt the 'pull method' instead of pushing the product to the consumers. To do this, the organisation must identify what the customers' need and tailor their production along that line. This is what is known as value identification and it is a major factor in eliminating waste. The Identification of value according to Peralta et al (2020), has five different stages such as customer development, customer value,lean product, lean start up and lean innovation.

Process Of Value Identification

In identifying values, organisations must follow a systematic and logical procedures. Some of the procedures include defining the customer's view on what they think adds value to them(Bhamu et al, 2020), collection of feedbacks from customers by conducting interviews to know their opinion on their expectations(Syafiq et al ,2022), picking out which activities in the process add values to the customer(Gupta et al,2021), and finally removing activities that do not add value to the process(Gupta et al,2021). However as cited by Reizobos (2021), students are part of the process in identifying the value, which is the educational services rendered in schools. He emphasized that students as parts of the process in identifying value must go through four major stages such as service specification and selection, service provision and transformation.

Kaban

This principle is one of the concepts that emanated from the Japanese production system, specifically from Toyotal production system. Kaban represents a tool used to control the workflow and inventory in a production system. It showcases what has been produced in form of visual card or signboard. With this, everyone can see what has been produced and what is in stock. In the long run, it helps to prevent overproduction, thereby eliminating or preventing waste.

Organisation Performance

Organisations set goals, as such they set parameters for evaluating the set goals, when organisations compare the actual standard against the set standard, they are involved in measuring their performances. There is no conclusive definition on this subject matter as there are different definitions for organsation performance. Equally, the measurement of organisation performance vary among authors. Several parameters have been used to measure performance such as level of profit, return on investment, operational efficiency, customer satisfaction, level of employees engagements, revenue, shareholders' return, return on asset e.t.c (Gutterman,2023). Although, it must also be noted that access to information for different organisations differs as such, this also determines the basis for measuring the performance of an organisation.

Furthermore, different factors can determine the performance of an organisation as it depends on the way an organisation effectively manages these factors. Where there is effective leadership style, employees will be motivated to give their best thereby contributing to the growth of the organisation. (Ojomolade et al,2025). Additionally, organisation culture which encourages unity will lead to innovation and snowball into tangible performance in the business (Zhang, 2024).

Equally, proper allocation of resources which is a product of effective strategy will enhance greatly the performance of an organisation and where employees are well engaged, they are well motivated to be productive. One major challenge in the application of organisation's performance in the service sector is the different types of stakeholders with different expectations, this makes it difficult to arrive at a unanimous measurement of performance. This is because organisations will be sandwiched between fulfilling the plights of different stakeholders. Another conundrum is customer perception which is difficult to measure. Despite these challenges, organisations must still measure their level of performance to determine whether they are growing or not.

Theoritical Review

There are two major theories which underpin the lean management concept. These are the Scientific theory, Total Management theory.

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The scientific management theory was introduced by Frederick Taylor (1911) as it emphasizes the use of scientific method in analysing job to determine the most efficient method. He went against the rule of thumb in having proper job allocation. This will help to yield efficiency as the work processes must be well analysed to give room for productivity. (Atakpa, 2022). Scientific theory and Lean management theory are both related as they both focus on efficiency and productivity leading to the reduction of waste. This further proves that they both have the same foundational principles. (Selimovic et al,2020). He equally introduced specialization by dividing work into individual task to be performed in an individual's specialised area.

On the other hand, the Total Quality Management focuses on continuous improvement, customer satisfaction and employees' engagement. It also emphasizes following accurate process approach in business so as to improve the products. (Aichouni,2023). Both the lean management theory and TQM agree that continuous improvement is important for the growth of an organisation. This is what is referred to as Kaizen in Lean management. Equally, both emphasized on customer satisfaction which is key in management. The lean management sees this as value which should be seen from the customer's perspective The total quality management uses several tools such as Pareto analysis, Fishbone diagram,control chart, flow chart, brainstorming, benchmarking, quality function deployment e.tc. All these are used to collect data and solve problems which will lead to the improvement of organisation performance.

Empirical Review

Singh et al. (2025) examined the impact of lean management practices in Horizon Addis Tire Manufacturing PLC. The study employed a cross-sectional survey design and used a five-point Likert scale questionnaire to collect primary data. Factor analysis, multiple regression, and fuzzy set qualitative comparative analyses were utilized to test their hypotheses. The study identified significant relationships between lean practices, operational performance, and organizational performance, demonstrating how lean management can influence organizational outcomes at the operational level.

William et al. (2023) investigated lean management and organizational performance in selected manufacturing firms in Akwa Ibom State, Nigeria. The researchers adopted a survey research design and applied the census technique to gather data from 59 respondents across top, middle, and lower management levels. Data analysis was conducted using ordinal logistic regression. The findings revealed that lean management dimensions significantly influenced organizational performance, particularly through value stream mapping and waste elimination.

Schwantz et al. (2023) explored the relationship between lean practices and organizational performance in a military organization. Using a quantitative approach and questionnaires as the primary data source, the researchers collected 116 responses. Structural Equation Modelling (SEM) was applied for analysis. The results showed that lean practices such as waste elimination, continuous improvement, leadership support, employee involvement, education and training, long-term thinking, quality focus, and systemic vision had positive impacts on organizational performance.

Khan et al. (2023) conducted a literature review to investigate the application of lean practices in higher education institutions. Following the PRISMA protocol, the study reviewed journal publications from 2019 to 2023. The findings indicated that 36% of the reviewed studies were analytical, while 64% implemented lean approaches. Key metrics examined included curriculum review, teaching methodology, administration, student satisfaction, lean waste identification, and barriers to implementation. The review concluded that lean techniques have been successfully applied in higher education, resulting in streamlined processes, reduced waste, and improved satisfaction levels for both staff and students.

De Souza Lima (2023) examined sustainability practices in public universities using lean evaluation for administrative processes. Using Fluminense University in Brazil as a case study, the research demonstrated that the elimination of waste in administrative processes saved approximately 444,754 sheets of paper, underscoring the potential of lean methods to enhance efficiency and sustainability.

Mulyana et al. (2023) studied the identification and prioritization of waste in higher education institutions, proposing a framework for waste management. The study employed observation and literature review to identify waste, followed by questionnaires administered to students, lecturers, and educational staff. Using a fuzzy method, the researchers prioritized 59 types of waste, including overproduction, inventory, defects, over-processing, waiting, motion, transportation, and underutilized talent. The study concluded by emphasizing the need for higher education institutions to prioritize waste reduction.

Klein et al. (2022) examined the influence of lean practices on process effectiveness within a Brazilian public institution. From a sample of 997 administrative staff, data were analyzed using descriptive statistics, exploratory and confirmatory factor analyses, and multiple regression. The results indicated that continuous improvement, long-term thinking, leadership support, and focus on the final user positively influenced process effectiveness, thereby enhancing organizational performance.

Bak (2021) investigated lean management in healthcare units, focusing on objectives, processes, and implementation effects. Case studies were conducted in the EMC Regional Health Center in Rubin and the Regional Center of Nephrology in Szczecinek, Poland. Using comparative analysis and content analysis of documentation, the findings revealed that lean implementation yielded benefits such as flexibility, efficiency in key processes, reduced resource waste, and improved service quality from patients' perspectives.

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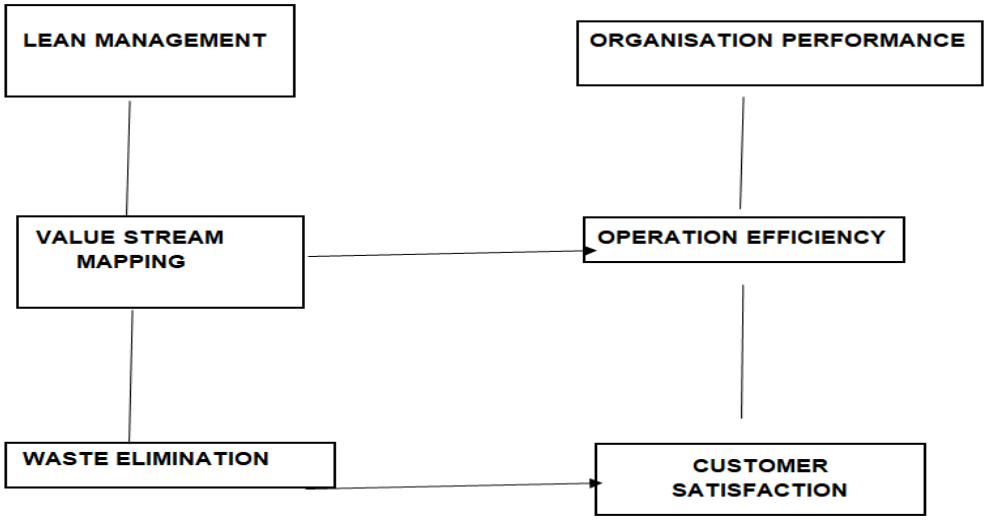
Rezebos et al. (2021) explored the use of value stream mapping (VSM) in education to address teacher work-related stress. Based on action research and literature review, the study developed a framework known as VSM4EDU. The findings suggested that VSM enabled teachers to visualize processes, engage in participatory problem-solving, and apply logical coping strategies, thereby reducing stress levels in educational services.

Collectively, the reviewed literature demonstrates the wide application of lean management across multiple sectors—including manufacturing, military, healthcare, and higher education—using different techniques and frameworks. This body of evidence reinforces the significance of lean principles in improving organizational performance. However, research on the application of lean management within higher education in Nigeria remains limited. This gap provides the impetus for the present study, which seeks to examine the impact of lean management on staff and undergraduate students of the University of Lagos, Lagos State University, and Inspire Polytechnic, and how it affects their performance.

Conceptual Framework

In this research work, the lean management represent the independent variable with value stream mapping (Rezebos et al,2021) and waste elimination as its indicators, while organization performance represents the dependent variable with customer satisfaction and operational efficiency (Uwa et al,2023) as its indicators.



Source: Researcher

III. Research Methodology

For this study, the survey research design was used and the instrument of data collection was a structured questionnaire. The sample size was determined using Yamane's (1967) formula with a 95% confidence level and a 3% margin of error. The population of study is 2,243 staff and students in their final year across the selected institutions, and the sample size is 743 respondents. Hence, a total number of 743 questionnaire were carefully administered to the Staff and students across all levels of the University of Lagos, Lagos State University and Inspire Polytechnic tertiary institutions. Out of the 743 questionnaires, 84 was administered to Inspire polytechnic, 300 to Lagos state University 338 to the University of Lagos. A total number of 73 questionnaires were administered to the students and 11 were given to the staff at Inspire Polytechnic, while 232 questionnaires were administered to the students and 68 were administered to the staff at Lagos State University. Equally, 285 questionnaires were administered to the students and 53 were administered to the staff at the University of Lagos. The structured questionnaires were made of 25 questions which helped clarify responses gathered from the respondents on the subject under study. The research instrument had both face and content validity. Ultimately, for proper research validity and result, Ordinal Logistic Regression were used in analyzing the data.

Data Analysis And Interpretation

Section B: Lean Management Adoption and Implementation in the Institutions' Familiarity with Lean Management

The study assessed the respondents' familiarity with the concept of lean management. The results show that 662 out of the study participants (91.7%) reported being familiar with lean management, which indicates a high level of awareness and understanding of the concept. Only 60 participants (8.3%) had never heard of lean management before, which suggests a minor knowledge gap.

Extent of Lean Management Implementation

The study examined the extent of lean management implementation in the departments of the study participants. The results revealed that the majority of respondents (482) reported that lean management had been implemented to a large extent in their departments. Meanwhile, 120 respondents indicated a moderate extent of implementation, and 60 respondents reported full

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implementation. Conversely, 60 participants stated that lean management had not been implemented at all in their department. This distribution suggests that while lean management is widely recognized and implemented to a significant extent in most departments, there is variability in the level of implementation across different units. The findings also highlight potential areas for further adoption and optimization of lean management practices.

Lean Management Practices

The study investigated the specific lean management practices currently utilized in the departments of the study participants. The results showed that Waste elimination was the most commonly adopted practice, with 421 participants (58.3%) indicating its use. Continuous improvement was also a prominent practice, with 241 participants (33.4%) reporting its implementation. Standardization of procedures was the least adopted practice, with only 60 participants (8.3%) indicating its use. This distribution suggests that while waste elimination and continuous improvement are relatively well-established practices, standardization of procedures may require more attention and adoption to enhance efficiency and consistency.

Section C: Percentage Analysis of Responses on Impact of Lean Management

Table 4.1.3.

Impact of Lean Management			**Extent of Agreement**		
	SA	A	UD	D	SD
Has lean management improved the efficiency of operations in the institution?	433 (60%)	181 (25%)	72 (10%)	36 (5%)	0 (0%)
Have lean practices contributed to better service delivery for students and staff?	578 (80%)	43 (6%)	36 (5%)	0 (0%)	0 (0%)
Has staff productivity improved since the adoption of lean practices?	542 (75%)	72 (10%)	36 (5%)	36 (5%)	36 (5%)
Has lean management helped improve operational costs?	361 (50%)	108 (15%)	72 (10%)	72 (10%)	108 (15%)
Has lean management strongly impacted the growth and reputation of the institution?	506 (70%)	144 (20%)	36 (5%)	0 (0%)	36 (5%)
Has lean management improved communication and teamwork within the department?	325 (45%)	325 (45%)	0 (0%)	36 (5%)	36 (5%)
Has lean management enhanced student satisfaction and experience?	433 (60%)	217 (30%)	36 (5%)	36 (5%)	0 (0%)

Source: Field survey 2025

Table 4.1.3 showed the frequency of responses and their percentages on the impact of lean management to enhance staff performance. Below are the analyses for each question

Impact of Lean Management on Operational Efficiency

The majority of respondents (433, 60%) strongly agreed that lean management has improved the efficiency of operations in the institution. Meanwhile, 181 respondents (25%) agreed, 72 respondents (10%) were neutral, and 36 respondents (5%) disagreed. This suggests that lean management has had a positive impact on operational efficiency, with most respondents recognizing its benefits.

Contribution of Lean Practices to Service Delivery

The majority of respondents (578, 80%) strongly agreed that lean practices have contributed to better service delivery for students and staff. Meanwhile, 43 respondents (6%) agreed, and 36 respondents (5%) were undecided. This indicates that lean practices have had a significant positive impact on service delivery, with most respondents acknowledging its benefits.

Impact of Lean Practices on Staff Productivity

The majority of respondents (542, 75%) strongly agreed that staff productivity has improved since the adoption of lean practices. Meanwhile, 72 respondents (10%) agreed, 36 respondents (5%) were neutral, 36 respondents (5%) disagreed, and 36 respondents (5%) strongly disagreed. This suggests that lean practices have had a significant positive impact on staff productivity, with most respondents recognizing its benefits.

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Impact of Lean Management on Operational Cost

Half of the respondents (361, 50%) strongly agreed that lean management has helped improve operational costs. Meanwhile, 108 respondents (15%) agreed, 72 respondents (10%) were neutral, 72 respondents (10%) disagreed, and 108 respondents (15%) strongly disagreed. This suggests that lean management has had a positive impact on operational costs for many respondents, but opinions are more divided on this issue.

Impact of Lean Management on Institutional Growth and Reputation

The majority of respondents (506, 70%) strongly agreed that lean management has strongly impacted the growth and reputation of the institution. Meanwhile, 144 respondents (20%) agreed, 36 respondents (5%) were neutral, 0 respondents (0%) disagreed, and 36 respondents (5%) strongly disagreed. This indicates that lean management has had a significant positive impact on the institution's growth and reputation, with most respondents acknowledging its benefits.

Impact of Lean Management on Student Satisfaction and Experience

The majority of respondents (433, 60%) strongly agreed that lean management has enhanced student satisfaction and experience. Meanwhile, 217 respondents (30%) agreed, 36 respondents (5%) were neutral, and 36 respondents (5%) disagreed. This suggests that lean management has had a significant positive impact on student satisfaction and experience, with most respondents recognizing its benefits. These analyses provide insights into the perceived impact of lean management on various aspects of the institution, including operational efficiency, service delivery, staff productivity, operational cost, institutional growth and reputation, communication and teamwork, and student satisfaction and experience.

Waste Elimination

Table 4.1.9: Percentage Analysis of Responses on Waste Elimination

Waste Elimination			**Extent of Agreement**		
	SA	A	UD	D	SD
Do you think the management is doing enough in reducing waste in our institution?	558 (77.40%)	129 (17.90%)	-	17 (2.40%)	18 (2.40%)
Does digitalising the registration and checking of result in our institution signify a way of reducing waste?	387 (53.57%)	223 (30.95%)	26 (3.57%)	52 (7.14%)	34 (4.76%)
Does combining both online and physical classes help reduce waste in our institution?	412 (57.14%)	249 (34.52%)	26 (3.57%)	9 (1.19%)	26 (3.57%)
Can we measure the effectiveness of our waste reduction efforts by tracking the level of delays in grading, approvals, or other students' services?	481 (66.66%)	103 (14.28%)	9 (1.19%)	77 (10.71%)	52 (7.14%)

Source: Field survey 2025

Table 4.1.9showed the frequency of responses and their percentages on the waste elimination.

Waste Reduction Rate

A significant majority of participants (558, 77.4%) strongly agreed that the management is doing a lot in the reduction of waste policies in the institution. Meanwhile, 129 participants (17.9%) agreed, 17 participants (2.4%) disagreed, and 18 participants (2.5%) strongly disagreed. This suggests that participants recognize the importance of initiatives taken by the management at leadership level to eliminate or reduce waste.

Digitalization as Waste Strategy rates

A significant majority of participants (387, 53.6%) strongly agreed that allowing the students to do their registration online and checking their result online signify better waste reduction efforts in the institution. Meanwhile, 223 participants (30.9%) agreed, 26 participants (3.6%) were undecided, 52 participants (7.2%) disagreed, and 34 participants (4.7%) strongly disagreed. This indicates that participants generally understand that digitalisation is a right measure in waste elimination.

Physical and Online classes Rates

A substantial majority of participants (412, 57.1%) strongly agreed that the conduct of both physical and online classes contribute significantly to waste elimination in the institution. Meanwhile, 249 participants (34.5%) agreed, 26 participants (3.6%) were undecided, 9 participants (1.2%) disagreed, and 26 participants (3.6%) strongly disagreed. This suggests that participants recognize the benefits of combining both physical and online classes to help reduce waste.

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Waiting or Delay

A significant majority of participants (481, 66.6%) strongly agreed that the elimination of delay in approval, grading of results, and other services offered to students can measure the effectiveness of waste reduction efforts. Meanwhile, 103 participants (14.3%) agreed, 9 participants (1.2%) were undecided, 77 participants (10.7%) disagreed, and 52 participants (7.2%) strongly disagreed. This suggests that participants generally understand the importance of reducing delays in the institution and view it as a key metric for evaluating waste management performance.

Summary

Participants demonstrate a strong understanding of waste management principles. There is broad support for initiatives aimed at improving waste management practices, indicating a willingness to adopt sustainable practices. The results suggest that the institution can build on this support to implement effective waste management strategies.

Section E: Understanding Student Value in Lean Management

This section sought to uncover students' perceptions of value, priorities, and experiences in their educational journey, with a specific focus on understanding the significance and relationship between these factors and lean management. By exploring this relationship, this research aims to contribute to the existing literature on lean management in higher education and provide insights into its importance in enhancing the educational experience.

1. Most Valuable Aspects of Educational Experience

Respondents prioritized the following aspects as most valuable:

- Engaging teaching methods (290)

- Access to resources (290)

- Opportunities for feedback (290)

- Relevant course content (200)

- Supportive instructors (150)

This suggests that students value interactive and resource-rich learning experiences, with opportunities for feedback and guidance.

2. Definition of Value

250 respondents defined value as gaining experience and knowledge through teaching. This indicates that students perceive value in their education when they acquire practical skills and knowledge through effective teaching.

3. Wasteful or Inefficient Aspects of Educational Experience

290 respondents indicated that there were no wasteful or inefficient aspects of their educational experience. This suggests that most students are generally satisfied with their educational experience.

4. Prioritization of Needs as a Student

Respondents prioritized their needs as follows:

- Academic support (250)

- Career guidance (200)

- Campus life and extracurricular activities (200)

- Personal development (150)

This indicates that students prioritize academic support and career guidance, while also valuing campus life and extracurricular activities.

5. Recent Experience of Time Waste or Inefficiency

Many respondents cited delays in online result checking as a recent experience where they felt their time was wasted or not utilized efficiently. This suggests that students value efficiency and timeliness in administrative processes.

6. Impact of Time Waste or Inefficiency

Delays and inefficiencies negatively affect students by causing frustration, anxiety, reduced productivity, poor academic performance, and perceptions of institutional inefficiency. These findings highlight the importance of improving processes to enhance students' emotional well-being and academic experience .These analyses provide insights into students' perceptions of value, priorities, and experiences in their educational journey, highlighting areas of strength and potential improvement.

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Test of Hypotheses

The ordinal logistic regression model was used to test the hypotheses when there is one dependent variable with more than two independent variables in categories, either sorted or unordered), and ordinal in nature.

The null statements of hypotheses were stated as follows:

Table 4.2.1 Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	874.683			
Final	675.484	199.198	2	.000

Link function: Logit.

Information on the model's fit indicates that it has significantly improved over the null model; as a result, the model is displaying a good fit. With p = 0.000, the model is significant in this case. The final model and the intercept-only model should differ significantly from one another.

Table 4.2.2 Goodness-of-Fit

	Chi-	Df	Sig.
Pearson	2584.548	1943	.510
Deviance	644.795	1943	1.410

Link function: Logit.

If the significant value is less than 0.05, the goodness of fit statistic indicates an inadequate fit. The model here correctly predicted the data (P>0.05). Both.510 and 1.410 are significant values. A value of 0 indicates that there are no significant deviations between the fitted (assumed) model and the observed data.

Table 4.2.3 Pseudo R-Square

Cox and Snell	.869
Nagelkerke	.774
McFadden	.538

Link function: Logit.

Although they can be utilized as approximations of variation in the criterion variable, the pseudo R-square model indicates that it is not technically possible to explain the variation. The

McFadden value of R2 will be used in ordinal regression. In this instance, we can state that the outcome prediction using the predictors has improved by 42.8% when compared to the null model.

Table 4.2.4 Parameter Estimates

		Estimate	Std. Error	Wald	Df	Sig.	95% Interval	Confidence
							Lower Bound	Upper Bound
Threshold [OP = 1.00]		20.100	17.664	1.295	1	.001	-14.522	54.721
[OP = 2.00]		32.897	19.412	2.872	1	.004	-5.149	70.944
[OP = 3.00]		39.851	19.684	4.099	1	.000	1.272	78.431
[OP = 4.00]		53.935	23.217	5.397	1	.002	8.431	99.440
Location	VSM	3.246	3.069	1.119	1	.002	-2.769	9.260
	Waste	3.298	2.969	1.235	1	.000	-2.520	9.116
	Elimination	4.323	2.439	3.142	1	.000	-.457	9.102
	[LS=1.00]	-1.417	12.054	.014	1	-.731	-25.043	22.209
	[LS=1.00]	-.558	10.089	.003	1	.-860	-20.332	19.216

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	[LS=2.00]	-7.165	7.349	.951	1	.-910	-21.570	7.239
	[LS=3.00]	-4.659	5.899	.624	1	.-603	-16.220	6.903
	[LS=4.00]	0[a]	.	.	0	.	.	.
	[LS=5.00]							

Link parameter function: Logit.

This is set to zero because it is redundant.

Test of Parallel Lines[a]

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	332.212			
General	312.203[b]	20.009	4	.352

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories. a. Link function: Logit.

The log-likelihood value is practically not zero.

Interpretations of Results

The null hypothesis states that the location parameters (slope coefficients) are constant for all responses types. The parameter estimations are displayed in Table 4.2.4, which also summarizes the effects of each predictor. The relative values of the component level coefficients and the sign of the covariate coefficients may offer important clues about the influence of the model's predictors. Variables with positive (negative) coefficients imply that the predictors and the criterion variable are positively (inversely) related.

The values of the ordinal logistic regression coefficients and intercepts are also shown in Table 4.2.4, together with the accompanying standard errors, t-values, and p-values. value stream mapping, 3.246; waste elimination, 0.002; organizational performance, 4.323; and PV, (0.000) are the new coordinates. This demonstrates that for every unit increase in the independent variable, there is an expected rise in the log probabilities of failing at a higher level of the dependent variable.

Any increase in a covariate's positive coefficient value indicates a better chance of ending up in a category with a "higher" cumulative outcome. A higher coefficient on a factor level denotes a greater possibility of falling into one of the "upper" cumulative result groups. The impact of a factor level on the reference categories determines the sign of a coefficient for that factor level. The variable in Table 4.2.4 with the highest coefficient and a p-value below the threshold for significance of 0.05 is regarded as the most important influencing factor. As a result, each independent variable's p-value is less than 0.05. This demonstrates that, at the 5% level of significance, each independent variable is statistically significant.

Interpretations of Tested Hypotheses

The null hypotheses were tested using ordinal logistic regression analysis. The following results were obtained as indicated in table 4.2.4.

H_{O1}: There is no significant relationship between value stream mapping and organizational performance in selected institution of learning.

Result of Hypothesis 1: Estimated location for value stream mapping, is 3.246, PV = 0.002. Where; VSM = value stream mapping, PV = Probability value, and OP = Organizational Performance (Threshold). The result in table 4.2.4 shows a significant influence of value stream mapping and organizational Performance in the selected institution of learning. This is because the estimated location for value stream mapping is 3.246 when PV = 0.000. The probability value was less than 0.05.

Hypotheses Two: H_{O2}: There is no significant relationship between waste elimination and organizational performance in in selected institution of learning.

Result of Hypothesis 2: Estimated location for waste elimination, is 3.024, PV = 0.003. Where;

WE = waste elimination, PV = Probability value, and OP = Organizational Performance (Threshold). The result revealed a significant influence of waste elimination on organizational performance in selected institution of learning. This is because the estimated location for waste elimination is 3.024 when PV = 0.003. The probability value was less than 0.05.

IV. Discussion Of Findings

This study examines the impact and relationship between lean management and organizational Performance using the University of Lagos, Lagos State University and Inspire Polytechnic as a unit of analysis. An Ordinal logistic regression analysis was carried

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out to ascertain how lean management associates with organizational Performance in selected institution of learning. The ordinal logistic regression model was significant $p < .05$ with df = 3). The pseudo R^2 values (e.g. Negelkerke. = 0. 774=77%) presented in Table 4.2.3 indicates that the ordinal logistic regression model with its independent variables explained a relatively large proportion of the variation in organizational in selected institution of learning. This further indicates that a model containing value stream mapping and waste elimination most likely to be a very good predictor of the organizational performance. Furthermore, the result of the ordinal logistic regression analysis showed that value stream mapping and waste elimination were responsible for changes in organizational Performance in selected institutions of learning. This was seen in the *P*-values all less than 0.05 level of significance. This implies that for any one unit increase in value stream mapping and waste elimination increases the chances for organizational performance given that all of the other variables in the model are held constant.

To examine the relationship between value stream mapping and organizational performance in selected institution of learning

The result for hypothesis (Ho_1) of the ordinal logistic regression analysis showed that value stream mapping, associates with organizational performance in selected manufacturing firms in selected institution of learning This implies that for any one-unit positive increase in the level of value stream mapping will contributes to chances for organizational performance given that all of the other variables in the model are held constant. Therefore, this suggests that a significant influence that exists between value stream mapping and organizational performance. Hence, the null hypotheses were hereby rejected. This is in line with the work of Willian et al (2023). Studies of the value stream mapping (VSM) in Western journals report that leveraging VSM as a lean tool result in performance improvements. However, in these articles, VSM is functioning as a tool for partial optimization, attempting to identify and resolve bottlenecks in individual functions and divisions, primarily in service-oriented activities in the University of Lagos, Lagos State University, and Inspire Polytechnic.

To ascertain the relationship between waste elimination and organizational performance in in selected institution of learning

From table 4.2.4, the result from the test of null hypothesis (Ho_2) shows that waste influences organizational performance as P-value is less than level of significance (0.05). Therefore, this finding suggests that a significant and positive effect exists between waste elimination and organizational performance in selected institution of learning (University of Lagos). Hence, the null hypothesis was hereby rejected. This finding is in line with the previous findings by Willian *et al* (2023) The capability to eliminate waste can lead to cost reduction and optimization of profit. Waste in any organizations is ranging from non-value adding activities to workplace hazards which can further lead to customers, employees and organizations dissatisfaction as well as environmental destruction.

V. Conclusion

The study concludes that lean management practices, including waste elimination and value stream mapping have a positive impact on organizational performance in the selected institution. The empirical results of the study clearly underscore the significance of lean management in enhancing operational efficiency, reducing costs, and improving student satisfaction and experience. Institutions that consider the application of lean management principles are likely to record better performance indicators, including improved quality, increased efficiency, and higher stakeholder satisfaction. Lean management is important because it fosters a culture of continuous improvement, efficiency, and effectiveness, leading to long-term success and resilience in an ever-evolving educational landscape.

Suggestion for Further Studies

Based on the results of the findings, it is suggested that further studies should be conducted to compare the implementation of lean management in different educational settings or departments, and to examine the long-term impact of lean management on institutional performance and sustainability. Additionally, research should investigate the role of leadership in successful lean management implementation and its impact on organizational culture, employee job satisfaction, engagement, and well-being.

References

1. Alalawin, A., Qamar, A. M., Alalaween, W., & Tanash, M. (2022). Aligning key performance indicators with lean management in the service sector: A case study for a Jordanian telecommunication company. Cogent Engineering, 9(1). doi: 10.1080/23311916.2022.2124940
2. Ballé, M., & Ballé, F. (2005). The Gold Mine: A Novel of Lean Turnaround. Lean Enterprise Institute.
3. Bhamu, J. (2014). Lean manufacturing: Literature review and research issues. International Journal of Operations & Production Management, 34(7), 876-940. doi: 10.1108/IJOPM-08-2012-0315
4. Gutterman, A. S. (2023). Organizational performance and effectiveness. Professional Website. Date Written: August 5, 2023.
5. Höfer, S., & Naeve, J. (2017). The application of lean management in higher education. International Journal of Contemporary Management, 16(4), 63-80.
6. Khan, S., Dimache, A., Gorman, D., & Gachon, C. (2024). Lean in higher educational institutes: A literature review. Studies in Educational Management, 15, 1-19. doi: 10.32038/sem.2024.15.01

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue VIII, August 2025

7. Klein, L. L., & Vieira, K. M. (2022). The influence of lean management practices on process effectiveness: A quantitative study in a public institution.
8. Liker, J.K., Meier, D. P. (2008). Toyota Talent. MT Biznes, Warszawa.
9. Lima, E. S., Oliveira, U. R., Costa, M. C., Fernandes, V. A., & Teodoro, P. (2023). Sustainability in public universities through lean evaluation and future improvement for administrative processes. Journal of Cleaner Production, 382, 135318.
10. Markovitz, D. (2011). A factory of one: Applying lean principles to banish waste and improve your personal performance. Productivity Press.
11. Mulyana, I. J., Sari, L. P., Hartanti, & Herdianto, V. A. (2022). Lean waste identification in higher education institution using waste assessment model. Management Systems in Production Engineering, 30(3), 200-206. doi: 10.2478/mspe-2022-0025
12. National Board for Technical Education. (2025.). Retrieved from (link unavailable)
13. National University Commission. (2025). Retrieved from (link unavailable)
14. Ohno, T. (1988). Toyota Production System: Beyond Large-Scale Production. CRC Press.
15. Ojomolade, D. J., Ugwulali, I. J., & Adejuwon, A. J. (2025). Effect of leadership styles and organizational performance: Evidence from Nigeria private universities. Nigerian Journal of Banking and Financial Issues, 11(1), 40-62.
16. PECB. (2023.). Lean management: A comprehensive guide.
17. Riezebos, J., & Huisman, B. Value stream mapping in education: Addressing work stress. International Journal of Quality.
18. Schwantz, P. I., Klein, L. L., & Simonetto, E. O. (2023). The relationship between lean practices and organizational performance: An analysis of operations management in a public institution. Logistics, 7(3), 52. doi: 10.3390/logistics7030052
19. Singh, A. P., Atsegeba, B. D., & Melkamu, M. (2025). Assess the impact of lean management practices on organisational performance. Journal of Business and Innovation, 3(1), 41-62. doi: 10.61552/JIBI.2025.01.005
20. Tertiary Education Trust Fund. (2022).
21. Thomas, A., & Antony, J. (2017). Lean thinking in higher education: A case study. International Journal of Quality & Reliability Management, 34(2), 216-230. doi: 10.1108/IJQRM-03-2015-0044
22. Warnecke, H. J., & Hüser, M. (1995). Lean production. International Journal of Production Economics, 41(1-3), 37-43.
23. Willian, I. C., & Uwa, K. L. (2023). Lean management and organizational performance in selected manufacturing firms in Akwa Ibom State. International Journal of Business and Management Review, 11(11).