

Narratives of Data Use in Educational Administration: How Leaders Interpret, Trust, and Act on Digital Data in Pakistan

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Abstract

The evolving nature of the digital data systems in the education sector has changed the manner in which the leaders of the institutions perceive information, decision-making, and administrative responsibility. The research explores the stories of educators who utilize data in Pakistani schools and colleges to explore how administrators perceive, believe, and take action with digital data created with the assistance of information systems, analytics dashboard, and reporting tools. The research problem deals with the current sparse knowledge of how leaders conceptualize data-driven governance rather than judging it based on how precise the technicality of the data it operates on is. The main idea of the research was to investigate the experience, beliefs, and stories of leaders on digital information application in administrative decision-making. Using qualitative research design, the data were gathered using semi-structured interviews with both the educational administrators of the public and private institutions. The aim of the research was to hold that institutional culture, accountability pressure and past experience determine the level of trust in data and that the level of trust is bounded by the quality of data, the system of systems and the expectations and demands of the policy. The results suggest that leaders are discriminating when dealing with digital data, incorporating formal measures with professional judgment, situational knowledge, and experience. These conclusions are in line with global studies on the use of data in decision-making as well as providing context-related knowledge in Pakistan. The research findings conclude that the narratives of administrators are core in the determination of how the digital information influences educational governance.

Keywords: Data-driven decision-making; Educational leadership; Trust in data; Narrative sense-making; Digital governance; Pakistan education

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1. Introduction

Educational administration has moved towards digital data systems that have influenced the planning, monitoring, and decision processes in educational industries such as schools and colleges. The use of data dashboards, student information system, and performance measures is becoming increasingly popular among the administrators to inform the institutional activity and prove their accountability (Williamson, 2017; Selwyn, 2019). Such developments are frequently placed in the context of data-driven styles of governance, in which digital data is presumed to provide objective and dependable information on the workings of institutions. Nonetheless, the studies indicate that data cannot exist without human input, instead, it can be interpreted, believed, and acted by way of professional judgment and contextual knowledge of leaders (Kitchin, 2014). The administrators of education in Pakistan are a vital influence when it comes to the educational practice as the scope of data utilization in Pakistan is very diverse, and the data infrastructure and governance requirement are neither standardized nor consistent.

There is a significant belief in the reality of educational reforms about how the additional access to digital information can ensure more rational and efficient decision-making. Analysts however dispute this belief when they highlight that data is socially created and construed in an organizational setting (Spillane et al., 2002). Although previous literature has conducted international research in the area of data-oriented decision-making, there is a lack of concern related to the narrative techniques used by educational leaders in their relationship with data, especially in developing settings. Current literature in Pakistan is based more on data systems and accountability systems rather than the sense-making of administrators and their belief in data. The gap leads to the subsequent research question: How do educational leaders in Pakistan perceive, believe and use digital data in the process of making administrative decisions?

This paper aims to collect the stories of digital data usage by the Pakistani school and college leaders. The study deconstructs how administrators interpret the data, bargain on the trust in the digital systems, and incorporate data in decision-making by using a qualitative approach. The results show that leaders interact with data in a selective way by integrating formal data with situational knowledge and experience. Focusing on the stories of administrators, the study can add to the existing books on data-driven governance and educational leadership to represent the articulative and social aspects of the use of data. The article then continues with a literature review of other related literature, then the methodology followed by the results, discussion and the conclusion.

2. Literature Review

2.1 Introduction

The rise of emphasis on data-driven governance has placed digital data as the principal resource in educational administration. To a growing extent, administrators are projected to read, believe in data, and refer to it in support of decisions when it comes to planning, performance, and accountability. Nonetheless, researchers claim that information does not work like neutral evidence but rather is perceived through narratives that are being formed by professional judgments, institutional culture, and institutional authority. The present literature review considers studies in data-driven decision-making, data-trust, narrative sense-making, professional judgment as well as data governance innovation in education. The research question will be as follows: How do educational leaders understand, believe and use digital data? This review synthesized scholarly works on global knowledge and Global South

views to outline major themes and gaps in international studies that present the need to conduct a qualitative inquiry in Pakistan.

2.2 Information-Based Renaissance in Education

The studies of data-driven decision-making draw attention to the growing prevalence of digital data in educational leadership and governance (Datnow and Park, 2018). Analytics platforms, performance indicators, and data dashboards have become commonly defined as instruments of thinking rationally and objectively in order to make a decision. Nevertheless, research indicates that administrators do not use data very often, but they blend metrics and experiential knowledge and understanding of context (Mandinach and Gummer, 2016). Researchers have warned that excessive focus on quantitative measures can cause decision-making to be more restricted and context to become cloudy (Selwyn, 2019).

2.3 Privacy, Data Security, and Data Integrity

Confidence in online information is a vital determinant in defining the action of administrators towards it. According to research, the accuracy of the data, system reliability, transparency, and previous experiences with the data systems affect the trust (Kitchin, 2014). Administrators can doubt the validity of data because of the lack of data, technical issues, loss of motivation with the reality of lived institutions (Wayman et al., 2012). Trust is hence not intrinsic in data but is created in an interaction, sense making, and validation process that happens repeatedly.

2.4 Narrative and Sense-Making of Data Use

The sense-making theory underlines that leaders make sense of information reflecting on narratives that can enable them to explain, and justify events (Weick, 1995). Research indicates that administrators create stories about information that is coherent with institutional interests, requirements in accountability, and the role of professional identity (Coburn, 2006). These stories influence which information is deemed to be valid and its utilization in decision making. This makes the data narratives interpretive frames as opposed to objective accounts of reality.

2.5 Professional Judgment and Hyrbridal Decision-Making

The studies have always indicated educational leaders to make decisions in a hybrid style, which combines the information with professional judgment and ethical issues and contextual knowledge (Spillane et al., 2002). Administrators can use information in a selective manner that might reinforce decisions that are already influenced by experience or intuition. Such selective usage is lenient to practical leadership over to data resistance, indicating the interpretive aspect of the utilization of data in practice (Datnow and Park, 2018).

2.6 Data Governance, Accountability and Power

The researchers claim that data systems are situated in larger accountability regimes that influence the production and utilization of data (Ball, 2012). Data can redistribute power by giving more privileges to what could be measured and strengthening managerial control (Williamson, 2017). Administrators have to walk the line between improving with the help of the available data and engaging outside accountability demands. Such dynamics affect the accounts of confidence, accountability, and responsibility in data application.

2.7 Global South and Pakistani Situation

The infrastructural inequality, policy borrowing, and low data literacy conditions are identified by research on data-driven governance in the Global South (Selwyn and Jandric, 2020). Data systems and accountability mechanisms are a subject of research in Pakistan, and little has been done regarding the interpretive experiences of administrators (Farooq et al., 2020). Data quality, reliability of the system, and contextual relevance are some of the typical issues that

administrators have to deal with; therefore, narrative sense-making is especially relevant in this case.

2.8 Synthesis and Research Gap

This paper identifies six themes that are all connected: (a) the growth of data-based governance, (b) trust as a precondition to using data, (c) narrative and sense-making, (d) hybrid decision-making, (e) accountability and power relations, and (f) lack of qualitative studies in the Global South. Although the use of interpretive data is recognized by the international studies, a significant gap persists in the literature on qualitative studies describing the narratives of administrators in using data in Pakistan. This paper fills this gap by undergoing the interpretation, trustfulness, and actionability of digital data in daily administrative practice among the leaders.

3. Research Methodology

3.1 Methodological Approach

This research paper has examined the stories of educational leaders in Pakistan using digital information in administrative decision-making, specifically on interpretation, trust and action. The study sought to solve the issue that the studies on data-driven governance tend to assume the objective nature of this phenomenon and that sense-making and narrative framing of leaders is the gap in the literature. The qualitative research design that was used in the study was interpretive research because it emphasized on meaning-making, professional judgment and experience. The study was based on primary data and a descriptive and exploratory design was used, which provided an opportunity to analyze the stories of leaders in the context of using digital data in detail. The qualitative approach was chosen because it is appropriate in the process of depicting in the subjective occurrence and contextual influences that determine the way in which data is construed and responded to within practice (Creswell and Poth, 2018).

3.2 Data Collection Methods

The variables used to gather data included public and private schools and colleges of Punjab, Sindh, and Khyber Pakhtunkhwa that had different governance and levels of digital maturity. The participants were [depending on the number of the educational leaders] 25-40 educational leaders in the form of principals, vice principals, head of departments, registrars, and senior administrators in charge of the making of data-informed decisions. The participants were recruited through the purposive sampling method in which those who had direct experience with the systems of digital data were included such as student information systems, analytics dashboards and reporting platforms. The semi-structured interviews were made to the leaders and their stories about the interpretation of data, the trust they have on data systems, the way they make decisions and the way they react to accountability requirements are included. Ethical permission was given, informed consent was taken, and confidentiality and free participation were requested.

3.3 Data Analysis Methods

Thematic narrative analysis was used to analyze interview data, which were audio-taped, transcribed at face value and analyzed. The analysis was conducted according to the thematic patterns of analysis used by Braun and Clarke (2006) and was focused on the narrative patterns in making leaders explain how data was used, trust was formed, and decisions were justified. The coding was based on credibility, skepticism, contextual interpretation, and action narrative. Comparison was done across cases in order to determine the presence of the same narrative structures across the institutional contexts. Data were coded and organized in qualitative data analysis software (e.g., NVivo) to arrange them in an orderly manner. Reflexive memo writing helped in analytical transparency and reflexivity of the researcher.

3.4 Justification of Methodology Evaluation

The data use was best studied through the qualitative interpretive approach since it is a narrative and sense-making process instead of technical one. The semi-structured interviews facilitated the leaders to describe their levels of trust, questions, and their reinterpretation of digital information concerning contextual knowledge and professional judgment. The use of leaders who worked in various institutional contexts made it more credible and transferable. There are restrictions; the use of self-reported stories and lack of data use practices and data report of documents observation. Close probing, cross context and reflexive analysis were used to take care of these limitations. Nonetheless, the limitations notwithstanding, the methodology offers a sound framework on how educational leaders in Pakistan are perceiving and responding to digital data in Pakistan.

4. Results

The following section contains results of semi-structured interviews with the educational leaders of the Pakistani educational establishments both public and private (schools and colleges). The findings put emphasis on the accounts of the leaders on how they understand, believe, and respond to the digital information in the administrative decision-making process. The results are categorized into major themes, which appeared repeatedly among the participants and in institutions.

4.1 Digital Data as a Point of Reference of an Administration

The participants noted that digital system of data was a valuable source of reference in the administrative practice. Managers said they regularly interacted with enrollment data, attendance reports, test scores, and performance reports. It has been reported that data was accessed on a routine basis through planning meetings, report cycles as well as accountability processes. Respondents mentioned data as a starting point of discussion and not a concrete source of decision making.

4.2 Data Trustfulness Induced by Experience and Situation

Based on previous events with data accuracy and reliability, leaders expressed the different degrees of trust in digital data. Respondents said that they had a sense of trust on the data when they matched with the institutional observations and experience. Where there was perceived data inconsistency or technical error, skepticism and further verification was reported by leaders. The confidence on data was hence termed contextual and conditional as opposed to being automatic.

4.3 Use of Data and Professional Judgment Hybrid

According to the participants, they used digital data together with professional judgment, contextual knowledge and experiential knowledge in decision-making. Leaders explained that they used data to confirm or justify the decisions that they have already made on the basis of experience instead of letting it dictate what to do on its own. This practice of being a hybrid was mentioned in terms of institution types and leadership positions.

4.4 Data Narratives to Accountability and Justification

The heads of state had said that they chose to make narratives out of data to explain to the head-of-state, the staff, and also the external authorities. The respondents reported selective data usage to show compliance, improvement, or intervention requirements. It was especially reported that data narratives were significant in audits, inspections, and reporting procedures. Leaders stated that they customized data presentation to fit accountability expectations.

4.5 Scepticism against Data Quality and Completeness

Among the issues reported by the participants were the quality of the data such as missing data, the delayed nature of updates, and conflicts in the various systems. The leaders noted

that they doubted the totality and applicability of some metrics, especially in situations where data did not capture situational variables. It is also found that skepticism was reported more often in the institutions that lacked a lot of technical help or had disconnected data systems.

4.6 Strictly Speaking: Data-driven Decision-Making

Managers said that they had been responsive and slow in responding to digital facts. The participants have talked of utilizing data to pinpoint trends or desired focus of their attention and not making a radical or immediate change. The data-driven decisions were frequently called provisional and to be reviewed and amended according to the continuous observation and feedback.

4.7 Limitations that are seen in the Data

It is necessary to take into account the factors of some limitations on the results. The information has been based on self-reports made by the leaders of the data utilization that might not fully define the actual practices of decision making. The lack of document analysis and observation does not allow checking the use processes of reported data. Further, the sample size is qualitative, and will not be generalizable outside like institutional settings. Such limitations are accepted as they are without interpretation and are discussed in the Discussion section.

5. Discussion

5.1 Summary of Major Findings

This paper has examined the ways in which the Pakistani school and college leaders interpret, put their trust, and take action on digital data concerning administrative decision-making. The results show that leaders do not appropriate data as a source of objective but as a starting point upon which the information should be interpreted. Data trust was conditional based on experience and situational fit and data-professional judgment seemed to be a common way of decision-making. Narratives were also created by leaders on data to address the accountability requirements.

5.2 Interpretation of Findings

These findings indicate that data utilization in the field of educational administration is based on interpretation and not determination. Leaders used the credibility of data as a criterion and compared it with the institutional knowledge and lived experience. Where lapses were found, doubt led to checking or precaution. The dependency on the hybrid decision-making process can be explained by the attempts of leaders to balance between the technical information and the contextual realities which states that the data is one of the numerous inputs rather than a driving force.

5.3 Relationship to the Previous Literature

The research results correlate with the literature that underlines that data-driven decision-making is mediated by the concept of professional judgment and sense-making (Spillane et al., 2002; Datnow and Park, 2018). Implicit trust, which is reflected by the participants, reflects the studies on the issue of quality data and interpretation (Wayman et al., 2012). The significance of narratives used by leaders to rationalize decision making is a sense-making theory and narrative framing on the part of the leaders in an organizational context (Weick, 1995; Coburn, 2006). It puts two study areas into global south insights of data governance and leadership practice because it is focused on Pakistan (Selwyn and Jandric, 2020).

5.4 Limitations of the Study

A number of constraints must be realized. The paper has used self-reported stories of the leaders, and this might not be similar to performed data practices. Triangulation of findings is not possible because of the lack of document analysis or observation. Also, although

respondents were representatives of different institutions, the qualitative sample limits the external validity to different settings. These drawbacks imply the possibility of future mixed-method and longitudinal research.

5.5 Theoretical and Practical Implications

Conceptually, the theoretical foundation of this study is that the use of data can be framed as a narrative and sense-making process that would provide contributions to educational leadership and data governance literature. It puts the ideas of data-driven governance that is purely based on rationality to the test. In practice, the results indicate that leadership is developed based on data literacy, critical interpretation, and ethical data use instead of technical proficiency. Social policies on data utilization should recognize the judgmental context and mediating narration.

5.6 Alternative Explanations

The other causes of being conservative in using data might be the low reliability of the systems used, that the external accountability pressures it or the organizational cultures where experiential knowledge is valued above metrics. The skepticism towards data based control by leaders can also indicate the strategic opposition to data-based control, as opposed to discussion of data quality. These opportunities suggest how complex the use of data can go beyond the preferences of the leaders.

5.7 Back to the Question of the Research

Returning to the research question, which follows, how do educational leaders in Pakistan interpret, trust, and use digital data, the results provided allow concluding that selective trust, narrative construction, and hybrid decision-making are observed amongst leaders. Their performances indicate certain continuous sense-making processes that are forced by accountability requirements, institutional framework, and professional identity and therefore leadership interpretation is core to data-driven governance.

Conclusion

This research aim was to analyze the manner in which school and college educational leaders of Pakistan understand, have faith in, and make use of digital information during the process of administrative decision making. Rephrasing the main concern of the paper, the study was aimed at going beyond the technical understanding of data-driven governance and anticipating the narratives and sense-making among the leaders. This evidence also shows that digital data is not considered as a neutral or authoritative source but is performed in accordance with professional judgment and contextual knowledge in relation to the experience of a particular institution.

It was found that leaders apply conditional trust, hybrid decision-making, and narrative construction at work with digital data in hand. Data were usually informative, supportive or justifying as opposed to determining decisions on their own. The findings can add to the literature by refining the interpretive and relational aspects of the use of data in educational leadership. Going back to the introduction, the study influences the argument that data-driven administration, in fact, is a human agency that is, in fact, a meaning-making process.

The extended application of the research is in terms of its implications in terms of leadership development and data governance in Pakistan. To be a responsible user of data, it is important to strengthen the skills of administrators in data literacy, ethical awareness, and critical interpretation. The future study will include observational study, policy examination, and consideration of stakeholder viewpoints to contribute more to the development of data narratives as they evolve and their impact on the governance of institutions.

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