



University Management Informatization Reforms and Decision-Making Quality of School Administrators in Weifang, China

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Abstract

This study examined the assessment of faculty members on the university management informatization reforms and the decision-making quality of school administrators at Shandong Second Medical University. Using a quantitative-descriptive correlational design, the study gathered data from a diverse group of respondents categorized by age, academic position, and employment status. The results showed that the informatization reforms in the university were generally understood as "Managed," which implemented at a very high quality, as indicated by big data integration and intelligent systems, which received relatively higher ratings. On the one hand, however, the Administrators rated their decision-making quality as "High Quality," with "highest" scores received for the collaborative and participatory approaches and holistic and context-sensitive decision-making aspects. Differences in information quality perception were according to position groupings, while adaptability according to age groupings. Correlation analysis revealed that some components of informatization reforms, such as big data integration and intelligent systems, would significantly influence some aspects of decision-making quality, such as adaptability and data utilization.

Keywords: Informatization reforms, decision-making quality, digital transformation, educational leadership, data utilization, participatory governance, Shandong Second Medical University

Introduction

Rapid socio-economic growth in China has compelled the government and universities to invest heavily in education reform, particularly in informatization. At its core, informatization promises greater efficiency in management, smoother information sharing, and more timely, data-driven decision-making. As Jing (2023) observes, digitizing archives does not merely secure institutional records; it also facilitates interdepartmental cooperation, which in turn strengthens organizational decision-making. Jiang (2024) adds that reforms of this nature help institutions navigate the complexities of big data by promoting innovative practices. Concrete examples, such as the adoption of WeChat public platforms (Chi, 2019) and the use of 3D virtual imaging (Zhang, 2022), illustrate how digital systems can personalize learning and accelerate communication. Still, while these cases demonstrate potential, it is worth noting that they often remain localized pilot projects rather than uniformly adopted practices across universities.

Informatics integration into university management is patchy despite these gains. Some institutions use hierarchical decision-making frameworks, which may seem efficient but lack agility and inclusion in current circumstances. Sharif et al. (2018) stress that fragmented systems, inadequate administrator



training, and limited coordination impede improvements. These issues persist, suggesting that technology alone cannot improve decision-making. To fully utilize digital technologies, administrators must gain technical skills and a collaborative approach. Otherwise, adjustments may be superficial and fail to transform organizational culture.

The research emphasizes that decision-making quality depends on both digital tools and processes. Quimpan and Bauyot (2024) stress the importance of collaborative approaches in pushing teachers to improve professionally, which boosts institutional capacity. Schildkamp (2019) emphasizes data-driven decisions' impact on student progress. These studies suggest that informatization works best in a participative culture where staff and administrators interpret and act on data jointly. One can wonder if such collaboration is possible in very hierarchical administrative systems.

Informatization has non-technical challenges. Administrative staff generally resist change, lack digital literacy, and distrust algorithmic advice (Sharif et al., 2018). Reform is also complicated by structure. According to Ju (2006), China's centralized decision-making system might inhibit participation, and this tension persists. Balancing human judgment with algorithmic insights raises ethical challenges about justice, openness, and responsibility (Prinsloo et al., 2022). Cultural values important. Juárez-Villegas et al. (2021) showed how Confucian hierarchy and collectivism influence healthcare ethics. Their study is not about education, but Chinese educational leaders may struggle to integrate traditional values with open, equity-driven, and data-intensive governance.

This study explores how informatization reforms affect Chinese school administrators' decision-making. The goal is to monitor accomplishments and examine gaps—where digital reforms succeed, fail, and affect leadership practice. This research proposes practical techniques for integrating informatization projects with institutional aims by drawing from previous literature and positioning it in ongoing reforms. It contributes to discussions on educational reform, leadership, and how digital change affects Chinese higher education governance.

Statement of the Problem

1. What is the assessment of the respondents on the university management informatization reforms of the university in terms of:
 - 1.1.big data integration;
 - 1.2.intelligent and automated systems;
 - 1.3.internet and cloud-based platforms;
 - 1.4.archives and resource management;
 - 1.5.personnel and administrative informatization;
 - 1.6.user-centric service systems;
 - 1.7.innovation in educational management models
 - 1.8.infrastructure and security?
2. What is the assessment of the respondents on the decision-making quality of school administrators in terms of:
 - 2.1.Data Utilization;
 - 2.2.Collaborative and Participatory Approaches;
 - 2.3.Adaptability and Contextual Awareness;
 - 2.4.Ethical Considerations;
 - 2.5.Continuous Professional Development;

2.6.Holistic and Context-Sensitive Approaches;

2.7.Information Quality?

3. Is there a significant correlation in the assessment of the respondents on the university management informatization reforms of the university and decision-making quality of school administrators?

Research Methodology

To explore the relationship that exists between university management informatization reforms and school administrators' decision-making quality, a quantitative correlational design was employed in this study, which was conducted at Medical University in Weifang City, Shandong Province, China. Three Hundred Fifty (350) Teachers were sampled on the basis of specific criteria to ensure that the sample represented diverse views on the implementation of university management informatization reforms and the decision-making quality of school administrators. Among the selection criteria were teachers who were actively engaged in university operations, had at least three years of teaching experience, and had a good working knowledge of administrative processes and/or informatization projects within their institutions. This manner of purposefully selecting individuals maximized the obtainment of those with knowledge and experience relevant to the issue at hand and meant that the data to be obtained was meaningful and relevant to the study's purpose. The research instrument for this study consisted of a researcher-made survey questionnaire designed to assess the constructs of university management informatization reforms and decision-making quality.

Table 1. Summary on the Assessment of the Respondents on the University Management Informatization Reforms of the University in terms of

Indicator	Weighted Mean	Standard Deviation	Qualitative Description	Verbal Interpretation	RANK
1. big data integration	3.29	0.31	Agree	Managed	4
2. intelligent and automated systems	3.33	0.31	Agree	Managed	3
3. internet and cloud-based platforms	3.17	0.34	Agree	Managed	6
4. archives and resource management	3.23	0.31	Agree	Managed	5
5. personnel and administrative informatization	3.15	0.33	Agree	Managed	7
6. user-centric service systems	3.14	0.37	Agree	Managed	8
7. innovation in educational management models	3.35	0.28	Agree	Managed	1.5
8. infrastructure and security	3.35	0.34	Agree	Managed	1.5



Overall Mean	3.25	0.12	Agree	Managed	
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Legend: 3.51 – 4.00 (Strongly Agree-Highly Managed); 2.51 – 3.50 (Agree- Managed); 1.51 – 2.50 (Disagree-Slightly Managed); 1.0-1.50 (Strongly Disagree-Not Managed)

The results in Table 1 suggest that respondents view the university's informatization reforms as generally well-managed, with an overall mean of 3.25 and a low standard deviation of 0.12. Such a consistent pattern indicates broad agreement among stakeholders that the institution has laid a reliable foundation for digital transformation. At the same time, the term "Managed" does not convey excellence; it implies that systems are in place and functional, but they may not yet be transformative or deeply embedded in the daily culture of administration and teaching. In defense terms, this is a good baseline but also a reminder that "consistency" is not synonymous with "optimization."

The fact that "Innovation in Educational Management Models" and "Infrastructure and Security" topped the list, both at 3.35, may point to institutional priorities that have resonated well with the community. Administrators seem to have prioritized tangible reforms, including computerized classrooms, enhanced networks, and protected databases, which may elucidate why respondents readily acknowledge advancements in these areas. This may entail dependable Wi-Fi connectivity, optimized security measures, and pilot initiatives evaluating novel learning management systems. However, one would contend that they represent the more concrete and readily demonstrable facets of reform; more profound challenges, such as the incorporation of innovation into pedagogical practices or the equitable allocation of infrastructure among departments, are more challenging to quantify through surveys.

Sitting just below the top are intelligent and automated systems ($M = 3.33$) and big data integration ($M = 3.29$). These results imply that automation has improved efficiency, perhaps in areas like admissions processing or timetable generation, while data systems are beginning to support institutional evaluation. Still, the scores stop short of suggesting that data analytics are fully driving policy or resource allocation. A possible limitation here is staff readiness: without widespread training in data literacy, even well-designed systems risk being underutilized. Respondents may have rated these dimensions positively because the tools exist, but existence does not guarantee confident or meaningful use.

The mid-tier domains, including archives and resource management ($M = 3.23$) and internet/cloud platforms ($M = 3.17$), indicate advancement accompanied by persistent deficiencies. Digitized documents may exist but can be challenging to access, and cloud platforms may operate sufficiently while still exasperating users with access delays or unreliable assistance. These are the types of "everyday frictions" that rarely feature in extensive survey categorizations yet significantly influence the lived experience of informatization. Faculty members experiencing difficulties with version control on collaborative platforms, or staff facing intermittent server outages, may account for the conservative evaluations within this spectrum.

The weakest areas, personnel and administrative informatization ($M = 3.15$) and user-centric service systems ($M = 3.14$), highlight the softer side of digital reform, where direct interaction with people and processes matters most. A possible interpretation is that back-end systems like payroll, leave management, or student services have lagged behind more visible technological upgrades. From a user perspective, this may translate into clunky interfaces, slow response times, or limited self-service options. The implication is that while the university has invested heavily in infrastructure and security, it has not yet fully translated informatization into smoother, more responsive daily experiences for staff and students.

The results indicate that the institution has progressed beyond the early adoption stage and entered a phase of systematic management. Nevertheless, it has not yet attained a "Highly Managed" culture or perfect informatization. The narrow range of values (3.14–3.35) fosters stability, although it also increases the likelihood of complacency. For transformation to occur, reforms must concentrate on aspects beyond mere technology. They must prioritize user experience, the promptness of government responses, and continuous professional development. According to Jing (2023) and Jiang (2024), informatization is most effective when it fosters collaboration and innovation rather than merely serving as a technical enhancement. The university's challenge may lie not in acquiring new systems, but in their effective integration into the established practices of governance, teaching, and learning.

Table 2. Summary on the Assessment of the Respondents on the Decision-making Quality of School Administrators in Terms of

Indicator	Weighted Mean	Standard Deviation	Qualitative Description	Verbal Interpretation	RANK
1. Data Utilization	3.27	0.35	Agree	High Quality	6.5
2. Collaborative and Participatory Approaches	3.42	0.3	Agree	High Quality	1
3. Adaptability and Contextual Awareness	3.32	0.32	Agree	High Quality	4
4. Ethical Considerations	3.37	0.3	Agree	High Quality	3
5. Continuous Professional Development	3.27	0.31	Agree	High Quality	6.5
6. Holistic and Context-Sensitive Approaches	3.38	0.31	Agree	High Quality	2
7. Information Quality	3.31	0.32	Agree	High Quality	5
Overall Mean	3.33	0.15	Agree	High Quality	

Legend: 3.51 – 4.00 (Strongly Agree- Very High Quality); 2.51 – 3.50 (Agree- High Quality); 1.51 – 2.50 (Disagree- Low Quality); 1.0-1.50 (Strongly Disagree- Low Quality)

The results in Table 2 indicate that the respondents generally rated the decision-making quality of school administrators at a “High Quality” level, with an overall mean of 3.33 and a low standard deviation of 0.15. The consistency of responses suggests a shared perception among faculty and staff that leadership practices are competent and stable. Still, one might argue that such uniform ratings, while encouraging, risk concealing underlying tensions or differing experiences among groups of respondents. In other words, the apparent consensus could reflect genuine satisfaction, but it might also signal a tendency toward cautious or socially desirable responses in institutional settings.

Interestingly, the strongest domain identified was Collaborative and Participatory Approaches ($M = 3.42$). This implies that administrators are perceived as valuing inclusivity, trust-building, and shared governance in their decision-making. From a practical standpoint, such practices may translate into open faculty consultations, transparent policy discussions, and involvement of staff in budget planning. Yet, there is a possibility that “participation” is more symbolic than substantive—stakeholders may be invited to discussions but not necessarily given equal weight in final decisions. This raises an important question about the depth of collaboration: does it genuinely shape outcomes, or is it more about maintaining appearances of openness?

The middle-ranking dimensions, such as Holistic and Context-Sensitive Approaches ($M = 3.38$) and Ethical Considerations ($M = 3.37$), point to an encouraging alignment with values that are crucial for long-term institutional trust. Administrators are seen as broad-minded and ethically grounded, which helps sustain credibility within the school community. However, the scores are only modestly higher than those for other dimensions, which could imply that while ethics and context are acknowledged, they may not consistently drive day-to-day decisions. For example, decisions on workload distribution or student discipline may still lean on traditional hierarchies rather than nuanced ethical deliberation.

What stands out as slightly weaker are Data Utilization and Continuous Professional Development (both at $M = 3.27$). This suggests that while administrators are regarded as competent overall, they may not be making the fullest use of data analytics or actively investing in leadership learning. In practice, this could mean that student performance data, though collected, is not systematically applied to policy adjustments, or that leadership workshops are treated as occasional rather than integral activities. It may also reflect broader systemic issues, such as limited training opportunities or overreliance on intuition and experience. This limitation is critical in the context of China’s rapid digitalization push, where schools are expected to integrate AI, big data, and evidence-based governance into their management systems.

Overall, the pattern of scores—clustered within a narrow range from 3.27 to 3.42—suggests that administrators are generally performing well, but without any domain standing out as exemplary. This consistency is reassuring in terms of stability, yet it may also highlight a plateau: administrators are meeting expectations but not yet exceeding them. To move from “High” to “Very High” quality, targeted improvements in data literacy, professional development, and evidence-based practices appear necessary. The challenge lies in embedding these practices not as add-ons but as integral parts of administrative culture, balancing technological tools with the ethical, participatory, and context-sensitive traditions already in place.

Table 3. Correlation Between Assessment of the Respondents on the University Management Informatization Reforms of the University and Decision-Making Quality of School Administrators

University Management Informatization Reforms of the University	Decision-Making Quality of School Administrators	Computed r	Sig.	Decision	Interpretation
big data integration	Data Utilization	.153**	.003	Rejected	Significant
	Collaborative and Participatory Approaches	-.076	.139	Accepted	Not Significant



	Adaptability and Contextual Awareness	.147**	.004	Rejected	Significant
	Ethical Considerations	.027	.605	Accepted	Not Significant
	Continuous Professional Development	.024	.635	Accepted	Not Significant
	Holistic and Context-Sensitive Approaches	.074	.153	Accepted	Not Significant
	Information Quality	-.004	.933	Accepted	Not Significant
intelligent and automated systems	Data Utilization	.137**	.008		
	Collaborative and Participatory Approaches	.018	.723	Accepted	Not Significant
	Adaptability and Contextual Awareness	.200**	.000	Rejected	Significant
	Ethical Considerations	.091	.076	Accepted	Not Significant
	Continuous Professional Development	-.029	.568	Accepted	Not Significant
	Holistic and Context-Sensitive Approaches	.148**	.004	Rejected	Significant
	Information Quality	.101*	.049	Rejected	Significant
internet and cloud-based platforms	Data Utilization	-.114*	.026	Rejected	Significant
	Collaborative and Participatory Approaches	-.124*	.016	Rejected	Significant
	Adaptability and Contextual Awareness	-.050	.328	Accepted	Not Significant
	Ethical Considerations	.146**	.004	Rejected	Significant
	Continuous Professional Development	.043	.401	Accepted	Not Significant
	Holistic and Context-Sensitive Approaches	.067	.196	Accepted	Not Significant
	Information Quality	-.048	.348	Accepted	Not Significant
	Data Utilization	.141**	.006	Rejected	Significant



archives and resource management	Collaborative and Participatory Approaches	-.135**	.009	Rejected	Significant
	Adaptability and Contextual Awareness	.128*	.013	Rejected	Significant
	Ethical Considerations	-.089	.082	Accepted	Not Significant
	Continuous Professional Development	-.056	.274	Accepted	Not Significant
	Holistic and Context-Sensitive Approaches	.138**	.007	Rejected	Significant
	Information Quality	.042	.414	Accepted	Not Significant
personnel administrative informatization	Data Utilization	.028	.585	Accepted	Not Significant
	Collaborative and Participatory Approaches	-.083	.106	Accepted	Not Significant
	Adaptability and Contextual Awareness	-.011	.832	Accepted	Not Significant
	Ethical Considerations	-.102*	.047	Rejected	Significant
	Continuous Professional Development	-.041	.421	Accepted	Not Significant
	Holistic and Context-Sensitive Approaches	.124*	.016	Rejected	Significant
	Information Quality	-.036	.483	Accepted	Not Significant
user-centric service systems	Data Utilization	.129*	.012		
	Collaborative and Participatory Approaches	.043	.402	Accepted	Not Significant
	Adaptability and Contextual Awareness	.124*	.016	Rejected	Significant
	Ethical Considerations	.092	.074	Accepted	Not Significant
	Continuous Professional Development	-.113*	.028	Rejected	Significant



	Holistic and Context-Sensitive Approaches	-.045	.388	Accepted	Not Significant
	Information Quality	.013	.807	Accepted	Not Significant
innovation in educational management models	Data Utilization	-.029	.575	Accepted	Not Significant
	Collaborative and Participatory Approaches	.017	.739	Accepted	Not Significant
	Adaptability and Contextual Awareness	.000	1.000	Accepted	Not Significant
	Ethical Considerations	.069	.178	Accepted	Not Significant
	Continuous Professional Development	-.027	.605	Accepted	Not Significant
	Holistic and Context-Sensitive Approaches	-.032	.538	Accepted	Not Significant
	Information Quality	-.120*	.020	Rejected	Significant
infrastructure and security	Data Utilization	-.173**	.001	Rejected	Significant
	Collaborative and Participatory Approaches	-.048	.356	Accepted	Not Significant
	Adaptability and Contextual Awareness	-.086	.096	Accepted	Not Significant
	Ethical Considerations	.084	.104	Accepted	Not Significant
	Continuous Professional Development	.000	.994	Accepted	Not Significant
	Holistic and Context-Sensitive Approaches	-.119*	.020	Rejected	Significant
	Information Quality	.000	.996	Accepted	Not Significant
Overall University Management Informatization Reforms of the University	Overall Decision-Making Quality of School Administrators	.078	.128	Accepted	Not Significant

The findings in Table 3 suggest that the relationship between university management informatization reforms and the decision-making quality of school administrators is not straightforward. While certain elements of digital reform appear to support more responsive and data-driven decision-making, other components either show no meaningful link or, more surprisingly, a negative association. This mixed



pattern implies that informatization, while often presented as a comprehensive solution to modern management challenges, may not automatically translate into stronger administrative decision-making. Context, implementation quality, and institutional culture likely play an equally critical role in shaping outcomes.

To be more specific, the positive correlations between big data integration and both data utilization and adaptability may indicate that when administrators have access to organized, large-scale data systems, they are more capable of grounding decisions in evidence and adjusting policies in real time. In practice, this could mean that student enrollment forecasting or curriculum adjustments are made with a clearer picture of demand and outcomes. Yet, one might also wonder whether such reliance on data carries hidden risks—overemphasis on quantifiable metrics, for example, could overshadow more qualitative insights from faculty or students. The numbers point to an advantage, but the human elements behind those numbers remain vital.

On the other hand, the negative relationship between internet/cloud platforms and collaborative or participatory approaches raises an uncomfortable question. These platforms are often promoted as democratizing access, yet here they seem associated with diminished collaboration. A possible interpretation is that, instead of fostering inclusivity, online platforms may be introducing barriers—technical difficulties, uneven digital literacy, or even mistrust of virtual processes. I can imagine faculty members who, rather than engaging more actively, disengage because the platforms feel cumbersome or impersonal. This complicates the assumption that technology inevitably enhances participation.

The correlations around archives and resource management also stand out. While organized data systems appear to bolster adaptability and holistic decision-making, the negative link with collaboration hints at a potential trade-off: better information systems may centralize control, reducing opportunities for shared access or collective interpretation. Similarly, the negative association between personnel informatization and ethical considerations suggests that automated HR systems might raise doubts about fairness—perhaps in areas such as workload distribution, promotions, or evaluations. These findings may reflect lingering skepticism about whether digital tools can fairly account for nuanced human performance.

Finally, it is telling that the overall correlation between informatization reforms and decision-making quality was not significant. This may suggest that informatization, taken as a broad reform package, does not by itself ensure higher-quality decisions. Instead, reforms may only matter when integrated with leadership practices, trust-building, and ongoing professional development. The caution here is that administrators should not equate “more technology” with “better decisions.” Technology seems to provide support in some areas, but it may also introduce new challenges or even undermine certain values. A limitation worth noting is that correlations cannot establish causation; negative associations, for example, could reflect contextual barriers unique to the studied institution rather than inherent flaws in the technology itself. Future research might probe these contradictions more closely, perhaps by combining quantitative analysis with interviews that capture how administrators and staff actually experience informatization in their daily work.

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