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ROLE OF LEADERSHIP COMPETENCIES IN THE DATA-DRIVEN DECISION-MAKING AT THE UNIVERSITY LEVEL

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Abstract

Achievement in today's business environment depends on educated decision-making and higher productivity. Data-driven knowledge and comprehensive evaluation are essential for making precise decisions that reduce risks and simplify organizational strategy. The objective of this research was to investigate the role of leadership competencies in enhancing data-driven decision-making of public and private sectors at the university level. The research used an interpretivist paradigm. A qualitative research design was used. The population was all HEC-recognized general universities of Lahore. 6 universities were taken as a sample by using a random sampling technique. The researcher was conducting 18 interviews with the selected heads of departments (HOD) and faculty. It was based on identified themes and patterns, ensuring a comprehensive analysis of the relationships among variables. Thematic analysis techniques will be used for the data analysis. The study findings show that leadership competencies, particularly analytical, strategic, ethical, and communication skills, are key to effective data-driven decision-making, as universities' success depends more on leaders' capacity to interpret and apply data than on technological systems alone. The research recommendation is to implement programs to enhance analytical, strategic, ethical, and communication skills among university leaders for effective data-driven decision-making.

***Keywords*:** Data-Driven, Leadership Competencies, Decision-Making, Data-Driven Decision-Making, University Academic Head

INTRODUCTION

In order to be successful, an organization must plan for the future, advance technology, and manage personnel. Leadership has long been recognized as a fundamental element of success. As fast-paced and constantly changing circumstances have increased the importance of leadership, specifically when decisions making are based on data. It was once thought that decision-making was a managerial job based on legal compliance, productivity, and supervision (Ochieng, 2023). However, advanced organizations are relying on this position to make evidence-based decision-making essential to maintaining their competitive edge.

An important aspect of data-driven decision-making is proficient leadership in employee retention, recruitment, staff retention, and oversight of operational performance (Govender & Bussin, 2020). Leaders need to use statistically based insights and flexible leadership competencies to enhance employee productivity. Aditionally, the rapid advancement of technological innovation and robotics has drastically changed the data-driven decision-making sphere. The necessity for successful leadership that is both flexible and tactically focused is highlighted by the becoming more complex of personnel issues and the growing dependence on artificial intelligence-driven decision-making procedures (Kessi et al., 2025).

Competent leaders give well-defined instructions, enthusiasm, and cooperation to foster a constructive workplace and enhanced institution capacity development. Leadership competencies importantly affect the efficiency of staff, employees' well-being, and long-term workforce stability (Prihantini et al., 2024). To enhance team performance and to sustain a strategic advantage and increased efficiency of the organization, leaders should take advantage of decision-making based on artificial intelligence and use data-driven understandings (Ramli et al., 2024). Further, for maintaining skilled and dedicated staff, encouraging leadership and successful approaches are important (Prihantini et al., 2024). When developing top-tier talent

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CJSSR
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is essential for mission and vision, integrated with data-driven decision-making methods (Syakoer, 2023).

Leadership competencies notably affect the results of data-driven decision-making. Leadership's distinct methods can produce different outcomes despite having the same data (Yunita et al., 2023). Competent leaders make a strong workforce, encourage equity, and cultivate a unified goal (Yunita et al., 2023). Moreover, leader competencies in data-driven decision-making and sustainable organizational methods aid management operations and structures of decision-making (Sonia, 2024).

In light of the increasing reliance on data and advanced technologies in organizational decision-making, leadership competencies have emerged as a decisive factor in determining how effectively data are interpreted and applied. Despite the availability of sophisticated data systems, outcomes largely depend on leaders' ability to integrate evidence-based insights with strategic judgment and human-centered management practices. Therefore, this study seeks to examine the role of leadership competencies in enhancing data-driven decision-making, with particular emphasis on how leadership practices influence organizational effectiveness, workforce performance, and sustainable institutional development.

Objective of the Study

- To investigate the role of leadership competencies in enhancing data-driven decision-making of public and private sectors at the university level.

Research Question

- In what ways do leadership competencies support data-driven decision-making of public and private sectors at the university level?

Significance

This study will benefit university leaders by aiding them in figuring out the leadership skills needed to improve data-driven decision-making in educational, managerial, and corporate domains. In order to create leadership structures and regulations that facilitate data-driven leadership in universities, policymakers and higher education oversight organizations will acquire statistically supported analysis. Better procedures for leadership will increase decision-making level, distribution of assets, and organizational efficiency for higher education institutions. Moreover, this research seeks to expand existing literature and provide researchers with empirical evidence regarding the impact of leadership competencies on data-driven decision-making in higher education.

Rationale of the Study

This research aims to fill the gaps identified to examine the role of leadership in effective and efficient data-driven decision-making. Previous studies emphasize leadership's effect on the enthusiasm of staff, career well-being, and involvement. The innovation of this study is that its cornerstone is on leadership competencies, which elevate data-driven decision-making of the public and private sectors at the university level.

LITERATURE REVIEW

The swift advancement of technologies has profoundly altered organizational direction and educational methodologies, thereby generating a critical requirement for competent leadership. Using technology to accomplish strategic goals is the essence of leadership that conducts institutions and organizations through leadership (Blanka, Krumay, & Rueckel, 2022; Böck & Lange, 2018). (Sow & Aborbie, 2018) defined assist in facilitating the acquisition of an approach that eases transformation, is called leadership, leadership competence, and culture are intertwined in its foundation, according to (Mihardjo, Sasmoko, Alamsjah, & Elidjen, 2019). Technology-assisted organizational and educational goals require effective leadership that combines strategic, interpersonal, and technical skills (Al-Hadrawi & Reniati, 2023; Torres et al., 2024).

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CJSSR
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Technology should be integrated into teaching and learning by educators (Al-Ajmi, 2022; Anwar & Saraih, 2024). Digital literacy strategies and advanced pedagogies are essential for 21st century educators and students. Sustainability and operational efficiency as a key driver of innovation, leadership competencies are critical to organizational success (Philip, Gilli, & Knappstein, 2023; Sow & Aborbie, 2018). In education, competent leadership has a positive effect on the comprehensive growth of the organization, improvement of teaching and learning, and the rise of digital literacy (Nasution, 2024). In organizational settings, leadership facilitates reliability, effective utilization of assets, and sustained achievement (Abdullah & Abdul Kadir, 2023).

According to Torres et al. (2024), in a variety of domains in which the concept of leadership is applicable, the intersecting competencies are highlighted. A tactical goal's significance in leadership is a crucial finding from the study. Modern time demands leaders be capable of matching digital projects with overarching goals, foreseeing advances in technology, and successfully incorporating novel applications. According to Davis (2024), to preserve institutional credibility and foster creativity in a setting that shifts quickly, tactical goals empower leaders. In educational contexts, where the incorporation of digital technology must be carefully managed to improve learning experiences whereas maintaining conformity with educational objectives, this ability is especially crucial (Eden & Adeniyi, 2024).

Methodology

To investigate how leadership ability promotes data-driven decision-making, an interpretive research paradigm and qualitative study approach were employed (Creswell and Poth, 2018). A phenomenological research design was used. In interpretivism, the researcher generates knowledge by investigating and understanding the social environment of the subject of the research, according to Wheeler & Holloway (2010). Blumberg et al. (2008) state that to obtain statistical proof, the interpretative approach employs small samples and concentrates on detailed, qualitative, extensive data instead of generalization. Prior to developing a hypothesis and results, an inductive strategy is employed that collects information and observations (Caulfield, 2022). The population HEC recognized all the general universities of Lahore. For this study, 6 universities consist of 3 public and 3 private, were taken as the sample. To select the sample, a purposive sampling technique was used. The researcher will conduct 18 interviews consist of 12 faculty interviews and 6 heads of department interviews with heads of departments (HODs) and faculty members.

Instrument

A semi-structured interview approach was used to gather data, enabling in depth understanding. Education professionals confirmed the interview procedures. The researcher was able to listen to and document participants' opinions and viewpoints in what they said throughout these interviews, giving the researcher freedom to look into and clarify the answers.

Data Analysis

Thematic analysis was used to examine the gathered information. This approach entailed reading the transcripts several times to spot trends, classifying significant passages, and organizing them into themes that represent the participants' opinions regarding the applicability of the instruction, deficiencies in abilities, and organizational procedures. The six-phase framework proposed by Braun and Clarke (2006) was followed in the data evaluation process, getting acquainted with the information, first code generation, top search, and overview of themes, theme definition and naming, and result production.

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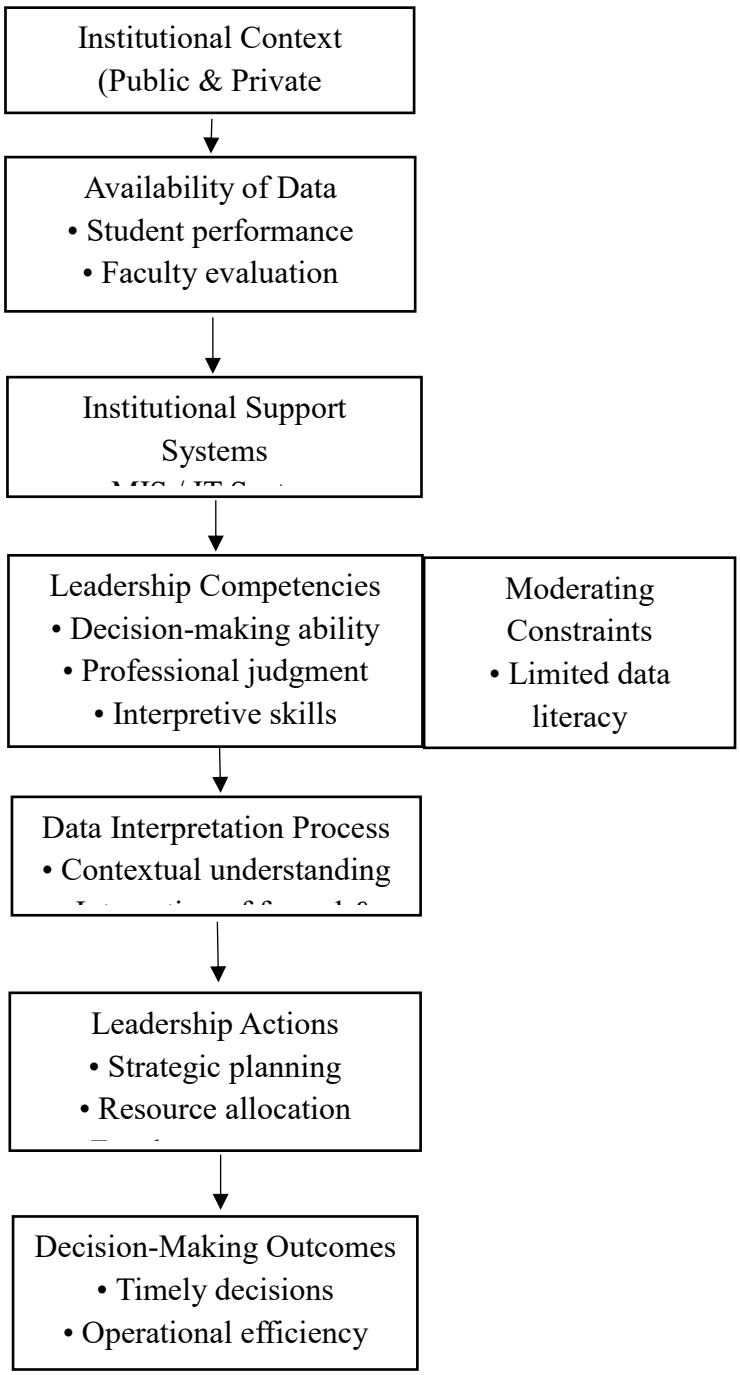
Systematic Flowchart/Mapping



Results

The results show the combined findings from public and private universities to examine the role of leadership competencies in data-driven decision-making. Thematic analysis resulted in major themes. Analysis of interviews with Heads of Departments and faculty members from public and private universities revealed several interrelated themes explaining how leadership competencies enhance data-driven decision-making. The major themes of the faculty and the head of department are given below:

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Theme 1: Use of Data in Academic Decision-Making

Across both public and private universities, academic heads primarily relied on processed and compiled data rather than raw datasets. Common forms of data included student performance records, attendance reports, faculty evaluations, and administrative information. In public universities, more meeting-based and procedural data were used, while in private universities, largely data were generated through the system with the help of SAP, digital portals, and LMS.

In data systems, in spite of differences, in public and private sectors, leaders emphasized the need to interpret contextually data. Especially where deficiencies in formal data systems, faculty interactions, student problems, and observations, all these informal data played an important role.

Theme 2: Leadership Judgment and Decision Authority

In public and private sectors, a dominant competency influencing data-driven decision-making is leadership judgment. Instead of a decision's sole basis, data is used as a supportive input, and academic heads exercise centralized decision authority. Private university leaders showed autonomy and flexibility to a large extent; public university leaders depend on hierarchical authority.

Participants highlighted that both public and private universities' professional experience, situational understanding, and personal interpretation shaped final decisions. Leadership competence is significant reinforcing over purely technical data used.

Theme 3: Capacity Building and Data Literacy

Across both public and private universities, findings highlighted in data analysis show that limited structured training is required. There was a limited amount of formal development of data literacy at private universities, while they offered training related to digital systems. Informal discussions and meetings were more common at public universities, with less emphasis on analytical skills.

In consequence, there was a gap between data availability and effective data use, as faculty members compiled data independently without much guidance from leadership.

Theme 4: Data Use in Strategic Planning and Resource Allocation

The allocation of resources and the planning of operations at public and private universities used data more consistently. In addition to workload management, laboratory distribution, project assignments, and faculty evaluations were some instances. The performance data used by private universities was more systematic, while the data combined with critical observation was used by public universities.

A direct link between institutional efficiency and outcomes is evident in this theme, illustrating the practical application of data-driven decision-making.

Theme 5: Analytical leadership enables effective data use

Data analysis competence is fundamental to understanding institutional data, both at public and private universities. Head of department to a great extend depend upon on QEC and MIS reports for tracking enrollment, accreditation, and academic results. The same system was used at private universities, but with better attention paid to real-time performance, market demands, and resource utilization.

Strong analytical skills allowed leaders in both public and private sectors identify gaps, compare trends, and validate information across multiple sources. Competent leaders verified data and critically interpreted it. So that the quality and credibility of decisions can be improved.

Theme 6: Professional Judgement enhances data interpretation

Poor engagement, weak program outcomes, and low pass rates data highlighted these performance problems. In public and private universities, leaders emphasized that professional experience was necessary to interpret these conclusions. Academic expertise is used by leaders

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CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

to find out whether issues were related to teaching sequence, student preparedness, and curriculum design. Industry and professional experience aid leaders in connecting data with practical constraints, such as inadequate software, abilities mismatches, and equipment outdated.

Leadership competency lies not only in selecting between judgment and data but collected both to reach exact results.

Theme 7: Strategy competence guides data-based planning

A key competency of leadership across both public and private sectors is a emerged strategic thinking. Enhance academic standards, meet accreditation requirements, and align programs with national priorities; these data are used by public university leaders. The same data is used by private university leaders to assess graduate employability and financial sustainability and improve competitiveness.

Decisions related to novel programs, updated curriculum, and facilities investments were driven by graduate outcomes, enrollment patterns, and research performance. Strategically skilled leaders used data to guide academic planning long-term instead of focusing on short-term solutions.

Theme 8: Communication competence improves data use

Strong communication was key to putting data-driven insights into practice. Leaders made complex data easy to grasp through visuals and summaries, helping faculty spot trends and make informed decisions. Collaborative interpretation of data was enabled, faculty involved in improvement efforts were encouraged in this competency.

Discussion

It is indicated by the results that data-driven decision-making in both public and private universities is strongly shaped by leadership competencies. Leadership competencies are central to effective data-driven decision-making in both public and private sectors, the results showed. Other studies showed that institutional data is integrated by leaders with contextual understanding and professional judgement. These competencies reflect the complex, human-centered nature of higher education decision-making (Bryman, 2007; Spillane, 2012; Chigbu & Makapela, 2025; Fernandes, 2023). How leaders interpret, apply, and communicate it all depends on a meaningful interpretation of information. Also, public and private universities have access to the same information systems.

Accreditation, regulatory, and quality assurance frameworks guide the data practices in public universities. Leaders use MIS and QEC reports to oversee compliance, maintain consistency, and improve curriculum delivery, quality of teaching, and student outcomes. While centralized authority enables timely decision-making, it can reduce faculty engagement, thereby limiting the growth of a data-driven culture (Middlehurst, 2013; Kezar & Eckel, 2004).

Other studies showed that private universities leverage data with greater flexibility, prioritizing student demand, job market trends, and financial sustainability. Leaders use real-time data on graduate outcomes, enrollment, and asset use to align programs with labor market demands, fostering innovation and institutional adaptability (Fernandes, 2023).

Analytical skills enable precise data interpretation, strategic abilities guide its application toward institutional objectives, and ethical and communication skills promote transparency, trust, and engagement with stakeholders in both public and private settings. According to previous studies, limited data literacy highlights the crucial role of leadership in turning data into meaningful institutional practices (Mandinach & Gummer, 2016; Shah, 2013).

Ultimately, while technological systems give the foundation. In higher education institutions, it is leadership competencies that ensure data drives effective, balanced, and context-aware decisions, promoting sustainable enhancement.

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CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

Conclusion

This study concludes that leadership competencies play a key role in enhancing data-driven decision-making in both public and private universities. Although MIS, QEC, and other data systems supply essential information, their impact relies on leaders' ability to interpret, apply, and communicate the data effectively.

In public universities, leadership competencies mainly focus on ensuring compliance, quality assurance, and academic accountability. Leaders use MIS and QEC reports to maintain consistency, student outcomes, oversee compliance, teaching quality, and improve curriculum delivery. It can reduce faculty engagement, limiting the growth of a data-driven culture, whereas centralized authority enables timely decision-making.

Leadership competencies help institutions respond to the requirements of the market, improve student employability, and optimize asset allocation at private universities. On graduate outcomes, enrollment, and resource use to link with programs with labor market requirements, fostering innovation and institutional adaptability for these leaders, utilize real-time data. Strategic, analytical, ethical, and communication skills allow leaders of the public and private sectors to translate data into balanced, context-aware decisions and be informed.

Both sectors have differences in systems and priorities to encounter challenges like limited data literacy training, underscoring the critical role of leadership in fostering a data-informed environment. As a result, data-driven decision-making is not just a technical task but a leadership-led process. Institutions that invest in cultivating these competencies are better positioned to achieve institutional advancement and sustainable academic.

Recommendations

Drawing on the study's findings, which emphasize the pivotal role of leadership competencies in converting data into meaningful institutional practice. The following recommendations are offered to enhance data-driven decision-making in universities:

1. Offer ongoing training for staff and faculty members to analyze and apply data, promoting wider participation in institutional decision-making.
2. Establish clear policies for responsible data use and sharing to build trust, accountability, and stakeholder confidence.

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