

ASSESSMENT OF THE IMPACT AND EFFECTIVENESS OF DATA-DRIVEN DECISION MAKING IN THE ADMINISTRATION OF PRIVATE SECONDARY SCHOOLS IN NSUKKA LOCAL GOVERNMENT AREA OF ENUGU STATE, NIGERIA

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Abstract - The study examined the impact of data-driven decision-making on the administration of secondary schools in Nsukka Local Government Area. The study was conducted in two private secondary schools in Nsukka Local Government Area: Royal Crown Academy (40 head teachers) and City Comprehensive Secondary School, Nsukka (38 head teachers), with a manageable population of 78 teachers. Since the population was not large, no sampling technique was required. The instrument used for data collection was structured questionnaire, titled: Data-Driven Decision-Making in Secondary Schools Questionnaire (DDDSSQ), which was tailored for this research. The instrument was face validated by three experts, two in the Department of Early Childhood and Primary Education and one expert in the Department of Educational Foundations, Faculty of Education, University of Nigeria, Nsukka. The instrument's reliability was tested and it yielded a coefficient of 0.84, indicating good consistency. Data were analyzed using mean scores and standard deviation. The study revealed that data-driven decision-making significantly improved academic performance and facilitated better resource allocation in secondary schools. Additionally, the study revealed that the practice enhanced staff management and professional development. The study contributes to knowledge by providing empirical evidence of the positive effects of data-driven decision-making on school administration. Based on the findings, the study recommended that secondary schools adopt data-driven decision-making practices to enhance academic outcomes, optimize resource management, and improve staff development.

Keywords: Data-driven decision-making, secondary schools, academic performance

Introduction

Secondary school administration plays a central role in determining the quality of education delivered and effectiveness of school operations. In a rapidly changing educational landscape, there is an increasing need for administrators to adopt innovative strategies that address complex challenges and ensure optimal utilization of resources. One such strategy is data-driven decision-making, a practice that involves using accurate and relevant data to inform policies, strategies, and management processes within schools. Research has shown that schools that embrace data-driven approaches often experience improved

outcomes in academic performance, resource management, and organizational efficiency (Mandinach & Gummer, 2016). Data-driven decision-making is increasingly being recognized as a powerful tool for improving school administration. By systematically collecting, analysing, and applying data, school administrators can gain valuable insights into key aspects of their institutions. Schildkamp and Kuiper (2010) emphasized that data use in schools encourages evidence-based practices, enabling administrators to identify strengths and weaknesses, set achievable goals, and monitor progress effectively. This approach aligns with the global demand for accountability and transparency in education, as well as the growing emphasis on fostering continuous improvement within schools. Mandinach and Jackson (2012) argued that successful implementation of data-driven decision-making requires a combination of technical capacity, professional development, and a supportive organizational culture.

In Nsukka Local Government Area, secondary school administrators face a variety of challenges, including uneven resource distribution, fluctuating students' performance, and limited teacher capacity. These issues demand a strategic approach to decision-making that relies on credible data to identify problems, allocate resources effectively, and evaluate the outcomes of administrative interventions. According to Jimenez and Mason (2017), schools that adopt data-driven decision-making are better positioned to respond to these challenges and achieve sustainable improvements in education quality. The integration of data into administrative processes not only enhances decision-making accuracy but also provides a foundation for targeted interventions that address specific needs within the school system. The importance of data-driven decision-making in school administration cannot be overstated. When effectively implemented, it supports administrators in making informed decisions that lead to better academic planning, improved teacher performance, and enhanced students' outcomes. Schildkamp, Poortman and Handelzalts (2016) highlighted the potentials of data to transform educational practices, emphasizing its role in fostering collaboration among stakeholders and promoting a culture of accountability. By enabling school leaders to evaluate the impact of their decisions, data-driven practices ensure that resources are utilized efficiently and that students receive the support needed to succeed. Despite its benefits, application of data-driven decision-making in secondary schools is often hindered

by a range of challenges. These include a lack of technical infrastructure, inadequate training for administrators, and resistance to change within the school system. Jimenez and Mason (2017) noted that overcoming these barriers requires a concerted effort to build capacity among school leaders and create an environment that supports the effective use of data in decision-making. The context of Nsukka Local Government Area provides an opportunity to explore the extent to which data-driven practices are being utilized and assess their impact on school administration.

Conceptualization

Data-driven practices emphasize the reliance on information to guide actions, decisions, and strategies across various fields, including education. The growing availability of data in educational institutions has enhanced the potential for administrators to make informed decisions that foster efficiency and effectiveness. Mandinach and Gummer (2016) described being data-driven as the systematic collection, analysis, and use of data to inform decision-making processes and improve practices. Similarly, Schildkamp, Poortman and Handelzalts (2016) highlighted that data-driven approaches integrate evidence into decision-making processes to address organizational challenges, prioritize tasks, and evaluate outcomes. Mandinach and Jackson (2012) further emphasized that data-driven systems allow stakeholders to identify issues, implement solutions, and monitor progress systematically. Within the context of this study, data-driven practices refer to the use of both quantitative and qualitative information by secondary school administrators to make decisions regarding academic performance, resource allocation, and staff management. These practices form the foundation for effective decision-making, ensuring that administrative actions are informed by accurate and relevant evidence.

Decision-making is an essential process in educational administration, as it involves selecting the most appropriate courses of action to achieve organizational goals. Simon (1977) described decision-making as the process of identifying and choosing among alternatives based on values, preferences, and available information. Hoy and Miskel (2013) viewed decision-making within schools as a systematic process where administrators analyze problems, consider options, and implement strategies to achieve desired outcomes. Lunenburg and Ornstein (2012) emphasized that decision-making is at the core of leadership and involves planning, organizing, and controlling resources to ensure optimal

results. In this study, decision-making refers to the process by which secondary school administrators use data analysis to select strategies and actions aimed at addressing challenges in school management. Effective decision-making underpins efficient administration by aligning organizational objectives with actionable strategies.

Administration involves the planning, organizing, directing, and controlling of resources to achieve specific goals within an organization, including schools. Koontz and O'Donnell (1976) defined administration as the systematic management of human and material resources to accomplish objectives. Peretomode (1992) described it as the mobilization and organization of resources to achieve goals effectively and efficiently, while Nwankwo (1981) viewed it as the systematic arrangement and utilization of resources to meet educational objectives. Within the context of this study, administration refers to the coordination and management of resources and activities in secondary schools to ensure delivery of quality education. Effective administration creates a framework within which secondary schools operate and achieve their goals.

Secondary schools play a crucial role as institutions that provide academic and vocational education to adolescent learners. According to the Federal Republic of Nigeria (2013), secondary education is an intermediate stage offered after primary school and before tertiary education, designed to prepare students for life and higher studies. Campbell (2014) defined secondary schools as formal institutions that provide structured academic and vocational training for students aged between 11 and 18 years, while UNESCO (2017) emphasized their role in personal and societal development by equipping learners with relevant knowledge and skills. For the purpose of this study, secondary schools refer to formal institutions in Nsukka Local Government Area that deliver academic and vocational education to students, serving as a platform for implementing and measuring academic performance, resource allocation, and staff management.

Academic performance reflects the extent to which students achieve their educational goals, as indicated by their grades, test scores and overall achievement. Marsh (2007) defined academic performance as the measurable outcomes of students' learning across various subjects. Patrick, Rya and Kaplan (2007) described it as a student's ability to meet educational objectives through examinations and classroom activities, while Orodho (2014) referred to it as the degree of success in achieving specific learning objectives. In this study,

academic performance is understood as the measurable outcomes of students' learning in secondary schools, influenced by data-driven decision-making practices. Academic performance is closely tied to the effective allocation of resources within schools.

Resource allocation is the systematic distribution of financial human, and material resources to achieve organizational goals. Bowers and White (2014) described resource allocation as the process of efficiently distributing resources to meet institutional priorities. Odden and Picus (2014) defined it as the equitable distribution of resources to support students' learning, while Levin and McEwan (2001) considered it a strategic process aimed at maximizing the impact of resources on outcomes. In this study, resource allocation refers to the effective distribution and utilization of resources in secondary schools to support academic and administrative objectives. Proper resource allocation has a direct impact on staff management, which is essential for achieving organizational goals.

Staff management involves the recruitment, training, motivation, and evaluation of employees to maximize their potential and contribution to institutional success. Armstrong (2009) defined staff management as the process of organizing and developing employees to enhance their performance. Cole (2002) emphasized that staff management encompasses activities aimed at improving employee performance and aligning it with institutional objectives. Dessler (2011) viewed it as a strategic approach to managing people, focusing on hiring, training, and performance appraisal. Within the context of this study, staff management refers to the strategies employed by secondary school administrators to enhance teacher performance and job satisfaction. Efficient staff management, in combination with effective resource allocation, strengthens data-driven decision-making in education, ultimately enhancing school performance.

Data-driven decision-making in education involves the use of evidence-based information to guide administrative decisions, improve practices, and enhance outcomes. Mandinach and Gummer (2016) described it as a systematic process of using data to identify challenges, implement solutions, and evaluate progress in schools. Schildkamp and Kuiper (2010) emphasized that this approach supports accountability and fosters continuous improvement, while Jimenez and Mason (2017) highlighted its role in enhancing transparency and effectiveness by grounding policies and strategies in evidence. In this study, data-driven decision-making refers to the use of data by secondary school

administrators in Nsukka Local Government Area to make informed decisions about academic performance, resource allocation, and staff management. This approach strengthens the capacity of administrators to address challenges and achieve desired outcomes in education.

Literature Review

The literature on data-driven decision-making in secondary school administration demonstrates that when used effectively, data can lead to significant improvements in academic performance, resource allocation and staff management. Data-driven practices have also been shown to contribute to the achievement of administrative goals by providing administrators with the tools to make informed decisions. However, challenges such as inadequate data literacy, resistance to change, and resource constraints continue to impede the successful implementation of data-driven practices in many schools. Addressing these challenges, particularly in developing regions, will be crucial in maximizing the potential of data-driven decision-making in school administration. Data-driven decision-making has proven to have a positive impact on academic performance of students in secondary schools. Bowers and White (2014) found that schools using data systems to monitor students' outcomes experienced improvements in academic achievement, especially when teachers were trained to interpret and apply the data effectively. Mandinach and Jackson (2012) also observed that data enabled teachers to personalize instruction based on individual student needs, resulting in better learning outcomes. Jimenez and Mason (2017) highlighted that continuous tracking of students' progress allowed for timely instructional adjustments, further improving academic performance. While the impact on academic performance is evident, there is a need for longitudinal studies to assess the long-term effects of data use, particularly in schools with limited resources. Additionally, the gap in the literature regarding the sustainability of these effects over time in developing regions warrants further exploration.

Data-driven decision-making plays a crucial role in resource allocation, ensuring that resources are directed where they are most needed. Odden and Picus (2014) emphasized that data-informed decisions regarding budget allocation lead to more efficient use of resources. Schools that use data to inform financial planning can make decisions that maximize educational outcomes, such as determining where to invest in curriculum development or instructional materials. According to Levin and McEwan (2001), data-driven approaches also

allow administrators to allocate resources in a manner that benefits the entire school community. However, many schools face challenges related to limited access to data analysis tools, and more research is needed to understand how schools can overcome these barriers, particularly in resource-constrained contexts. In staff management, data-driven decision-making can enhance teacher performance, recruitment, and retention by enabling administrators to assess and support staff development effectively. Schildkamp et al. (2016) found that schools using data to monitor teacher effectiveness could offer more personalized professional development opportunities, leading to improved teaching quality. Data also helps identify areas where teachers require additional support, making interventions more targeted. Koontz and O'Donnell (1976) argued that data is particularly useful in evaluating teacher performance and making decisions regarding hiring, promotion, and professional growth. However, while the literature supports the use of data in staff management, research on its role in addressing challenges like teacher retention and motivation remains limited. Additionally, issues such as data privacy concerns are often underexplored in the existing body of work.

Data-driven decision-making is also associated with the achievement of administrative goals, such as improving school efficiency and ensuring accountability. Lunenburg and Ornstein (2012) argued that data allows school administrators to set clear goals, track progress, and adjust strategies as necessary, improving alignment between school operations and educational objectives. According to the UNESCO (2017) report, data enables school leaders to make informed decisions that foster a culture of continuous improvement, which is essential for meeting both short-term and long-term educational goals. Despite the evidence of effectiveness, there is a lack of comprehensive research on how school leaders can navigate challenges like inadequate data infrastructure and resistance to change. Studies on how to overcome these challenges and ensure that data-driven practices achieve their intended goals would be valuable in enhancing the understanding of data's potential in school administration. The implementation of data-driven decision-making faces several challenges. One of the primary issues is the lack of data literacy among school administrators and staff. Mandinach and Gummer (2016) stressed that, without proper training in data analysis, even the best data systems may not yield useful results. Furthermore, resistance to change remains a significant barrier, particularly in

schools where data-driven practices are not well integrated into the culture. Schildkamp et al. (2016) observed that schools with a collaborative and open culture were more successful in implementing data-driven decision-making practices.

In addition to these challenges, many schools, particularly those in developing regions, struggle with inadequate data infrastructure and resources. Schools that lack access to necessary technological tools and human capacity face considerable barriers to data-driven decision-making. Levin and McEwan (2001) pointed out that resource constraints are a significant hindrance to the effective use of data, limiting its potential to improve school outcomes. Although the literature on data-driven decision-making in secondary schools is extensive, several gaps remain. First, there is a lack of research focusing on the challenges faced by schools in developing regions where data infrastructure is limited. Exploring how these schools can effectively implement data-driven practices would provide valuable insights into overcoming these barriers. Additionally, while much of the research has focused on academic performance, there is limited exploration of how data can address issues such as teacher retention, motivation, and professional development. More studies are needed in this area to understand how data-driven practices can improve staff management and well-being. Finally, although the importance of data literacy is widely acknowledged, there is a need for more research on the long-term effects of professional development programs aimed at improving data literacy for school administrators and teachers. Longitudinal studies on the sustainability of data-driven practices would help assess their long-term impact on school performance. Hence, the literature suggests that when used effectively, data-driven decision-making can lead to significant improvements in academic performance, resource allocation, and staff management. While there is substantial evidence of the positive impact of data-driven practices on school outcomes, challenges such as inadequate data literacy, resistance to change, and resource constraints continue to hinder their successful implementation. More research is needed to explore how schools, particularly in resource-constrained regions, can overcome these barriers and fully realize the potential of data-driven decision-making in secondary school administration.

Statement of the Problem

Effective school administration requires informed decision-making that is rooted in accurate and timely data. In an ideal situation, data-driven decision-making enables school administrators to enhance academic performance, allocate resources efficiently, and manage staff development strategically. However, in practice, many secondary schools, particularly in Nsukka Local Government Area, face significant challenges in utilizing data effectively for decision-making. These challenges include inadequate infrastructure, insufficient training in data analysis, and resistance from staff, all of which hinder the potential benefits of data-driven practices. This study intends to examine the impact and effectiveness of data-driven decision-making in the administration of secondary schools in Nsukka Local Government Area. Specifically, it will investigate how data is used to improve academic performance, optimize resource allocation, and support staff management. Additionally, the study will explore the challenges faced by school administrators in implementing data-driven decision-making and provide recommendations for enhancing its effectiveness in secondary school administration.

Purpose of the Study

The primary objective of the study was to examine the impact and effectiveness of data-driven decision-making in the administration of private secondary schools in Nsukka Local Government Area. Specifically, the study aimed to:

1. assess the impact of data-driven decision-making on academic performance in private secondary schools in Nsukka Local Government Area.
2. examine how data-driven decision-making influences resource allocation in private secondary schools.
3. evaluate the role of data-driven decision-making in staff management and professional development in private secondary schools.
4. determine the effectiveness of data-driven decision-making practices in achieving administrative goals in private secondary schools.
5. identify the challenges faced by head teachers in implementing data-driven decision-making practices in private secondary schools.
6. determine factors that enhance the successful implementation of data-driven decision-making in private secondary school administration.

Research Questions

The following research questions guided the study

1. What is the impact of data-driven decision-making on academic performance in private secondary schools in Nsukka Local Government Area?
2. How does data-driven decision-making influence resource allocation in private secondary schools in Nsukka Local Government Area?
3. In what ways does data-driven decision-making affect staff management and professional development in private secondary schools?
4. How effective are data-driven decision-making practices in achieving administrative goals in private secondary schools?
5. What challenges do head teachers face in implementing data-driven decision-making practices in private secondary schools?
6. What are the factors that contribute to the successful implementation of data-driven decision-making in private secondary school administration?

Methods

The study employed a descriptive survey research design to examine the impact of data-driven decision-making on the administration of secondary schools in Nsukka Local Government Area. The research aimed to explore the influence of data-driven practices on academic performance, resource allocation, staff management, and the challenges faced by school administrators in implementing these practices. The population of the study comprised 78 teachers from two private secondary schools: Royal Crown Academy (40 head teachers) and City Comprehensive Secondary School, Nsukka (38 head teachers). The manageable size of the population eliminated the need for sampling. For data collection, the study utilized a self-developed instrument titled the Data-Driven Decision-Making in Secondary Schools Questionnaire (DDDSSQ). The instrument was validated by two experts from the Department of Educational Foundations and one expert from the Department of Science Education, all within the Faculty of Education, University of Nigeria, Nsukka. The reliability of the instrument was established with a coefficient of 0.84, which indicated a high level of internal consistency. Data were collected through the administration of the questionnaire, and the responses were analyzed using descriptive statistics such as frequency counts, percentages, and mean scores. A criterion mean of 2.50 was set as the cut-off point for analysis. Items with mean scores of 2.50 or higher

were considered to meet the acceptance threshold and were categorized as agreed upon. Conversely, items with mean scores below 2.50 were considered to fall below the threshold and were categorized as disagreed upon. This approach allowed for a clear understanding of the extent to which data-driven decision-making practices were implemented in the selected secondary schools and their impact on various aspects of school administration.

Results

Table 1: Mean and Standard Deviation of Responses on the Impact of Data-Driven Decision-Making on Academic Performance

S/ N	Item Statement	Royal Crown Academy, Nsukka			City Comprehensive Secondary School, Nsukka			Mean Set	Rank	Decision
		(\bar{X})	Std. Dev.	Decisi	(\bar{X})	Std. Dev.	Decisi			
1	Data-driven decision-making improves students' performance.	3.34	0.51	A	3.32	0.50	A	3.33	1	A
2	Data analysis helps identify areas needing improvement.	3.25	0.52	A	3.30	0.47	A	3.275	2	A
3	Data-driven decision-making enhances teaching strategies.	3.38	0.49	A	3.35	0.46	A	3.365	3	A
4	Data use assists in better allocation of educational resources.	3.34	0.53	A	3.30	0.48	A	3.32	4	A
5	Data-driven decisions aid in setting realistic academic goals.	3.23	0.56	A	3.20	0.52	A	3.215	5	A
6	Using data allows for tracking of students' progress effectively.	3.24	0.54	A	3.28	0.50	A	3.26	6	A

7	Data helps in identifying students' strengths and weaknesses.	3.23	0.55	A	3.30	0.48	A	3.265	7	A
Cluster Mean		3.32	0.53		3.30	0.49		3.31		

Data in Table 1 shows that both Royal Crown Academy and City Comprehensive Secondary School had high mean scores, all above the 2.50 threshold, indicating strong agreement on the benefits of data-driven decision-making. The Mean Set ranged from 3.215 to 3.365, suggesting that data-driven decision-making is seen as effective in improving academic performance, teaching strategies, and resource allocation. The Overall Means for Royal Crown Academy (3.32) and City Comprehensive Secondary School (3.30) confirm strong agreement on its positive impact. The Mean Set of 3.31 further supports the consensus that data-driven decision-making improves academic performance. The low Standard Deviations (0.49–0.56) show consistency in responses, reflecting a high level of agreement among participants about the importance of data in enhancing education.

Table 2: Mean and Standard Deviation of Responses on the impact of Data-Driven Decision-Making on Resource Allocation in Secondary Schools

S / N	Item Statement	Royal Crown Academy, Nsukka			City Comprehensive Secondary School, Nsukka			Mean Set	Rank	Decision
		(\bar{X})	Std. Dev	Decision	(\bar{X})	Std. Dev.	Decision			
1	Data-driven decision-making leads to efficient resource allocation.	3.36	0.51	A	3.30	0.48	A	3.33	1	A
2	Data helps in prioritizing resource allocation to areas of need.	3.28	0.53	A	3.32	0.50	A	3.30	2	A
3	Data-driven decisions ensure equitable distribution of	3.35	0.49	A	3.34	0.46	A	3.345	3	A

	resources.									
4	Data use facilitates the identification of areas with resource deficiencies.	3.30	0.55	A	3.28	0.52	A	3.29	4	A
5	Data-driven decisions allow for effective budgeting and resource planning.	3.24	0.54	A	3.20	0.56	A	3.22	5	A
6	Data supports timely allocation of resources based on immediate needs.	3.30	0.52	A	3.26	0.49	A	3.28	6	A
7	Data helps identify surplus and underutilized resources.	3.29	0.50	A	3.31	0.47	A	3.30	7	A
Cluster Mean		3.31	0.51		3.28	0.50		3.295		

Data in Table 2 shows that both Royal Crown Academy and City Comprehensive Secondary School agree that data-driven decision-making positively influences resource allocation. The Mean Set values (ranging from 3.22 to 3.345) indicate strong agreement. The Overall Mean of 3.31 for Royal Crown Academy and 3.28 for City Comprehensive Secondary School reflects a consensus on the effectiveness of data in ensuring efficient resource distribution. The Standard Deviation values (ranging from 0.47 to 0.56) suggest consistency in responses, emphasizing the widespread recognition of data's role in improving resource allocation decisions.

Table 3: Mean and Standard Deviation of Responses on Data-Driven Decision-Making and Staff Management/Professional Development

S/N	Item Statement	Royal Crown Academy, Nsukka			City Comprehensive Secondary School, Nsukka			Mean Set	Rank
		(\bar{X})	Std. Dev.	Decision	(\bar{X})	Std. Dev.	Decision		
1	Data-driven decision-making helps in effective staff recruitment.	3.40	0.65	A	3.35	0.60	A	3.375	1

2	Data-driven decisions improve staff training and development.	3.25	0.50	A	3.30	0.55	A	3.275	2
3	Data-driven decisions help identify professional development needs.	3.30	0.60	A	3.40	0.65	A	3.35	1
4	Data is used to track staff performance for better management.	3.20	0.55	A	3.25	0.60	A	3.225	2
5	Data-driven decision-making aids in creating effective staff development programs.	3.15	0.50	A	3.20	0.55	A	3.175	3
6	Data helps ensure professional development programs are aligned with school goals.	3.25	0.55	A	3.30	0.50	A	3.275	2
7	Data-driven decisions foster a culture of continuous professional growth.	3.35	0.60	A	3.40	0.65	A	3.375	1
Cluster Mean		3.26	0.57		3.30	0.59		3.28	

Data in Table 3 shows that both Royal Crown Academy and City Comprehensive Secondary School participants agreed on the positive impact of data-driven decision-making on staff management and professional development. The Mean Set, ranging from 3.175 to 3.375, reflects agreement on the influence of data on staff recruitment, development, and growth. The Overall Means for Royal Crown Academy (3.26) and City Comprehensive Secondary School (3.30) indicate strong agreement. The low Standard Deviations (0.50 to 0.65) show consistent responses, confirming participants' confidence in data-driven decisions supporting effective staff management. The Decision Rule, with all items

averaging above 2.50, highlights consensus in both schools on the benefits of data-driven decision-making for staff development and management.

Table 4: Mean and Standard Deviation of Responses on Data-Driven Decision-Making and Achieving Administrative Goals

S / N	Item Statement	Royal Crown Academy, Nsukka			City Comprehensive Secondary School, Nsukka			Mean Set	Rank
		(\bar{X})	Std. Dev.	Decisi	(\bar{X})	Std. Dev.	Decisi		
1	Data-driven decision-making helps in achieving school objectives.	3.50	0.60	A	3.45	0.55	A	3.475	1
2	Data-driven decisions improve the efficiency of administrative tasks.	3.45	0.65	A	3.40	0.60	A	3.425	2
3	Data helps to prioritize and allocate resources for school goals.	3.30	0.55	A	3.35	0.60	A	3.325	3
4	Data-driven decisions contribute to achieving high academic standards.	3.40	0.60	A	3.50	0.55	A	3.450	2
5	Data aids in monitoring progress towards achieving administrative goals.	3.30	0.55	A	3.25	0.60	A	3.275	3
6	Data-driven decision-making practices help in evaluating the success of school policies.	3.35	0.60	A	3.45	0.55	A	3.400	1
7	Data enhances the overall performance of the school's administration.	3.40	0.60	A	3.50	0.55	A	3.450	2
Cluster Mean		3.39	0.58		3.40	0.57		3.395	

Data in Table 4 shows that both Royal Crown Academy and City Comprehensive Secondary School participants strongly agree that data-driven decision-making enhances administrative goals. The Mean Set ranges from 3.275 to 3.475, indicating a general consensus on the effectiveness of data in achieving school objectives and improving efficiency. With an Overall Mean of 3.39 for Royal Crown Academy and 3.40 for City Comprehensive, the results suggest a high level of agreement. The Standard Deviations (0.55–0.65) indicate consistent responses, and all items surpass the 2.50 threshold, confirming that data-driven practices effectively support school administration and resource allocation. Both schools are aligned in their positive evaluation of the practice.

Table 5: Mean and Standard Deviation of Responses on Challenges Faced by School Administrators in Implementing Data-Driven Decision-Making Practices

S/ N	Item Statement	Royal Crown Academy, Nsukka			City Comprehensive Secondary School, Nsukka			Mean Set	Rank	Decisio
		(\bar{X})	Std. Dev	Decisio	(\bar{X})	Std . Dev	Decisio			
1	Lack of sufficient training for staff in data analysis	3.20	0.60	A	3.25	0.55	A	3.225	1	A
2	Limited access to quality data collection tools and software	3.10	0.65	A	3.05	0.70	A	3.075	3	A
3	Resistance from staff to adopting data-driven approaches	3.30	0.50	A	3.20	0.60	A	3.250	2	A
4	Insufficient time allocated for data analysis and decision-making processes	3.15	0.55	A	3.10	0.65	A	3.125	4	A
5	Lack of proper understanding of the data's role in decision-making	3.10	0.60	A	3.00	0.65	A	3.050	5	A
6	Financial constraints	3.00	0.70	A	2.95	0.70	A	2.97	6	A

	hindering the implementation of data systems					5		5		
7	Inadequate support from educational policymakers	3.05	0.65	A	3.00	0.60	A	3.02	7	A
	Cluster Mean	3.13	0.61		3.05	0.6		3.09		
						4				

Data in Table 5 shows that both Royal Crown Academy and City Comprehensive Secondary School participants agree that challenges hinder the full implementation of data-driven decision-making. The Mean Set ranges from 3.05 to 3.25, with an Overall Mean of 3.09 across both schools, suggesting moderate agreement on the existing obstacles. The Standard Deviations (0.50–0.75) indicate that responses were consistent, with all items surpassing the 2.50 threshold. The top-ranked challenges include insufficient training, limited data collection tools, and resistance from staff. Addressing these issues could enhance the adoption of data-driven practices for better decision-making.

Table 6: Mean and Standard Deviation of Responses on Factors Contributing to the Successful Implementation of Data-Driven Decision-Making Practices

S/ N	Item Statement	Royal Crown Academy, Nsukka			City Comprehensive Secondary School, Nsukka			Mean Set	Rank	Decision
		(\bar{X})	Std. Dev.	Decision	(\bar{X})	Std. Dev.	Decision			
1	Availability of reliable data sources	3.40	0.45	A	3.35	0.50	A	3.37	1	A
2	Strong leadership commitment to data-driven decision-making	3.45	0.40	A	3.40	0.45	A	3.42	2	A
3	Continuous professional development for staff on data usage	3.30	0.50	A	3.25	0.55	A	3.27	3	A
4	Adequate time allocated for data analysis and decision-making	3.25	0.55	A	3.20	0.60	A	3.22	4	A

	processes									
5	Collaborative approach among staff for data interpretation and use	3.35	0.45	A	3.30	0.50	A	3.325	5	A
6	Support from educational policymakers and stakeholders	3.40	0.50	A	3.30	0.55	A	3.350	6	A
7	Sufficient funding to acquire necessary data tools and technologies	3.20	0.60	A	3.15	0.65	A	3.175	7	A
	Cluster Mean	3.33	0.48		3.20	0.54		3.30		
					7					

Data in Table 6 shows that both Royal Crown Academy and City Comprehensive Secondary School participants agree on the factors contributing to successful data-driven decision-making implementation. The Mean Set ranges from 3.17 to 3.43, with an Overall Mean of 3.30, indicating that respondents perceive these factors as key to successful implementation. The Standard Deviations (0.40–0.65) show consistency in responses. The top-ranked factors include strong leadership commitment, availability of reliable data sources, and continuous professional development. These findings suggest that a collaborative, well-supported environment is crucial for successful data-driven practices in secondary schools.

Discussion of Findings

The findings of the study revealed that data-driven decision-making has a significant positive impact on academic performance in secondary schools in Nsukka Local Government Area. Participants noted that data analysis of students' academic progress enabled teachers and administrators to identify learning gaps and adopt targeted instructional strategies, which led to better academic outcomes. This finding aligns with the work of Mandinach and Jackson (2012), who emphasized that data-driven practices allow educators to adapt their teaching based on evidence, ultimately improving students' performance. Furthermore, Jimenez and Mason (2017) argued that data use in schools provides a systematic approach to monitoring academic achievement, which enhances teaching effectiveness and students' learning. Regarding resource allocation, the study found that data-driven decision-making facilitated more efficient resource distribution in schools. Hence, by using data on students' enrolment, teacher performance, and material usage, administrators were able to allocate resources

more effectively, ensuring that areas with greater need were prioritized. Schildkamp and Poortman (2016) observed that data-informed decision-making enhances resource management by providing insights that guide budget planning and resource distribution. Similarly, Bowers and White (2014) argued that schools that effectively utilize data for resource allocation experience improved operational efficiency and make better financial decisions that align with educational goals.

In the area of staff management and professional development, the findings showed that data-driven decision-making had a considerable impact on improving staff performance and professional growth. Administrators used data to identify teachers' strengths and areas requiring development, allowing them to tailor professional development programs. This resonates with the work of Mandinach and Gummer (2016), who highlighted the importance of data literacy in teachers' professional development, suggesting that data can guide teachers in improving their practices. Additionally, Schildkamp et al. (2016) noted that data use in staff management not only supports teachers' professional growth but also fosters a culture of continuous improvement within schools.

The study also revealed that data-driven decision-making practices were effective in achieving administrative goals. School leaders reported that using data to guide curriculum design, evaluate school performance, and make policy decisions helped align their administrative strategies with the school's overall educational objectives. Jimenez and Mason (2017) highlighted the role of data in strategic decision-making, indicating that data can improve decision accuracy and guide schools in achieving their goals. In a similar vein, Schildkamp et al. (2016) found that schools that regularly used data to inform administrative decisions achieved better alignment between their goals and practices, leading to improved educational outcomes. Challenges faced in implementing data-driven decision-making were also a key finding of this study. Participants identified several barriers, including limited access to technology, insufficient training, and resistance from staff. These challenges reflect the observations of Mandinach and Gummer (2016), who pointed out that inadequate training and lack of data literacy among educators can hinder the effective use of data in decision-making. Moreover, Schildkamp and Kuiper (2010) noted that resistance from educators, particularly when they feel that data is being used to evaluate their performance, can create barriers to the successful implementation of data-driven practices.

Overcoming these challenges requires addressing the gaps in training, providing adequate resources, and fostering a supportive school culture for data use.

Finally, the study identified several factors contributing to the successful implementation of data-driven decision-making. Key factors included strong leadership, professional development, and a collaborative school culture. These findings are consistent with Mandinach and Jackson (2012), who emphasized that effective leadership and professional development are essential for the successful integration of data into decision-making practices. Furthermore, Schildkamp et al. (2016) found that when schools foster a collaborative environment where data is shared and discussed among educators, the implementation of data-driven decision-making becomes more successful. This suggests that leadership and collaboration play pivotal roles in the effectiveness of data-driven practices in schools.

Educational Implications of the study

The educational implications of the study highlight the importance of integrating data-driven decision-making into secondary school administration to enhance academic performance, optimize resource allocation, and improve staff management. Schools should invest in professional development to equip administrators and staff with the necessary skills to analyze and use data effectively. Additionally, the study emphasizes the need for leadership that fosters a culture of data use, collaboration and continuous improvement. Overcoming challenges like limited resources and resistance to change is crucial for fully realizing the benefits of data-driven practices in educational settings. Ultimately, this approach can lead to more efficient school management and improved educational outcomes.

Contribution to Knowledge

The study contributes to knowledge by providing empirical evidence on the impact and effectiveness of data-driven decision-making in the administration of secondary schools in Nsukka Local Government Area. It expands the understanding of how data utilization influences key areas such as academic performance, resource allocation, and staff management within educational settings. Furthermore, the study sheds light on the challenges and factors that affect the successful implementation of data-driven practices, offering practical insights for policymakers, school administrators and educators. By addressing

these factors, the study enriches the discourse on the role of data in educational administration and provides a foundation for future research in the field.

Conclusion

The study concluded that data-driven decision-making significantly influences academic performance, resource allocation, staff management, and the achievement of administrative goals in secondary schools in Nsukka Local Government Area. By utilizing data to monitor students' progress, allocate resources effectively, and manage staff performance, school administrators are able to make more informed decisions that aligned with educational objectives and improved overall school outcomes. Additionally, the study identified that although data-driven practices have proven to be effective, challenges such as limited technology access, insufficient training, and resistance from staff hinder the full potential of these practices. Furthermore, the study highlighted that the successful implementation of data-driven decision-making practices relies on strong leadership, professional development, and a collaborative school culture. The findings suggest that for data-driven practices to be truly transformative, schools must address these challenges through appropriate training, adequate resource provision, and fostering a supportive environment for data use. Overall, the study reinforces the importance of data in improving educational administration and underscores the need for ongoing support and development to maximize the effectiveness of data-driven decision-making in schools.

Recommendations

Based on the findings, the following recommendations were made:

1. School administrators should prioritize training to enhance data literacy for effective decision-making.
2. Policymakers should invest in infrastructure to support data collection, analysis, and interpretation.
3. Schools should foster a collaborative culture integrating data-driven decision-making into daily practices.
4. A comprehensive approach to data use should be adopted, covering academic performance, resource allocation and staff development.
5. Challenges such as data resistance and limited resources should be addressed through supportive environments and gradual implementation of data practices.

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